# BMJ Open Defining and grouping children's therapeutic footwear and criteria for their prescription: an international expert Delphi consensus study

Matthew Hill, Aoife Healy 0, Nachiappan Chockalingam 0

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Centre for Biomechanics and Rehabiliation Technologies, Staffordshire University, Stokeon-Trent, UK

#### **Correspondence to**

Professor Nachiappan Chockalingam; n.chockalingam@staffs.ac.uk

#### **ABSTRACT**

Objectives This study aimed to achieve an expert consensus on how to define and group footwear interventions for children, with a further focus on the design characteristics and prescription of off-the-shelf stability footwear for children with mobility impairment. **Setting** A group of multinational professionals, from clinicians to those involved in the footwear industry, were recruited to ensure a spectrum of opinions.

Participants Thirty panellists were contacted, of which 24 consented to participate and six withdrew before round 1, a further two withdrew after round 1. Sixteen panellists completed the consensus exercise.

Primary and secondary outcome measures A Delphi consensus method was employed with round 1 split into three sections: (1) terms and definitions, (2) specifics of offthe-shelf stability footwear design and (3) criteria for clinical prescription of off-the-shelf stability footwear. The panel was asked to rate their level of agreement with statements and to provide further insights through open-ended questions. The opinions of the experts were analysed to assess consensus set at 75% agreement or to modify or form new statements presented through the subsequent two rounds.

Results Therapeutic footwear was the agreed term to represent children's footwear interventions, with grouping and subgrouping of therapeutic footwear being dependent on their intended clinical outcomes (accommodative, corrective or functional). Both the heel counter and topline as well as the stiffness and width of the sole were identified as potentially influencing mediolateral stability in children's gait. A consensus was achieved in the prescription criteria and outcome measures for off-the-shelf stability therapeutic footwear for cerebral palsy, mobile symptomatic pes planus, Duchenne muscular dystrophy, spina bifida and Down's syndrome.

**Conclusions** Through a structured synthesis of expert opinion, this study has established a standardisation of terminology and groupings along with prescription criteria for the first time. Reported findings have implications for communication between stakeholders, evidence-based clinical intervention and standardised outcome measures to assess effectiveness.

#### INTRODUCTION

Footwear is a fundamental common boundary between the ground and the foot in daily

# Strengths and limitations of this study

- A multinational sample of professionals from clinicians to those involved in the footwear industry was sought to ensure a spectrum of opinions were included.
- Analysis followed a standard mixed-method approach for Delphi consensus surveys and employed both qualitative and quantitative analysis.
- The study was limited to countries with English as their first language, and there may be differences in expert opinions outside the selected expert's countries (Australia, UK and USA).
- This research paves the way for the development of appropriate mechanical testing methods for off-theshelf therapeutic stability footwear.

activities; it modifies forces and sensory stimulus with demonstratable effects on children's gait.<sup>1-3</sup> Correspondingly footwear has been used both historically and in modern healthcare practice as an assistive aid for children with mobility impairment. 45 However, a recent scoping review<sup>6</sup> highlighted that footwear as a clinical intervention for children lacks a common understanding of terms and definition as to the specifics of its clinical role. The development of recognised terms, definitions and characteristics of a healthcare intervention afford an understanding of how it should work, the value it should provide, who should benefit, how to measure its success, what risks are present and what is and is not included within the intervention.<sup>78</sup> The scoping review<sup>6</sup> demonstrated that numerous terms have been used in the literature concerning clinical footwear interventions, including orthopaedic shoes, rehabilitative boots, modified shoes, supportive shoes and special shoes. Additionally, there was no clear definition of the clinical role and outcome measures to classify and group the range of available children's footwear interventions. The results of the



scoping review suggested therapeutic footwear as a potential overarching term to represent the myriad roles and designs of children's clinical footwear interventions, with three primary groupings of therapeutic footwear categorised according to common identified clinical roles. The groupings were: corrective (footwear designed to bring about the correction of congenital skeletal lower limb alignment), accommodative (footwear designed to reduce stresses on children's foot deformity through the matching of footwear dimensions to the child's foot) and functional (footwear designed to improve dynamic gait parameters of mobility-impaired children, reducing pathological movements and facilitating typical walking patterns inclusive of stability).

Among the therapeutic footwear groupings suggested in the scoping review, <sup>6</sup> those that offered a stabilising role were the most studied. Research has demonstrated potentially beneficial clinical outcomes to children with mobility impairment with increased velocity and lowered mediolateral excursions of the centre of mass in walking. 9-11 Children's stability footwear may be bespoke or have uppers that come in a range of modular adaptions but are most commonly made to a manufacturer's standard stock model, which are termed off the shelf. 10 12 The body of research concerning off-the-shelf stability footwear has chiefly focused on its biomechanical effects. However, the specific standard design characteristics for this footwear that are requisite for stability were not clearly identified or consistently reported in the literature. <sup>6 9</sup> The lack of recognised characteristics of an intervention prevents a common understanding of how it should work clinically<sup>78</sup> and preclude a meaningful comparison throughout any evidence-based research. Thus, it is important that a consensus understanding of design characteristics required to enhance stability during gait is obtained, from both a manufacturing and clinical perspective, for this footwear.

In respect to who may benefit from this intervention,<sup>78</sup> there were seven childhood mobility impairments considered for off-the-shelf stability footwear intervention among the research identified through the scoping review: cerebral palsy, pes planus, toe walking, Duchenne muscular dystrophy, spina bifida, Down's syndrome and intoeing.<sup>6</sup> However, there appeared to be no clear prescription criteria for the use of off-the-shelf stability footwear in these conditions. Specific gaps in prescription criteria included the stated clinical role, the grade/severity of the condition when this footwear should be used as a sole assistive aid or an adjunct to other aids such as ankle foot orthoses (AFOs) and the suitable age range for intervention. <sup>69</sup> In addition, there appears to be no standardised set of agreed outcome measures, both physical and psychosocial, to ascertain the effectiveness of this footwear. Identification and consensus agreement of outcome measures for both research and clinical practice allows for a unified measure of the effectiveness of an intervention, informing on value-driven healthcare and the development of a consistent evidence base.<sup>13</sup>

Although terminology and means of grouping clinical footwear interventions as a whole have been suggested by a synthesis of the available research, <sup>6 9</sup> a common understanding and usage of these terms would require an opinion on their practical application from experts who provide footwear to children with mobility impairment. Once the overall groupings and terminology of clinical footwear interventions have been established among experts in this area, it will be possible to identify and define individual intervention footwear categories for childhood mobility impairment, such as stability footwear. Off-the-shelf stability footwear appears to offer a beneficial effect on the broadest range of childhood mobility impairments.<sup>6 9</sup> However, as stated, a common understanding of the specifics and purpose of their design and the proposed clinical outcomes of this treatment is not apparent in the research.<sup>69</sup>

Where there is contradictory or insufficient information, the ability to formulate effective clinical reasoning can be affected; here consensus surveys such as the Delphi offers a valid and reliable method of determining expert opinion to inform on these areas. 14-16 Delphi surveys incorporate the collective opinion of a panel of experts fed back to the panel through a series of iterative rounds in an anonymised and controlled manner, with the underlying goal to achieve expert consensus on a certain issue where no agreement previously existed. This technique has been used successfully to achieve professional consensus on school footwear design<sup>17</sup> and the use of orthoses for mobility impairment. 18 19 The only previous study relating to the synthesis of expert opinion on footwear interventions was performed by Staheli and Giffin in 1980.4 This was a single round cross-section survey of practice and opinion that lacked the staged systematic approach of a Delphi survey and was restricted to the correction of musculoskeletal alignments that are mainly found in typically developing children. The survey did not consider the footwear terminology used, the purpose of the specific designs of footwear or any effects on children's gait. Establishing a common understanding of terms, definitions and groupings of clinical footwear as a whole, alongside design characteristics and prescription criteria for specific footwear groupings, may be achieved by conducting a Delphi consensus with experts in the field of clinical footwear provision and design. The consensus opinion may then be used to develop consistent terms and definitions for footwear interventions and prescription criteria and design characteristics for off-the-shelf stability footwear for children with mobility impairment.

# **Aims and objectives**

The overall aim of this study was to achieve an expert consensus on how to define and group clinical footwear interventions for children, with a further focus on the design characteristics and clinical prescription of off-the-shelf stability footwear for children with mobility impairment.

The objectives were:

➤ To establish expert consensus on the terms, definitions and groupings of children's clinical footwear

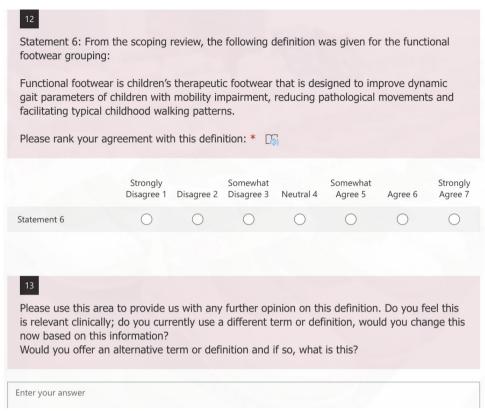


Figure 1 An example of a question from section 1 exploring consistent terms and definition of clinical footwear interventions (\* indicates required answer).

interventions, providing a consistent and common clinical understanding to identify and categorise the purpose of these footwear types as an assistive aid for children.

- To establish a consensus of expert opinion of the ideal design characteristics of off-the-shelf stability footwear and the purpose of these characteristics.
- To develop expert consensus recommendations for the prescription criteria and outcome measures for off-the-shelf stability therapeutic footwear.

#### **METHOD**

This Delphi consensus study followed the methodological and reporting recommendations suggested by Keeney, Hasson and Mckenna. <sup>20</sup> <sup>21</sup> The development and purpose of this survey were informed by scoping and systematic reviews performed by the authors. 69

All panellists provided written informed consent to participate in this study.

# Patient and public involvement

Due to the nature of this study, no patients or public were involved in the design, implementation or analysis of results.

# **Identifying panellists**

Experts were recruited by the purposeful sampling of individuals meeting specific criteria:

Registered practitioner in healthcare or clinical footwear manufacture.

- ≥10 years of practice in clinical footwear provision/ manufacture.
- ≥25% clinical caseload involving the provision of footwear interventions to children with mobility impairment or ≥25% of their workload involved with the design or manufacture of footwear intended for therapeutic use in children with mobility impairment.

Recruitment was initially through professional networks of the research team and subsequently recruited experts were asked to identify additional experts who they felt met the criteria for this study. A multinational sample of professionals from clinicians, researchers and those involved in the footwear industry was sought to ensure a spectrum of opinions were included. Although there are no agreed definitions for an effective size convention ranging from 10 to 100 panellists within the literature, 22 researchers have suggested a sample size of 10 will provide a diversity of expert opinion.<sup>23</sup>

#### **Contacting experts**

Experts were contacted with the information sheet by email, with consent and a participant professional characteristic survey captured by Microsoft Forms.

### Questionnaire design

The study took the form of a modified Delphi<sup>15</sup>; the first round was informed by scoping and systematic reviews of research in relation to children's clinical footwear interventions<sup>69</sup> and benchtop analysis of design characteristics

In the question below you will be presented with a series of findings in relation to the heel counter/stiffener of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention: The heel counter should have the following characteristics: \* Strongly Somewhat Somewhat Strongly Disagree 1 Disagree 3 Neutral 4 Agree 7 Disagree 2 Agree 5 Agree 6 Heel counter/stiffener extended to midfoot Heel counter/stiffener height extended towards topline. Please use this section to provide your opinion on the design characteristics of the heel counter/stiffener in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \* Enter your answer

**Figure 2** An example of a question from section 2 exploring recognised design characteristics of children's off-the-shelf stability footwear (\* indicates required answer).

of a range of off-the-shelf footwear proposed to offer a stabilising effect on mobility impaired children. This approach allowed the development of informed questions from the available evidence. The survey consisted of closed-ended ranked and option questions, with ranked questions using a 7-point Likert scale. Open-ended questions were also provided to explore the panellists' opinions on the statements and questions posed and to allow them to offer alternatives or raise further salient items in relation to children's clinical footwear interventions. The first round of the survey, therefore, captured qualitative and quantitative data. This generated a combined synthesis of the current literature evidence base in relation to children's clinical footwear interventions alongside that of the experts' opinions from working in the area of clinical footwear provision.

The survey was designed by the first author with calibration and modification of questions among all authors. The survey was also piloted on an expert in clinical footwear provision to ensure the questions were appropriately framed and phrased to avoid ambiguity or multiple events within any question.<sup>24</sup> The first round consisted of three sections:

Section 1 asked the panellists for their opinion on consistent terms, definitions and groupings of clinical footwear interventions for children with mobility impairment. An example of the type and structure of the questions is provided in figure 1, with the full section 1 survey available in online supplemental appendix S1.

Section 2 asked the panellists for their opinion on the ideal design characteristics of off-the-shelf stability foot-wear and the purpose of these characteristics. An example of the type and structure of the questions is provided in figure 2, with the full section 2 survey available in online supplemental appendix S2.

Section 3 asked the panellists for their opinion on the prescription criteria of issuing commercially available off-the-shelf stability footwear in a range of mobility impairments and the outcome measures to be used to assess the effectiveness of this footwear. An example of the type and structure of the questions is provided in figure 3, with the full section 3 survey available in online supplemental appendix S3.

The panellists were given instructions on how to complete the survey in the introduction of each section.

#### **Distribution**

The survey was distributed among panellists electronically via Microsoft Forms. Panellists were reminded to complete the survey 1 week before the deadline. Late responders were followed up and offered an appropriate extension if required.



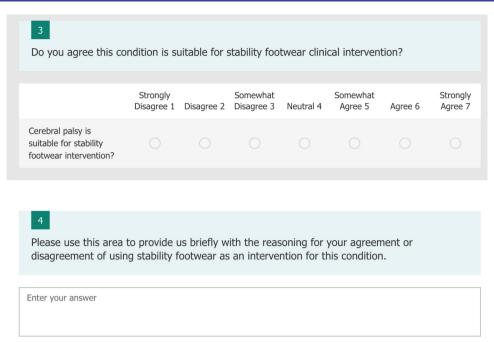


Figure 3 An example of a question from section 3 exploring prescription criteria for the provision of children's off-the-shelf stability footwear.

#### **Analysis of results**

Analysis followed a standard mixed-method approach for Delphi consensus surveys and employed both qualitative and quantitative analysis. The combined findings were used to inform the development of subsequent rounds of Delphi (two and three) in addition to the final results.

Analysis of open-ended questions involved an inductive themed content analysis framework performed by the first author. The process involved the identification of statements that were the same or could be constructed to mean the same thing. These statements were grouped together, and themes were developed around similar statements. Once statements were grouped under a common theme, a decision was made among the research team as to whether these themes should be collapsed into one statement to be presented to the Delphi panel in the subsequent round. Unique statements that did not fall into any common theme were kept as the original statements. The wording of all statements was assessed by the research team for potential multiclauses and ambiguity.

The grouped themed and unique statements were presented to the panellists alongside a summary of the collective panellists' reasoning in rounds 2 and 3. These were in a series of ranked Likert scale questions or options alongside the original statements from round 1 or 2. Rounds 2 and 3 followed the same format of round 1 with three sections (online supplemental appendices S1–3).

Descriptive statistics: central tendency and dispersion of the responses (median analysis, IQR) and % frequency to the ranked questions were fed back to the panellists in rounds 2 and 3 for an estimation of the general response of the other expert panellists (online supplemental appendices S1–3). The quantitative values were also recorded for consistency analysis across the rounds.

#### **Consensus**

There is no agreed guidance on consensus but is often achieved through generating a predetermined percentage level of consensus of ranked questions or panellists preferred option (frequency). The range of preset agreement is variable among Delphi studies; however, a value of 75% is a commonly reported value and the one chosen to define consensus among the recruited panel in the present study. Statements would reach consensus when there was 75% or greater frequency of response for a preferred option or ranked questions of 'agree' to 'strongly agree'.

### **Cut-off**

The Delphi was set a priori to run over three rounds or if there was a greater than 30% drop off of panellists.

#### RESULTS

Thirty panellists were contacted in January 2020, of which 24 consented to participate; six participants withdrew from the study prior to commencement of the first round. Eighteen panellists participated in round 1; the panel consisted of orthotists, podiatrists and a physiotherapist with a range of experience and roles in clinical footwear provision for children, including direct patient contact, education, research and commercial sales and manufacture. The international panel was composed of panellists from the UK, Australia and the USA; a full breakdown of the panellists' characteristics are provided in (table 1).

Of the 18 panellists, 16 completed all rounds of the Delphi survey resulting in an 11% drop off from the initial round (figure 4). From the initial 45 statements (11 in section 1, 27 in section 2 and 7 in section 3), a



Table 1 Participant chara	acteristics	
	7 females	39%
Sex	11 males	61%
Experience with clinical footwear provision for children	Median 18 years	IQR 11.75
% workload dedicated to either: assessment, manufacture or commercial distribution of footwear interventions for children with mobility impairment	Median 36.5%	IQR 25%
Profession:		
Orthotist	10	55.60%
Physiotherapist	1	5.60%
Podiatrist	7	38.80%
Professional role		
Clinician	5	27.80%
Clinician; researcher	3	16.70%
Clinician; education	3	16.70%
Clinician; education; researcher	3	16.70%
Clinician; commercial (sales and manufacture)	2	11.10%
Clinician; researcher; commercial (sales and manufacture)	1	5.60%
Clinician; education; commercial (sales and manufacture)	1	5.60%
Highest qualification		
PhD/professional doctorate	5	27.80%
Master's degree	5	27.80%
Bachelor's degree	6	33.30%
Professional diploma	2	11.10%

further 238 statements were developed or modified from panellist feedback (figure 4) for a total of 283 statements. Consensus agreement among the panel was reached on a total of 150 statements (figure 4). The statements for each section inclusive of the original, modified and those that reached consensus are found in supporting information files (online supplemental appendix S4–6). The results for each section are presented and discussed separately.

#### **Section 1**

The 11 consensus statements from section 1 were taken forward to establish consistent terms and definitions to broadly group and categorise children's clinical footwear interventions. There was a considerable majority consensus of the panel (81% agreement) who favoured therapeutic footwear as the overarching term for children clinical footwear interventions (figure 5). This term was felt by the majority of the panel to reflect the holistic

aspect of footwear interventions on childhood mobility rather than be limited to aspects of aligning body structure that would be suggested by 'orthopaedic' and 'orthotic'. A broad overarching definition was established by panellists (82% agreement) for these interventions as:

Footwear that is designed or adapted specifically to protect, support, align, prevent, or correct foot deformity, or to assist mobility and standing in children.

This definition comprised the scope of the potential role of footwear as a clinical intervention while also recognising that designs may incorporate specific therapeutic footwear or standard shoes that are adapted to meet a clinical purpose. Groupings of footwear fell under the overarching term therapeutic footwear (100% agreement), and panellists felt they should be grouped and categorised according to intended clinical outcomes of the components of the footwear (100% agreement). This was modified from the suggested method of groupings from the scoping review<sup>6</sup> in which the groupings assigned footwear as an individual design. The current grouping recognised that footwear might have more than one clinical role, that is, footwear may have both a direct functional component on gait and an accommodative component of the child's foot deformity. The main groupings of therapeutic footwear were those offered in round 1, which were taken from the scoping review<sup>6</sup>: accommodative, corrective and functional (figure 5). However, the definitions were modified by panellist's feedback with all achieving consensus in the second round:

Accommodative footwear is children's therapeutic footwear that is designed to prevent deterioration of children's foot deformities through the dimensional matching of the footwear to the child's foot. (76% agreement)

Corrective footwear is footwear that is designed or adapted to support correction of congenital or acquired foot and ankle deformity in children. This may be secondary to a primary corrective measure such as serial casting or surgery. (82% agreement)

Functional footwear is children's therapeutic footwear that is designed or adapted to directly assist mobility and standing in children. (76% agreement)

Panellists felt that functional footwear could be placed into subgroupings dependent on the design and intended clinical outcomes of the footwear similarly to that suggested for the main groupings of therapeutic footwear (76% agreement). The panellists favoured the subgrouping of stability footwear suggested from the scoping review provided in round 1 (94% agreement) (figure 5). However, the definition was modified by panellists' feedback and did not achieve consensus until the third round:

Stability Footwear is footwear that is designed to assist mobility and standing in children by influencing

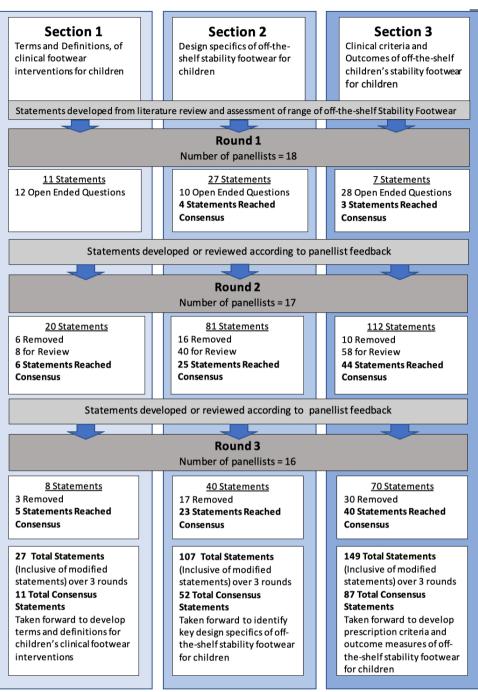


Figure 4 The Delphi survey three-round process and individual sections results.

movements and potentially proprioception of the foot and ankle. (94% agreement)

Panellists felt that the separate subgroupings of lift (raise\*), rounded bottom (rocker bottom\*) suggested from the scoping review in round 1 should be considered to fall collectively under one subgrouping. Therefore, a new separate subgrouping of functional footwear adapted sole was suggested from panellist feedback; this reached consensus in round 2 (76% agreement) (\*preferred alternative terminology suggested by the majority of panellists in round 1) (figure 5). This was defined as:

A range of customised sole or heel adaptions to any suitable children's footwear, with the adaptions designed to assist mobility or standing in children.

From panellist feedback, the subgrouping of adapted sole recognised that there is a range of sole adaptions offering varied functional roles broader than stability. However, it was beyond the scope of the current Delphi to fully categorise and define the many sole adaptions that could fall into this subgrouping. Further detail on panellist opinion in the development of the subgrouping adapted sole may be found in online supplemental appendix S4.



**Figure 5** Terms and groupings of clinical footwear interventions for children derived from section 1.

#### **Section 2**

The 52 consensus statements from section 2 concerning the specific ideal design characteristics and purpose of off-the-shelf stability therapeutic footwear were distributed in nine regions of the shoe: topline, upper, facings and fastenings, heel counter/stiffener, heel, inlay, sole unit, sole rocker, in addition to overall consideration of the footwear's mass (table 2). Three key themes emerged from panellist feedback concerning the ideal design characteristics and their purpose those of stability, ergonomics and aesthetics (table 2). Stability was felt to be achieved by material stiffens of the heel counter (81% agreement), which may be assisted by an increased topline height in offering mediolateral stability to the foot and ankle (81% agreement). Panellists also felt that the fitting of the shoe inlay/insole to the child's heel should not be overlooked to increase vertical ground reaction forces in this area in addition to the firm anchorage of the counter to the welt and outer sole (88% agreement) (table 2). Although a proprioceptive effect of the heel counter and topline was suggested by some panellists, full consensus

 Table 2
 Themes of the ideal design specifics and purpose of off-the-shelf therapeutic stability footwear derived from section

Theme	Region	Dimension/manufacture	Material/properties
Stability	Heel counter/stiffener	Extended to midfoot and towards topline. Robust anchorage to welt and outsole.	Stiffened material.
	Topline	Extended above ankle To assist leverage of heel counter.	Leather.
	Outer sole	Wider than heel cup of upper Range of tread depths. Deepened tread for uneven terrain. Shallower for indoor use to avoid catching on the walking surface. Minimal heel forefoot differential to maximise stability.	Stiffer at the heel and midfoot. Hard wearing sole material.
	Upper		Leather with stiffened material properties.
	Inlay/insole	Contoured to cup the child's heel to improve the rearfoot fit.	
	Fastenings/facings	Facings extended to midfoot.	Lace fastenings.
	Forefoot rocker	Should not be so large to affect ground clearance in swing.	
Ergonomics	Heel counter/stiffener	Range of available extensions to accommodate ankle anatomy.	
	Topline	Padded collar and contoured to ankle anatomy.	
	Outer sole	Flexibility focused at the toe flex line.	
	Upper	Range of available dimensional adaptions to accommodate foot anatomy.  Tongue adapted to avoid slippage under fastenings.  Tongue length to provide comfort from fastenings.	Range of materials to allow breathability in warm climates. Wipeable material dependent on user's continence.
	Fastening/facings	Facings extended to toe box to allow greater access to footwear for limited foot and ankle mobility.	Velcro or lace dependent on the patient's dexterity.
	Inlay/insole	Contoured to cup the child's heel to improve rearfoot fitting.  Deep enough to simulate potential prescriptive orthoses.	
	Footwear kept to the lo	owest reasonable mass to reduce the physiological cost	to a child in mobility.
Aesthetics	Upper	Range of colours.	Range of material.

(69% agreement) could not be achieved as a number of panellists were not convinced that the current evidence base supported the design components influence on proprioception. Other design features that were thought to impart stability and reached consensus were the: width of the heel in relation to the upper (87% agreement), stiffness of the outsole at the midfoot and rearfoot (88% agreement), tread depth of the outsole (87% agreement), lace fastenings (81% agreement) and leather upper of high tensile strength properties (93% agreement). The overall mass of the shoe was not thought to improve the stability properties of the shoe; it was, however, proposed and achieved consensus as a potential cause of instability in the swing phase of gait if too heavy.

The second key theme concerning the ideal design characteristics of off-the-shelf stability therapeutic footwear was in relation to ergonomics. Ergonomic aspects considered the fit and comfort of the shoe during wear and the ease in which the shoe could be donned and doffed on a child's foot with limited mobility. Originally in round 1, specific statements were presented to the panellists in relation to the design of this footwear, for example, 'Extended topline height above the ankle' and 'The fastening should have the following characteristics: Lace'. However, panellist opinion and feedback established a consensus preference to a pragmatic range of ergonomic options based on the child's ability, age and clinical need over the course of rounds 2 and 3, for example:

The topline extension should come in an optional range both above and below the ankle dependent on the patient's ability and needs. (93% agreement), and The Fastenings should be Optional dependent on patient's ability and desired goal (eg, Velcro for limited hand dexterity, lace for greater stability). (93% agreement)

Panellists felt that the upper (93% agreement) and heel counter (80% agreement) should be available in a range of dimensions for any given size of off-the-shelf stability therapeutic footwear to accommodate a child's foot and ankle anatomy. The material of the upper should come in a range of materials to include breathable and wipeable fabrics for warm climates and issues with continence (100\% agreement). The topline should be padded at the collar (88% agreement) and contoured to the ankle anatomy (80% agreement) to minimise mechanical stress to this region. Facings should be offered extended to the toe box to allow easy access (donning and doffing of the footwear) for children with limited movement of the foot and ankle (93% agreement).

Fastening should be in both lace and Velcro fastening to accommodate children's manual dexterity and allow a degree of independence (93% agreement). The mass of the footwear should be the lowest reasonable to reduce the physiological cost of walking (100% agreement). However, it was recognised that older children might require heavier footwear to account for increased mobility or enhanced stability requirements such as a stiffened outsole or extended heel counter that may additionally increase the footwear's mass (93% agreement). A consensus of the panellist was reached concerning the inlay/insole of off-the-shelf stability footwear, in that contouring at the heel improves rearfoot fit (81% agreement), and the inlay should be removable and thick enough to represent replacement by a possible adjunct orthosis (100% agreement). However, the specifics of the design in relation to contouring to the arch and heel failed to reach a consensus (63% agreement). Similarly, the purpose of a forefoot rocker to facilitate forward progression in gait and not affect the swing phase of gait reached a consensus (93% agreement). However, the standard design requirements of the rocker did not reach a consensus (56% agreement). Aesthetics of the footwear was proposed by the panellists in recognition of the psychosocial needs of children and felt that the visual appeal of the shoe was important to facilitate social interaction with peers with this statement receiving 100% agreement among the panel on initial consideration in round 2.

#### **Section 3**

The 87 consensus statements concerning children's mobility impairments suitable for off-the-shelf stability therapeutic footwear intervention resulted in consensus recommendations for the prescription criteria and outcome measures for five of the initial seven conditions: cerebral palsy (92% agreement), mobile symptomatic pes planus (86% agreement), Duchenne muscular dystrophy (92% agreement), spina bifida (80% agreement) and Down's syndrome (85% agreement) (tables 3-4). Five further conditions were suggested and reached a consensus among the panel: Charcot-Marie-Tooth (92% agreement), hypermobility (Ehlers-Danlos type) (92% agreement), developmental coordination disorder (100% agreement), Rett's syndrome (80% agreement) and chronic lateral ankle instability (77% agreement) (online supplemental appendix S6). However, the prescription criteria and outcome measures for the treatment of these further conditions were unable to be explored without further extending the Delphi survey and risking panellist fatigue.14

In relation to the prescription criteria for off-the-shelf stability therapeutic footwear, there were three areas that reached a general consensus for the five conditions:

- 1. The footwear provides mediolateral stability at the foot and ankle in walking and standing. Meaning it could act as both a walking aid and transfer aid (range 79%-88% agreement) (table 3).
- 2. The provision of off-the-shelf stability therapeutic footwear should only be issued to children with mobility impairment after a critical assessment of the child's mobility needs in respect to other assistive aids or footwear modifications and with clear clinical outcomes (range 86%–92% agreement). Panellists voiced their concern that this footwear had been historically uncritically prescribed in the conditions exampled. Panellists

Table 3 Prescription	on criteria for off-the-shelf stabi	ility therapeutic footwear
Condition	Indications for treatment	Sole or adjunct treatment
Cerebral palsy	Where mediolateral stability is required for standing and walking.	Sole aid May be used to assist both foot and ankle walking stability in children with GMFCS 1 and no significant tonal issues.  Adjunct Used simultaneously with other assistive aids* to assist walking and standing in ambulant children GMFCS 1–3 with tonal issues. Used simultaneously with other assistive aids* to assist standing in non-ambulant children GMFCS 4.
Down's syndrome		Sole aid In prewalking and learning to walk stages with associated hypotonia and delayed motor milestones.  Adjunct Used simultaneously with:  1. Foot orthoses to assist walking in individuals with ankle instability.  2. AFOs to assist walking in individuals with knee instability.
Duchenne muscular dystrophy		Adjunct     Used simultaneously with:     Foot orthoses to assist foot and ankle stability in early ambulatory stages.     AFOs and walking frames to assist walking in late ambulatory stages.     AFOs and standing frames to assist standing and transfer in early non-ambulatory stages.
Spina bifida		<ul> <li>Adjunct</li> <li>Used simultaneously with:</li> <li>1. Foot orthoses to assist foot and ankle stability in sacral level 1 (meningocele).</li> <li>2. AFOs and walking frames to assist walking and standing in lumbar level 4–5 (meningocele and myelomeningocele).</li> <li>3. HKAFO or KAFO and walking frames to assist walking and standing in lumbar level 1–3 (meningocele and myelomeningocele).</li> </ul>
Symptomatic mobile pes planus	Secondary line intervention to improve mediolateral stability in walking where foot orthoses have not resolved associated symptoms.	Used simultaneously with foot orthoses in:  Children with significant foot and ankle instability associated with tripping and falling.  Children with insufficiency of posterior tibialis function.  Children with conditions associated with motor delay.

<sup>\*</sup>Other assistive devices to include AFOs, crutches, foot orthoses, standing frames and walking frames.

felt foot orthoses serving similar function are less obtrusive and potentially cheaper. Consequently, a consensus (86% agreement) was reached that off-the-shelf stability therapeutic footwear should only be used as a secondary line of intervention for symptomatic pes planus where foot orthoses had failed to resolve symptoms.

3. In relation to the suitable age range for off-the-shelf stability therapeutic footwear intervention, a pragmatic approach to initiation and endpoints reached consensus in that it should be based on the functional ability and the mobility needs of the child rather than a specified age (range 77%–94% agreement).

Other areas suggested by panellists were concerning the use of this footwear as a sole aid or adjunct to other assistive devices. Most indications for the use of off-the-shelf stability therapeutic footwear was as an adjunct to other assistive devices (range 77%–92% agreement) to aid mediolateral stability in walking and standing (table 3). These other assistive devices included foot orthoses, AFOs, knee ankle foot orthoses (KAFOs), hip knee ankle foot orthoses and walking and standing frames. Indications for off-the-shelf stability therapeutic footwear as a sole aid were limited to low-grade cerebral palsy with no tonal issues (81% agreement) and the early walking stage of individuals with Down's syndrome (94% agreement).

<sup>†</sup>Adjunct AFO with stability footwear intervention requires a review of prescription of the sole to address any potential exacerbation of knee hyperextension in midstance.

AFO, ankle foot orthoses; GMFCS, Gross Motor Functioning Classification Score; HKAFO, hip knee ankle foot orthoses; KAFO, knee ankle foot orthoses.



Biomechanical	Physiological	Gross motor proficiency	Quality of life measures
Kinematic Optimising gait movement patterns (foot and ankle) Edinburgh Gait Score† Hoffer Ambulation Score‡ Static Ankle Range of Motion: Passive§: measured with the knee flexed and extended within the child's limits Weightbearing lunge¶: provided child can safely stand and get the heel to the ground Spatiotemporal: Walking velocity TUG 6MWT	Physiological cost Index** Perceived exertion** (BORG)	Number of falls BOT2†† Hoffer ambulation Score‡ Four square step test	Paediatric pain scale Daily mobility and social interaction

<sup>\*</sup>Outcomes must consider the stage/grade of the condition and the capability of the child to perform the tasks.

It was also noted by panellists that the foot anatomy of children with Down's syndrome presents a challenge with footwear fitting. Therefore, the practitioner should consider available last adaptions to accommodate the dimensions of these children during prescription (85% agreement).

Two of the seven originally proposed conditions suggested from the scoping review toe walking and intoeing failed to reach any consensus statements concerning the suitability and clinical indications for stability footwear intervention. However, it must be noted that idiopathic toe walking moved closer towards consensus statements for clinical indications (range 60%–67% agreement) than intoeing (range 25%–44% agreement).

Outcome measures proposed by the panellist were broadly aligned to biomechanical, physiological, gross motor proficiency and quality of life (QoL) measures. In relation to biomechanical measures, ankle range of motion reached consensus as an outcome measure for cerebral palsy, symptomatic pes planus and Duchenne muscular dystrophy (range 80%–88% agreement). Spatiotemporal outcome measures including walking velocity, 6 min walk test and Timed Up and Go reached consensus among the five conditions (range 77%–90% agreement). Kinematic outcome measures also achieved consensus among the five groupings (range 77%–90% agreement); these were in relation to optimising gait movement patterns of the foot and ankle against disease-specific scores, Edinburgh Gait Score and Hoffer Ambulation Score or normal available data sets. None of the suggested kinetic outcome measures achieved a consensus level of agreement (range 60%-67% agreement). Physiological outcome measures concerning cardiovascular and metabolic exertion were proposed and reached consensus (range 75%–91% agreement) for cerebral palsy, spina bifida and mobile pes planus. Outcome measures based on the child's ability to perform activities via measures of gross motor skills reached a consensus among the five conditions (range 75%–88% agreement) (table 4). Consensus was also reached by the panel in that suitability of physical outcome measures must consider the stage/ grade of Duchenne muscular dystrophy and the capability of the child to perform the tasks (88% agreement). QoL measures, pain and activities of daily living outcome measures for off-the-shelf stability footwear intervention reached consensus agreement for all five conditions to a relatively high level (range 79%-100% agreement). With the majority of QoL outcome measures reaching consensus on initial consideration in round 2.

# **DISCUSSION**

Despite the historical and relatively common usage of clinical footwear interventions in children with mobility impairment,<sup>5 6</sup> there has been a lack of common understanding of how to define and characterise this intervention. The collective opinion of the expert panel and the consensus formed through the inductive and iterative process of this study allowed novel ideas to be synthesised alongside previously published information. Clinical footwear interventions for children with mobility impairment reached a common understanding and were collectively

<sup>†</sup>Specific outcome for cerebral palsy.

<sup>‡</sup>Specific outcome for spina bifida.

<sup>§</sup>Range of motion outcome for cerebral palsy and symptomatic mobile pes planus

<sup>¶</sup>Range of motion outcome for cerebral palsy, Symptomatic mobile pes planus and duchenne muscular dystrophy

<sup>\*\*</sup>Physiological outcomes for cerebral palsy, symptomatic mobile pes planus and spina bifida.

<sup>††</sup>Gross motor proficiency outcome for cerebral palsy, symptomatic mobile pes planus and Down's syndrome.

<sup>6</sup>MWT, 6 min walk test; TUG, Timed Up and Go.

grouped and defined under the overarching term therapeutic footwear. This allowed the identification and categorisation of one of the more potentially effective of these interventions, stability footwear<sup>9</sup> as a subgrouping of functional footwear. The process also provided a consensus understanding of the ideal design characteristics for offthe-shelf stability therapeutic footwear and how this intervention may be used in a range of childhood mobility impairments. As stated, only one previous study had explored expert opinion on footwear as a clinical intervention for children. <sup>4</sup> The current study has provided a more detailed synthesis of expert opinion providing consensus on terms and definitions for children's clinical footwear interventions in addition to identifying the specifics and purpose of off-the-shelf stability therapeutic footwear design and criteria for clinical prescription for children.

Section 1 sought to obtain consensus on definitions terms and groupings for clinical footwear interventions in children. Although this represented the smallest section in the total number of statements and open-ended questions in round 1, it received the most detailed and rich comments for qualitative analysis, underlining the potential contentiousness of this section. However, this was the only section that received a consensus statement for each area presented to the panel. It is highlighted that a consistent language of terms and definitions is required in healthcare practice to improve interprofessional communication, healthcare research and provide optimal patient outcomes.<sup>8 27</sup> The suggested terms definitions and groupings, incorporating children's footwear interventions from this study, have been obtained using a valid consensus approach. 15

The survey also sought to focus on off-the-shelf stability therapeutic footwear, which is a potentially effective footwear intervention for children's mobility impairment<sup>9</sup> The survey provided consensus agreement of a number of ideal design characteristics that should be offered on off-the-shelf stability therapeutic footwear for children, and the purpose of these. Identification of the key design specifics of an assistive aid affords an understanding of how and where the aid should support and assist mobility and has been used to help develop interventions such as AFOs. 27-29 However, the panellists pointed out there was a limited evidence base to support these stability design characteristics. Some panellist proposed potential neurodynamic properties of the footwear through proprioceptive feedback at the heel counter and extended topline. However, panellists felt that further evidence was required to justify this claim. In comparison with stability features of the footwear, the panellists appeared more certain with their opinion on ergonomic factors as this achieved consensus in earlier rounds and is probably due to the established body of work in footwear science that relates comfort and fit to function. 30-33 Although there is a lack of evidence to substantiate the design characteristics purported to offer stability, the identification of these areas may inform further mechanical testing of off-theshelf stability therapeutic footwear.

In addition to the design characteristics of children's offthe-shelf stability therapeutic footwear, the survey sought to gain opinion and consensus on the clinical criteria for providing this footwear and the outcome measures to ascertain its effectiveness. Uncertainty on prescription criteria and goals of treatment can lead to inconsistent practice and lack of confidence in providing assistive aids to mobility-impaired children. 34 35 This section initially started with the least number of statements in round 1 but went on to generate a total of 149 statements for panellist consideration. Criteria for prescription were largely to improve mediolateral stability in mobility and standing. Off-the-shelf stability therapeutic footwear may often be prescribed by clinicians as a first-line intervention based on historical practice. However, expert consensus recommends that prescription of this footwear be assessed critically against the mobility needs of the child and the evidence base of other assistive devices, with the most suitable intervention being issued. Off-the-shelf stability footwear was to be used simultaneously with other assistive devices (AFOs KAFOs walking frames) in more severe gradings (Gross Motor Functioning Classification Score (GMFCS) 2-4) with only minor gradings indicated for sole line treatment with off-the-shelf stability therapeutic footwear (GMFCS 1). The exception to this was symptomatic pes planus where it may be used only as a secondary line intervention after foot orthoses had failed to resolve symptoms. Body structure and function outcome measures were chiefly focused on spatiotemporal and kinematic measures in addition to the physiological cost. Kinetic measures did not reach consensus; however, this was largely due to the perceived compliance with in-shoe measurement devices and availability of force plates in clinical settings rather than the validity of these outcome measures. It was, therefore, uncertain if the panellists considered if outcomes were inclusive of research settings as well as daily clinical practice. QoL measures appeared to be considered an important outcome for off-the-shelf stability therapeutic footwear intervention in children with mobility impairment as these reached a higher frequency of strongly agree and in earlier rounds compared with the other outcomes. Conversely, the current body of research is limited, exploring the effects of footwear interventions on the QoL of children.<sup>9</sup>

Idiopathic toe walking and intoeing did not achieve any consensus for clinical criteria of off-the-shelf stability therapeutic footwear provision. Idiopathic toe walking was not felt by the panel to be completely unsuitable for off-the-shelf stability therapeutic footwear intervention. It was noted that it presented with a nebulous aetiology with variable responses to many interventions. The establishment of criteria therefore required more complex stratification than the closed-ended statements offered in the current survey. Intoeing again was cited as heterogeneous in nature the intervention of panellists scoring disagree or strongly disagree with panellists reaching a general consensus there was no clear evidence base to indicate off-the-shelf stability therapeutic



footwear for this clinical presentation even in the subcategories suggested by the modified statements offered across rounds 2 and 3.

Five further conditions were suggested through consensus of the panellists; however, it was beyond the capacity of the current survey to explore the clinical criteria and proposed outcomes for off-the-shelf stability therapeutic footwear intervention in these additional conditions. This will require further exploratory work among experts in the area of clinical footwear provision to establish this.

The Medical Research Council<sup>38</sup> provides a list of recommendations in developing and evaluating complex interventions. Paramount to the development process is that an intervention should be able to be fully defined in what it is expected to do and under what situations. There should be a full understanding of the components of the intervention and how these should act, who the intervention is aimed at and what the salient outcome measures expected to be achieved. <sup>7 38</sup> The results of the Delphi consensus process have outlined and defined the spectrum of roles footwear may play as a clinical intervention. Further to this, the results of the study provided an expert consensus of off-the-shelf stability therapeutic footwear including the identification of the design characteristics purported to enhance mediolateral stability in children's gait, the childhood mobility impairments that may benefit from stability footwear intervention and the necessary outcomes to evaluate the footwear's effectiveness in these children. While this consensus has identified several design characteristics, which the experts considered pertinent for off-the-shelf stability therapeutic footwear, further consideration should be given on how to assess these characteristics using mechanical testing procedures and in turn link them to International Organization for Standardization (ISO standards.

The Delphi technique has limitations in that it does not necessarily produce the right or definitive answers; instead, it produces a valid consensus of expert opinion.<sup>21</sup> The method uses both qualitative and quantitative analysis in a mixed-method approach; however, the data provided from Delphi's are of inductive level 5 evidence<sup>39</sup> and are not authoritative requiring further deductive empirical research to support the findings of the work.<sup>15</sup> The recruitment to the Delphi panel was limited to countries with English as their first language, and potential differences in expert opinions may exist outside the selected experts' countries (Australia, UK and USA). We actively sought a range of professionals from both the clinical and manufacturing sectors to have a full, balanced understanding of the design specifics and purpose of the footwear. While there is a possibility of unconscious bias among the participants' response as a result of their personal affiliations with either the clinical and commercial sectors, it has certainly not affected the credibility of the results. Although we did not require a formal declaration of conflict of interest, the professionals were required to state their role in children's footwear intervention and

any conflict of interests has been detailed on the table of participant characteristics.

The themes were derived by content analysis performed by one author. This may potentially have introduced some bias in interpretation of the expert opinions; however, this was mitigated by a collective agreement of statement generation between the authors from the themes, and the opportunity for panellists to correct any misrepresentation or omission of their opinions in the subsequent Delphi rounds.

This study has achieved an expert consensus on defining and grouping clinical footwear interventions for children, where none previously existed. Additionally, the ideal design characteristics for off-the-shelf stability therapeutic footwear for children with mobility impairment and suitable clinical populations for their provision have been identified.

The consensus will facilitate:

- A common understanding of therapeutic footwear terminology to facilitate communication between clinicians, researchers and manufacturers.
- Research-informed evidence for selection of appropriate off-the-shelf stability therapeutic footwear based on identified design characteristics.
- Research-informed evidence for dispensing off-theshelf stability therapeutic footwear to suitable clinical populations.
- Standardised outcome measures for clinical assessment of the effectiveness of off-the-shelf stability therapeutic footwear interventions.

# CONCLUSION

The current study is the first to establish a structured synthesis of expert opinion on defining and grouping children's therapeutic footwear, in addition to identifying the design characteristics of off-the-shelf stability therapeutic footwear and relevant criteria for clinical prescription. Also, this study, through clear terminology and definitions, provides a framework for the development of appropriate mechanical testing methods for off-the-shelf stability therapeutic footwear.

Twitter Aoife Healy @AoifeCHealy and Nachiappan Chockalingam @nachic

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#### **ORCID iDs**

Aoife Healy http://orcid.org/0000-0002-4948-6086 Nachiappan Chockalingam http://orcid.org/0000-0002-7072-1271

#### **REFERENCES**

- 1 Cranage S, Perraton L, Bowles K-A, et al. The impact of shoe flexibility on gait, pressure and muscle activity of young children. A systematic review. J Foot Ankle Res 2019;12:55.
- Wegener C, Hunt AE, Vanwanseele B, et al. Effect of children's shoes on gait: a systematic review and meta-analysis. J Foot Ankle Res 2011;4:3.
- 3 Carlos González J, Alemany S, Garrido D. Footwear's influence on young children's Gait pattern. Proceeding of the 7th Symposium on Footwear Biomechanics, 2005. Available: https://www. footwearbiomechanics.org/fbs-2005 [Accessed 8 Apr 2019].
- 4 Staheli LT, Giffin L. Corrective shoes for children: a survey of current practice. *Pediatrics* 1980:65:13–17.
- 5 Nester CJ, Graham A, Martinez-Santos A, et al. National profile of foot orthotic provision in the United Kingdom, part 2: podiatrist, orthotist and physiotherapy practices. J Foot Ankle Res 2018;11:10.
- 6 Hill M, Healy A, Chockalingam N. Key concepts in children's footwear research: a scoping review focusing on therapeutic footwear. J Foot Ankle Res 2019;12:25.
- 7 Craig P, Dieppe P, Macintyre S, et al. Developing and evaluating complex interventions: the new medical Research Council guidance. BMJ 2008;337:a1655–983.
- 8 Owen E. Defining what we do. J Prosthet Orthot 2018;30:2-4.
- 9 Hill M, Healy A, Chockalingam N. Effectiveness of therapeutic footwear for children: a systematic review. J Foot Ankle Res 2020;13:23.
- 10 Abd Elkader SM, Abd Elhafz YN, Al-Abdulrazaq SS. Foot taping versus medical shoes on kinematic gait parameters in children with down's syndrome. World Appl Sci J 2013;27:311–7.
- Aboutorabi A, Saeedi H, Kamali M, et al. Immediate effect of orthopedic shoe and functional foot orthosis on center of pressure displacement and gait parameters in juvenile flexible flat foot. Prosthet Orthot Int 2014;38:218–23.
- 12 ISO. ISO 21064:2017(en), Prosthetics and orthotics Foot orthotics Uses, functions classification and description, 2017. Available: https://www.iso.org/obp/ui/#iso:std:iso:21064:ed-1:v1:en [Accessed 13 May 2020].
- 13 ICHOM. Overall pediatric health standard set | measuring outcomes. Available: https://www.ichom.org/portfolio/overall-pediatric-health/?utm\_source=ActiveCampaign&utm\_medium=email&utm\_content=ICHOM+Standard+Sets+Update&utm\_campaign=February+Newsletter+%28Split+Test%29 [Accessed 14 Apr 2020].

- 14 Keeney S, Hasson F, McKenna H. Consulting the oracle: ten lessons from using the Delphi technique in nursing research. J Adv Nurs 2006;53:205–12.
- 5 Keeney S, Hasson F, Mckenna H. *The Delphi technique in nursing and health research*. Wiley-Blackwell, 2010.
- 16 McPherson S, Reese C, Wendler MC. Methodology update: Delphi studies. Nurs Res 2018;67:1.
- 17 Davies N, Branthwaite H, Chockalingam N. Where should a school shoe provide flexibility and support for the asymptomatic 6- to 10-year-olds and on what information is this based? A Delphi yielded consensus. Prosthet Orthot Int 2015;39:213–8.
- 18 Dars S, Uden H, Kumar S, et al. When, why and how foot orthoses (Fos) should be prescribed for children with flexible pes planus: a Delphi survey of podiatrists. PeerJ 2018;6:e4667.
- 19 Hijmans JM, Geertzen JHB. Development of clinical guidelines for the prescription of orthoses in patients with neurological disorders in the Netherlands. *Prosthet Orthot Int* 2006;30:35–43.
- 20 Hasson F, Keeney S, McKenna H. Research guidelines for the Delphi survey technique. J Adv Nurs 2000;32:1008–15.
- 21 Hasson F, Keeney S. Enhancing rigour in the Delphi technique research. *Technol Forecast Soc Change* 2011;78:1695–704.
- 22 Akins RB, Tolson H, Cole BR. Stability of response characteristics of a Delphi panel: application of bootstrap data expansion. BMC Med Res Methodol 2005;5:37.
- 23 Novakowski N, Wellar B. Using the Delphi technique in normative planning research: methodological design considerations. *Environ Plan A* 2008;40:1485–500.
- 24 Glenn JC, Gordon TJ. Futures research methodology: the millennium project: version 3.0, 2009. Available: http://www.millennium-project. org/publications-2/futures-research-methodology-version-3-0/ [Accessed 20 April 2020].
- 25 Burnard P. A method of analysing interview transcripts in qualitative research. *Nurse Educ Today* 1991;11:461–6.
- 26 Diamond IR, Grant RC, Feldman BM, et al. Defining consensus: a systematic review recommends methodologic criteria for reporting of Delphi studies. J Clin Epidemiol 2014;67:401–9.
- 27 Owen E. The importance of being earnest about Shank and thigh kinematics especially when using ankle-foot orthoses. *Prosthet Orthot Int* 2010;34:254–69.
- 28 Eddison N, Chockalingam N. The effect of tuning ankle foot orthoses-footwear combination on the gait parameters of children with cerebral palsy. *Prosthet Orthot Int* 2013;37:95–107.
- 29 Eddison N, Mulholland M, Chockalingam N. Do research papers provide enough information on design and material used in ankle foot orthoses for children with cerebral palsy? A systematic review. J Child Orthop 2017;11:263–71.
- 30 Goonetilleke RS, Luximon A, Tsui KL. The Quality of Footwear Fit: What we know, don't know and should know. Proc Hum Factors Ergon Soc Annu Meet 2000;44:2-515–2-518.
- 31 Goonetilleke RS. The science of footwear. CRC Press, 2013.
- 32 Witana CP, Goonetilleke RS, Au EYL, et al. Footbed shapes for enhanced footwear comfort. Ergonomics 2009;52:617–28.
- 33 Branthwaite H, Chockalingam N. Everyday footwear: an overview of what we know and what we should know on ill-fitting footwear and associated pain and pathology. *Foot* 2019;39:11–14.
- 34 Owen E. Call to action: clinical algorithms for the prescription of ankle-foot orthoses are needed: a commentary on "physical therapists' use of evaluation measures to inform the prescription of ankle-foot orthoses for children with cerebral palsy". *Phys Occup Ther Pediatr* 2019;39:254–8.
- 35 Kane KJ, Lanovaz JL, Musselman KE. Physical therapists' use of evaluation measures to inform the prescription of Ankle-Foot Orthoses for children with cerebral palsy. *Phys Occup Ther Pediatr* 2019;39:237–53.
- 36 Williams CM, Pacey V, de Bakker PB, et al. Interventions for idiopathic toe walking. Cochrane Database Syst Rev 2016;28.
- 37 Uden H, Kumar S. Non-surgical management of a pediatric "intoed" gait pattern - a systematic review of the current best evidence. J Multidiscip Healthc 2012;5:27–35.
- 38 Medical Research Council. Developing and evaluating complex interventions, 2006. Available: www.mrc.ac.uk/complexinterventions quidance [Accessed 25 Nov 2020].
- 39 OCEBM Levels of Evidence Working Group. The Oxford levels of evidence 2. Oxford centre for evidence-based medicine. Available: https://www.cebm.net/2016/05/ocebm-levels-of-evidence/ [Accessed 6 Oct 2019].



# WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

# **Delphi survey Round 1**

Introduction

Thank you for participating in this Delphi survey for the consensus on children's clinical footwear interventions.

Please note this is Round 1 of the survey and will be the lengthiest in respect to your time.

This first round aims to:

1) Gather information and seek consensus for the general definition of clinical footwear interventions in children.

These will be: The specific terms to be used, the categorisation of the footwear, and the proposed clinical role of these footwear.

- 2) To gather specific information on "off the shelf"\* and modular\*\* clinical footwear interventions that would be considered to offer a stability effect on children with mobility impairment. This would be in terms of design characteristics and suggested clinical protocols (guidelines) for the prescription of stability footwear as an assistive aid.
- \* Footwear taken from stock or supplies and not individually designed.
- \*\* Standard range of dimensional adaptations (maximum 3) to stock upper.

Your responses from this round will be analysed and collated into statements. These will be returned to you along with the anonymised responses of the other panellists, and you will be asked to rank your agreement or non-agreement with them. You can review the previous information you provided, and considering the information provided by the other panellists, maintain or change your opinion.

Please note you are free to withdraw from the study at any time.

For withdrawal from the study or any further questions, please contact: Matthew Hill

Centre for Biomechanics and Rehabilitation Technologies, Science Centre, Staffordshire University, Leek Road, Stoke on Trent, ST4 2DF, U.K, Ph +44 1782 294122

E-Mail: Matthew.Hill@research.staffs.ac.uk

1)

Name \*



# **OVERVIEW OF SURVEY**

There are three sections in round 1 of this survey which will be available in a separate link.

The first section is aimed at determining how to define clinical footwear interventions for children with mobility impairment. This will be the terminology used, categorisation and the proposed clinical role of the footwear.

The second section will consist of your ideas and opinions on design characteristics of "off the shelf" and modular clinical footwear that offers stability to children with mobility impairment.

The third section will consist of your ideas and opinions on clinical protocols and outcomes for the provision of "off the shelf" and modular footwear that offers stability for children with mobility impairment.

# Please note!

There is no "save and complete later" option available for the survey; therefore, you must complete and submit your answers for each section in one sitting. You may, however, complete each of the three sections on separate occasions if you wish.



Defining clinical footwear interventions for children with mobility impairment. Terms, Categorisation and Proposed clinical roles.

Definition together with standard terminology is essential for any intervention to allow a consistent understanding of who will benefit, the value it will provide, what is and isn't included, how it will work and how to measure its success.

The work in this section has been informed from the results of our recently published scoping review, https://rdcu.be/b1tKM

We derived general terminology definitions and groupings of footwear that had been used from a therapeutic perspective from the collective body of research considering children's footwear.

We will ask you to rate your agreement with these proposed terms, definitions and groupings. These will be in the form of a Likert scale where you will rank your level of agreement on a scale of 1-7 ranging from Strongly Disagree (1) to Strongly Agree (7).

We will provide you with the opportunity to offer your opinion to modify these proposed terms, definitions and groupings. All answers will be anonymised and will not be identifiable as your responses.

What can you base your answers on?

The validity of the data obtained relies on your answers, being your opinion. This may be based on research or your own clinical or manufacturing experience.

How do you provide detail to your answer?

It is recommended that your answers be clear and unambiguous. You should provide enough detail to qualify what you are basing your opinion on. General comments are therefore not recommended. On some answers, you may wish to provide more information.

i.e., The following statement provides insufficient information "Stability footwear would improve children's gait ."

A qualified statement may read:

"Stability footwear would potentially increase children's walking velocity, stride length and reduce mediolateral (side to side) displacement of the centre of mass "

The answers and rationale you provide may influence the opinion of other panellists. i.e., a panellist may change their opinion dependent on the strength of your response.

\* Required Filed

2)

From the collective body of research, various terms have been used in relation to clinical footwear interventions in childhood. Statement 1: The scoping review recommended the term "Children's Therapeutic Footwear" as the standard terminology to be used for clinical footwear interventions for children with mobility impairment.

Please rank your agreement with the term children's therapeutic footwear as a standard term for this purpose. \*

	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Statement							
1							

3

Please use this area to provide us with any further opinion on this terminology. Do you feel this is relevant clinically; do you currently use a different term, would you change this now based on this information?

Would you offer alternative terminology and if so, what is this? \*

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Please rank	your agree Strongly	ment with t Disagree	this Definition Somewhat	n. * Neutral	Somewhat	Agraa	Strongly
	Disagree	Disagree	Disagree	Neutrai	Agree	Agree	Agree
	1	2	3	4	5	6	7
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now based Would you			nology and if	so, what is	s this? *		
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# END OF SECTION 1 ROUND 1

Thank you for taking the time to complete section 1. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

You can find the link for next section of Round 1 attached to the Delphi survey email.



# ROUND 2 (S1) WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

# **Delphi survey Round 2**

Introduction

Thank you for participation in Round 1 of this Delphi survey for the consensus on children's clinical footwear interventions.

Please note this is Round 2 of the survey which will provide you with the collective responses from Round 1 of the expert panel. The panel consisted of 18 participants (orthotists, podiatrists and physiotherapists) with clinical expertise in footwear provision including research, commercial distribution as well as clinical practitioners. The panel is international comprising of panellists from the UK, Australia and the U.S.A.

The feedback from responses will be presented as the median and distribution of level of agreement, as well as a summary of the reasoning for panellists' answers.

This second round aims to:

1) Seek consensus for the general definition of footwear used as a clinical intervention for children.

These will be: The specific terms to be used, the categorisation of the footwear, and the proposed clinical role of these footwear.

2) To gain consensus on "off the shelf"† clinical footwear interventions that would be considered to offer a stability effect on children with mobility impairment. This would be in terms of design characteristics and suggested clinical protocols (guidelines) for the prescription of stability footwear as an assistive aid.

†Footwear taken from stock or supplies and not individually designed.

This questionnaire is completed differently to the first round, and the instructions within the form will guide you through this process. Please read the instructions carefully and complete the Delphi questionnaire as fully as you can.

You will receive the original statements from Round 1 alongside modified statements that have been informed by yours and other panellists' responses.

You will be asked to give your preferential option or your level of agreement with them. You can review the previous information you provided (in the document emailed to you), and

considering the information provided by the other panellists, maintain or change your opinion.

Please note you are free to withdraw from the study at any time.

For withdrawal from the study or any further questions, please contact: Matthew Hill

Centre for Biomechanics and Rehabilitation Technologies, Science Centre, Staffordshire University, Leek Road, Stoke on Trent, ST4 2DF, U.K, Ph +44 1782 294122

Email: Matthew.Hill@research.staffs.ac.uk1)

\* Required Filed

Name *			



# **OVERVIEW OF SURVEY**

There are three sections in round 2 of this survey which will be available in three separate links.

The first section will consist of yours and the panellists' collective opinions on determining how to define clinical footwear interventions for children with mobility impairment. This will be the terminology used, categorisation and the proposed clinical role of the footwear.

The second section will consist of yours and the panellists' collective opinions on design characteristics of "off the shelf" clinical footwear that offers stability to children with mobility impairment.

The third section will consist of yours and the panellists' collective opinions on clinical protocols and outcomes for the provision of "off the shelf" footwear that offers stability for children with mobility impairment.

#### Please note!

There is no "save and complete later" option available for the survey; therefore, you must complete and submit your answers for each section in one sitting. You may, however, complete each of the three sections on separate occasions if you wish.

# Section 1

Defining clinical footwear interventions for children with mobility impairment. Terms, Categorisation and Proposed clinical roles.

The original statements concerning terminology, definitions and groupings of footwear that had been used from a therapeutic perspective for children suggested by the scoping review are listed alongside modified statements informed from the opinions gained from yourself and the other panellists in round 1. You will be asked to give your preferential option or your level of agreement or non-agreement with them (Strongly Disagree to Strongly Agree).

You can review the previous information you provided (in the document emailed to you), and considering the information provided by the other panellists, You may maintain your position with the original statement or change your opinion and align yourself with the new statement

We will provide you with the opportunity to offer your reasoning for your stance or to suggest any further amendments to the statements (You may also leave these areas blank in this round). All answers will be anonymised and will not be identifiable as your responses.

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From Round 1 panellists were presented with Statement 1:

"The scoping review recommended the term Children's Therapeutic Footwear as the standard terminology to be used for footwear used as a clinical intervention for children with mobility impairment."

The median level of agreement amongst the panellists was "agree" with the majority of responses between "somewhat agree" to "strongly agree".

From panellist feedback there was support for this term in preference to orthopaedic footwear as some felt this term had negative social connotations and could be associated with over-medicalisation. Other feedback indicated that therapeutic may be ambiguous inferring that the footwear healed the disease. Some panellists suggested alternate terms that matched International Organisation for Standardisation (ISO) terminology, with Orthopaedic footwear matching ISO 9999:2016 and more recently Orthotic footwear matching ISO 21064:2017. It was also discussed that ISO terminology aligned footwear with orthotic therapies.

Please choose your preferred standard term for footwear that is used as a clinical intervention for children with mobility impairment. \*

Therapeutic Footwear (Term from Round 1)
Orthopaedic Footwear
Orthotic Footwear
Prescriptive Footwear
Other

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You may use this optional area if you wish to provide any further information for your	
response.	

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From Round 1 panellists were presented with Statement 2 which offered the following definition for footwear used as a clinical intervention for children:

"footwear that is designed specifically with the purpose to support or alleviate mobility impairment in childhood."

The median level of agreement amongst the panellists was "somewhat agree" with the majority of responses between "neutral" to "agree".

From panellist feedback suggestions were made to improve the definition. Alleviate was seen as an ambiguous term that may be misinterpreted as curing the problem. The terminology should include that standard retail footwear may be adapted to offer a therapeutic role as well as therapeutic footwear that is specifically designed. The definition should also recognise the role footwear may play to accommodate or prevent foot deformities and the role it can offer to assist standing as well as mobility. Some panellist also requested the definition Follow ISO or World Health Organisation (WHO) terminology and be more biomechanically specific.

From panellist feedback, the following modified definitions for footwear used as a clinical intervention in children were derived.

Statement 2a: "Footwear that is designed or adapted specifically to protect, support, align, prevent, or correct foot deformity, or to assist mobility and standing in children."

Please choose your preferred definition. \*

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Statement 2 (Original statement)
Statement 2a
Other

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You may use this optional area if you wish to provide any further information for your
response.

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From Round 1 panellists were presented with Statement 3:

"footwear for clinical interventions in childhood should be categorised into groupings dependent on their intended therapeutic role."

The median level of agreement amongst the panellists was "agree" with the majority of responses between "somewhat agree" to "strongly agree".

Panellist feedback suggested that this was a suitable method of grouping clinical footwear interventions as it recognised the different characteristics and requirements for footwear prescriptions in a similar manner to orthoses. Suggestions to improve this method of grouping footwear included ensuring the therapeutic role had measurable outcomes. The method should recognise that footwear may offer more than one therapeutic role e.g. "accommodative and stability", therefore the method to classify should address that they are not separate footwear groupings, but potential therapeutic components of the footwear and a coding method could be employed to classify multiple therapeutic components of the footwear.

From panellist feedback, the following modified statement has been offered as an alternate method to group clinical footwear interventions for children.

Statement 3a: "Footwear used as a clinical intervention in childhood should be classified via the intended therapeutic outcomes of its components."

Please choose your preferred method for classifying footwear as a clinical intervention for children. \*

Statement 3 (Original statement)
Statement 3a
Other

You may use this optional area if you wish to provide any further information for your	
response.	

8

From Round 1, panellists were presented with Statement 4 as a definition for the corrective footwear grouping:

"Corrective footwear is children's therapeutic footwear that is designed to bring about the correction of congenital skeletal lower limb alignment."

The median level of agreement amongst the panellists was "Neutral" with the majority of responses between "somewhat disagree" to "agree".

Panellist feedback suggested modifications to improve the definition. It was noted that footwear could not act as a curative intervention on its own and should be used alongside other corrective interventions (serial casting, surgery). Correction of lower limb alignment is misleading as footwear can only affect the foot and ankle. The definition should also include acquired deformity.

From panellist feedback, the following modified statement has been offered as an alternate definition.

Statement 4a: "Corrective footwear is children's therapeutic footwear that is designed or adapted to support correction of congenital or acquired foot and ankle deformity in children."

Please choose your preferred definition.\*

Statement 4 (Original statement)
Statement 4a
Other

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You may use this optional area if you wish to provide any further information for your
response.

From Round 1, panellists were presented with Statement 5 as a definition for the accommodative footwear grouping:

"Accommodative footwear is children's therapeutic footwear that is designed (off the shelf or bespoke) to reduce compression, and shearing stresses on children's foot deformities through dimensional matching of footwear upper, insole, and sole to that of the child's foot."

The median level of agreement amongst the panellists was "agree" with the majority of responses between "somewhat agree" to "strongly agree".

Panellist feedback suggested modifications to the definition. This included the role accommodative footwear may play in preventing deterioration of the child's foot deformity and reducing excessive details of the footwear design.

From panellist feedback, the following modified statement has been offered as an alternate definition.

Statement 5a: "Accommodative footwear is children's therapeutic footwear that is designed to prevent deterioration of children's foot deformities through the dimensional matching of the footwear to the child's foot."

Please choose your preferred definition.\*

Statement 5 (Original statement)	
	Statement 5a
	Other

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You may use this optional area if you wish to provide any further information for your	
response.	

From Round 1, panellists were presented with Statement 6 as a definition for the functional therapeutic footwear grouping:

"Functional footwear is children's therapeutic footwear that is designed to improve dynamic gait parameters of children with mobility impairment, reducing pathological movements and facilitating typical childhood walking patterns."

The median level of agreement amongst the panellists was "agree" with the majority of responses between "neutral" to "agree".

Panellist feedback suggested that the definition represented the direct dynamic role footwear may play in supporting walking in children with mobility impairment. Suggested modifications to improve the definition included avoiding ambiguous terms such as pathological movement and typical patterns. Recognise the role functional footwear may play in assisting standing as well as mobility. Two panellists suggested disagreement with the term functional as all therapeutic footwear groupings had a function, however, no alternate term was suggested to represent this grouping.

From panellist feedback, the following modified statement has been offered as an alternate definition.

Statement 6a: "Functional footwear is children's therapeutic footwear that is designed or adapted to directly assist mobility and standing in children."

Please choose your preferred definition.\*

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Statement 6 (Original statement)
Statement 6a
Other

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You may use this optional area if you wish to provide any further information for your	
response.	

From Round 1, panellists were presented with Statement 7 as a method to categorize functional footwear into subgroupings:

"Functional therapeutic footwear was divided into subgroupings which are categorised dependent on the design and functional role."

The median level of agreement amongst the panellists was "agree" with the majority of responses between "somewhat agree" to "strongly agree".

Panellist feedback was similar to the previous statement on methods of grouping footwear, in that footwear may offer more than one therapeutic role. The classification should recognise that they are not separate footwear groupings but therapeutic components of the footwear.

From panellist feedback, the following modified statement has been offered as an alternate method to subgroup functional therapeutic footwear for children.

Statement 7a "Functional therapeutic footwear should be classified via its design and the intended therapeutic outcomes of its components."

Please choose your preferred method for classifying functional therapeutic footwear for children.\*

Ī	Statement 7 (Original statement)
	Statement 7a
	Other

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You may use this optional area to provide us with any further information for your	
response.	

From Round 1, panellists were presented with Statement 8 as a definition for the stability footwear subgrouping.

"Stability functional therapeutic footwear is a range of footwear that is designed to limit extreme movements of the lower limb to maintain a controlled displacement of the centre of force during gait."

The median level of agreement amongst the panellists was "somewhat agree" with the majority of responses between "somewhat disagree" to "agree".

Feedback from the panellists suggested that the definition attempted to represent the effects of this footwear. Suggestions for improvement of the definition included avoiding ambiguous terms such as extreme movements, and recognising that this footwear would only effectively control forces at the foot and ankle but not the knee. The definition should recognise the potential proprioceptive effect of the footwear and the additional ability to assist standing in children.

From panellist feedback, the following modified statement has been offered as an alternate definition.

Statement 8a: "Stability therapeutic footwear is a range of footwear that is designed to assist mobility and standing in children by enhancing proprioception and influencing movements of the foot and ankle."

In the section below, please choose your preferred definition.\*

Statement 8 (Original statement)	
	Statement 8a
	Other

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You may use this optional area if you wish to provide any further information for your
response.

18) Therapeutic Footwear **Functional** Corrective Accomodative Stability Adapted sole From the feedback of panellists, there was a collective suggestion that a number of the groupings offered in the first round, (lift, rounded bottom, instability) should fall under another Functional Footwear subgrouping termed Adapted Sole. Panellists suggested this represented footwear either therapeutic or standard retail footwear that had a custom adaption to the sole which would facilitate gait or standing posture in children with mobility impairment. Panellist feedback also suggested alternative terms for adapted soles that would fall under this subgrouping, raise instead of lift and rocker sole instead of rounded bottom. The following term and definition were derived from panellist feedback. Term: Adapted Sole Definition: "A range of customised sole adaptions to standard retail or children's therapeutic footwear that would assist mobility or standing in children." In the section below please rank your agreement with the term and definition: \* Strongly Disagree Somewhat Neutral Somewhat Strongly Agree Disagree Disagree Agree Agree 2 3 6 Term Adapted sole Definition of Adapted sole You may use this optional area if you wish to provide any further information for your response.



### **END OF SECTION 1 ROUND 2**

Thank you for taking the time to complete section 1. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

You can find the link for next section of Round 2 attached to the Delphi survey email.



## ROUND 3 (S1) WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND

ŀ	HOW TO PRESCRIBE THEM?
	Thank you for taking the time to complete section 1. Your time and participation in this survey are greatly appreciated.
	Please remember to submit your answers before closing this form.
	You can find the link for next section of Round 1 attached to the Delphi survey email.
	* Required Filed
	Name *
	To recognise the valued work you have provided on this project the research team would like to acknowledge you as a panel member on any report or publication generated from the completed work. Please indicate your consent to your name and profession being released as an expert panel member below *
	I consent to my name and profession being included in the acknowledgment section of any publication generated from the completed work
	I do not consent to my name being acknowledged in this work



### **OVERVIEW OF SURVEY**

There are three sections in round 3 of this survey which will be available in three separate links.

The first section will consist of yours and the panellists' collective choices and opinions on determining how to define clinical footwear interventions for children with mobility impairment. This will be the terminology used, categorisation and the proposed clinical role of the footwear.

The second section will consist of yours and the panellists' collective choices and opinions on design characteristics of "off the shelf" clinical footwear that offers stability to children with mobility impairment.

The third section will consist of yours and the panellists' choices and collective opinions on clinical protocols and outcomes for the provision of "off the shelf" footwear that offers stability for children with mobility impairment.

### Please note!

There is no "save and complete later" option available for the survey; therefore, you must complete and most importantly submit your answers for each section in one sitting. You may, however, complete each of the three sections on separate occasions if you wish.

### Section 1

Defining clinical footwear interventions for children with mobility impairment. Terms, Categorisation and Proposed clinical roles.

You will be presented with the collective preference (Median, relative frequency of response) and opinions of the panellists to the modified and original statements from round 1 and 2 of the survey concerning terminology, definitions and groupings of footwear that had been used from a clinical perspective for children. You will again be asked to give your preferential option or your level of agreement or non-agreement with them ("Strongly Disagree" to "Strongly Agree").

You can review the previous information you provided (in the document emailed to you), and considering the information provided by the other panellists, you may maintain your option or level of agreement with your chosen statement or change your opinion.

Full consensus for a statement is reached when a statement gains  $\geq$ 75% of panellists with a level of agreement of "agree" or above, or  $\geq$  75% of panellists preferred option.

If you choose a level of agreement below "agree" we would ask that you provide us with the reason for your choice in the optional open-ended section provided.

\* Required Filed

3)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for standard terminology to be used for footwear used as a clinical intervention for children with a mobility impairment:

The relative frequency of response is detailed below:

Term "Therapeutic Footwear" 59%

Term "Orthotic Footwear" 23%

Term "Prescriptive Footwear" 12%

Term "Orthopaedic Footwear" 6%

### From panellist feedback:

The reasoning for choosing "Therapeutic Footwear" was that it was felt that orthotic and orthopaedic footwear would appear to be limited to the body structure aspect of the WHO ICF-CY as it still implies a "straightening" approach to care and did not embrace a holistic approach of health care delivery, as also outlined in the WHO ICF-CY, such as those involved with Quality of Life, activity and participation. They also felt that orthotic "straightening" could be misleading for some treatment goals such as accommodative footwear. It was also pointed out Prescriptive Footwear may not be applicable if using unmodified "off the shelf footwear". It was felt that Therapeutic Footwear was consistent with the language used in the research literature. The importance of embracing consistent international terminology as outlined by the ISO was proposed, however, even here there has been inconsistency with both the terms Orthopaedic footwear (ISO 9999:2016) and Orthotic footwear ISO (21064:2017) being used.

The reasoning for choosing "Orthotic footwear" was that it embraced reputable terminology from ISO without the perceived negative social connotations of orthopaedic footwear.

The reasoning for choosing "Prescriptive Footwear" evoked setting out specific parameters of footwear treatment that were potentially measurable.

No specific reasoning was given for choosing "Orthopaedic footwear"

One panellist suggested overall term could be interchangeable dependent on clinical preference as long as there was an agreed definition and understanding of how footwear could be applied and used for the treatment of mobility impairment in childhood.

Considering the collective panellist feedback please choose your preferred standard term for footwear that is used as a clinical intervention for children with mobility impairment.

	Therapeutic Footwear (Term from Round 1)
	Orthopaedic Footwear
	Orthotic Footwear
	Prescriptive Footwear

4)

You may use this optional area if you wish to provide any further information for your response.

5

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel which offered a definition for footwear used as a clinical intervention for children:

The relative frequency of response is detailed below:

Statment 2a "Footwear that is designed or adapted specifically to protect, support, align, prevent, or correct foot deformity, or to assist mobility and standing in children." (82%)

Statement 2 "footwear that is designed specifically with the purpose to support or alleviate mobility impairment in childhood." (12%)

Other (6%)

A Consensus was reached to Statement 2a

Panellist feedback from those who chose "Other"

One panellist objected to the aligning and corrective aspect in the definition due to limited evidence base for this and suggested the following definition: "Footwear that is designed or adapted specifically to protect, support or assist mobility and standing in children".

One preferred a definition that encompassed ISO and WHO terminology and suggested the following definition: "Footwear intended to address the effect of a neuromusculoskeletal impairment(s). These can encompass the ankle joint. They can be custom made or prefabricated"

6)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for the process of categorising clinical footwear interventions for children.

The relative frequency of response is detailed below:

Statement 3a: "Footwear used as a clinical intervention in childhood should be classified via the intended therapeutic outcomes of its components." (70%)

Statement 3 "footwear for clinical interventions in childhood should be categorised into groupings dependent on their intended therapeutic role." (18%)

Other (12%)

From panellist feedback, there was agreement throughout the panel that it was important that the method of classification/grouping of the footwear relates to the intended clinical role or outcome, However, consensus failed to be reached due to the terminology used within the statement.

Panellists who did not choose therapeutic footwear as a preferred term objected to the reference to therapeutic in the statement, others wanted WHO terminology to be included within the definition.

Slight modification to the statement has been made to this definition to address panellist feedback and gain consensus within the panel, please rank your agreement with the following statement \*

"Footwear used as a clinical intervention in childhood should be classified by the intended outcomes of its components."

	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
"Footwear							
used as a							
clinical							
intervention							
in childhood							
should be							
classified by							
the intended							
outcomes of							
its							
components."							

7)
If your level of agreement was "somewhat agree" or lower please use this optional area to
provide us with your reasoning.

8

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for the grouping and definition of Corrective footwear.

The relative frequency of response is detailed below:

Statement 4a: "Corrective footwear is children's therapeutic footwear that is designed or adapted to support correction of congenital or acquired foot and ankle deformity in children."\* (82%)

Other (18%)

Statment 4 "Corrective footwear is children's therapeutic footwear that is designed to bring about the correction of congenital skeletal lower limb alignment." (0%)

A Consensus was reached to Statement 4a

From panellists who chose "Other" one objected to the inclusion of the term therapeutic footwear in the statement\*. One panellist did not agree to the corrective footwear grouping established from the research literature and advocated for different groupings based on a different structural tree however no alternative suggestions were offered.

Even those panellists who agreed to the new definition advocated that the definition needs to be clearer that this footwear works as a subsequent step to support and maintain primary corrective interventions such as serial casting and surgery,

\*(To respect panellists variation in preferred overarching terminology for clinical footwear interventions reference to therapeutic, orthotic, orthopaedic and prescriptive will be removed from all definitions including those that have reached consensus)

In light of panellist feedback concerning corrective footwear's role in supporting primary corrective measures, a slight modification to this statement has been made.

"Corrective footwear is footwear that is designed or adapted to support correction of congenital or acquired foot and ankle deformity in children. This may be secondary to a primary corrective measure such as serial casting or surgery."

Please indicate if you agree to this modified statement below.\*

Yes I agree
No I don't agree

9)

You may use this optional area if you wish to provide any further information for your response.

10)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for the grouping and definition Accommodative footwear.

The relative frequency of response is detailed below:

#### Statement 5a:

"Accommodative footwear is children's therapeutic footwear that is designed to prevent deterioration of children's foot deformities through the dimensional matching of the footwear to the child's foot."

(76%)

### Statement 5

"Accommodative footwear is children's therapeutic footwear that is designed (off the shelf or bespoke) to reduce compression, and shearing stresses on children's foot deformities through the dimensional matching of footwear upper, insole, and sole to that of the child's foot." (12%)

Other (12%)

A Consensus was reached to Statement 5a

From panellists who chose "Other" one objected to the inclusion of the term therapeutic footwear in the statement\*. One panellist did not agree to the Accommodative footwear grouping established from the research literature and advocated for different groupings based on a different structural tree however no alternative suggestions were offered.

11)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for the grouping and definition Functional footwear

The relative frequency of response is detailed below:

Statement 6a: "Functional footwear is children's therapeutic footwear that is designed or adapted to directly assist mobility and standing in children." (76%)

Statement 6"Functional footwear is children's therapeutic footwear that is designed to improve dynamic gait parameters of children with mobility impairment, reducing pathological movements and facilitating typical childhood walking patterns." (12%)

Other (12%)

A Consensus was reached to Statement 6a

From panellists who chose "Other" one objected to the inclusion of the term therapeutic footwear in the statement\*. One panellist did not agree to the Functional footwear grouping established from the research literature and advocated for different groupings based on a different structural tree however no alternative suggestions were offered.

One panellist who agreed to statement 6a questioned if psychosocial factors such as cosmesis should be considered in function for those individuals who are immobile.

12)

From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for the process of categorising functional footwear into subgroupings:

The relative frequency of response is detailed below:

Statement 7a "Functional therapeutic footwear should be classified via its design and the intended therapeutic outcomes of its components." (76%)

Statement 7 "Functional therapeutic footwear was divided into subgroupings which are categorised dependent on the design and functional role." (12%)

Other (12%)

A Consensus was reached to Statement 7a

From panellists who chose "Other" one objected to the inclusion of the term therapeutic footwear in the statement\*. One panellist did not agree to the footwear groupings established from the research literature and advocated for different groupings based on a different structural tree however no alternative suggestions were offered.

The panellist who queried the psychosocial aspect missing from the functional footwear group definition in 6a felt this method of subgrouping would address their suggestion.

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From Round 2 panellists were presented with a series of options from the original scoping review and suggestions from the panel for the subgrouping and definition Stability footwear

The relative frequency of response is detailed below:

Statement 8a "Stability therapeutic footwear is a range of footwear that is designed to assist mobility and standing in children by enhancing proprioception and influencing movements of the foot and ankle." (65%)

Other (23%)

Statement 8 "Stability functional therapeutic footwear is a range of footwear that is designed to limit extreme movements of the lower limb to maintain a controlled displacement of the centre of force during gait." (12%)

From panellists who chose "Other" one objected to the term therapeutic footwear in the statement. A number of panellists were uncertain of the evidence for the footwear influencing proprioception and that by placing this prior to its role on influencing movements in the definition may imply that this was the footwear's primary role. It was suggested to move proprioception to the end of the definition to deemphasize its role in this footwear subgrouping

A slight modification has been made to this definition to address panellist feedback and gain consensus within the panel, please rank your agreement with the following statement

"Stability Footwear is footwear that is designed to assist mobility and standing in children by influencing movements and potentially proprioception of the foot and ankle."

			<u>, , , , , , , , , , , , , , , , , , , </u>				
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
"Stability							
Footwear is							
footwear that							
is designed to							
assist mobility							
and standing							
in children by							
influencing							
movements							
and							
potentially							
proprioception							
of the foot and							
ankle."							

14

If your level of agreement was "somewhat agree" or lower please use this optional area to provide us with your reasoning.

15)

From Round 2 panellists were presented with a new subgrouping of functional footwear and definition for this subgrouping suggested by panellist feedback in Round 1, this was "Adapted sole". This subgrouping would incorporate raise, rocker sole and possibly instability footwear.

The median level of agreement and relative frequency of response for both the term and definition is presented below.

Term "Adapted Sole"

Median level of agreement 6 ("Agree")

Relative frequency of agreement: 6% "Somewhat Disagree", 6% "Neutral",

12% "Somewhat Agree", 41% "Agree", 35% "Strongly Agree"

Panellist Consensus reached (76%)

Definition "A range of customised sole adaptions to standard retail or children's therapeutic footwear that would assist mobility or standing in children."

Median level of agreement 6 ("Agree")

Relative frequency of agreement: 6% "Somewhat Disagree", 6% "Neutral", 23% "Somewhat Agree", 41% "Agree", 24% "Strongly Agree"

From Panellist feedback reasons for lack of agreement with the statement is that the definition should include a reference to the heel as well as the sole to ensure heel modifications are represented in the subgrouping of functional footwear.

Also, therapeutic footwear was not every panellist's preferred terminology for clinical footwear interventions,

A slight modification has been made to this definition to address panellist feedback and gain consensus within the panel; please rank your agreement with the following definition for Adapted Sole Footwear

"A range of customised sole or heel adaptions to any suitable children's footwear, with the adaptions designed to assist mobility or standing in children."

In the section below, please rank your agreement with the modified definition.\*

 /  -						
Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly Agree
Disagree		Disagree		Agree		
1	2	3	4	5	6	7

"A range of				
customised				
sole or				
heel				
adaptions				
to any				
suitable				
children's				
footwear,				
with the				
adaptions				
designed				
to assist				
mobility or				
standing in				
children."				
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### **END OF SECTION 1 ROUND 3**

Thank you for taking the time to complete section 1. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

You can find the link for next section of Round 1 attached to the Delphi survey email.



# WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM? (SECTION2 ROUND 1)

The second section asks for your ideas and opinions on identifiable and or desirable design characteristics of "off the shelf" and modular clinical footwear interventions that offers stability to children with mobility impairment.

### Section 2



Establishing identifiable and desirable design characteristics for "off the shelf"\* and modular\*\* footwear clinical interventions that offer stability to children with mobility impairment.

- \* Footwear taken from stock or supplies and not individually designed.
- \*\* Standard range of dimensional adaptations e.g. width, girth, (maximum 3) to stock upper.

This section consists of a series of ranked and open-ended questions concerning identifiable or desirable characteristics of standard "off the shelf" and modular clinical stability footwear interventions.

The information provided in this section was informed by a study of the design and dimensional characteristics of a sample of standard children's off-the-shelf footwear (EU size range 19-41\*) from a range of manufacturers that are currently marketed to offer stability to children with some form of mobility impairment.

We will ask you to rate your agreement with the findings of the characteristics identified from the sample. These will be in the form of a Likert scale where you will rank your level of agreement on a scale of 1 Strongly Disagree to Strongly Agree 7.

We will provide you with the opportunity to offer your opinion on these characteristics and to suggest their possible purpose to facilitate stability in children with mobility

impairment. You will also be free to suggest additional aspects you view as important and your reasons for this. All answers will be anonymised and will not be identifiable as your responses.

Example of answers to a series of questions concerning a specific area of "off the shelf" modular stability footwear.

Please rate your agreement with the following findings of the topline of "off the shelf" modular stability footwear.

1) "Off the shelf" and modular stability footwear should have an extended topline height

Agree (6)

2) "Off the shelf" and modular stability footwear should have a padded foam collar.

Agree (6)

3) Please provide your opinion and the possible purpose of these characteristics

#### Answer:

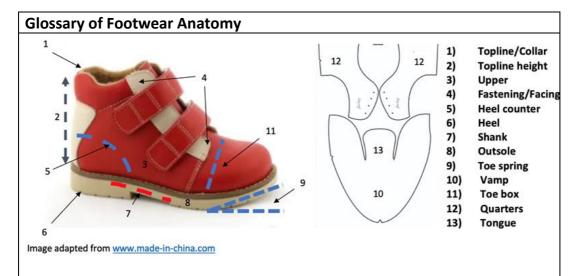
The topline should extend above the ankle. The purpose of this is to offer a degree of proprioceptive stability and increased leverage at the ankle and rearfoot. This has been shown to help in previous studies on the elderly. High topped shoes appear to improve stability in comparison to lower toplines on children in my clinical practice. The padding of the collar allows for a reduction of shearing during ambulation, enhancing the ergonomics of the shoe design.

Please note when answering the following questions we are asking you to consider the characteristics of standard stability footwear and not adaptations for specific clinical presentations.

Required Field \*

1)

Name: \*



This section provides a brief glossary to the footwear terms used in this survey.

- 1) Topline: the opening of the shoe at the rearfoot and ankle region, Collar: Sometimes padded, a strip of material attached to the topline/opening of a shoe.
- 2) Topline height, The height between the base of the upper at the heel cup to the topline.
- 3) Upper: The part of a shoe that covers the entire top, sides and back of the foot and attaches to the insole and outsole
- 4) Fastening: The part of the shoe that can adjust and secure the fitting of the vamp and the quarters to the foot.

Facing: The area of the shoe where the fastenings are located.

- 5) Heel counter: stiffened material placed between the shoe's inner lining and the upper located at the heel cup region of the shoe just above the heel.
- 6) Heel: The part of the outsole that raises the rear of the shoe (maybe part/or a separate attachment of the outsole)
- 7) Shank: The Reinforced strip of material located between the insole and the sole of the shoe running from the heel region to the midfoot.
- 8) Outsole: The base of the shoe that is attached to the upper and contacts the ground.
- 9) Toe spring: The elevation angle from the ball region of the shoe to the distal aspect of the toe box.
- 10) Vamp: The area of the upper that covers the front part of the shoe,

- 11) Toe box: Distal region of the shoe upper that provides space and protection for the toes.
- 12) Quarters: The back half of the upper. Attached at the front to the vamp, making up both sides of a shoe, and wrapping around the rear of the shoe.
- 13) Tongue: Flap of material attached to the vamp shoe, extending centrally along the instep from the forefoot to the topline.

Top	line/	'col	lar



In the question below you will be presented with a series of findings in relation to the topline/collar of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

2)

<u> </u>							
The topline	The topline or collar should have the following characteristics: *						
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Extended							
topline							
height							
above							
ankle							
Foam							
padded							
collar							
Collar							
contoured							
to							
malleoli							
Collar							
contoured							
to Achilles							
tendon							
Pull tab to							
back of							
collar							

3

Please use this section to provide your opinion on the design characteristics of the topline/collar in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \*

Uppe	Ì
------	---



In the question below you will be presented with a series of findings in relation to the upper of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

4)

·'/							1
The upper s	hould have	the followi	ng characteri:	stics: *			
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Leather							
material							
Tongue in							
line with							
topline							
Tongue							
extended							
above							
topline							

5

Please use this section to provide your opinion on the design characteristics of the upper in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \*

## **Fastening and Facing**



In the question below you will be presented with a series of findings in relation to the Fastening and Facing of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

6

<u>-,</u>	
The fastening	should have the following characteristics:
(You may sugg	est an alternative by typing your suggestion in the other option) *
	Velcro
	Lace
	No Preference
	Other

7)

	1	
	The facings sho	ould have the following characteristics:
	(You may sugge	est an alternative by typing your suggestion in the other option)*
		Facings extended to the midfoot
		Facings extended to just behind the toe box
Ī		No Preference
ſ		Other

8

Please use this section to provide your opinion on the design characteristics of the fastening and facing in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \*

H	eel	CO	unt	ter/	st!	itt	en	er
---	-----	----	-----	------	-----	-----	----	----



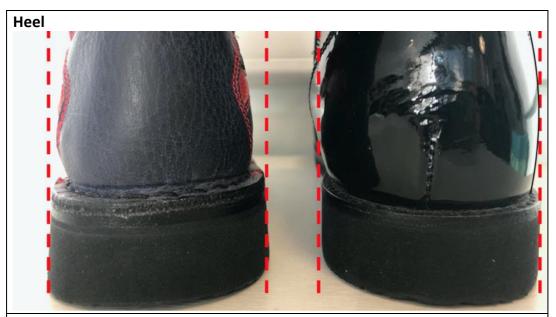
In the question below you will be presented with a series of findings in relation to the heel counter/stiffener of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

9)

The heel counter should have the following characteristics: *								
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly	
	Disagree		Disagree		Agree		Agree	
	1	2	3	4	5	6	7	
Heel								
counter								
/stiffener								
extended to								
midfoot								
Heel								
counter/								
stiffener								
height								
extended								
towards								
topline.								

10

Please use this section to provide your opinion on the design characteristics of the heel counter/stiffener in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \*



In the question below you will be presented with a series of findings in relation to the heel of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

11)

The heel shoul	d have the following characteristics:				
(You may suggest an alternative by typing your suggestion in the other option)*					
	Heel width in line with heel counter width				
	Heel width extended wider than heel counter width				
	No Preference				
	Other				

12)

Please use this section to provide your opinion on the design characteristics of the heel in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \*

Inlay							
				The state of	A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
							)
In the questic	on below vou	will be pre	sented with a	a series of	findings in re	elation to	the .
					ear, please r		
_		ng a desirab	ole characteri	istic of this	s clinical foot	wear	
intervention:							
3)							
The Inlay unit	t should have	the follow	ing character	istics: *			
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
						Agree	
	Disagree	2	Disagree	4	Agree		Agree
Stability	Disagree 1	2	Disagree 3	4		6	
		2		4	Agree		Agree
footwear		2		4	Agree		Agree
footwear should come with a		2		4	Agree		Agree
footwear should come with a standard		2		4	Agree		Agree
footwear should come with a standard removable		2		4	Agree		Agree
footwear should come with a standard removable inlay.		2		4	Agree		Agree
footwear should come with a standard removable inlay. The inlay		2		4	Agree		Agree
footwear should come with a standard removable inlay. The inlay should be contoured		2		4	Agree		Agree
footwear should come with a standard removable inlay. The inlay should be contoured to simulate				4	Agree		Agree
footwear should come with a standard removable inlay. The inlay should be contoured to simulate the medial		2		4	Agree		Agree
footwear should come with a standard removable inlay. The inlay should be contoured to simulate the medial longitudinal				4	Agree		Agree
footwear should come with a standard removable inlay. The inlay should be contoured to simulate the medial longitudinal				4	Agree		Agree
footwear should come with a standard removable inlay. The inlay should be contoured to simulate the medial longitudinal arch.					Agree		Agree
Stability footwear should come with a standard removable inlay. The inlay should be contoured to simulate the medial longitudinal arch.  4) Please use th			3		Agree 5	6	Agree 7



In the question below you will be presented with a series of findings in relation to the heel counter/stiffener of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

15)

The sole unit	should have	the followi	ng characteri	stics: *			
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
A deepened							
tread							
Be made of							
hard							
wearing							
material							

16)

Please	Please rank the degree of flexibility for the sole unit you feel would constitute a desirable									
characteristic of this clinical footwear intervention. *										
0	1	2	3	4	5	6	7	8	9	10
0-Comp	oletely fl	exible						10-C	omplete	ly rigid

17

Please use this section to provide your opinion on the design characteristics of the inlay in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable. \*

## Toe spring forefoot/heel rocker



In the question below you will be presented with a series of findings in relation to the toe spring/forefoot rocker and heel rocker of standard "Off the Shelf" and modular stability footwear, please rank your level of agreement with these being a desirable characteristic of this clinical footwear intervention:

18)

*							
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Stability footwear should have a reasonable forefoot rocker.							
Stability footwear should have a heel rocker.							

19)

Please use this section to provide your opinion on the design characteristics of the toe spring forefoot heel rockers in terms of the purpose of the suggested design features, any disagreement with the suggested design features, or further design features you feel are desirable.\*

Strongly Disagree Disagree Agree Agree    Strongly Disagree Disagree Disagree Agree Agree Agree   1	modular stabil	ity footwea	r when con	sidering thes	e as a clini	ical intervent	ion:	
Strongly Disagree Somewhat Disagree Agree Agree Agree  1 2 3 4 5 6 7  The weight of the stability footwear is an important consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
Disagree Disagree Agree Agree  1 2 3 4 5 6 7  The weight of the stability footwear is an important consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may	*	Strongly	Disagree	Somewhat	Noutral	Somewhat	Agree	Strongly
The weight of the stability footwear is an important consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may			Disagree		Neutrai		Agree	
of the stability footwear is an important consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may			2		4		6	
stability footwear is an important consideration when issuing footwear to children with mobility impairment?  1) Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
footwear is an important consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
an important consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
consideration when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
when issuing footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
footwear to children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
children with mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may	_							
mobility impairment?  1)  Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
1) Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
1) Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may								
Please use this section to provide your opinion on the weight of stability footwear and how you feel it may impact on the gait of children with mobility impairment or may	ппрантнене:		<u> </u>					
	change with th	ne age of the	e patient.*					

<b>Optional Further Inform</b>	nation
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You may use this additional section to provide further suggestions that you feel are important characteristics of children's "Off the Shelf" and modular stability footwear.

Please remember to detail your answer where appropriate with the following information:

Constituents or area of the footwear

Material

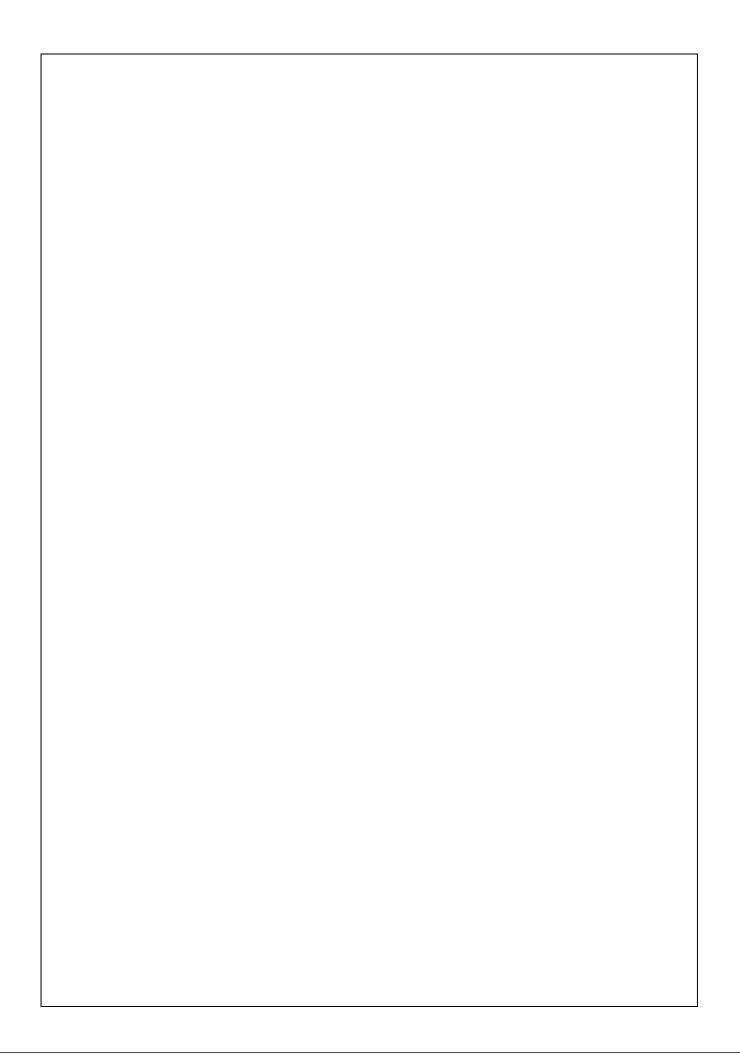
Shape or dimension

Degree of rigidity flexibility.

Purpose

า	า	١
_	/	ı
_	_	1

22)
Which other areas do you feel are important design characteristics of children's "Off the
Shelf" and modular stability footwear?





### END OF SECTION 2 ROUND 1

Thank you for taking the time to complete section 2. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

You can find the link for next section of Round 1 attached to the Delphi survey email.



## ROUND 2(S2) WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

The second section will present the feedback of panellists opinions from Round 1 on the desired design characteristics of "off the shelf" stability footwear and the purpose of these as a clinical intervention for children with mobility impairment.

### Section 2



Establishing desired design characteristics of "off the shelf" † stability footwear and the purpose of these as a clinical intervention for children with mobility impairment. †Footwear taken from stock or supplies and not individually designed.

The original statements provided from the study of a range of children's "off the shelf" stability footwear is listed alongside modified statements informed by the collective opinions gained from the panellists in round 1. The panel in this section consisted of 17 experts in the clinical provision of footwear for children with mobility impairment.

You will be asked to give your preferred option or your level of agreement with the original or modified statements (Strongly Disagree to Strongly Agree)

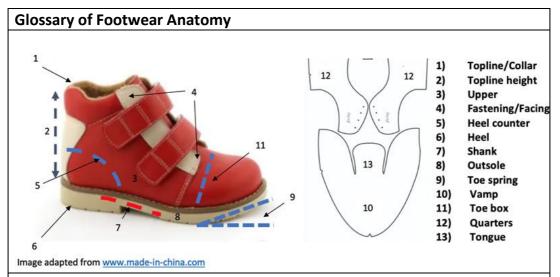
You can review the previous information you provided (in the document emailed to you), and considering the information provided by the other panellists, You may maintain your position with your original statement or change your opinion and align yourself with the new statement

We will provide you with the opportunity to offer your reasoning for your stance or to suggest any further amendments to the statements at the end of each section (You may also leave these areas blank in this round). All answers will be anonymised and will not be identifiable as your responses.

С	leau	irad	Fio	Ы	*
r	keau	ırea	ыe	a	•

1)

Name\*



This section provides a brief glossary to the footwear terms used in this survey.

- 1) Topline: the opening of the shoe at the rearfoot and ankle region,
  Collar: Sometimes padded, a strip of material attached to the topline/opening of a shoe.
- 2) Topline height, The height between the base of the upper at the heel cup to the topline.
- 3) Upper: The part of a shoe that covers the entire top, sides and back of the foot and attaches to the insole and outsole
- 4) Fastening: The part of the shoe that can adjust and secure the fitting of the vamp and the quarters to the foot.

Facing: The area of the shoe where the fastenings are located.

- 5) Heel counter: stiffened material placed between the shoe's inner lining and the upper located at the heel cup region of the shoe just above the heel.
- 6) Heel: The part of the outsole that raises the rear of the shoe (maybe part/or a separate attachment of the outsole)
- 7) Shank: The Reinforced strip of material located between the insole and the sole of the shoe running from the heel region to the midfoot.
- 8) Outsole: The base of the shoe that is attached to the upper and contacts the ground.
- 9) Toe spring: The elevation angle from the ball region of the shoe to the distal aspect of the toe box.

- 10) Vamp: The area of the upper that covers the front part of the shoe,
- 11) Toe box: Distal region of the shoe upper that provides space and protection for the toes.
- 12) Quarters: The back half of the upper. Attached at the front to the vamp, making up both sides of a shoe, and wrapping around the rear of the shoe.
- 13) Tongue: Flap of material attached to the vamp shoe, extending centrally along the instep from the forefoot to the topline.

## Topline/collar



In the questions below you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the topline/collar of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment. Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

2

"Extended topline height above the ankle":

The median level of agreement amongst the panellists was "agree" with the majority of responses between "somewhat agree" to "agree".

From panellist feedback, it was proposed the purpose of a topline extended above the ankle (supra-malleolar) increases proprioceptive input around the rearfoot and ankle in addition to assisting the leverage of the heel counters. This was thought to assist in reducing frontal plane movements at the foot and ankle. Other panellists suggested toplines extended above the ankle may adversely affect ankle plantarflexion and dorsiflexion power generation and limit mobility in some patients.

Please consider the following options suggested by panellists' feedback in relation to the desired design characteristic of the topline height for stability footwear. \*

The topline should be extended above the ankle (Original)
The topline should not be extended above the ankle
The topline extension should come in an optional range both above and below the ankle dependent on the patient's ability and needs.
below the annual dependent on the patient of about y and heads.

suggested from	Strongly	Disagree	Somewhat	Neutral		Agree	Strongly
	Disagree 1	2	Disagree 3	4	Agree 5	6	Agree 7
Purpose: An extended topline height increases proprioception input at the rearfoot and ankle							
Purpose: An extended topline height assists heel counter leverage to resist frontal plane movement of the rearfoot and ankle.							
Adverse Effect: An extended topline height may reduce sagittal plane power generation at the ankle.							

"agree". reached i				. 0		rity of
i caciica i	in Round 1	with respect	to this de	sign feature h	neing an	ideal
		With respect		3.6.1 Teatare x	zem g um	- Car
	1.1					
			_			
					-	
		•				
ll - <b>f</b> -		. : the the control	•			
			wing purp	ose or cnarac	teristic	suggested
Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
Disagree		Disagree		Agree		Agree
1	2	3	4	5	6	7
d to Malle	oli"					
l of agreer	ment amon	gst the pane	lists was '	agree" with t	the majo	rity of
"agree".						
reached i	n Round 1	with respect	to this de	sign feature b	eing an	ideal
ncue was	roachad a	a thic dasian	haractar:	ctic papallist	foodbaa	l <sub>r</sub>
ensus was	reached oi	n this design (	cnaracteri	stic paneilist	teedbac	K
	shear str nellists ind uld be cov level of a eedback of Strongly Disagree 1	shear stress to structure in the stress indicated that all the covered in a least of a padded strongly Disagree Disagree 1 2	shear stress to structures to the shellists indicated that foam paddir uld be covered in a low shear material level of agreement with the followeedback of a padded collar. *  Strongly Disagree Somewhat Disagree 1 2 3 1 1 2 3 1 1 1 1 1 1 1 1 1 1 1 1 1	shear stress to structures to the sides and rellists indicated that foam padding may includ be covered in a low shear material.  Ilevel of agreement with the following purpleedback of a padded collar. *  Strongly Disagree Somewhat Neutral Disagree 1 2 3 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	shear stress to structures to the sides and the back of the lelists indicated that foam padding may increase shear full be covered in a low shear material.  Ilevel of agreement with the following purpose or characted back of a padded collar. *  Strongly Disagree Somewhat Neutral Somewhat Disagree Agree  1 2 3 4 5  1 2 3 4 5  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	level of agreement with the following purpose or characteristic seedback of a padded collar. *  Strongly Disagree Somewhat Neutral Somewhat Agree Disagree 1 2 3 4 5 6  1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

compression.							
Based on panel			•			esired de	esign
characteristic is	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree	Disagree	Disagree	reaciai	Agree	718100	Agree
	1	2	3	4	5	6	7
Design Characteristic: The foam padded collar should be							
covered with							
low shear							
material.							
From the feedb partial level of a There was no fe purpose of the would reduce s Please consider desired design of footwear.*	agreement eedback to suggested of hear and co	other than suggest an characterist ompression ing options	a lack of rese ideal modifie tic, it was pro to the area. suggested by	earch to sued design of posed cor	upport the de characteristic ntouring to th s' feedback ir	sign ada . Concer le Achillo	nption. Ining the es tendon
	Collar cont	oured to A	chilles tendor	n (Original	)		
	Collar cont	oured to A	chilles tendor	n is not a d	desired design	n charac	teristic.

<b>'</b> )							
Please rank y					pose suggest	ed from	panellists
feedback of a	collar cont	oured to th	e Achilles ter	ndon. *			
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose:							
Contouring							
the collar to							
the Achilles							
tendon							
reduces							
shear and							
compression							
to the							
tendon.							
	TO BUCK OF C	ollar":					
responses be Panellist feed footwear; ho pull-tab to do Please consid	evel of agreing betwee lback sugge wever, a number stability for the followin character Pull tab t	ement among mement among mement among steed that the mber of particular continuity of a contin	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original	pull-tab w d that they by panellis or stability	vas to assist o v had never se sts' feedback v footwear.*	lonning c een a chi in relatic	of the Id use the
The median leresponses be Panellist feed footwear; ho pull-tab to do Please considesired desig	evel of agreing betwee lback sugge wever, a number stability for the followin character Pull tab t	ement among mement among mement among steed that the mber of particular continuity of a contin	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original	pull-tab w d that they by panellis or stability	vas to assist o v had never so sts' feedback	lonning c een a chi in relatic	of the Id use the
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig  D Please rank y	evel of agreing betwee Iback sugge wever, a number stability for the following character Pull tab to Pull tab to our level of	ement amount amount in "neutral" sted that the mber of particities of a color back of	to "agree".  The purpose of the purpose of the purpose of the pull tab follar (Original collar is not a control tab follar is not a control ta	pull-tab we that they by panellis or stability desired des	vas to assist o v had never se sts' feedback v footwear.* sign characte	lonning ceen a chi in relation	of the Id use the on to the
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig  D Please rank y	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to our level of a pull tab to	ement amount amount in "neutral" sted that the mber of participation of a color back of color back of color back of color back of color agreement the collar.*	to "agree".  ne purpose of nellists stated as suggested allar pull tab follar (Original collar is not a contract with the foll as with the foll as a contract with the following with the following with the contract with the following with the contract with the contra	pull-tab we that they by panellist or stability desired desired owing pur	vas to assist of had never so sts' feedback footwear.* sign characte	lonning ceen a chi in relation	of the Id use the on to the panellists'
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig  D Please rank y	evel of agreing betwee lback sugge wever, a number stability for the following character Pull tab to Pull tab to Strongly	ement amount amount in "neutral" sted that the mber of particities of a color back of	to "agree".  ne purpose of nellists stated as suggested allar pull tab follar (Original collar is not a content of the following of the follow	pull-tab we that they by panellis or stability desired des	vas to assist o v had never se sts' feedback v footwear.* sign characte	lonning ceen a chi in relation	of the Id use the on to the panellists'
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to our level of a pull tab to	ement amon "neutral" sted that the mber of particle of a color back of color agreement the collar.	to "agree".  ne purpose of nellists stated as suggested allar pull tab follar (Original collar is not a contract with the foll as with the foll as a contract with the following with the following with the contract with the following with the contract with the contra	pull-tab we that they by panellist or stability desired desired owing pur	vas to assist of had never so sts' feedback footwear.* sign characte	lonning of een a chi in relation ristic.	of the Id use the on to the panellists'
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig	evel of agreing betwee lback sugge wever, a number stability for the following character Pull tab to Pull tab to Strongly	ement amount amount in "neutral" sted that the mber of participation of a color back of color back of color back of color back of color agreement the collar.*	to "agree".  ne purpose of nellists stated as suggested allar pull tab follar (Original collar is not a content of the following of the follow	pull-tab we that they by panellist or stability desired desired owing pur	vas to assist of had never so sts' feedback footwear.* sign characte	lonning ceen a chi in relation	of the Id use the on to the panellists'
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig  Please rank y feedback of a	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to Strongly Disagree	ement amon "neutral" sted that the mber of particle of a color back of color agreement the collar.	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original pollar is not a continuous somewhat Disagree	pull-tab we that they by panellis or stability desired des	vas to assist of had never sets feedback footwear.* sign characte pose suggeste Somewhat Agree	lonning of een a chi in relation ristic.	of the Id use the on to the panellists' Strongly Agree
Panellist feed footwear; ho pull-tab to do personal desired designation of the personal desired desire	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to Strongly Disagree	ement amon "neutral" sted that the mber of particle of a color back of color agreement the collar.*	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original pollar is not a continuous somewhat Disagree	pull-tab we that they by panellis or stability desired des	vas to assist of had never sets feedback footwear.* sign characte pose suggeste Somewhat Agree	lonning of een a chi in relation ristic.	of the Id use the on to the panellists' Strongly Agree
Panellist feed footwear; ho pull-tab to do personal desired designation of the personal desired desire	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to Strongly Disagree	ement amon "neutral" sted that the mber of particle of a color back of color agreement the collar.*	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original pollar is not a continuous somewhat Disagree	pull-tab we that they by panellis or stability desired des	vas to assist of had never sets feedback footwear.* sign characte pose suggeste Somewhat Agree	lonning of een a chi in relation ristic.	of the Id use the on to the panellists' Strongly Agree
Purpose: A collar pull tab aids the	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to Strongly Disagree	ement amon "neutral" sted that the mber of particle of a color back of color agreement the collar.*	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original pollar is not a continuous somewhat Disagree	pull-tab we that they by panellis or stability desired des	vas to assist of had never sets feedback footwear.* sign characte pose suggeste Somewhat Agree	lonning of een a chi in relation ristic.	of the Id use the on to the panellists' Strongly Agree
responses be Panellist feed footwear; ho pull-tab to do Please consid desired desig	evel of agreing betwee lback sugge wever, a number stability for the follown character Pull tab to Pull tab to Strongly Disagree	ement amon "neutral" sted that the mber of particle of a color back of color agreement the collar.*	to "agree".  ne purpose of nellists state  ns suggested llar pull tab follar (Original pollar is not a continuous somewhat Disagree	pull-tab we that they by panellis or stability desired des	vas to assist of had never sets feedback footwear.* sign characte pose suggeste Somewhat Agree	lonning of een a chi in relation ristic.	of the Id use the on to the panellists' Strongly Agree

1	•	٦	١
T	ι	J	ı

You may use this optional area to provide us with any further information to your responses on the topline/collar.

## Upper



In the questions below you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the upper of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

#### 11)

"The Upper should be constructed of leather:"

The median level of agreement amongst the panellists was "agree" with the majority of responses being between "neutral" to "agree".

From panellist feedback, it was suggested that the purpose and advantages of leather material was that it adapts to foot structures over time and can enhance stability adaptions of the footwear through material stiffness. A number of panellists suggested that the upper should be available in optional materials, such as breathable materials for hot climates or sweaty feet, in addition, wipeable washable fabric for issues with incontinence.

Please consider the following options suggested by panellists' feedback in relation to the desired design characteristic of the material of the upper for stability footwear.\*

Upper should be constructed of leather (Original)
Optional range of upper material to include; leather, breathable material
and wipeable material.

12)							
12) Please rank yo	ur level d	of agreemen	nt with the fo	llowing nu	rnoce cuadec	ted from	nanallists'
feedback of lea		_		nowing pu	Those sugges	teu mom	parienists
	rongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	isagree	2.008.00	Disagree		Agree	7 .8. 55	Agree
	1	2	3	4	5	6	7
Leather	П						
adapts to	_			_			
foot							
structures							
over time							
Leather							
enhances							
material							
stiffness							
of the							
footwear							
13)	.1:	#! la ! II					
"Tongue to top	oline rela	tionsnip:"					
"Tongue in line	with th	o toplino:"					
The median lev		•	nongst the na	nallists wa	s "agree" wit	h tha mai	ority of
responses beir	_			ileilists wa	3 agree wit	ii tile illaj	Officy Of
responses ben	ig betwe	cii iicatiai	to agree .				
"Tongue exten	ded abo	ve topline:"					
this reached th		•		the mediar	n level		
amongst the p		_				ing betwe	een
"neutral" to "a				,			
	J						
Panellist feedb	ack cond	erning the	tongue being	in line wit	h the topline	suggeste	d that this
would cause le	ss irritat	ion to the f	ront of the ar	ıkle than a	n extended to	ongue. Ho	wever,
panellists who							
allowed comfo	rt with la	acing and th	ne ability for t	he patient	to pull up th	e tongue	to stop
slippage of the	tongue	during wea	r. Other feed	back sugge	sted that the	tongue l	ength
should be opti	onal dep	ending on t	he patient's p	oreference	and manual	dexterity.	
Please conside							
desired design			_				
Please conside							
desired design						ootwear.	•
	_		above topline				
			in line with to			nco and :	manual
	dexteri		ioriai depend	ent on pat	ient's prefere	ince and f	ııdıludi
	1	•					

Purpose: Tongue in line with topline is to minimise irritation to the anterior aspect of the ankle	Disagree 1	2	Disagree 3		Agree		
Tongue in line with topline is to minimise irritation to the anterior aspect of the ankle			3				Agree
Tongue in line with topline is to minimise irritation to the anterior aspect of the ankle				4	5	6	7
line with topline is to minimise irritation to the anterior aspect of the ankle						Ш	
topline is to minimise irritation to the anterior aspect of the ankle							
minimise irritation to the anterior aspect of the ankle							
irritation to the anterior aspect of the ankle							
the anterior aspect of the ankle							
aspect of the ankle							
the ankle							
Purpose:							
Tongue							
extended							
above							
topline							
allows for							
comfort							
with lacing							
Purpose: Tongue						Ш	
extended							
above							
topline							
allows the							
wearer to							
minimise							
slippage of							
the tongue							
under the							
fastenings							
during wear							
weai							
5)							
From panellis	t feedback	other sugg	estions for th	ne upper d	esign were o	ffered th	ese
included:		00	•		Ü		
An option for	an open u	pper in the	form of a hig	h topped	sandal for sta	ndard st	ability
An option for footwear ran				topped	sandal for sta	ndard st	ability

Please rank yo further desired							
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
High topped candals to be offered as an option for ctability cootwear ranges for warm							
ergonomic consideration of internal seams to reduce skin rritation							
Sit or loop in ongue for astening to minimise ongue							
6) You may use tl responses on t		area to pro	ovide us with	any furth	er informatio	n to you	ır

# **Fastening and Facing**



In the questions below you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the Fastenings and Facings of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

#### 17

"The type of fastenings"

Most panellists (53%) choose "other", next was Velcro (23%), no preference (18%) and lace (6%).

Those panellists that chose the other option suggested that the chosen fastenings be optional depending on the ability of the child or the desired therapeutic goal (e.g. Velcro for limited hand dexterity to enhance independence, lace if greater stability is required).

From panellist feedback Velcro fastenings were proposed to assists with independence making it easier for children to don/doff the shoes. A number of panellists proposed that lace fastenings allowed a firmer grip to the contours of the foot to enhance the stability offered by the shoe.

Please consider the following options suggested by panellists' feedback in relation to the desired design characteristic of the type of fastenings for stability footwear.\*

Velcro (Original)
Lace (Original)
No Preference (Original)
Optional dependent on patient's ability and desired goal (e.g. Velcro for
limited hand dexterity, lace for greater stability)

18)							
Please rank you		_	with the follo	wing purp	ose suggeste	d from p	oanellists'
feedback for th		_		l	la	1 .	l a
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree 1	2	Disagree 3	4	Agree 5	6	Agree 7
Purpose of Velcro fastenings: Assists independenc							
e with limited hand dexterity in donning and doffing							
Purpose of lace fastenings: Enhances stability through potential							
firmer grip to contours of							
the foot							
19)							
"Position of the Most panellists 18% suggested	(47%) choo		-				other",
From panellist faccess into the facings extended Similar to the fashould be offer therapeutic role extended to the	footwear wed to the minastenings and ed in an operate. Extended	vith patient idfoot allov number of tional rang I to the toe	s who had lir ved the uppe panellists fel e dependent box for limite	mited foot or to offer t the facin on the ab ed patient	and ankle RO greater stability ngs of stability of the pa	OM. Who lity. y footwe atient an	ereas ear d desired
Please consider the desired des							
			e midfoot (O				
			st behind the	toe box (	Original)		
	No Preferer	nce (Origina	al)				

20)							
flease rank feedback of				llowing pu	irpose sugges	ited fron	n panellists'
TCCUBACK OF	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose: Facings extended to just behind the toe box allows greater access into the footwear for the child with limited foot and ankle range of motion							
Purpose: Facing extended to the midfoot allows the upper to offer greater stability to the foot and ankle.							

adjustment. A side zip alor	-	-		-	e fastening to	allow e	asy
donning and o	doffing to p	re-tightene	d laced footv	vear.			
Please rank yo	_						
further desire							
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree 1	2	Disagree 3	4	Agree 5	6	Agree 7
The gap						$\Box$	
between							
facings							
should allow							
an adequate							
range of							
fastening							
adjustment. Side zip lace							
combination							
fastening							
	factoning a	nd facing					
You may use t responses on	fastening a	nd facing.					
	fastening a	nd facing.					
	fastening a	nd facing.					
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	fastening a	nd facing.					
	fastening a	nd facing.					
	fastening a	nd facing.					

## Heel counter/stiffener



In the questions below you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the Heel Counter/Stiffener of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

23

The heel counter/stiffener extension

"Heel counter/stiffener extended to midfoot:"

The median level of agreement amongst the panellists was "agree" with the majority of responses being between "somewhat agree" to "agree".

"Heel counter/stiffener extended towards the topline."

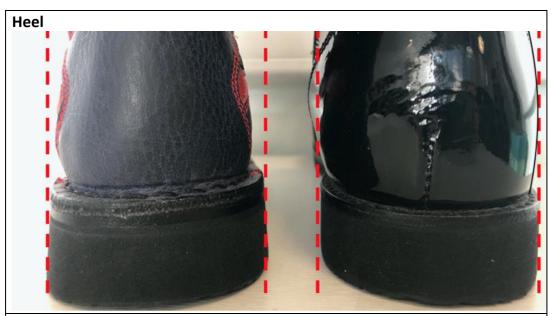
The median level of agreement amongst the panellists was "somewhat agree" with the majority of responses being between "somewhat agree" to "agree".

From panellist feedback, it was suggested that this was one of the most important design characteristics to enhance the stability of this footwear. It was thought the material stiffness of the counter and its extension could resist frontal plane movements of the foot and ankle and the midfoot if extended to this region. It was also suggested that this design feature can enhance proprioception at the rearfoot and ankle. Some panellists suggested that heel counters should come in a range of extensions both in length and height dependent on the therapeutic need (high to moderate stability) and to account for any impingement on the varied foot and ankle anatomy of patients.

Please consider the following options suggested by the panellists' feedback in relation to the desired design characteristic of the heel counter/ stiffener extensions for stability footwear.\*

	Heel counter/stiffener extended to the midfoot only
	Heel counter/stiffener extended towards the topline only
	Heel counter stiffener, extended to the midfoot and towards topline

	from panellist  Agre Strong e y Agre
Please rank your level of agreement with the following purpose suggested reedback of the heel counter/stiffener:*    Strongly   Disagre   Somewha   Neutra   Somewha   t Agree	Agre Strong e y Agre
Please rank your level of agreement with the following purpose suggested feedback of the heel counter/stiffener:*    Strongly   Disagre   Somewha   Neutra   Somewha   t Agree	Agre Strong e y Agre
Strongly Disagre e t Disagree l t Agree  Strongly Disagre e t Disagree l t Agree  1 2 3 4 5  Purpose: Heel counter/stiffene extensions can enhance proprioception at the foot and enkle counter/stiffene extension offers material stiffness to eestrict frontal plane	Agre Strong e y Agre
Strongly Disagre e t Disagree l t Agree l t Agree e t Disagree l t Agree e t Agree e t Disagree e t Agree e t Agree e t Agree e t Disagree e t Agree e	e y Agre
Disagre e t Disagree I t Agree  1 2 3 4 5  Purpose: Heel counter/stiffene r extensions can enhance proprioception at the foot and ankle  Purpose: Heel counter/stiffene r extension offers material stiffness to restrict frontal plane	e y Agre
e  1 2 3 4 5  Purpose: Heel counter/stiffene r extensions can enhance proprioception at the foot and ankle  Purpose: Heel counter/stiffene r extension offers material stiffness to restrict frontal plane	
Purpose: Heel	6 7
counter/stiffene r extensions can enhance coroprioception et the foot and enkle  Purpose: Heel counter/stiffene r extension offers material estiffness to restrict frontal plane	
r extensions can enhance proprioception eat the foot and enkle Purpose: Heel counter/stiffene r extension offers material stiffness to restrict frontal plane	
enhance proprioception at the foot and ankle Purpose: Heel counter/stiffene r extension offers material stiffness to restrict frontal plane	
proprioception at the foot and ankle  Purpose: Heel counter/stiffene r extension offers material stiffness to restrict frontal plane	
at the foot and ankle  Purpose: Heel counter/stiffene r extension offers material stiffness to restrict frontal plane	
ankle Purpose: Heel counter/stiffene r extension offers material stiffness to restrict frontal plane	
Purpose: Heel	
counter/stiffene r extension offers material stiffness to restrict frontal olane	
r extension offers material stiffness to restrict frontal plane	
offers material stiffness to restrict frontal plane	
estrict frontal plane	
plane	
movements at	
he foot, ankle	
and midfoot	
dependent on	
he extension profile.	
nome.	
)	
ou may use this optional area to provide us with any further information	to your
esponses on heel counter/stiffener.	•



In the questions below you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the Heel of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

#### 26

"Heel width in relation to the heel counter"

The majority (47%) felt that the heel should be extended wider than the heel counter followed by 23% who felt it should be in line, the remaining 30% chose no preference or other.

Feedback from the panellists suggested that the purpose of an increased heel width allowed greater medial-lateral stability. Panellists suggested that a welted sole construction provided a slight width increase from standard retail footwear. Others suggested that wider heels affect aesthetics and the mass of the shoe or potentially cause weakening to the upper and sole adhesion. Other feedback stated that heel width extension needs to be quantified and come in a range of prescriptive adaptions (heel float) dependent on clinical need rather than a standard characteristic.

Please consider the following options suggested by panellists' feedback in relation to the desired design characteristic of the heel to heel counter width relationship for stability footwear.\*

Heel width in line with heel counter width (Original)
Heel width extended wider than heel counter width (Original)
No preference (Original)

	with the		ons should be extension or ted seam.				
	1110101						
7)							
	•	_	nt with the fo	llowing pu	irpose sugge:	sted from	n panellists'
feedback of	an extende	d heel widt				_	<b>,</b>
	Strongly	Disagre	e Somewha	t Neutra	I Somewha	t Agree	Strongly
	Disagree	<u>ڊ</u>	Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose:							
Heel width							
extensions							
assist							
medial-							
ateral							
stability of							
he foot and	t l						
ankle							
hrough an							
ncreased							
oase of							
support							
8)							
Other heel o	design cons	iderations s	suggested by	the panell	ists were the	heel pito	h; heel
oitch should	l not be so l	nigh as to ir	mpart instabil	ity at the	ankle or be ir	compati	ble with
the fitting o	f adjunct or	thotic ther	ару:				
Please rank	your agree	ment with t	the following	•			n to
Please rank	your agree	ment with t		•			n to
Please rank	your agreer red design of Strongly	ment with t	the following tics for the he	•		.*	on to Strongly
Please rank	your agree red design (	ment with t	the following	el of stabi	lity footwear	:* Agree	
Please rank Further desi	your agreer red design of Strongly	ment with t	the following tics for the he	el of stabi	lity footwear Somewhat	:* Agree	Strongly
Please rank Further desi	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch Should not	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch Should not ncrease	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch Should not ncrease ankle	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch Should not ncrease ankle nstability	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch Should not ncrease ankle nstability Heel pitch	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch should not ncrease ankle nstability Heel pitch	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree
Please rank Further desi Heel Pitch should not ncrease ankle nstability Heel pitch should allow for	your agreed red design of Strongly Disagree	ment with t characterist Disagree	the following tics for the he Somewhat Disagree	el of stabi Neutral	lity footwear Somewhat Agree	:* Agree	Strongly Agree

29)

You may use this optional area to provide us with any further information to your responses on the heel

## Inlay



In the questions below, you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the Inlay of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

30

The inlay should have the following characteristics:

"Stability footwear should come with a standard removable inlay."

The median level of agreement amongst the panellists was "strongly agree" with the majority of responses being between "agree" to "strongly agree".

Consensus was reached on this design feature in Round 1.

"The inlay should be contoured to simulate the medial longitudinal arch."

The median level of agreement amongst the panellists was "neutral" with the majority of responses being between "somewhat disagree" to "somewhat agree".

From panellist feedback, it was suggested that a removable inlay would allow for soft covering over the inner base layer of the sole and be thick enough to allow replacement with a prescriptive foot orthotic device if required. The majority of panellists did not feel contouring to the arch was necessary as this not be representative of an early walkers foot; however, panellists did suggest contouring to the heel cup to improve rearfoot fitting in the footwear.

Please consider the following options suggested by the panellists' feedback in relation to the desired design characteristic of the inlay for stability footwear.\*

The inlay should be contoured to simulate the medial longitudinal arch
(Original)

Disagree Disagree Agree Agree 1 2 3 4 5 6  Removable Inlay should be thick enough to allow for a potential prescriptive foot orthoses.  An inlay contoured to cup the heel improves rearfoot fitting	
to cup the heel  1)  Please rank your level of agreement with the following purpose suggested from page feedback of the inlay.*    Strongly   Disagree   Somewhat   Neutral   Somewhat   Agree   Agree	anellists' trongly agree
Please rank your level of agreement with the following purpose suggested from particle feedback of the inlay.*    Strongly   Disagree   Somewhat   Neutral   Somewhat   Agree   Agree	trongly agree
Please rank your level of agreement with the following purpose suggested from particle debtack of the inlay.*    Strongly   Disagree   Somewhat   Neutral   Somewhat   Agree   Somewhat   Agree   Agre	trongly agree
Please rank your level of agreement with the following purpose suggested from particle debtack of the inlay.*    Strongly   Disagree   Somewhat   Neutral   Somewhat   Agree   Somewhat   Agree   Agre	trongly agree
feedback of the inlay.*    Strongly   Disagree   Somewhat   Neutral   Somewhat   Agree   Somewhat   Agree   Ag	trongly agree
Strongly Disagree Disagree Disagree Agree Agree Agree Agree Disagree Disagree Disagree Agree Agree Agree Agree Agree Agree Disagree Disagree Disagree Agree	gree
Disagree Disagree Agree A  Removable Inlay should be thick enough to allow for a potential prescriptive foot orthoses.  An inlay contoured to cup the heel improves rearfoot fitting  Disagree Disagree Agree Agree A  A prescriptive   Disagree Agree Agree A  A pagree Agree	gree
Removable	
Inlay should be thick enough to allow for a potential prescriptive foot orthoses.  An inlay contoured to cup the heel improves rearfoot fitting  32)  You may use this optional area to provide us with any further information to your	
should be thick enough to allow for a potential prescriptive foot orthoses.  An inlay	
thick enough to allow for a potential prescriptive foot orthoses.  An inlay contoured to cup the heel improves rearfoot fitting  You may use this optional area to provide us with any further information to your	
enough to allow for a potential prescriptive foot orthoses.  An inlay contoured to cup the heel improves rearfoot fitting   You may use this optional area to provide us with any further information to your	
allow for a potential prescriptive foot orthoses.  An inlay	
potential prescriptive foot orthoses.  An inlay contoured to cup the heel improves rearfoot fitting  You may use this optional area to provide us with any further information to your	
prescriptive foot orthoses.  An inlay	
foot orthoses.  An inlay	
orthoses.  An inlay	
An inlay contoured to cup the heel improves rearfoot fitting    You may use this optional area to provide us with any further information to your	
contoured to cup the heel improves rearfoot fitting	
to cup the heel improves rearfoot fitting 32)  You may use this optional area to provide us with any further information to your	Ш
heel improves rearfoot fitting 32)  You may use this optional area to provide us with any further information to your	
rearfoot fitting 22) You may use this optional area to provide us with any further information to your	
fitting 22) You may use this optional area to provide us with any further information to your	
32) You may use this optional area to provide us with any further information to your	
You may use this optional area to provide us with any further information to your	
You may use this optional area to provide us with any further information to your	
responses on the imay.	



In the questions below you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the sole unit of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

#### 33)

The sole unit should have "A deepened tread"

The median level of agreement amongst the panellists was "somewhat agree" with the majority of responses being between "neutral" to "agree".

Panellist feedback suggested that a deepened tread allows for greater traction over different terrains however it may also be a trip hazard especially with low ground clearance in some mobility impairments.

Please consider the following options suggested by the panellists' feedback in relation to the desired design characteristic of the tread depth for stability footwear.\*

	A deepened tread (Original)
	The tread depth should come in an optional range dependent (on the
	ability of the child and the environment where the footwear is to be used.

#### 34

The sole unit should: "Be made of hard-wearing material"

The median level of agreement amongst the panellists was "agree" with the majority of responses being between "somewhat agree" to "agree".

Panellist feedback suggested the benefit of a hard-wearing sole unit is that it would resist abnormal sole wear from pathological gait and prolong the stability effect of the footwear. Other suggestions indicated that hard-wearing soling material may not be so important for younger children as growth would entail replacement before significant wear. There was also the suggestion that hard-wearing soling material may increase walking effort in early walkers.

Please consider the following options suggested by the panellists' feedback in relation to the desired design characteristic of the wear resilience of the sole material for stability footwear.\*

	Hard-weari	ng materia	l (Original)							
	Optional w ability of th		ce of the sole	material	dependent o	n the ag	e and			
	j diamety or en	рассолог								
5)										
In relation to a hard wearing sole material please rank your level of agreement with the following purpose or characteristic suggested from panellists feedback.*										
following pur						Т	T			
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly			
	Disagree		Disagree		Agree		Agree			
	1	2	3	4	5	6	7			
Purpose:										
Hard										
wearing										
sole										
material will orolong the										
stability										
effect of the										
ootwear by										
resisting										
wear										
patterns										
associated										
with gait										
athologies.										
5)	6.61									
-	of flexibility"			1.0			1.			
			pletely rigid a							
	ility amongst	tne panei	was 6 with th	e majority	y of values fai	ling bet	ween 5			
nd 7.										
Panellist feed	hack suggest	ed that alt	hough a rigid	sole may	enhance stah	ility fle	vion of			
			) is a requisite	•		•				
		•	of the foot. It			•				
•		•	he ability of t							
,			,							
Please consid	er the follow	ing options	s suggested b	y the pane	ellists' feedba	ck in rel	ation to			
the desired d	esign charact	eristic of th	ne sole unit fl	exibility fo	or stability fo	otwear.*	k			
			ome in a rang							
	patient's al	ility or the	therapeutic a	goals, with	h flexibility of	the sole	focused			
	at the MPJ	area								
	Other: (Ple	ase state)								

That the rearfoot to forefoot sole width should be kept to the lowest practical ratio to									
manage medi				kept to ti	ie iowest pra	cticai i a	tio to		
That the sole		•		and rearfo	oot to assist s	tability i	in these		
regions									
Please rank your agreement with the following panellists' suggestions in relation to									
further desired design characteristics for the sole unit of stability footwear.*									
	Strongly	Disagree	Somewhat	Neutral		Agree	Strongly		
	Disagree		Disagree		Agree		Agree		
	1	2	3	4	5	6	7		
Rearfoot to									
Forefoot									
width of the									
sole unit									
kept to									
lowest practical									
ratio to									
assist									
medial-									
lateral									
stability									
The sole			П						
unit should									
be stiffer at									
the midfoot									
and									
rearfoot to									
assist									
stability in									
these									
regions.									
٥١									
88) You may use t	thic ontional	area to pro	wido us with	any furth	or information	2 to vou	r		
responses on	•	•	Mide us With	ally fultile		i to you	ı		
responses on	the sole unit								

# Toe spring forefoot/heel rocker



In the questions below, you will be presented with the collective opinion of panellists to the findings form Round 1 in relation to the Toespring forefoot/heel rocker of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment, please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics:

39)

"Stability footwear should have a reasonable forefoot rocker."

The median level of agreement amongst the panellists was "agree" with the majority of responses being between "somewhat agree" to "agree".

Panellist feedback suggested that forefoot rockers should come in a range depending on the patient's condition from increased in Charoct Marie Tooth to avoid tripping in propulsion and swing, to reduced in conditions such as Idiopathic toe walking to reduce the 3rd rocker (MPJ) loading. It was pointed out a range of forefoot rockers would also be required dependent on the stiffness of the sole. Panellists suggested the purpose of an appropriate rocker was to facilitate sagittal progression in propulsion without impacting on stability and also allowing for adequate ground clearance in swing phase.

Please consider the following options suggested by the panellists' feedback in relation to the desired design characteristic of the forefoot rocker for stability footwear.\*

Stability footwear should have a reasonable forefoot rocker. (Original)
Stability footwear should come in a range of forefoot rockers dependent
on the patient's condition and the stiffness of the sole.

In relation to t	40)										
In relation to the forefoot rocker please rank your level of agreement with the following purpose or characteristic suggested from panellists feedback.*											
purpose or cha						П	T .				
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly				
	Disagree	2	Disagree		Agree	-	Agree				
D (	1	2	3	4	5	6	7				
Purpose of forefoot											
rocker:											
Should											
facilitate											
forward											
progression											
in terminal											
stance											
without											
impacting on											
stability											
Design											
characteristic											
of forefoot											
rocker:											
Should allow											
adequate											
ground											
clearance in											
swing											
1)											
1) "Stability footy	wear should	have a hor	al rocker "								
Stability 100th	wcai siiUulU	nave a net	.i i UCKEI.								
The median le	vel of agree	ment amor	gst the nane	llists was '	'neutral" witl	h the ma	iority of				
responses beir	_		-				.,011.01				
	6										
Panellist feedb	ack suggest	ed that a h	eel rocker ma	ay speed u	up the 1st roc	ker and	cause				
instability duri											
heel rockers sh	nould be off	ered as a so	ole adaption	prescriptio	on dependen	t on the	child's				
condition rath	er than a sta	andard desi	gn.								
Please conside							ation to				
the desired de	sign charact	eristic of th	ne heel rocke	r for stabi	lity footwear.	.*					
	Stability for	ntwear sho	uld have a he	el rocker	(Original)						

			e offered as a n rather than	•			
42)						·	
You may use the responses on t	•	•		any furthe	er informatio	n to you	r
Weight of th	e footwea	ar					
In the question	•	•			•	•	
the findings fro							
options offered purpose of the	•		-	ith the su	ggested chara	acteristic	or or
20)							
"The weight of	stability fo	otwear is a	n important c	onsiderat	ion when issu	uing foot	twear to
children with r	nobility imp	airment?"					
The median lev responses beir	_	ment amor	igst the pane	llists was '	"agree" with	the majo	ority of
Consensus was		Round 1 w	ith respect to	this bein	g an importa	nt desig	n
characteristic.							
D 11: 1 C 11							
Panellist feedb reduce physiol							
of the child and	-	_		_			
features associ							_
conditions mig					_		-
sturdier footw		•				_	
requiring lighte stance and the		_	-				•
weight of stabi	•		-		•		
mass.	mry rootwee	ar by critical	en mgm be e	ide to its :	Jenniess raen	er than t	ine detadi
The following of	-		•	_	•		
purpose have I these.*	been formed	a from pan	ellist reedbac	k; piease	rank your agr	eement	with
trese.	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Stability							
footwear should be the							
lowest							
reasonable							

mass to				
reduce				
physiological				
cost during				
mobility.				
The mass of				
the shoe				
should be				
dependent				
on the mass				
and age of				
the child.				
The mass of				
the shoe				
should be				
dependent				
on the child's				
stability				
needs.				
Purpose of				
increased				
mass: Assist				
stability in				
stance				
Purpose of				
increased				
mass: Assists				
pendular				
motion in				
swing				

21)

You may use this optional area to provide us with any information for your responses on the weight of the footwear.

Further Des	ign Consid	erations					
The following			onal design c	onsiderati	ons for "Off t	the Shelf	;11
Stability footy	vear suggest	ed by the p	anellists.				
45)							
Children's "Of	f the Shelf"	stability foc	twear should	come in	a range of las	t dimen	sions to
accommodate	e proportion	al differenc	es in foot typ	es.	-		
Please rank yo desired design	_				iggestion in r	elation t	o further
acsirea aesigi	Strongly	Disagre	Somewha	Neutra	Somewha	Agree	Strongl
	Disagre	e	t Disagree	I	t Agree	Agree	y Agree
	e		Disagree		CAGICC		y Agree
	1	2	3	4	5	6	7
Children's					П		
stability							
footwear							
should be							
available in a							
range of last							
dimensions to							
accommodate	е						
different foot							
types.							
46							
Children's "Of		•	twear should	come in	a range of co	lours an	d styles
to appeal to c	hildren's pre	ferences.					
Please rank yo feedback.*	our agreeme		design featu	re sugges	ted from the	panellis	ts'
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Stability							
footwear							
should come							
in a range of							
colours and							
styles to							
appeal to							
children's							

47) You may use this option	al area to provide us with an	v information for your respo	onses
Tournay use this option	ar area to provide as with an	y information for your respo	J113C3.



## **END OF SECTION 2 ROUND 2**

Thank you for taking the time to complete section 2. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

You can find the link for the next section of Round 2 attached to the Delphi survey email.



# ROUND 3(S2) WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

The second section will present yours and the panellists' collective choices and opinions from Round 2 on the desired design characteristics of "off the shelf" stability footwear and the purpose of these as a clinical intervention for children with mobility impairment.

### Section 2



Establishing desired design characteristics of "off the shelf" stability footwear and the purpose of these as a clinical intervention for children with mobility impairment.

\* Footwear taken from stock or supplies and not individually designed.

In this section, you will be presented with the collective preference (Median, relative frequency of response) and opinions of the panellists to the modified and original statements from round 1 and 2 of the survey concerning the desired design characteristics of "off the shelf" stability footwear and the purpose of these as a clinical intervention for children with mobility impairment. You will again be asked to give your preferential option or your level of agreement or non-agreement with them ("Strongly Disagree" to "Strongly Agree").

You can review the previous information you provided (in the document emailed to you), and considering the information provided by the other panellists, you may maintain your option or level of agreement with your chosen statement or change your opinion.

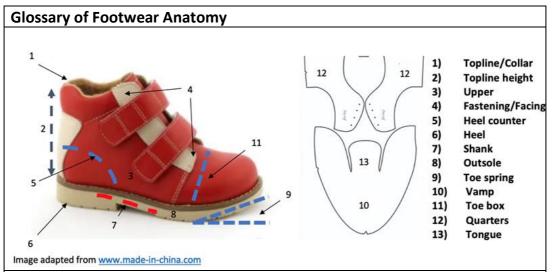
Full consensus for a statement is reached when a statement gains  $\geq$ 75% of panellists with a level of agreement of "agree" or above, or  $\geq$  75% of panellists preferred option.

If you choose a level of agreement below "agree" we would ask that you provide us with the reason for your choice in the optional open-ended section provided.

Rea	uired	Field	*
neu	uneu	rieiu	

1)

Name\*



This section provides a brief glossary to the footwear terms used in this survey.

- 1) Topline: the opening of the shoe at the rearfoot and ankle region, Collar: Sometimes padded, a strip of material attached to the topline/opening of a shoe.
- 2) Topline height, The height between the base of the upper at the heel cup to the topline.
- 3) Upper: The part of a shoe that covers the entire top, sides and back of the foot and attaches to the insole and outsole
- 4) Fastening: The part of the shoe that can adjust and secure the fitting of the vamp and the quarters to the foot.

Facing: The area of the shoe where the fastenings are located.

- 5) Heel counter: stiffened material placed between the shoe's inner lining and the upper located at the heel cup region of the shoe just above the heel.
- 6) Heel: The part of the outsole that raises the rear of the shoe (maybe part/or a separate attachment of the outsole)
- 7) Shank: The Reinforced strip of material located between the insole and the sole of the shoe running from the heel region to the midfoot.
- 8) Outsole: The base of the shoe that is attached to the upper and contacts the ground.
- 9) Toe spring: The elevation angle from the ball region of the shoe to the distal aspect of the toe box.
- 10) Vamp: The area of the upper that covers the front part of the shoe,

- 11) Toe box: Distal region of the shoe upper that provides space and protection for the toes.
- 12) Quarters: The back half of the upper. Attached at the front to the vamp, making up both sides of a shoe, and wrapping around the rear of the shoe.
- 13) Tongue: Flap of material attached to the vamp shoe, extending centrally along the instep from the forefoot to the topline.

# Topline/collar



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the topline/collar of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment. Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

2

rom Round 2 panellists were presented with a series of options from suggestions from the panel and the original study of stability footwear in relation to the height of the topline. The relative frequency of response is detailed below:

Option 1: The topline extension should come in an optional range both above and below the ankle dependent on the patient's ability and needs. (93%)

Option 2: The topline should be extended above the ankle (Original) (7%)

Option 3: The topline should not be extended above the ankle (0%)

A Consensus was reached to Option 1.

Panellist feedback suggested that it was difficult to recommend standard design as different foot types (pes planus, pes cavus) will affect the efficacy of the topline and collar options

3)							
Panellists were a	asked to rai	nk their agr	eement with	the follow	ving purpose	and pot	ential
adverse effects		•					
The median leve	el of agreen	nent and re	lative distrib	ution of re	esponse is de	tailed be	elow.
Purpose: Extend	led tonline	increases r	ronriocentio	n at the Fo	not and Ankle	د	
Median level of				ii at the i	Jot and Ankie	-	
20% "Neutral", 3	_	-		e", 7% "St	trongly Agree	."	
					0, 0		
Purpose: Extend	led topline	assist heel	counter leve	rage to re	sist frontal pl	ane mot	ion at foot
and ankle		C /!! A !	11				
Median level of 13% "Neutral", 3	•	. •	•	o" 120/ "	Strongly Agra	·o"	
15% Neutral,	54/0 SUITE	wiiat Agiet	= ,40/0 Agre	;∈ ,13% 3	on ongry Agre	:C	
Adverse Effect:	An extende	d topline h	eight may red	duce sagit	tal plane pov	ver gene	ration at the
ankle		•	,	J		J	
Median level of	Agreement	5 ("Somev	vhat Agree")				
7% "Somewhat	Disagree", 2	20% "Neuti	ral", 40% "Soı	mewhat A	gree"		
13% "Agree", 20	% "Strongly	y Agree"					
Dan alliat Facalla			+:-! ·	ام امانیما کا	مام م میں مارین	ما ماريم الم	. limaika d
Panellist Feedba peer-reviewed e		•	_		•		limited
The research tea				_			inical
research but we			•	•			
the perceived ro		•		a. 5 6. 6	icai experient	oc ana c	Apertise as to
Based on your c	•	•	se rank your	level of ag	greement wit	h these	proposed
purposes of an e						ı	Г.
		Disagree		Neutral	Somewhat	Agree	Strongly
	Disagree	2	Disagree	4	Agree	-	Agree
Purposo: An	1	2	3	4	5	6	7
Purpose: An extended							
topline height							
may increase							
proprioception							
input at the							
rearfoot and							
ankle.							
Purpose: An	$   \sqcup   $						
extended							
topline height							
may assist heel counter							
leverage to							
ieverage tu		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Design							
			<del>–</del>	<del></del>	<del>– –</del>	<u> </u>	<u> </u>
	1	2	3	4	5	6	7
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
ourposes of a fo	oam padde	d collar.*					
Based on your c	clinical expe	erience plea	ase rank your	level of a	greement wi	th these	proposed
to the perceived	d role of th	is design ac	daption.				
research but we	would ask	you to cor	nsider your ye	•			
will affect the e <sup>.</sup> The research te	•	•	•		ntific or stru	rtured d	inical
was difficult to	recommen	d standard	design as dif	ferent foo			•
Panellist Feedba imited peer-rev	_				•		
Danollist Foodba	ack again s	Iddoctod +p	nat partial ac-	roomant s	ould only be	roachad	due to
20% "Strongly A		,		, ,,	0		
Median level of 7% "Disagree",	-		-	ree", 33%	"Agree"		
Purpose Foam p	_			from an	extended top	line hei	ght.
Median level of 13% "Neutral", :	-		-	ee", 20% "	Strongly Agre	ee"	
Design Characte				l with low	sheer materi	al	
					·		
foam padded co The median leve			ne relative di	stribution	of response i	is detaile	ed below.
The panellists w	•		ne following o	lesign cha	racteristic an	d purpo	se of a
'Padded collar"							
)							
the ankle.							
generation at							
power							
may reduce sagittal plane							
topline height							
extended							
Effect: An							
and ankle. Adverse							
the rearfoot							
movement of							
olane							
resist frontal							

should be covered with low shear material.							
Purpose:							
Foam Padding	5						
may reduce							
compression							
to lower limb							
anatomy from	ì						
an extended							
topline							
height.							
5)							
The panellists to the ankle re			the following	g purpose t	to the contou	iring of t	he topline
The median le	vel of agre	ement and	relative distr	ibution of	response is	detailed	below.
Purpose: cont	ouring of to	opline redu	ces compres	sion and sl	heer to ankle	region.	
Median level	of Agreeme	ent 6 ("Agre	ee")				
13% "Somewh	nat Disagre	e", 7% "Ne	utral", 20% "S	Somewhat	Agree", 47%	"Agree'	', 13%
"Strongly Agre	ee"						
Panellist Feed	back again	suggested	that partial a	greement	could only b	e reache	d due to
limited peer-r	_		•	-	•		
acknowledge				•	· ·	•	
tolerance fit a	_					•	
The research t	team appre	ciates that	there is a pa	ucity of sc	ientific or str	uctured	clinical
research but v			•	•			
to the perceiv				•	·		·
Based on your purposes of a			ease rank yo	ur level of	agreement v	vith thes	e proposed
Pa. Poses or a	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree	Disagree	Disagree	Neatrai	Agree	Agree	Agree
	1	2	3	4	5	6	7.61.00
Purpose:			Ť		$\overline{\Box}$		<u>,                                     </u>
Contouring					Ш		
of topline							
may reduce							
shear and							
compression							
stress to the							
ankle							
region.							
-0.5	<u> </u>	<u> </u>	<u> </u>	1			<u> </u>

6)

The panellists were presented with the following options in relation to the contouring of the collar to the Achilles tendon in Round 2

The relative distribution of response is detailed below:

Option 1: Collar contoured to Achilles tendon (Original) (80%)

Option 2: Collar contoured to the Achilles tendon is not a desired design characteristic (20%)

A Consensus was reached to Option 1.\*

7

The following purpose was presented to the panellists in Round 2 in relation to contouring the collar to the Achilles tendon.

The median level of agreement and relative distribution of response is detailed below.

Purpose: Contouring the collar to the Achilles tendon reduces shear and compression to the tendon.

Median level of Agreement 6 (Agree)

13% "Neutral", 27% "Somewhat Agree", 53% "Agree", 7% "Strongly Agree"

Panellist Feedback again suggested that partial agreement could only be reached due to limited peer-reviewed evidence to support the purpose. However, some panellists did acknowledge contouring to anatomical structures above or below the ankle improves tolerance fit and comfort.

The research team appreciates that there is a paucity of scientific or structured clinical research but we would ask you to consider your years of clinical experience and expertise as to the perceived role of this design adaption.

Based on your clinical experience please rank your level of agreement with these proposed purposes of a topline contoured to the Achilles tendon.\*

	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose:							
Contouring							
the collar to							
the Achilles							
tendon may							
reduce shear							
and							
compression							

to the tendon.							
3)							
The panellist back of the c	•		the following	g options ir	n relation to t	he pull to	ab at the
Option 1: Pul Option 2: Pul		-			haracteristic	47%	
Panellist feed to the child in The pull tab i	n donning t	he shoe.				offering	assistanc
Please consid	•	•	J	1711 0 11110	the boot.		
			ollar (Origina	1)			
				•	sign characte	ristic	
	r un tab t	.O back of co		desired de	sign characte	11300.	
The following to the back o	of the collar.	•					
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly	of the collar. level of agre ollar pull tal of Agreeme e", 33% "Ne Agree"	eement and b aids the cl ent 5 ("Som utral", 26%	relative distr nild in donnir newhat Agree "Somewhat A	ribution of ng the shoo ") Agree", 27	response is o	letailed b	pelow.
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly	of the collar. level of agre ollar pull tal of Agreeme e", 33% "Ne Agree"	eement and b aids the cl ent 5 ("Som utral", 26% slightly mo	relative distr nild in donnir newhat Agree "Somewhat A	ribution of ng the shoo ") Agree", 27	response is o	letailed b	oelow.
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statemen	of the collar. level of agre ollar pull tal of Agreeme e", 33% "Ne Agree"	eement and b aids the cl ent 5 ("Som utral", 26% slightly mo	relative distr nild in donnir newhat Agree "Somewhat A	ribution of ng the shoo ") Agree", 27	response is o	letailed b	oelow.
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statemen	of the collar. evel of agree ollar pull tal of Agreem e", 33% "Ne Agree"  nt has been t with this.*  Strongly Disagree	eement and b aids the cl ent 5 ("Som utral", 26% slightly mo	relative distribution in donning ewhat Agree "Somewhat Addition based Somewhat Disagree	ribution of ng the shoot ") Agree", 27 on panellis	response is ce  "Agree"  st feedback p  Somewhat Agree	letailed b lease ran Agree	oelow. ok your lev
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statement of agreement	of the collar. level of agree ollar pull tal of Agreem e", 33% "Ne Agree"  nt has been t with this.* Strongly	eement and b aids the cl ent 5 ("Som utral", 26% slightly mo	relative distribution of the community o	ribution of ng the shoon ") Agree", 27 on panellis	response is one  "Agree"  st feedback p  Somewhat	letailed b	elow. ok your lev
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statement of agreemen  Purpose: A	of the collar. evel of agree ollar pull tal of Agreem e", 33% "Ne Agree"  nt has been t with this.*  Strongly Disagree	eement and b aids the cl ent 5 ("Som utral", 26% slightly mo	relative distribution in donning ewhat Agree "Somewhat Addition based Somewhat Disagree	ribution of ng the shoot ") Agree", 27 on panellis	response is ce  "Agree"  st feedback p  Somewhat Agree	letailed b lease ran Agree	oelow. ok your lev Strongly Agree
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statemen of agreemen  Purpose: A collar pull	of the collar. evel of agree ollar pull tal of Agreem e", 33% "Ne Agree"  nt has been t with this.*  Strongly Disagree	eement and b aids the cl ent 5 ("Som utral", 26% slightly mo	relative distribution in donning ewhat Agree "Somewhat Addition based Somewhat Disagree	ribution of ng the shoot ") Agree", 27 on panellis	response is ce  "Agree"  st feedback p  Somewhat Agree	letailed b lease ran Agree	oelow. ok your lev Strongly Agree
to the back of The median I Purpose: A collar pull tab may aid	of the collar. evel of agree ollar pull tal of Agreem e", 33% "Ne Agree"  nt has been t with this.*  Strongly Disagree	eement and b aids the cl ent 5 ("Som utral", 26% slightly mo	relative distribution in donning ewhat Agree "Somewhat Addition based Somewhat Disagree	ribution of ng the shoot ") Agree", 27 on panellis	response is ce  "Agree"  st feedback p  Somewhat Agree	letailed b lease ran Agree	oelow. ok your lev Strongly Agree
to the back of The median I Purpose: A co Median level 7% "Disagree 7% "Strongly The statemen of agreemen  Purpose: A collar pull	of the collar. evel of agree ollar pull tal of Agreem e", 33% "Ne Agree"  nt has been t with this.*  Strongly Disagree	eement and b aids the cl ent 5 ("Som utral", 26% slightly mo	relative distribution in donning ewhat Agree "Somewhat Addition based Somewhat Disagree	ribution of ng the shoot ") Agree", 27 on panellis	response is ce  "Agree"  st feedback p  Somewhat Agree	letailed b lease ran Agree	oelow. ok your lev Strongly Agree
to the back of The median I Purpose: A complete A collar pull tab may aid the child or The median I Purpose: A collar pull tab may aid the child or	of the collar. evel of agree ollar pull tal of Agreem e", 33% "Ne Agree"  nt has been t with this.*  Strongly Disagree	eement and b aids the cl ent 5 ("Som utral", 26% slightly mo	relative distribution in donning ewhat Agree "Somewhat Addition based Somewhat Disagree	ribution of ng the shoot ") Agree", 27 on panellis	response is ce  "Agree"  st feedback p  Somewhat Agree	letailed b lease ran Agree	oelow. ok your lev Strongly Agree
to the back of The median I Purpose: A commedian level 7% "Disagree 7% "Strongly The statement of agreement Purpose: A collar pull tab may aid the child or those offering assistance	of the collar. evel of agree ollar pull tal of Agreem e", 33% "Ne Agree"  nt has been t with this.*  Strongly Disagree	eement and b aids the cl ent 5 ("Som utral", 26% slightly mo	relative distribution in donning ewhat Agree "Somewhat Addition based Somewhat Disagree	ribution of ng the shoot ") Agree", 27 on panellis	response is ce  "Agree"  st feedback p  Somewhat Agree	letailed b lease ran Agree	oelow. ok your lev Strongly Agree
to the back of The median I Purpose: A comedian level 7% "Disagree 7% "Strongly The statement of agreement Purpose: A collar pull tab may aid the child or those offering assistance in donning	of the collar. evel of agree ollar pull tal of Agreem e", 33% "Ne Agree"  nt has been t with this.*  Strongly Disagree	eement and b aids the cl ent 5 ("Som utral", 26% slightly mo	relative distribution in donning ewhat Agree "Somewhat Addition based Somewhat Disagree	ribution of ng the shoot ") Agree", 27 on panellis	response is ce  "Agree"  st feedback p  Somewhat Agree	letailed b lease ran Agree	oelow. ok your lev Strongly Agree
to the back of The median I Purpose: A commedian level 7% "Disagree 7% "Strongly The statement of agreement Purpose: A collar pull tab may aid the child or those offering assistance	of the collar. evel of agree ollar pull tal of Agreem e", 33% "Ne Agree"  nt has been t with this.*  Strongly Disagree	eement and b aids the cl ent 5 ("Som utral", 26% slightly mo	relative distribution in donning ewhat Agree "Somewhat Addition based Somewhat Disagree	ribution of ng the shoot ") Agree", 27 on panellis	response is ce  "Agree"  st feedback p  Somewhat Agree	letailed b lease ran Agree	oelow. ok your lev Strongly Agree

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to the topline/collar please use this optional area to provide us with your reasoning.

# Upper



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the upper of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment.

Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

11)

The panellists were presented with the following options in relation to the ideal material for the upper in Round 2

The relative distribution of response is detailed below:

Option 1: Optional range of upper material to include; leather, breathable material and wipeable material. 100%

Option 2: Upper should be constructed of leather (Original) 0%

A Consensus was reached for Option 1

12)

The following purpose was presented to the panellists in Round 2 in relation to leather as an upper material.

		nent 6 ("Agr newhat Agr	ee") ee", 53% "Ag	ree", 20%	"Strongly Agr	ee"	
Median leve	el of Agreen hat Disagre	nent 6 ("Agr	al stiffness of ree") eutral", 20% "				
Panellist fee	edback sugg naterial nee	ds to accou	eather mate.				_
			modified bas	ed on pane	ellist feedbac	k please	rank your
level of agre	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree	2	Disagree	4	Agree		Agree
Purpose:	1	2	3	4	5	6	7
Leather may adapt to foot structures over time dependent on the tensile strength of the leather.							
Purpose: Leather may enhance material stiffness of the footwear dependent on the tensile strength of the leather.							

The panellists were presented with the following options in relation to the desired design characteristic of the tongue to topline relationship for stability footwear In Round 2. The relative distribution of response is detailed below:

Option 1: Tongue length optional dependent on patient's preference and manual dexterity 67%
Option 2:Tongue extended above topline (Original) 33%
Option 3:Tongue should be in line with topline (Original) 0%

No specific panellist feedback was given to inform any further modification of these options.

Please consider the following two options in reference to the tongue to topline relationship.\*

Option 1:Tongue length optional dependent on patient's preference and manual dexterity

Option 2: Tongue extended above topline (Original)

#### 14

The following purposes were presented to the panellists in Round 2 in relation to the tongue to topline relationship.

The median level of agreement and the relative distribution of response is detailed below.

Purpose: Tongue in line with topline is to minimise irritation to the anterior aspect of the ankle.

Median level of Agreement 5 ("Somewhat Agree")

13% "Somewhat Disagree", 13% "Neutral", 40% "Somewhat Agree",

27% "Agree", 7% "Strongly Agree"

Purpose: Tongue extended above topline allows for comfort with lacing Median level of Agreement 6 ("Agree")

13% "Neutral", 27% "Somewhat Agree", 40% "Agree", 20% "Strongly Agree"

Purpose: Tongue extended above topline allows the wearer to minimise slippage of the tongue under the fastenings during wear

Median level of Agreement 6 ("Agree")

13% "Somewhat Disagree", 13% "Neutral", 13% "Somewhat Agree",

40% "Agree", 21% "Strongly Agree"

No specific panellist feedback was given to inform any further modification of these statements, However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please consider the following statements from Round 2 in relation to the purpose of the tongue to topline relationship and rank your agreement with them..\*

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Purpose:							
Tongue in							
line with							
topline is to							
minimise							
irritation to							
the anterior							
aspect of							
the ankle							
Purpose:							
Tongue							
extended							
above							
topline							
allows for							
comfort							
with lacing							
Purpose: Tongue							
extended							
above							
topline							
allows the							
wearer to							
minimise							
slippage of							
the tongue							
under the							
fastenings							
during							
wear							
5)							
•	s were pres	ented with	following de	sign consi	derations for	the uppe	er of off
he shelf stal	oility footw	ear in Roun	d 2 based on	panellist	suggestions ir	n Round	1.
The median l	evel of agre	eement and	l relative dist	ribution o	f response is	detailed	below.
	sandals to I	oe offered a	as an option f	or stabilit	y tootwear ra	inges for	warm
weather.	-f ^	+ C (!! A	"\				
Median level	_	_		aroo" 27	/ "Ctrongly A	aroc"	
13% Neutra	1,33%, 30	mewnat A	gree", 27% "A	igree , 27	% Strongly A	gree	
Ergonomic co	onsideratio	n of interna	ıl seams to re	duce skin	irritation		
Median level							

67% "Agree", 3							
A Consensus w	as reached	for this de	sign option				
Slit or loop in t	he tongue f	for fastenin	g to minimise	e tongue s	slippage		
Median level o	of Agreemer	nt 6 ("Agree	e")				
13% "Somewh	_	_		ngly Agree	2"		
A Consensus w	as reached	for this de	sign option				
No specific par	nellist feedb	ack was gi	ven to inform	any furth	ner modificati	on of th	e design
option of high						on of th	e panel's
response to eit	ther change	or mainta	in your previo	ous choice	2.		
Please conside the upper.*	r the follow	ing statem	ent from Rou	ınd 2 in re	lation to the	design o	ption for
«բրեւ	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree	_	Agree		Agree
High topped		2	3	4	5	6	7
sandals to be							
offered as an							
option for							
stability							
footwear ranges for							
warm							
weather							
s)			ewhat agree"	or lower	for any of the	statem	ents in
6) f vour level of	agreement	was "some					
6) f your level of relation to the	-		_	to provid	de us with you	ur reasor	
f your level of	-		_	to provid	le us with you	ır reasor	
f your level of	-		_	to provid	le us with you	ır reasor	<u> </u>
f your level of	-		_	to provid	le us with you	ır reasor	J
f your level of	-		_	to provid	le us with you	ır reasor	J
f your level of	-		_	a to provid	le us with you	ur reasor	
f your level of	-		_	a to provid	le us with you	ur reasor	
f your level of	-		_	a to provid	le us with you	ur reasor	
f your level of	-		_	a to provid	le us with you	ur reasor	
f your level of	-		_	a to provid	de us with you	ur reasor	
f your level of	-		_	a to provid	le us with you	ur reasor	
f your level of	-		_	a to provid	de us with you	ur reasor	
f your level of	-		_	a to provid	le us with you	ur reasor	
f your level of	-		_	a to provid	de us with you	ur reasor	
f your level of	-		_	a to provid	le us with you	ur reasor	

# **Fastening and Facing**



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the Fastenings and Facings of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment. Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

#### 17)

The panellists were presented with the following options in relation to the desired design characteristic of the type of fastening in Round 2 The relative distribution of response is detailed below:

Option 1: Optional dependent on patient's ability and desired goal (e.g. Velcro for limited hand dexterity, lace for greater stability) 93%

Option 2: Velcro (Original) 7% Option 3: Lace (Original) 0%

Option 4:No preference (Original) 0%

A consensus was reached for Option 1.

Panellist feedback suggested that having combination fastenings on offer may also assist donning with adjunct assistive aids such as AFO's

18)

The following purposes were presented to the panellists in Round 2 for the type of fastenings.

Purpose of Velcro fastenings: Assists independence with limited hand dexterity in donning and doffing.

Median level of Agreement 6 ("Agree")

7% "Somewhat Agree", 46% "Agree", 47% "Strongly Agree"

A Consensus was reached for this purpose

Purpose of lace fastenings: Enhances stability through potential firmer grip to contours of the foot.

Median level of Agreement 6 (Agree)

7% "Somewhat Disagree", 7% "Neutral", 13% "Somewhat Agree", 47% "Agree", 26% "Strongly Agree"

No specific panellist feedback was given to inform any further modification of the purpose of lace fastenings. However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please consider the following statement from Round 2 in relation to the purpose of a lace fastening.\*

	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose of							
lace							
fastenings:							
Enhances							
stability							
through							
potential							
firmer grip							
to the							
contours of							
the foot							

#### 19

The panellists were presented with the following options in relation to the desired design characteristic of the Position of the facings in Round 2

The relative distribution of response is detailed below:

Option 1: Optional dependent on patient's foot and ankle mobility or therapeutic goal (i.e. facings extended to toe box for ease of foot and ankle access, extended to midfoot for greater upper stability) 93%

Option 2: Facings extended to just behind the toe box (original)

7%

Option 3: Facings extended to midfoot (original) 0%

Option 4: No Preference (original) 0%

A consensus was reached for Option 1.

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The following purposes were presented to the panellists in Round 2 in relation to the position of the facings.

The median level of agreement and the relative distribution of response is detailed below.

Purpose: Facings extended to just behind the toe box allows greater access into the footwear for the child with limited foot and ankle range of motion

Median level of Agreement 6 ("Agree")

7% "Neutral", 66% "Agree", 27% "Strongly Agree"

A consensus was reached for this Purpose

Purpose: Facing extended to the midfoot allows the upper to offer greater stability to the foot and ankle.

Median level of Agreement 6 ("Agree")

7% "Somewhat Disagree", 20% "Neutral", 20% "Somewhat Agree", 53% "Agree"

No feedback was given to explain the lack of consensus agreement to the purpose of the facings extended to the midfoot, or to suggest further modification of the statement, although a strong majority of the panel advocated for an optional range of facing extensions to be incorporated in Question 19.

Please consider the following statement from Round 2 in relation to the purpose of facings extended to the midfoot..\*

	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Purpose:							
Facing							
extended							
to the							
midfoot							
allows the							
upper to							
offer							
greater							
stability to							
the foot							
and ankle.							

21)							
The panellists facings of off to Round 1.	the shelf sta	ability foot	wear in Roun	d 2 based	on panellist s	uggestic	ons in
The median le	vel of agree	ement and	the relative of	distributio	n of response	is detai	led below.
The Gap betw Median level of 13% "Somewh A consensus w Side Zip comb Median level of 7% "Somewhat "Strongly Agre Panellist feedl damage zip m lace fastening	of Agreeme nat Agree", vas reached ination fast of Agreeme at Disagree' ee" pack sugges echanism, o	ent 6 ("Agree 40% "Agree I for this state ening ent 6 ("Agree ', 20% "New sted potent dangers of	e") e", 47% "Stro atement e") utral", 13% "S cial difficulty v	ngly Agree Somewhat with side z n or nails,	e" Agree", 47% ip fastening i	"Agree" ncluding v in faste	, 13% g easy to
lace lastering	s are tigrite	neu tignt e	nough to con	itoui to tii	e ioot and ai	IKIC.	
Considering pa		dback pleas	se rank your l	evel of ag	reement to si	de zip la	ce
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Side zip lace							
combination							
fastening							
22)							
If your level of relation to the	_		_				

f your level of agreement was "somewhat agree" or lower for any of the statements in
relation to the fastening and facings please use this optional area to provide us with your
reasoning.

# Heel counter/stiffener



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the Heel counter/stiffener of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment. Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

#### 23

The panellists were presented with the following options in relation to the desired design characteristic of the heel counter/stiffener extension in Round 2.

The relative distribution of response is detailed below:

Option1: Optional range of heel counter extensions dependent on therapeutic need and the patient's foot and ankle anatomy (80%)

Option 2: Heel counter/stiffener extended to the midfoot only (13%)

Option 3: Heel counter stiffener, extended to the midfoot and towards topline (7%)

Option 4: Heel counter/stiffener extended towards the topline only (0%)

A Consensus was reached for Option 1:

Panellist Feedback suggested a concern that requesting too many optional features may present manufactures with difficulty in providing a stock boot. Additionally, heel counter changes may affect the fixation of the upper to the sole unit.

# 24)

The following purposes were presented to the panellists in Round 2 in relation to the heel counter/stiffener.

The median level of agreement and the relative distribution of response is detailed below.

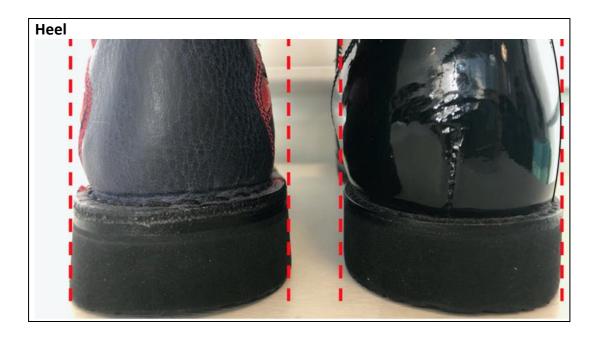
Purpose: Heel counter/stiffener extensions can enhance proprioception at the foot and ankle

Median level of Agreement 5 ("Somewhat Agree")

20% "Neutral", 46% "Somewhat Agree", 27% "Agree", 7% "Strongly Agree" Purpose: Heel counter/stiffener extension offers material stiffness to restrict frontal plane movements at the foot, ankle and midfoot dependent on the extension profile. Median level of Agreement 6 ("Agree") 7% "Neutral", 40% "Somewhat Agree", 40% "Agree", 13% "Strongly Agree" Panellist feedback suggested partial agreement due to the limited evidence base to support the purpose of the heel counter. Additionally, it was felt control at the heel counter area of the shoe should also consider the vertical ground reaction force component through increased contact area between the inner sole of the shoe and the plantar surface of the child's heel. The research team appreciates that there is a paucity of scientific or structured clinical research but we would ask you to consider your years of clinical experience and expertise as to the perceived role of this design adaption. Based on your clinical experience please rank your level of agreement with these proposed purposes and design considerations of the Heel counter/stiffener:\* Strongly Disagre Somewha Neutra Somewha Agre Strongl Disagre t Disagree t Agree y Agree 1 2 3 6 Purpose: Heel counter/stiffene r extensions may enhance proprioception at the foot and ankle. Purpose: Heel counter/stiffene r extension offers material stiffness that may restrict frontal plane movements at the foot, ankle and midfoot dependent on the extension profile. Control of frontal plane movements of the foot and ankle at the

heel counter				
area should also				
consider vertical				
ground reaction				
force contact				
area, through				
close contact				
between the				
plantar surface				
of the child's				
heel and the				
inner sole of the				
shoe.				

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to the heel counter/stiffener please use this optional area to provide us with your reasoning.



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the Heel of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment.

Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

#### 26

The panellists were presented with the following options in relation to the desired design characteristic of the "Heel width in relation to the heel counter" in Round 2.

The relative distribution of response is detailed below:

Option 1: Heel width extensions should be provided as an optional sole adaption with the heel width extension on standard stability footwear being no wider than the welted seam. (53%)

Option 2: Heel width extended wider than heel counter width (Original) (40%)

Option 3: No preference (Original) (7%)

Option 4: Heel width in line with heel counter width (Original) 0%

No specific panellist feedback was given to inform any further modification of the options of heel width in relation to the heel counter. However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please consider the following 3 options from Round 2 of the heel width in relation to the heel counter.\*

Heel width in line with heel counter width (Original)
Heel width extended wider than heel counter width (Original)
No preference (Original)
Heel width extensions should be provided as an optional sole adaption with the heel width extension on standard stability footwear being no wider than the welted seam.

#### 27)

The following purpose was presented to the panellists in Round 2 in relation to an extended heel width

The median level of agreement and relative distribution of response is detailed below. Purpose: Heel width extensions assist medial-lateral stability of the foot and ankle through an increased base of support.

Median level of Agreement 6 ("Agree")

7% "Neutral", 7% "Somewhat Agree:, 53% "Agree", 33% "Strongly Agree" A consensus was reached for this statement.

Panellist feedback suggested for a wide sole to offer increased stability maximum contact with the insole of the shoe and the plantar surface of the foot is required to maximise vertical GRF contact area:\*

The panellists were presented with following design considerations for the heel of off the shelf stability footwear in Round 2 based on panellist suggestions in Round 1.

The median level of agreement and relative distribution of response is detailed below.

Heel Pitch should not increase ankle instability
Median level of Agreement 6 ("Agree")
13% "Somewhat Agree", 67% "Agree", 20% "Strongly Agree"
A consensus was reached for this statement

Heel pitch should allow for adjunct orthotic therapy Median level of Agreement 6 ("Agree") 7% "Somewhat Agree", 73% "Agree", 20% "Strongly Agree" A consensus was reached for this statement

Panellist feedback suggested that ankle Instability would be inevitable due to plantarflexion in propulsion.

29)

You may use this optional area to provide us with any further information to your responses on the heel

### Inlay



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the Inlay of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment.

Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

30

The panellists were presented with the following options in relation to the desired design characteristic of the Inlay in Round 2.

The relative distribution of response is detailed below:

Option 1: The inlay should be contoured to simulate the medial longitudinal arch and to cup the heel 54% Option 2: The inlay should be contoured to cup the heel but not the medial longitudinal arch 33% Option 3: The inlay should be contoured to simulate the medial longitudinal arch (Original) 13% Panellist feedback suggested, That "off the shelf" stability footwear not just for early walkers therefore contouring to MLA may be required for larger sizes. Mild arch contour similar to that offered in standard retail footwear would be appropriate. The Arch may be easily reduced by clinician to control blistering in low arch feet. Ambiguous statement unsure if heel cupping would improve the fit of inlay to shoe or inlay and shoe to patient's foot Slight modification to the options have been addressed panellist based on panellist feedback.\* The inlay should cup the child's heel to improve rearfoot fit and be appropriately contoured to the medial longitudinal arch The inlay should cup the child's heel to improve rearfoot fit but not be

31)

The following purpose and design characteristics were presented to the panellists in Round 2 in relation to inlay

contoured to the medial longitudinal arch

The median level of agreement and the relative distribution of response is detailed below.

The inlay should be appropriately contoured to the medial longitudinal

Removable Inlay should be thick enough to simulate a potential prescriptive foot orthoses Median level of Agreement 6 ("Agree")

67% "Agree", 33% "Strongly Agree"

arch

A consensus was reached for this statement

Purpose: An inlay contoured to cup the heel improves rearfoot fitting Median level of Agreement 5 ("Somewhat Agree")

7% "Somewhat Disagree", 13% "Neutral", 34% "Somewhat Agree", 33% "Agree", 13% "Strongly Agree"

Panellist feedback suggested ambiguity if cupping of the heel would improve the fit of inlay to shoe or the inlay and shoe to the patient's foot

The statement has been slightly modified based on panellist feedback please rank your level of agreement with this.\*

inlay itoured cup the el proves rfoot ing of child's t to the		Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
inlay distoured cup the cell disport of the statements in disport of the statement of th			2		4		6	
our level of agreement was "somewhat agree" or lower for any of the statements in	n inlay							
our level of agreement was "somewhat agree" or lower for any of the statements in	ontoured		_	_				
our level of agreement was "somewhat agree" or lower for any of the statements in	o cup the							
our level of agreement was "somewhat agree" or lower for any of the statements in	eel							
our level of agreement was "somewhat agree" or lower for any of the statements in	nproves							
child's t to the se  our level of agreement was "somewhat agree" or lower for any of the statements in								
our level of agreement was "somewhat agree" or lower for any of the statements in								
our level of agreement was "somewhat agree" or lower for any of the statements in								
our level of agreement was "somewhat agree" or lower for any of the statements in	noe							
	)							
		of agreeme	ent was "so	mewhat agre	e" or lowe	er for any of t	he state	ments in
		ine imay pie	ase ase triis	optional arc	ca to provi	ac as with ye	our reaso	



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the Sole unit of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment.

Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

33)

The panellists were presented with the following options in relation to the desired design characteristic of the tread depth of the sole unit in Round 2.

The relative distribution of response is detailed below:

Option 1: The tread depth should come in an optional range dependent on the ability of the child and the environment where the footwear is to be used. (87%)

Option 2: A deepened tread (Original) 13%

A consensus was reached for Option 1

34

The panellists were presented with the following options in relation to the desired design characteristic of the wear characteristics of the sole unit in Round 2.

The relative distribution of response is detailed below:

Option 1: Optional wear resilience of the sole material dependent on the age and ability of the patient. (87%)

Option 2: Hard-wearing material (Original) (13%)

A consensus was reached for Option 1

35)

The following purpose was presented to the panellists in Round 2 in relation to hard wearing sole material.

Purpose: Hard-wearing sole material will prolong the stability effect of the footwear by resisting wear patterns associated with gait pathologies.

Median level of Agreement 6 ("Agree")

7% "Neutral", 7% "Somewhat Agree", 79% "Agree", 7% "Strongly Agree"

A consensus was reached for this Statment.

#### 36)

"The panellists were presented with the following options in relation to the desired design characteristic of the degree of flexibility for the sole unit. in Round 2. The relative distribution of response is detailed below:

Option 1: The sole unit should come in a range of sole stiffness dependent on the patient's ability or the therapeutic goals, with flexibility of the sole focused at the MPJ area

(100%)

Option2 (Other)

(0%)

A consensus was reached for option 1.

#### 37

The panellists were presented with following design considerations for the sole unit of off the shelf stability footwear in Round 2 based on panellist suggestions in Round 1. The median level of agreement and relative distribution of response is detailed below.

Rearfoot to Forefoot width ratio's kept to lowest practical ratio to assist medial lateral stability

Median level of Agreement 5 ("Somewhat Agree")

27% "Neutral", 27% "Somewhat Agree', 40% "Agree", 6% "Strongly Agree"

The sole unit should be stiffer at the midfoot and rearfoot to assist stability in these regions.

Median level of Agreement 5 (Somewhat Agree)

7% "Somewhat Disagree", 20% "Neutral", 26% "Somewhat Agree", 20% "Agree", 27% "Strongly Agree"

Panellist feedback suggested the width ratio of forefoot and rearfoot was ambiguous and required further explanation.

The statement in relation to the sole unit rearfoot to forefoot ratio has been slightly modified based on panellist feedback No specific feedback was offered to offer modification of the statement concerning the stiffness at midfoot and rearfoot sole unit,

	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
he ground ontact rea ratio							
etween he earfoot nd							
orefoot of he sole unit hould be							
ept to the owest ractical							
atio to ssist nedial- ateral							
tability							
ne sole nit should e stiffer at e midfoot							
nd earfoot to ssist							
ability in							
nese egions.							

# Toe spring forefoot/heel rocker



In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the toe spring forefoot/heel rocker of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment.

Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

39)

The panellists were presented with the following options in relation to the desired design characteristic of the forefoot rocker in Round 2.

The relative distribution of response is detailed below:

Option 1: Stability footwear should come in a range of forefoot rockers dependent on the patient's condition and the stiffness of the sole. (73%)

Option 2: Stability footwear should have a reasonable forefoot rocker. (Original) (27%)

Panellist feedback suggested that although the variation of rocker's and sole stiffeners offered for conditions such as Charcot Marie Tooth and toe walking were important these should be offered as a sole adaption prescription rather than a standard design on stability footwear.

A modified option as been offered based on panellist feedback.\*

Option 1: Stability footwear should come in a range of forefoot rockers
dependent on the patient's condition and the stiffness of the sole.
Option 2: Stability footwear should have a reasonable forefoot rocker as a standard design. With forefoot rocker adaption prescriptions available to meet patient's needs.

The following purposes were presented to the panellists in Round 2 in relation to the forefoot rocker

The median level of agreement and relative distribution of response is detailed below.

Purpose of forefoot rocker: Should facilitate forward progression in terminal stance without impacting on stability.

Median level of Agreement 6 ("Agree")

7% "Somewhat Agree", 66% "Agree", 27% "Strongly Agree"

A consensus was reached for this statement

Design characteristic of forefoot rocker: Should allow adequate ground clearance in swing Median level of Agreement 6 ("Agree")

7% "Somewhat Agree", 66% "Agree', 27% "Strongly Agree"

A consensus was reached for this statement

41

The panellists were presented with the following options in relation to the desired design characteristic of the heel rocker in Round 2.

The relative distribution of response is detailed below:

Option 1: Heel rockers should be offered as a sole adaption prescription dependent on the child's condition rather than a standard design of stability footwear. (100%) Option 2: Stability footwear should have a heel rocker. (Original) (0%)

A Consensus was reached for Option 1

42)

You may use this optional area to provide us with any further information to your responses on toe spring forefoot/heel rocker.

# Weight of the footwear

In the questions below you will be presented with the collective choices and opinions from Round 2 in relation to the weight of the footwear of standard "Off the Shelf" stability footwear used as a clinical intervention for children with mobility impairment. Please consider the options offered or rank your level of agreement with the suggested characteristic or purpose of these design characteristics some of which may have been slightly modified based on panellist feedback in Round 2:

43)

The following purpose and design characteristics were presented to the panellists in Round 2 in relation to the weight of the footwear

Stability Footwear should be the lowest reasonable mass to reduce physiological cost during mobility

Median level of Agreement 6 ("Agree")

33% 'Somewhat Agree", 40% "Agree", 27% 'Strongly Agree'

Mass of shoe should be dependent on the mass and age of the child Median level of Agreement 6 ('Agree")

13% "Neutral", 20% "Somewhat Agree", 54% "Agree", 13% "Strongly Agree"

The mass of the shoe should be dependent on the child's stability needs.

Median level of Agreement 6 ("Agree")

7% "Neutral", 13% "Somewhat Agree", 67% "Agree", 13% "Strongly Agree" A consensus was reached for this statement

Purpose of Increased mass assists stability in stance, Median level of Agreement 5 ("Somewhat Agree") 40% "Neutral", 20% "Somewhat Agree", 40% "Agree"

Purpose of Increased Mass Assists pendular motion in swing Median level of Agreement 5 ("Somewhat Agree") 7% "Somewhat Disagree", 40% "Neutral', 26% "Somewhat Agree" 20% "Agree", 7% "Strongly Agree"

Panellist feedback suggested that pendular motion may be assisted but increased mass may also cause an adverse effect with instability in swing and preloading increasing difficulty in navigating obstacles and stair climbing.

The increased mass of the footwear may unintentionally provide a benefit in strengthening limbs but also may induce early fatigue.

A new statement was generated from panellist feedback concerning a potential adverse effect of the weight of the shoe. No specific panellist feedback was given to inform further modification of the other statements, However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please rank your level of agreement with these statements..\*

1 10000 101111 70	<del></del>	<u> </u>		***************************************	-		
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Stability							
footwear							
should be the							
lowest							
reasonable							
mass to							
reduce							
physiological							

cost during mobility.				
The mass of the shoe should be				
dependent on the mass and age of				
the child.				
Purpose of increased mass: Assist				
stability in stance				
Purpose of increased				
mass: Assists pendular motion in				
swing Adverse				
Effect: Increased				
mass of the shoe may lead to				
difficulty in swing phase				
with ground clearance,				
navigating obstacles and stair				
climbing.				
14) If your level of a relation to the your reasoning.	weight of th			

# **Further Design Considerations**

The following section provides additional design considerations for "Off the Shelf" Stability footwear suggested by the panellists.

#### 45)

The Following design consideration was presented to the panellist in Round 2. The median level of agreement and relative distribution of response is detailed below.

Children's "Off the Shelf" stability footwear should come in a range of last dimensions to accommodate proportional differences in foot types.

Median level of Agreement 6 ("Agree")

7% "Neutral", 46% "Agree", 47% "Strongly Agree",

A consensus was reached for this statement.

#### 46

The Following design consideration was presented to the panellist in Round 2. The median level of agreement and relative distribution of response is detailed below.

Children's "Off the Shelf" stability footwear should come in a range of colours and styles to appeal to children's preferences.

Median level of Agreement 7 ("Strongly Agree") 40% "Agree", 60% "Strongly Agree"

A consensus was reached for this statement.



# **END OF SECTION 2 ROUND 3**

Thank you for taking the time to complete section 2. Your time and participation in this survey are greatly appreciated.

Please remember to submit your answers before closing this form.

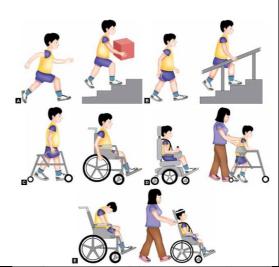
You can find the link for the next section of Round 2 attached to the Delphi survey email.



# WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM? (SECTION 3 ROUND 1)

The third section will consist of your ideas and opinions on clinical protocols and outcomes for the provision of "off the shelf" modular stability clinical footwear interventions for children with mobility impairment.

# Section 3



Opinion on prescription and clinical outcomes of "off the shelf" and modular stability footwear clinical interventions for children with mobility impairment.

This section consists of a series of closed-ended and structured open-ended questions concerning clinical protocols for the issuing of stability footwear as a sole assistive aid or in combination with other assistive aids (ankle foot orthoses (AFO\*), walking frames) for children with mobility impairment, and the expected clinical outcomes of these footwear.

\*Please remember to qualify any abbreviation for mobility aids.

The conditions presented were suggested from the research sourced in the scoping review. However, you will be given the opportunity to suggest further conditions you treat or that you consider from your manufacturing experience may benefit from stability footwear intervention.

For each condition, a range of topics will be considered, and you will be free to suggest additional aspects you view as necessary, and your reasons for these.

- Do you have experience of treating or from a manufacturing perspective recommending footwear for This condition?
- Do you feel that this condition is appropriate for stability footwear intervention?
- Degree of mobility impairment (qualify if the footwear is to be used as a sole aid or in combination with another assistive aid).
- Age of patient, i.e. at what age do you consider appropriate to use this footwear as a mobility intervention.
- Clinical Outcomes: Changes in gait e.g. reduction/increase in velocity/stride length/ side to side movement.

An example of answers to a series of questions in relation to a specific condition that would benefit from the clinical prescription of "off the shelf" and modular stability footwear is presented below.

Cerebral palsy

1) Do you have experience in treating this condition

Answer: (Yes)

2) Do you feel this condition is appropriate for stability footwear intervention

Answer: (Strongly Agree 7)

3) The degree of mobility impairment would be:

Answer: For sole use of footwear: Gross Motor Function Classification Score level 1, mild hemiplegia or diplegia where the child is capable of independent ambulation For combined use with walking frame Level: Gross Motor Function Classification Score level 3 where independent ambulation is extremely limited,

4) Concerning this condition, the age range would be:

Answer: 1-18 years

5) Concerning this condition, the clinical outcomes of "off the shelf" and modular stability footwear intervention would be:

		gait velocity, stride length. Reduce side to side sway. Improved participation in daily life activities such as play, family outings,
	Required Field*	
Name: *	1)	
	Name: *	

Cerebral Pal	sy						
From the reservable children with on the question	cerebral pal ns below, p	sy. lease consi	der the follov	ving in ref	erence to clir	ical prot	ocols for
issuing "off the	e shelf" and	l modular s	tability footw	ear as a m	nobility aid fo	r childre	n:
Experience Agreement Degree of n The age ran Clinical out	on the suit nobility imp	ability of st pairment	ability footwe	ear as a tre	eatment for t	his cond	ition
2)							
Do you have e	xperience i	n treating t	his condition	? If your a	nswer is no m	nove to t	he next
condition							
(Q 8). *	Yes						
	No						
	1110						
3)							
, Do you agree t	his condition	on is suitab	le for stability	/ footwear	clinical inter	vention	?
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Cerebral							
palsy is							
suitable for							
stability							
footwear intervention?							
inci vention:							
)							
Please use this	area to pro	ovide us bri	efly with the	reasoning	for your agr	eement	or
disagreement	of using sta	bility footv	vear as an int	ervention	for this cond	ition.	
)	1 .1						
) The degree of *Please qualify	•	•					th

6)	n years the age range this footwear intervention should be prescribed
clinically for this	condition: e.g. 1-5 years.
7)	
Clinical outcome	us:

Pes Planus							
From the research		y footwear	has been pro	posed as	a clinical inte	rventior	for
children with p In the question	•	lease consid	der the follow	ving in ref	erence to clin	ical prot	ocals for
issuing "off the	•			-		•	
Experience	treating thi	s condition					
	_			ear as a tre	eatment for t	his cond	ition
Degree of n							
The age ran Clinical out		nts					
Cillical out	Joines						
B) Do you have e	vnerience i	n treating t	his condition	2 If your a	nswer is no ~	10VA +0 +	he nevt
condition	xperience ii	i treating t	ilis condition	: II your a	113WEI 13 110 11	iove to t	ile llext
(Q 14). *							
	Yes						
	No						
11							
9) Do you agree t	his condition	on is suitabl	le for stability	, footwear	clinical inter	vention	)
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	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Pes planus is							
suitable for							
stability footwear							
intervention?							
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LO)							
Please use this	•		•	_			or
disagreement	of using sta	bility footw	vear as an int	ervention	for this cond	ition.	
1)							
The degree of	mobility im	pairment t	hat would be	suitable f	or this condit	ion is:	
†Please qualify	, if stability	footwear is	s to be used a	as a sole ai	id or in comb	ination v	vith
	hic avi						
another assisti	ve alu.						

clinically for this condition: e.g. 1-5 years.  13)  Clinical outcomes:	

Toe Walking	<u> </u>						
From the reserchildren with the In the question issuing "off the Experience Agreement Degree of notes and Clinical outs	oe walking ns below, ple shelf" and treating thi on the suit nobility imp ge of patie	ease consider some modular some scondition ability of stairment	der the follow	ving in ref rear as a m	erence to clin	iical prot r childre	cocols for n:
4) Do you have e condition (Q 20). *	xperience ii Yes	n treating t	his condition	? If your a	nswer is no m	nove to t	he next
5)	1.10						
Do you agree t	his condition	n is suitab	le for stability	/ footwear	clinical inter	vention	?
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
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Toe walking is suitable for stability footwear intervention?			3	4	5	6	7
.6)						1	
Please use this disagreement	•		•	_			or 
.7) The degree of †Please qualify another assisti	if stability	•					vith

clinically for this con-	ars the age range this foot	wear intervention should	be prescribed
clinically for this con-	altion: e.g. 1-5 years.		
.9)			
Clinical outcomes:			

		Dystrophy					
From the resea		-	•	posed as	a clinical inte	rvention	for
children with [		•					
In the question				•		•	
issuing "off the	e shelf" and	modular si	tability footw	ear as a m	nobility aid fo	r childre	n:
Experience	treating thi	s condition					
-		•	ability footwe	ear as a tre	eatment for t	his cond	ition
Degree of m							
The age ran		nts					
Clinical out	comes						
0)							
Do you have e	xperience i	n treating t	his condition	? If your a	nswer is no m	nove to t	he next
condition							
(Q 26). *	1						
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	No						
• >							
1)							
Do you agree t	ı	l					
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree	2	Disagree	4	Agree		Agree
Duchonno	1	2	3	4	5	6	7
Duchenne muscular							
dystrophy is							
suitable for							
stability							
footwear							
intervention?							
2)							
Please use this	area to pro	ovide us bri	efly with the	reasoning	for your agre	eement (	or
disagreement							
3)							
	mahility im	nairmant t	hat would bo	cuitable f	or this condit	ion ic:	

i icase iliaicate ili	years the age range this footwear intervention should be prescribed
clinically for this co	ondition: e.g. 1-5 years.
25)	
Clinical outcomes:	:

Spina Bifida							
From the researchildren with some the question	pina bifida.	•	·				
issuing "off the				_			
Experience Agreement Degree of m The age ran Clinical outo	on the suita nobility imp ge of patien	ability of sta airment		ear as a tre	eatment for t	his cond	ition
<u> </u>							
6) Do you have excondition (Q 31). *	xperience ii	n treating t	his condition	? If your a	nswer is no m	nove to t	he next
	Yes						
7) Do you agree t	Strongly	on is suitabl Disagree	Somewhat	/ footwear Neutral	Somewhat	vention? Agree	Strongly
	Disagree 1	2	Disagree 3	4	Agree 5	6	Agree 7
Spina bifida is suitable for stability footwear intervention?							
8) Please use this	area to nro	ovide us bri	efly with the	reasoning	for your agr	ement (	nr
disagreement				_			
9) The degree of †Please qualify another assisti	if stability	•					vith

Please indicate i	n years the age range this fo	ootwear intervention sho	ould be prescribed
clinically for this	condition: e.g. 1-5 years.		
31)			
Clinical outcome	es:		

Down's Syn	drome						
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children with	Down's synd	drome.					
In the questio				_			
issuing "off th	e shelf" and	l modular s	tability footw	ear as a m	obility aid fo	r childre	n:
Experience	treating thi	s condition					
•	_			ear as a tre	eatment for t	his cond	ition
_	nobility imp		,				
_	nge of patie	nts					
Clinical out	comes						
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Do you have e	xperience i	n treating t	his condition	? If your a	nswer is no m	nove to t	he next
condition	•	J		,			
(Q 38). *							
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	No						
3)							
Do you agree	this condition	on is suitab	e for stability	/ footwear	clinical inter	vention:	?
. ,	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Down's							
syndrome is suitable for							
stability							
Stability							
footwear							
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footwear intervention?			Cl. 1.1 .1			eement (	or
intervention? 4) Please use this	•			_			
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intervention? 4) Please use this	of using sta	bility footw	ear as an int	ervention	for this cond	ition.	

36)	n years the age range this footwear intervention should be prescribed
clinically for this	condition: e.g. 1-5 years.
0=)	
37) Clinical outcome	ç·
emilical datesines	<u>5.</u>

Intoeing							
From the rese	arch stabilit	v footwear	has been pro	posed as	a clinical inte	rvention	n for
children with I		•	•				
In the question				ing in ref	erence to clin	ical prot	ocols for
issuing "off the	e shelf" and	modular st	tability footw	ear as a m	nobility aid fo	r childre	n:
Experience	_					امدماما	ia:
Degree of n			ability rootwe	ear as a tre	eatment for t	nis cona	ition
The age ran							
Clinical out							
8)			hia aawalikiawi	) If			
Do you have e condition	xperience ii	i creating ti	nis condition	r if your a	nswer is no m	iove to t	ne next
(Q 44). *							
	Yes						
	No						
	•						
9)							
Do you agree t							
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree 1	2	Disagree	4	Agree	6	Agree
Intoeing is			3	4	5		7
suitable for							
stability							
footwear							
intervention?							
0)			<u></u>		•		
Please use this				_			or
disagreement	or using sta	DIIILY TOOLW	rear as an inc	ervention	TOT LITTS COTTO	ition.	
1)							
The degree of	mobility im	pairment tl	hat would be	suitable f	or this condit	ion is:	
†Please qualify		footwear is	s to be used a	is a sole ai	id or in comb	ination v	vith
	ive aid.						
another assist							
another assist							

42)	
clinically for th	e in years the age range this footwear intervention should be prescribed nis condition: e.g. 1-5 years.
>	
43) Clinical outcor	mes:
Cirrical outcor	1103.

	ional Further Information
	se use the additional area to provide further conditions where you feel "off the shelf"
	ular stability footwear would act as a mobility aid. se try to detail your answer with the following considerations
•	Condition
•	Severity / Grade of the condition if applicable,
•	The age of the patient
•	Clinical Outcomes



## **END OF SECTION 3 ROUND 1**

Thank you for taking time to complete section 3 of round 1. You have now completed all sections of round 1 of this Delphi survey. Your time and participation is greatly appreciated. Please note that the following rounds will be less time consuming and will be sent in the same format as round 1.

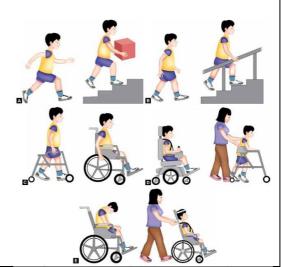
Remember to submit your answers before closing this form.



# ROUND 2(S3) WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

The third section will present the feedback of panellists opinions from Round 1 on clinical protocols and outcomes for the provision of "off the shelf" stability footwear clinical interventions for children with mobility impairment.

## Section 3



Opinion on prescription and clinical outcomes of "off the shelf" stability footwear clinical interventions for children with mobility impairment.

This section consists of a series of closed-ended and ranked questions concerning clinical protocols for the issuing of stability footwear as a sole assistive aid or in combination with other assistive aids (ankle foot orthoses AFO†, walking frames) for children with mobility impairment, and the expected clinical outcomes of these footwear interventions.

† Please remember to qualify any abbreviation for mobility aids.

The original information provided in this section sourced from the scoping review are listed alongside modified statements informed from the responses gained from panellists in round 1.

You will be asked to give your preferred option or your level of agreement with these statements (Strongly Disagree to Strongly Agree).

We will provide you with the opportunity to offer your reasoning for your stance or to suggest any further amendments to the statements (You may also leave these areas blank in this round). All answers will be anonymised and will not be identifiable as your responses.

Required Field\*

<u>1)</u>

Name: \*

Cerebral	Palsy
----------	-------

From the research stability footwear has been proposed as a clinical intervention for children with cerebral palsy.

In the questions below, you will be presented with the collective opinion of panellists from Round 1 in relation to the suitability of stability footwear as a clinical intervention.

13 of the 15 (86%) panellists had clinical experience with this condition and provided the information for this section.

(If you have no clinical experience in treating this condition, please move to the next condition Question 7)

2)

Panellists were asked if cerebral palsy (CP) was a suitable condition for stability footwear intervention in children and their reasoning for this.

The median level of agreement amongst the panellists was "strongly agree" with the majority of responses between "agree" and "strongly agree.

A Consensus was reached with respect to this condition being suitable for stability footwear intervention in Round 1

Panellist feedback suggested the reasons for stability footwear as an assistive aid for CP were: it could be used alongside other assistive devices such as foot orthoses and walking frames to assist in standing and walking. It assists with mediolateral stability and proprioception to reduce falls. Other feedback stated that footwear could be issued to children with CP but should be thoroughly assessed for its suitability with clear, measurable outcomes. One panellist felt ankle foot orthoses (AFO) and foot orthoses (FO) used with regular footwear or other footwear modifications such as "tuned" footwear were more applicable interventions. However, a number of panellists felt that stability footwear would offer greater ankle stability than regular footwear and foot orthoses combinations. Other panellists suggested stability footwear as an interim stability aid in some cases when not using their AFO and could make mobility easier than their AFO for some tasks such as getting up off the floor.

The following statements have been devised form panellist feedback in relation to the suitability of stability footwear for this condition; please rank your agreement.

	· · · · · · · · · · · · · · · · · · ·				, – –		
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Stability							
footwear may							
assist							
mediolateral							
stability and							

proprioception of the foot and ankle in standing and walking in children with CP.							
Stability footwear may be used alongside other assistive aids to assist standing and walking in children with CP.							
Stability footwear should only be issued to children with CP after a critical assessment of the child's mobility needs in respect to other assistive aids or footwear modifications, and with clear intervention outcomes.							
Panellists were a be suitable for so assistive aid.  Panellist feedbar and ankle stabilit footwear may al assist stability in issues. May be u	tability foo ck suggeste ty in walkii so be used walking ai	twear both ed Stability ng at GMFC alongside ond standing	as a sole aid footwear ma S-1 with no so other assistive from GMFCS	or in coml y be used ignificant e devices S 1-3 in am	bination with as a sole aid tone issues. (AFO's walkii bulant child	to assist Stability ng frame ren with	foot s) to tonal

The following degree of mo intervention,	bility impa	irment in cl	nildren with C	P suitable			
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	
	Disagree		Disagree		Agree		Agree
Ct. 1 :1::	1	2	3	4	5	6	7
Stability footwear							
may be							
used as a							
sole							
assistive							
intervention							
to assist							
both foot							
and ankle							
walking							
stability in children							
with GMFCS							
1 and no							
significant							
tonal issues.							
Stability							
footwear							
may be							
used							
alongside							
other assistive							
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GMFCS 1-3							
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other							
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aids to				
assist				
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and transfer				
in non-				
ambulant				
children				
GMFCS 3-4.				

4

Panellists were asked the age range they felt this footwear intervention should be prescribed clinically for in CP

From panellists feedback, a range of ages was stated varying from 1-4 years for initiation and 16 years -adulthood for an endpoint, however from the reasoning; it was decerned even those panellists who indicated an endpoint of 16 years envisioned the potential for ongoing stability footwear intervention into adulthood if required. Some feedback indicated that footwear should only be used in mild cases (GMFCS 1) in the learning to walk stages then should focus on other orthotic aids. In moderate cases (GMFCS 2-3) where surgery was not indicated in teenage years, supportive footwear may be used alongside orthoses. Other panellists felt initiation and endpoints of treatment should be functionally based on the child's abilities and needs rather than specific age ranges such as displaying the potential to stand and endpoint defined as the need for differing assistive aids.

The following options have been suggested by panellist feedback:

1-18 years (with assessed adult transition care)
3-18 years (with assessed adult transition care)
Initiation and end points of treatment indicated by functional ability and
the mobility needs of the child (potential or actual).
N/A I do not feel this condition is suitable for stability footwear
intervention.

5

Panellists were asked what clinical outcomes would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with CP:

From panellist feedback outcomes were grouped into therapeutic goals alongside the World Health Organisation International Classification of Functioning Child and Youth version (WHO ICF-CY). These were goals based on body structures and function and those based on Quality of Life measures (QoL).

Concerning body structure, passive ankle range of motion (ROM) was suggested to monitor any flexural contracture. The majority of outcomes were focused on body function. These included kinematic and spatiotemporal measures. Kinematic outcomes suggested optimising or normalising gait movement patterns using referenced scales such as the

Edinburgh Gait Sominute walk test proficiency measure Oseretsky Test of measure of the chexertion measure QoL outcome measure (ADL) walking (ADL) walking the following out	(6MWT) Til ures were a Motor Pro nild's motol s (BORG) w asures sugg ng to school comes hav	med Up and also suggest ficiency (BC r performa with motor gested inclu al, shops, pl	d Go (TUG), s ted including DT-2), freque nce. Physiolo tasks were al uded pain rat ayparks and	tride leng, motor m ncy of fall gical outc so purpos ing and m interaction	th, and cader ilestones and s was also su omes such as ed. easures of ac n with peers.	nce. Groon Bruinin ggested perceiv	ss motor ks- as a ed of daily		
agreement with t	agreement with these.  Strongly Disagree Somewhat Neutral Somewhat Agree Strongly								
	Disagree	Disagree	Disagree	Neatrai	Agree	Agree	Agree		
	1	2	3	4	5	6	7		
Passive Ankle ROM									
Kinematics: Optimising gait movement patterns (Edinburgh Gait Scale)									
Spatiotemporal: Increased walking velocity, 6MWT, TUG, stride length, cadence									
Motor skill proficiency: Number of falls									
Motor skill proficiency: Gross Motor Skills (BOT-2)									
Physiological: Perceived exertion (BORG)									
QoL: Pain									
QoL: ADL (daily mobility and social interaction)									

footwear intervention	tional area if you wish to on in children with CP.	provide any further info	rmation on stability

Pes Planus							
From the resear	es planus.						
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C. 1.11.	1	2	3	4	5	6	7
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symptomatic mobile pes							

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Panellists we		_					
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another assis	tive aid.						
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From panellist, feedback outcomes were grouped into therapeutic goals alongside the WHO ICF-CY. These were goals based on body structures and function and those based on QoL measures.

Concerning body structure, monitoring foot posture using the FPI was suggested. Body function outcomes included kinematic and spatiotemporal measures. Kinematic outcomes suggested optimising or normalising gait movement patterns, specifically those of the foot and ankle. Spatiotemporal outcomes included increased walking velocity, 6MWT and TUG. Gross motor proficiency measures were also discussed, Gross motor milestones, BOT-2 and frequency of falls.

QoL measures suggested by the panellists included pain rating and measures of ADL, walking to school, shops, playparks and interaction with peers.

The following outcomes have been suggested from panellist feedback; please rank your agreement with these.

agreement with t	hese.						
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Foot Posture							
FPI-6							
Kinematics:							
Optimising gait							
movement							
patterns							
(Foot and							
ankle)							
Spatiotemporal:							
Increase							
walking							
velocity,							
6MWT, TUG							
Motor skill							
proficiency:							
Number of falls							
Motor skill							
proficiency:							
Gross Motor							
Skills (BOT-2)							
QoL: Pain							
QoL: ADL (daily							
mobility and							
social							
interaction)							

11)

You may use this	•	•	•	de any fur	ther informat	tion on s	tability
footwear interve	ention in ch	ildren with	pes planus.				
Toe Walking							
From the resear	•	footwear h	nas been prop	osed as a	clinical inter	vention	for
In the questions	_	will be pre	sented with t	the collect	ive opinion c	f panelli	sts from
Round 1 in relat	ion to the s	uitability o	f stability foo	twear as a	a clinical inter	rvention	
15 of the 15 pan	ellists 100%	6 had clinic	al experience	with this	condition an	d provid	led the
information for			ar experience	z wien ems	condition an	a provio	ica tire
2)							
2) Panellists were a	asked if toe	walking w	as a suitable (	condition	for stability f	ootwear	
intervention in o		_					
The median leve	-		-		neutral" with	the maj	ority of
responses betwe	een neutra	ii and soi	newnat agre	е.			
Panellist feedba	ck suggeste	d that the	issue with the	e suitabilit	ty for stability	, footwe	ar used as
an intervention					•		
Some panellist s							_
(ITW) it was not			•				•
Disorder or hype stiffened sole or				•			e a
engagement. If t	_						re issues
stability footwea		_			•	•	
intervention eve	n in ITW.						
<b>T</b> I 6 !! •							
The following sta							
suitability of sta	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree	Disagree	Disagree		Agree	, 18100	Agree
	1	2	3	4	5	6	7
Stability							
footwear may be a suitable							

treatment if							
used alongsid							
other stiffene	d						
components							
(insole, sole)							
for ITW with							
no associated							
hypertonia							
Stability							
footwear may	'						
be used for							
toe walking in							
developmenta	al						
conditions							
with							
hypermobility	7						
and gross							
motor delay							
that would be another assist Panellist feedl restrictive con ITW patients,	suitable fo ive aid. back sugges nponents (i the child m	r stability f sted that st reduced for ust be able	ability footw refoot rocker to achieve a	n as a sole ear may bo , carbon fi standing	aid or in con e used in con bre insole pla plantargrade	nbination nbination ate) in ty position	with with pe 1-2
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that would be another assist  Panellist feedl restrictive con ITW patients, panellist felt t accommodate  The following degree of mol	suitable for ive aid.  back suggest ponents (in the child make use for the an AFO.  statements bility impair	r stability f sted that st reduced for ust be able this footwe s have beer rment in ch	ability footwrefoot rocker to achieve a ar only if the devised from the devised from the second rocker with to	ear may be carbon fi standing p child's ow m panellist be walking	e used in con bre insole pla plantargrade n footwear c	nbination nbination ate) in ty position ould not relation	n with n with pe 1-2 . Other
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Kinematics:							
Optimising gait							
movement patterns (Heel							
forefoot							
contact timing							
ankle ROM)							
Kinetic: In-shoe							
pressure measurement							
(Heel and							
Forefoot							
loading) Spatiotemporal							
Increased							Ш
walking							
velocity,							
6MWT, TUG QoL: Pain							
QoL: ADL (daily							
mobility and social							
interaction)							
.6) You may use this footwear intervent	ention in ch	ildren who		de any furtl	ner informa	tion on st	ability
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(If you have no clinical experience in treating this condition please move to the next condition Question 22)

#### 17)

Panellists were asked if DMD was a suitable condition for stability footwear intervention in children and their reasoning for this.

The median level of agreement amongst the panellists was "somewhat agreel" with the majority of responses between "neutral" and "strongly agree".

Panellist feedback suggested there was a dispersion of responses concerning the suitability of stability footwear for this condition. Some panellist felt there were no significant foot posture issues with DMD and if there were that foot orthoses were a more cost-effective measure. Whereas others felt it could help stabilise rearfoot and ankle motion in early stages and could be used in later stages if there was a loss of ankle range of motion or assist standing balance alongside other assistive aids (AFO). Some felt it may hinder walking in later stages due to muscle weakness and knee extension ability.

The following statements have been devised from panellist feedback in relation to the suitability of stability footwear for this condition, please rank your level of agreement.

Saltability of Sta	Diricy 100tv	vear for time	o contaition, p	icase rain	t your level o	i agreen	iciic.
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Stability							
footwear							
should only be							
issued to							
children with							
DMD after a							
critical							
assessment of							
the child's							
mobility							
needs in							
respect to							
other assistive							
aids							

#### 18)

Panellists were asked the degree of mobility impairment in children with DMD that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid.

Panellist feedback suggested that stability footwear may be used as a sole aid or in combination with foot orthosis for foot and ankle instability in early ambulatory stage DMD (walks with some limitations to velocity and balance, can stair climb). In late

ambulatory	stage DMD	, (Loss of ar	nkle ROM, dif	ficulty wit	:h walking dis	tances a	ınd stair
•	•	•		•	with an AFO a		
frames to as	sist with m	obility. In E	arly non-amb	ulatory D	MD, (Mobilit	y require	es a
wheelchair,	but the chil	d may still	weight-bear f	for a limit	ed time) stab	ility foot	wear
may be used	with AFOs	and standi	ng frames to	assist wit	h standing an	d transf	er tasks.
The Callegation		4 - l · · - l					
	-			•	ist feedback i		
_					able for stabi	iity rooti	wear
milervention	Strongly	Disagree	of agreeme Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree	Disagree	Disagree	ineutial	Agree	Agree	Agree
	1	2	3	4	Agree 5	6	7
Stability							
Footwear							
may be							
used							
alongside							
foot							
orthoses to							
assist foot							
and ankle							
stability in							
early							
ambulatory							
stages.							
Stability							
Footwear							
may be							
used							
alongside							
AFO's and							
walking							
frames to							
assist							
walking in							
late							
ambulatory							
stages.	İ				<u>                                      </u>	<u> </u>	<u> </u>

standing				
standing and transfer in				
early non				
ambulatory				
early non ambulatory stages.				

19)

Panellists were asked the age range they felt this footwear intervention should be prescribed clinically for in DMD

Panellists feedback suggested a range of ages were stated varying from 1-5 for initiation and 9-18 for an endpoint. Other panellists suggested initiation and endpoints of treatment should be functionally based on the child's abilities and needs rather than chronological.

The following options have been suggested by panellist feedback

1	perons have been subpessed by puriemse recuback
	1-18 years
	4-18 years
	4-9 years
	Initiation and end points of treatment indicated by functional ability and the
	mobility needs of the child (potential or actual).
	N/A I do not feel this condition is suitable for stability footwear
	intervention.

20

Panellists were asked what clinical outcomes would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with DMD:

From panellist feedback outcomes were grouped into therapeutic goals alongside the WHO ICF-CY. These were goals based on body structures and function and those based on QoL measures.

Concerning body structure, passive ankle ROM was suggested to monitor any flexural contracture. Body function outcomes included kinematic, kinetic and spatiotemporal measures. Kinematic outcomes suggested optimising or normalising gait patterns including heel and forefoot contact timing and ankle ROM, Kinetic outcomes purposed in-shoe pressure measurements of heel and forefoot loading. Spatiotemporal outcomes included increased walking velocity, 6MWT. Gross motor proficiency measures were suggested such as frequency of falls and the four square step test.

QoL measures suggested by the panellists included pain rating and measures of ADL walking to school, shops, playparks and interaction with peers.

The following outcomes have been suggested from panellist feedback please rank your agreement with these.

Str	ongly Disagree	Strongly	Somewhat	Neutral	Somewhat	Agree	Strongly
Dis	sagree	Disagree	Disagree		Agree		Agree

	1	2	3	4	5	6	7
Passive Ankle ROM							
Kinematics: Optimising gait movement patterns (Heel and forefoot contact timing,							
ankle ROM)							
Kinetic: In-shoe pressure measurement (Heel and Forefoot loading)							
Spatiotemporal Increased walking velocity, 6MWT							
Gross motor proficiency: four square step test							
Gross motor proficiency: Number of falls							
QoL: Pain							
QoL: ADL (daily mobility and social interaction)							
1) You may use this footwear interve				de any furth	ner informa	tion on st	ability

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From the research stability footwear has been proposed as a clinical intervention for children with spinal bifida.

In the questions below you will be presented with the collective opinion of panellists from Round 1 in relation to the suitability of stability footwear as a clinical intervention.

10 of the 15 panellists 66% had clinical experience with this condition and provided the information for this section.

(If you have no clinical experience in treating this condition please move to the next condition Question 27)

22)

Panellists were asked if spina bifida (SB) was a suitable condition for stability footwear intervention in children and their reasoning for this.

The median level of agreement amongst the panellists was "agree" with the majority of responses between "agree" and "strongly agree.

A Consensus was reached with respect to this condition being suitable for stability footwear intervention in Round 1

Panellist feedback suggested that although stability footwear was suitable for children with SB even with low-level spinal involvement other assistive aids would be required alongside stability footwear. Additionally, stability footwear would have to offer a range of dimensional measures to the last to accommodate foot deformity with underlying sensory neuropathy.

The following statements have been devised from panellist feedback in relation to the suitability of stability footwear for this condition, please rank your level of agreement.

			, i				
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Stability							
footwear							
should only be							
issued to							
children with							
SB after a							
critical							
assessment of							
the child's							
mobility							
needs in							
respect to							

other assistive							
aids.							
3)							
Panellists were	e asked the	degree of	mobility imp	airment in	children wit	h SB that	t would
be suitable for							
assistive aid.	•						
Panellist feedb	ack sugges	sted that st	ability footwe	ear may b	e used with o	ther ass	istive
aids such as Af		_		_	_		
5 dysraphisms	. In mild dy	sraphism a	t lumbar leve	el 5, stabili	ty footwear ເ	used alo	ngside
foot orthoses i	may offer a	idequate m	obility assista	ance.			
The following:				•			
degree of mob					for stability f	ootwear	•
intervention, p					Computat	۸۵۳۵۵	Ctronali
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
}	Disagree 1	2	Disagree 3	4	Agree 5	6	Agree 7
Stability						$\Box$	
footwear							
may be used							
alongside							
foot							
orthoses to							
assist foot							
and ankle							
stability in							
mild level							
umbar 5							
vertebral							
involvement.							
Stability							
Footwear							
may be used							
alongside							
AFO's and							
walking frames to							
frames to assist							
walking and							
standing in							
lumbar 1-5							
vertebral							
involvement.							
			ı	1	ı	1	
4)							
,							

Optimising gait movement patterns (Hoffer Ambulation scale)

Panellists were as prescribed clinica	-	-	ey felt this foo	otwear int	ervention sh	ould be	
Panellists feedbac	ck suggesti	ed an age ra	ange 1-2 vear	s for initia	ition and 18-2	21 vears	for an
endpoint with ass		_	-				
endpoints of treat			•	_	-		
rather than age-s			,				
The following opt	ions have	heen sugge	sted by pane	llist feedh	ack		
			ed adult tran				
	•		ed adult tran		•		
			ts of treatme			nal abilit	y and the
		•	hild (potentia				•
N	/A I do no	t feel this co	ondition is su	itable for	stability footy	wear	
in	ntervention	າ.					
25)							
Panellists were as						e effecti	veness of
"Off the Shelf" Sta	ability foot	wear in chi	ldren with Sp	ina Bifida:			
From panellist fee	adhack out	comes wer	a grouped int	o therane	سائاد ممعاد عاد	nacide t	ha WHO
ICF-CY. These wer					_	_	
measures.	c godis bu	3Ca 011 50a	y structures t	ina rancen	on and those	basea o	II QUL
Concerning body	structure.	passive ank	de range of m	notion (RO	M) was sugg	ested to	monitor
any flexural contr			_				
included kinemat							
suggested optimis							
as the Hoffer Amb							
velocity, 6-minute	e walk test	(6MWT) Ti	med Up and	Go (TUG),	stride length	, and ca	dence.
Gross motor profi	iciency me	asures wer	e also sugges	ted includ	ing, motor m	ilestone	s and
Hoffer Ambulatio	n Scale. Pł	nysiological	outcomes su	ch as perc	eived exertio	n meası	ıres
(BORG) with motor	or tasks we	ere also pur	posed. QoL o	utcome m	neasures sugg	gested in	rcluded
pain rating and m	easures of	factivities c	of daily living	(ADL) walk	king to schoo	l, shops,	
playparks and inte	eraction w	ith peers.					
The following out		e been sug	gested from	panellist f	eedback plea	se rank	your
agreement with t		T 5:				T .	G. 1
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree	2	Disagree	1	Agree	6	Agree
Kinematics:	1	2	3	4	5	6	/

Spatiotemporal:							
Increased							
walking velocity,							
6MWT, TUG							
Gross motor							
proficiency:							
(Hoffer Ambulation							
Score)							
Physiological:							
Perceived							
exertion (BORG)							
QoL: Pain							
QoL: ADL (daily mobility and	Ш						
social							
				I I			
.1) You may use this	•	•	•	e any furth	er informat	cion on sta	ability
You may use this	•	•	•	e any furth	er informat	cion on sta	ability
Interaction)  I1)  You may use this footwear interver	ntion in chi	•	•	e any furth	er informat	cion on sta	ability
11) You may use this footwear interver	ome  n stability for your selow your	footwear had ome. will be pres	as been prop	osed as a c	linical inter	vention fo	or
Pown's Syndro  From the research children with Down the questions by the syndrom the questions by the syndrom the questions by the syndrom	eme  In stability to the sum to the sum to the sum to section.	footwear had ome. will be presuitability of	es been propented with the stability foot	osed as a c he collectiv twear as a c vith this co	linical interve opinion ocinical inter	vention for panellist evention provided	or ts from the

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_	•	

Panellists were asked if Down's Syndrome was a suitable condition for stability footwear intervention in children and their reasoning for this.

The median level of agreement amongst the panellists was "agree" with the majority of responses between "agree" and "strongly agree.

A consensus was reached in Round 1 with respect to this condition being suitable for stability footwear intervention.

Panellist feedback suggested that this footwear could assist the mediolateral stability of the foot and ankle due to low tone and hypermobility. This would aid gross motor skill acquisition and mobility in these children. Other panellist suggested only consider stability footwear if the child's foot dimensions were outside a standard last. There was also the discussion that stability footwear offer modular sizing to accommodate altered foot anthropometrics in these children.

The following statements have been devised from panellist feedback in relation to the suitability of stability footwear for this condition, please rank your level of agreement.

-	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Stability							
footwear may							
assist							
mediolateral							
stability and							
proprioception							
of the foot and							
ankle in							
standing and							
walking in children with							
Down's							
syndrome							
Stability							
footwear							
design should							
consider last							
adaptions to							
accommodate							
the foot							
dimensions of							
children with							
Down's							
syndrome							

Panellists were asked the degree of mobility impairment in children with Down's syndrome that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid.

Panellist feedback suggested that stability footwear may be used as a sole intervention in children with delayed motor skills alongside hypermobility and hypotonia in the prewalking and early walking stages. If associated with ankle instability (tripping, falling) in older children use stability footwear to support foot orthoses interventions. If associated with knee instability stability footwear may be used to support AFO interventions

The following statements have been devised from panellist feedback in relation to the degree of mobility impairment in children with Down's syndrome suitable for stability footwear intervention, please rank your level of agreement.

Disagree Disagree Agree Agree Agree 1 2 3 4 5 6 7  Stability footwear may be used as a sole assistive aid in pre-walking and learning to walk stages with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in individuals		Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
Stability footwear may be used as a sole assistive aid in pre- walking and learning to walk stages with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in		Disagree		Disagree		Agree		Agree
footwear may be used as a sole assistive aid in pre- walking and learning to walk stages with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in		1	2	3	4	5	6	7
may be used as a sole assistive aid in pre- walking and learning to walk stages with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in	Stability							
used as a sole assistive aid in pre-walking and learning to walk stages with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in	footwear							
sole assistive aid in pre- walking and learning to walk stages with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in	may be							
assistive aid in pre- walking and learning to walk stages with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in								
aid in pre- walking and learning to walk stages with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in	sole							
walking and learning to walk stages with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in								
and learning to walk stages with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in								
learning to walk stages with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in	_							
walk stages with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in								
with associated hypotonia and delayed motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in	_							
associated hypotonia and delayed motor milestones.  Stability	_							
hypotonia and delayed motor milestones.  Stability								
and delayed motor milestones.  Stability								
delayed motor milestones.  Stability								
motor milestones.  Stability Footwear may be used alongside foot orthoses to assist walking in								
milestones.  Stability  Footwear  may be  used  alongside  foot  orthoses to  assist  walking in	1							
Stability Footwear may be used alongside foot orthoses to assist walking in								
Footwear may be used alongside foot orthoses to assist walking in								
may be used alongside foot orthoses to assist walking in	1							
used alongside foot orthoses to assist walking in								
alongside foot orthoses to assist walking in								
foot orthoses to assist walking in								
orthoses to assist walking in	_							
assist walking in								
walking in								
	_							

with ankle							
instability							
Stability							
Footwear							
may be							
used							
alongside							
AFO's to							
assist							
walking in							
individuals							
with knee							
instability							
Panellists wer prescribed clin Panellists feed ongoing asses treatment sho specific.	nically for dback sugg ssment for	in Down's s gested an a radult need	syndrome nge range 1-4 d. Other pane	for initiat ellists sugg	ion and 18 fo ested initiation	r an end on and e	point with ndpoints of
The following							
	-		ssessed adult		-		
			ssessed adult		•		
			points of trea		•	nctional	ability and
		•	of the child	•		<u> </u>	
			his condition	is suitable	for stability	tootwea	r
	interve	ntion.					
30)							
Panellists wer	e asked w	hat clinical	outcomes w	ould be us	sed to evalua	to the of	fectiveness
of "Off the Sh							rectiveriess
From panellis World Health						_	
vvoriu nealth	Organisat	ion interna	itional Classii	ication of	runctioning (	cillu all	i ioutii

version (WHO ICF-CY). These were goals based on body structures and function and those based on Quality of Life measures (QoL).

Concerning body structure, passive ankle range of motion (ROM) was suggested to monitor any flexural contracture. The majority of outcomes were focused on body function. These included kinematic and spatiotemporal measures. Kinematic outcomes suggested optimising or normalising gait movement patterns using referenced scales such as the Edinburgh Gait Scale. Spatiotemporal outcomes included increased walking velocity, 6minute walk test (6MWT) Timed Up and Go (TUG), stride length, and cadence. Gross motor

proficiency meas Oseretsky Test o measure of the c	f Motor Pro	oficiency (B	OT-2), freque	ency of fal	ls was also su	uggested	l as a
exertion measur	es (BORG) v	with motor	tasks were a	lso purpos	sed.		
QoL outcome me	easures sug	gested incl	uded pain ra	ting and m	neasures of a	ctivities	of daily
living (ADL) walk	_	_	•	_			,
The following ou agreement with		e been su	ggested from	panellist t	feedback plea	ase rank	your
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Foot posture FPI-6							
Kinematics: Optimising gait movement patterns (foot and							
ankle)							
Spatiotemporal Increase Velocity,							
6MWT							
Gross motor							
proficiency:							
number of falls							
Motor skill proficiency: Gross Motor Skills (BOT-2)							
QoL: Pain							
QoL Comfort with Footwear							
QoL: ADL (daily mobility and social interaction)							
interaction)  (1)  You may use this footwear interve	•	•	•	•	ther informat	ion on s	tability

Intoeing							
From the researchildren with in	-	footwear l	nas been pro <sub>l</sub>	posed as a	clinical inter	vention	for
In the questions	_	ı will be pre	esented with	the collec	tive opinion o	of panelli	ists fr
Round 1 in relat							
12 of the 15 par	nellists 80%	had clinica	al experience	with this	condition and	l provide	ed the
information for			experience		Jonardon und	. p. 0 v iac	110
(If you have no	clinical exp	erience in t	reating this c	ondition p	olease move t	o Quest	tion 3
32)							
Panellists were		_		ndition for	stability foot	wear int	erver
in children and	their reasor	ning for thi	S.				
The median lev	el of agreer	nent amon	gst the panel	lists was "	somewhat d	isagree"	with
majority of resp	onses betw	veen "disag	ree" and "ne	utral".			
Feedback form	panellists s	uggested th	nat intoeing v	vas genera	ally a skeletal	rotation	ıal issı
accordated with	typical dov	elonment :					
associated Willi	i typicai uev	Ciopinciic	and Stability i	ootwear h	nas no effect	on the n	atura
progression on		Сюринент	and Stability I	ootwear h	nas no effect	on the n	atura
	this.	•	·				
progression on	this. sted that on	ıly significa	nt cases of m	etatarsus	adductus req	uired fo	otwea
progression on Panellist sugges	this. sted that on	ıly significa	nt cases of m	etatarsus	adductus req	uired fo	otwea
progression on Panellist sugges intervention an	this. sted that on d this was c	nly significations	nt cases of m ootwear (rev	etatarsus erse last a	adductus req nd straight la	uired foost) not s	otwea tabilit
progression on Panellist sugges intervention an footwear. Some panellists	this. sted that on d this was o	nly significations of the that if the	nt cases of mootwear (rev	etatarsus erse last a associated	adductus req nd straight la d with a neur	uired foost) not s	otwea tabilit ar
progression on Panellist sugges intervention an footwear.	this. sted that on d this was c s suggested ipping stabi	ally significal corrective for that if the lity footwe	nt cases of mootwear (revi	etatarsus erse last a associated nsidered.	adductus req nd straight la d with a neur	uired foost) not s	otwea tabilit ar
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri	this. sted that on d this was c s suggested ipping stabi	ally significal corrective for that if the lity footwe	nt cases of mootwear (revi	etatarsus erse last a associated nsidered.	adductus req nd straight la d with a neur	uired foost) not s	otwea tabilit ar
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri same as the sug	this. sted that on d this was of s suggested ipping stabi ggested leve	aly significa corrective for that if the lity footwe el of mobili	nt cases of mootwear (revoluted) intoeing was ar may be conty impairment.	etatarsus erse last a associated nsidered. t)	adductus req nd straight la d with a neur (These indica	uired foo st) not s omuscul tions we	otwea tabilit ar ere als
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri same as the sug The following st	this. sted that on d this was c s suggested ipping stabi ggested leve	aly significant corrective for that if the lity footwell alof mobility	nt cases of mootwear (revoluted) intoeing was ar may be conty impairment devised from	etatarsus erse last a associated nsidered. t)	adductus req nd straight la d with a neur (These indica	uired for st) not s omuscul- tions we	otweatabiliter  ar  ere alser  the
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri same as the sug	this. sted that on d this was c s suggested ipping stabi ggested leve	aly significant corrective for that if the lity footwell alof mobility	nt cases of mootwear (revoluted) intoeing was ar may be conty impairment devised from	etatarsus erse last a associated nsidered. t)	adductus req nd straight la d with a neur (These indica	uired for st) not s omuscul- tions we	otweatabiliter are also the nent.
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri same as the sug The following st	this. sted that on d this was o s suggested ipping stabi ggested leve tatements h ability footw	that if the lity footwell of mobilinate been covery	nt cases of mootwear (revented intoeing was ar may be conty impairment devised from a condition, p	etatarsus erse last a associated nsidered. t) panellist f lease ranl	adductus req nd straight la d with a neur (These indica eedback in re c your level o Somewhat	uired foo st) not s omuscul tions we elation to f agreem	otweatabiliter are also the nent.
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri same as the sug The following st	this. sted that on d this was o s suggested ipping stabi ggested leve tatements h ability footw Strongly	that if the lity footwell of mobilinate been covery	nt cases of mootwear (revented intoeing was ar may be conty impairment devised from s condition, p Somewhat Disagree	etatarsus erse last a associated nsidered. t) panellist f lease ranl	adductus req nd straight la d with a neur (These indica eedback in re c your level o Somewhat Agree	uired for st) not s omuscul- tions we elation to f agreem Agree	otweatabiliter are also the nent. Stroid Agreenter and the nent.
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri same as the sug The following st suitability of sta	this. sted that on d this was o s suggested ipping stabi ggested leve tatements h ability footw Strongly Disagree	that if the lity footwell of mobilinave been dear for this Disagree	nt cases of mootwear (revoluted intoeing was ar may be conty impairment devised from soundition, possible Somewhat	etatarsus erse last a associated nsidered. t) panellist f lease ranl Neutral	adductus req nd straight la d with a neur (These indica eedback in re c your level o Somewhat	uired foo st) not s omuscul tions we elation to f agreem	otweatabiliter  ar  ere alser  the
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri same as the sug The following st suitability of sta	this. sted that on d this was o s suggested ipping stabi ggested leve tatements h ability footw Strongly Disagree	that if the lity footwell of mobilinave been dear for this Disagree	nt cases of mootwear (revented intoeing was ar may be conty impairment devised from s condition, p Somewhat Disagree	etatarsus erse last a associated nsidered. t) panellist f lease ranl Neutral	adductus req nd straight la d with a neur (These indica eedback in re c your level o Somewhat Agree	uired for st) not s omuscul- tions we elation to f agreem Agree	otweatabiliter are also the nent. Stroid Agreenter and the nent.
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri same as the sug The following st suitability of sta	this. sted that on d this was o s suggested ipping stabi ggested leve tatements h ability footw Strongly Disagree	that if the lity footwell of mobilinave been dear for this Disagree	nt cases of mootwear (revented intoeing was ar may be conty impairment devised from s condition, p Somewhat Disagree	etatarsus erse last a associated nsidered. t) panellist f lease ranl Neutral	adductus req nd straight la d with a neur (These indica eedback in re c your level o Somewhat Agree	uired for st) not s omuscul- tions we elation to f agreem Agree	otweatabiliter are also the nent. Stroid Agreenter and the nent.
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri same as the sug. The following st suitability of states. Stability footwear may a suitable	this. sted that on d this was o s suggested ipping stabi ggested leve tatements h ability footw Strongly Disagree	that if the lity footwell of mobilinave been dear for this Disagree	nt cases of mootwear (revented intoeing was ar may be conty impairment devised from s condition, p Somewhat Disagree	etatarsus erse last a associated nsidered. t) panellist f lease ranl Neutral	adductus req nd straight la d with a neur (These indica eedback in re c your level o Somewhat Agree	uired for st) not s omuscul- tions we elation to f agreem Agree	otweatabiliter are also the nent. Stroid Agreenter and the nent.
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri same as the sug. The following st suitability of statement of the suggestate of the following st suitability of statement of the suggestate of the suggesta	this. sted that on d this was o s suggested ipping stabi ggested leve tatements h ability footw Strongly Disagree	that if the lity footwell of mobilinave been dear for this Disagree	nt cases of mootwear (revented intoeing was ar may be conty impairment devised from s condition, p Somewhat Disagree	etatarsus erse last a associated nsidered. t) panellist f lease ranl Neutral	adductus req nd straight la d with a neur (These indica eedback in re c your level o Somewhat Agree	uired for st) not s omuscul- tions we elation to f agreem Agree	otweatabiliter are also the nent. Stroid Agreenter and the nent.
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri same as the sug. The following st suitability of state suitability of state suitability of state suitable intervention for intoeing if	this. sted that on d this was o s suggested ipping stabi ggested leve tatements h ability footw Strongly Disagree	that if the lity footwell of mobilinave been dear for this Disagree	nt cases of mootwear (revented intoeing was ar may be conty impairment devised from s condition, p Somewhat Disagree	etatarsus erse last a associated nsidered. t) panellist f lease ranl Neutral	adductus req nd straight la d with a neur (These indica eedback in re c your level o Somewhat Agree	uired for st) not s omuscul- tions we elation to f agreem Agree	otweatabiliter are also the nent. Stroid Agreenter and the nent.
progression on Panellist sugges intervention an footwear. Some panellists pathology or tri same as the sug. The following st suitability of statement of the suggestate of the following st suitability of statement of the suggestate of the suggesta	this. sted that on d this was o s suggested ipping stabi ggested leve tatements h ability footw Strongly Disagree	that if the lity footwell of mobilinave been dear for this Disagree	nt cases of mootwear (revented intoeing was ar may be conty impairment devised from s condition, p Somewhat Disagree	etatarsus erse last a associated nsidered. t) panellist f lease ranl Neutral	adductus req nd straight la d with a neur (These indica eedback in re c your level o Somewhat Agree	uired for st) not s omuscul- tions we elation to f agreem Agree	otweatabiliter are also the nent. Stroid Agreenter and the nent.

Stability footwear may a suitable intervention for intoeing if associated with an underlying							
neurological condition							
33) Panellists were as	_	_	ey felt this foo	otwear int	ervention sh	ould be	
The age range wa	as only give	n by a limit					
3 years was giver endpoints of trea rather than age-s	tment shou			•			
3 II	years onwa	d end point	ts of treatme		•	nal abilit	y and the
	I/A I do not ntervention		ondition is sui	itable for s	stability foot	wear	
10)							
Panellists were as "Off the Shelf" St					o evaluate th	e effecti	veness of
From panellist fer ICF-CY. These we measures.							
Body function ou outcomes sugges Spatiotemporal of	ted optimis	sing or norr	malising gait ¡	oatterns s	pecifically An	gle of Ga	ait.
proficiency was d by the panellists activities of daily	liscussed in included pa	relation to in rating, p	the frequencerceived com	cy of tripp	ing. QoL mea footwear and	sures su d measu	ggested res of
The following out	tcomes hav	_				·	-
agreement with t	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7

Kinematics: Optimising gait movement patterns						
(Angle of Gait) Spatiotemporal: Increased walking velocity, 6MWT, TUG						
Gross motor proficiency: reduction in tripping						
QoL: Pain						
QoL: ADL (daily mobility and						
social interaction)  1) You may use thi footwear interven			e any furth	ner informat	ion on sta	ability
social interaction)  1) You may use thi	ention in ch		e any furth	ner informat	ion on sta	ability
social interaction)  1) You may use thi footwear intervent  Additional Co	ention in ch		e any furth	ner informat	ion on sta	ability
social interaction)  1) You may use thi footwear interven	ention in ch	ildren with in		ner informat		ability

Developmental Coordination Disorder Rett's Syndrome Foetal Alcohol syndrome Accessory navicular Chronic lateral ankle instability	Coordination Disorder  Rett's Syndrome Foetal Alcohol	Coordination Disorder  Rett's Syndrome Foetal Alcohol	Coordination Disorder  Rett's Syndrome Foetal Alcohol	Hypermobility (Ehlers Danlos Type)		
Syndrome  Foetal Alcohol	Syndrome  Foetal Alcohol	Syndrome  Foetal Alcohol	Syndrome  Foetal Alcohol	Disorder		
syndrome Accessory navicular Chronic lateral ankle	syndrome Accessory navicular Chronic lateral ankle	syndrome Accessory navicular Chronic lateral ankle	syndrome Accessory navicular Chronic lateral ankle	Syndrome		
navicular  Chronic lateral	navicular  Chronic lateral	navicular  Chronic lateral	navicular  Chronic lateral	syndrome		
ankle	ankle	ankle	ankle	navicular		
				ankle		



# **END OF SECTION 3 ROUND 2**

Thank you for taking the time to complete section 3 of round 2. You have now completed all sections of round 2 of this Delphi survey. Your time and participation is greatly appreciated.

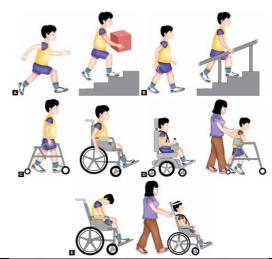
Remember to submit your answers before closing this form.



# ROUND 3(S3) WHAT ARE CHILDREN'S CLINICAL FOOTWEAR INTERVENTIONS AND HOW TO PRESCRIBE THEM?

The third section will present yours and the panellists' collective choices and opinions from Round 2 on clinical protocols and outcomes for the provision of "off the shelf" stability footwear clinical interventions for children with mobility impairment.

## Section 3



Opinion on prescription and clinical outcomes of "off the shelf" stability footwear clinical interventions for children with mobility impairment.

In this section, you will be presented with the collective preference (Median, relative frequency of response) and opinions of the panellists to the modified and original statements from round 1 and 2 of the survey concerning clinical protocols for the issuing of stability footwear as a sole assistive aid or in combination with other assistive aids (Ankle Foot Orthosis (AFO)\*, walking frames) for children with mobility impairment, and the expected clinical outcomes of these footwear interventions.

\* Please remember to qualify any abbreviation for mobility aids.

You will again be asked to give your preferential option or your level of agreement or non-agreement with them ("Strongly Disagree" to "Strongly Agree").

You can review the previous information you provided (in the document emailed to you), and considering the information provided by the other panellists, you may maintain your option or level of agreement with your chosen statement or change your opinion.

Full consensus for a statement is reached when a statement gains  $\geq$ 75% of panellists with a level of agreement of "agree" or above, or  $\geq$  75% of panellists preferred option.

If you choose a level of agreement below "agree" we would ask that you provide us with the reason for your choice in the optional open-ended section provided.

Required Field\*

1)

Name: *			

## **Cerebral Palsy**

In the questions below you will be presented with the collective choices and opinions from Round 2

concerning suggested protocols and measurable outcomes of stability footwear as a clinical intervention for this condition.

(100%) panellists in Round 2 had clinical experience with this condition and provided the information for this section.

2

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear for individuals with Cerebral Palsy (CP) in Round 2.

The median level of agreement and the relative distribution of response is detailed below.

Purpose: Stability footwear may assist mediolateral stability and proprioception of the foot and ankle in standing and walking in children with CP.

Median level of Agreement 6 (Agree)

7% "Somewhat Disagree", 7% "Neutral", 7% "Somewhat Agree", 36% "Agree", 43% "Strongly Agree"

A consensus was reached for this statement.

Stability footwear may be used alongside other assistive aids to assist standing and walking in children with CP.

Median level of Agreement 7 ("Strongly Agree")

14% "Neutral", 29% "Agree", 57% "Strongly Agree"

A consensus was reached for this statement.

Stability footwear should only be issued to children with CP after a critical assessment of the child's mobility needs in respect to other assistive aids or footwear modifications and with clear intervention outcomes.

Median level of Agreement 6 ("Agree")

14% "Neutral", 36% "Agree", 50% "Strongly Agree"

A consensus was reached for this statement.

Panellists feedback suggested there may be potential overlap between stability footwear and oversplint footwear, and that stability footwear was only to be issued to provide further stability and not just to accommodate the adjunct assistive aid such as an Ankle Foot Orthosis (AFO) or Knee Ankle Foot Orthosis (KAFO).

The following statement has been added based on panellist feedback.\*

The following se	atement has been added based on panemst recaback.						
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7

Stability							
footwear is							
only to be							
issued as an							
adjunct to							
AFO's KAFO's							
where							
additional							
medio-lateral							
stability is							
required, and							
not just to							
accommodate							
the orthotic.							
the orthotic.							
3)							
Panellists were a	asked to ra	nk their agi	reement with	the follo	wing stateme	nts con	cerning
the degree of m		_			_		_
footwear both a							-
The median leve							
The median leve	i or agreen	incinc ana ti	ic relative als	cindation	or response i	3 actane	d below.
Stability footwe	ar may he i	ised as a so	ale assistive i	nterventic	nn to assist ho	oth foot	and
ankle stability in	•						
(GMFCS) 1 and r	_			tor runcti	ioning classii	ication	COLE
Median level of	_						
	-		-	owhat Ac	roo" 420/ "A	aroo" 2	00/
7% "Somewhat	_	/% Neutra	11 , 14% 5011	iewnat Ag	gree ,43% A	gree , z	9%
"Strongly Agree							
Chability for the care				المام مالهما			J
Stability footwer		_			s to assist wa	iking and	J
standing in amb				ai issues.			
Median level of	•	. •	•				
14% "Neutral",		_	_	e", 36% "S	trongly Agree	5	
A consensus was	s reached f	or this state	ement.				
6. 1.11. 6 .							
Stability footwe	•	_		sistive aids	s to assist sta	nding ar	nd
transfer in non-a							
Median level of	-		-				
14% "Neutral", 1	14% "Some	what Agree	e", 43% "Agre	ee", 29% "	Strongly Agre	ee"	
Panellists feedb			•				
panellists questi			•	ear was to	be used at o	different	times or
simultaneously	with the ot	her assistiv	e aid.				
The following st	atements h	iave been s	lightly modif	ied based	on panellist	feedbac	k.*
112 12 13 111 13 11	Strongly	Disagre	Somewha	Neutra	Somewha	Agre	Strongl
	Disagre	e	t Disagree		t Agree	e	y Agree
	e		. 5.005100	•			7.10,00

	1	2	3	4	5	6	7
Stability footwear may be used as a sole assistive intervention to assist both foot and ankle							
stability in walking in children with GMFCS 1 and no significant tonal issues.							
Stability footwear may be used simultaneousl y with other assistive aids to assist standing and transfer in non-ambulant children GMFCS 3-4. This footwear must be issued to assist stability and not just to accommodate the associated assistive aid							
Panellists were properties of the relative dist Option 1, Initiati mobility needs coption 2, 1-18 y Option 3, 3-18 y Option 4, N/A I coption 4	wear internation of on and end of the child ears (with a cars (with a	vention for response is d points of (potential of assessed accassessed accases acc	CP in Round se detailed be treatment in or actual).69 dult transitio dult transitio	2. low. dicated by % n care) 15% n care) 8%	functional a	ability an	d the

options. Howe	nellist feedback was given to inform any further modification of these ver, you may consider the distribution of the panel's response to either
change or main	ntain your previous option.
	Option 1, Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).
	Option 2, 1-18 years (with assessed adult transition care)
	Option 3, 3-18 years (with assessed adult transition care)
	Option 4, N/A I do not feel this condition is suitable for stability footwear
	intervention.
5)	
Panellists were clinical outcom Stability footw	e asked to rank their agreement with the following statements concerning the nes that would be used to evaluate the effectiveness of "Off the Shelf" ear for children with CP in Round 2: wel of agreement and the relative distribution of response is detailed below.
	of Agreement 6 ("Agree") t Disagree", 14% "Neutral", 22% "Somewhat Agree", 43% "Agree"
Median level o 21% "Somewh	otimising gait movement patterns (Edinburgh Gait Scale)  of Agreement 6 ("Agree")  at Agree", 57% "Agree", 22% "Strongly Agree"  as reached for this statement
(TUG), stride le Median level o 14% "Somewh	al: Increased walking velocity, 6 Minute Walk Test (6MWT), Timed Up and Go ength, cadence of Agreement 6 ("Agree") at Agree", 50% "Agree", 36% "Strongly Agree" as reached for this statement
Median level o 14% "Neutral",	ficiency: Number of falls of Agreement 6 ("Agree") of, 7% "Somewhat Agree", 57% "Agree", 22% "Strongly Agree" of this statement
Motor skill pro	ficiency:
Gross Motor SI	·
Median level o	of Agreement 6 ("Agree") , 14% "Somewhat Agree", 50% "Agree", 22% "Strongly Agree"
Median level o	Perceived exertion (Borg) of Agreement 5 ("Somewhat Agree") 43% "Somewhat Agree", 36% "Agree", 14% "Strongly Agree"

Quality of Life (Q Median level of <i>F</i> 7% "Neutral", 14	ngreement % "Somewh	nat Agree",	50% "Agree"	, 29% "Str	ongly Agree"		
A consensus was	reached fo	i tilis statel	ment				
QoL: Activities of Median level of A 21% "Somewhat A consensus was	ngreement ( Agree", 509	6 ("Agree") % "Agree",	29% "Strongl		nteraction)		
A consensus was	reactied to	i tilis statel	Henc				
Panellist feedbac			-				
Passive Ankle Rai	-						din
extended. Weigh addition to passiv	_			-		-	
panellist feedbac			_				
not reach conser	_						
either change or			•		·		
DI '	_		п	<b>4</b>			
Please rank your		l	Somewhat	omes.* Neutral	Somewhat	Agree	Strongly
	Strongly Disagree	Disagree	Disagree	Neutrai	Agree	Agree	Agree
	1	2	3	4	5 Agree	6	7
Passive Ankle						Ď	Ιή
ROM measured							
with knee							
flexed and							
extended							
within child's							
limits							
Ankle ROM							
-							
lunge provided							
lunge provided child can get							
child can get heel to ground							
lunge provided child can get heel to ground Motor skill							
lunge provided child can get heel to ground Motor skill proficiency:							
lunge provided child can get heel to ground Motor skill proficiency: Gross Motor							
lunge provided child can get heel to ground Motor skill proficiency: Gross Motor Skills (BOT-2)							
lunge provided child can get heel to ground Motor skill proficiency: Gross Motor Skills (BOT-2) Physiological:							
lunge provided child can get heel to ground Motor skill proficiency: Gross Motor Skills (BOT-2) Physiological: Perceived							
lunge provided child can get heel to ground Motor skill proficiency: Gross Motor Skills (BOT-2) Physiological: Perceived exertion							
lunge provided child can get heel to ground Motor skill proficiency: Gross Motor Skills (BOT-2)							
lunge provided child can get heel to ground Motor skill proficiency: Gross Motor Skills (BOT-2) Physiological: Perceived exertion (BORG)							

6) If your level of ag	greement was "somewhat agree" or lower for any of the statements in	
relation to stabili	ity footwear intervention in children with CP please use this optional	
area to provide u	us with your reasoning.	

## **Pes Planus**

In the questions below you will be presented with the collective choices and opinions from Round 2

concerning suggested protocols and measurable outcomes of stability footwear as a clinical intervention for this condition.

(100%) panellists in Round 2 had clinical experience with this condition and provided the information for this section.

7

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear for individuals with mobile pes planus in Round 2.

The median level of agreement and the relative distribution of response is detailed below.

Suitability and Purpose

Stability footwear may assist foot and ankle stability in children with symptomatic mobile pes planus

Median level of Agreement 6 ("Agree")

7% "Disagree", 7% "Neutral", 7% "Somewhat Agree", 57% "Agree", 22% "Strongly Agree" A consensus was reached for this statement.

Stability footwear is a suitable secondary line intervention for symptomatic mobile pes planus in children where foot orthoses have not resolved associated symptoms Median level of Agreement 7 ("Strongly Agree")

14% "Neutral", 29% "Agree", 57% "Strongly Agree"

A consensus was reached for this statement.

8

Panellists were asked to rank their agreement with the following statements concerning the grade of mobility impairment in children with pes planus that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid in Round 2.

The median level of agreement and the relative distribution of response is detailed below.

Stability Footwear may be used alongside foot orthoses in children with insufficiency of posterior tibialis function.

Median level of Agreement 6 ("Agree")

14% "Neutral", 14% "Somewhat Agree", 65% "Agree", 7% "Strongly Agree"

Stability Footwear may be used alongside foot orthoses in children with significant foot and ankle instability associated with tripping and falling.

Median level of Agreement 6 ("Agree")

14% "Neutral", 7% "Somewhat Agree", 43% "Agree", 36% "Strongly Agree"

A consensus was reached for this statement.

Stability footwe associated with Median level of 7% "Disagree", 2	motor dela Agreemen	ay t 6 ("Agree	")				ns
There was also p this mean stabil other assistive a	ity footwea			_	•		
The following st			1				1
	Strongly Disagre e	Disagre e	Somewha t Disagree	Neutra I	Somewha t Agree	Agre e	Strongl y Agree
	1	2	3	4	5	6	7
Stability Footwear may be be used simultaneousl y with foot orthoses in children with insufficiency of posterior tibialis function.							
Stability Sootwear may be used simultaneousl with foot orthoses in children with conditions associated with motor delay							
) Panellists were   stability footwe The relative dist Option 1, Initiat mobility needs o	ar interven ribution of ion and end	tion for mo response i	bbile pes plan s detailed be treatment in	us in Roullow.	nd 2.		-

Option 2, 1-18 years (with assessed adult transition care) 15%

Option 3, N/A I do not feel this condition is suitable for stability footwear intervention 8% Option 4, 5-18 years (with assessed adult transition care) 0%

A consensus was reached to Option 1,

#### 10)

Panellists were asked to rank their agreement with the following statements in relation to the clinical outcomes that would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with mobile pes planus in Round 2:

The median level of agreement and the relative distribution of response is detailed below.

Foot Posture FPI-6

Median level of Agreement 5 ("Somewhat Agree")

7% "Disagree", 7% "Somewhat Disagree", 22% "Neutral", 14% "Somewhat Agree", 36% "Agree",

14% "Strongly Agree"

Kinematics: Optimising gait movement patterns (Foot and ankle)

Median level of Agreement 6 ("Agree")

23% "Somewhat Agree", 62% "Agree", 15% "Strongly Agree"

A consensus was reached for this statement

Spatiotemporal: Increased walking velocity, 6MWT, TUG, stride length, cadence Median level of Agreement 6 ("Agree")

7% "Neutral", 21% "Somewhat Agree", 36% "Agree", 36% "Strongly Agree"

Motor skill proficiency: Number of falls Median level of Agreement 6 ("Agree")

29% "Somewhat Agree", 57% "Agree", 14% "Strongly Agree"

Motor skill proficiency:

Gross Motor Skills (BOT-2)

Median level of Agreement 6 ("Agree")

36% "Somewhat Agree", 43% "Agree", 21% "Strongly Agree"

QoL: Pain

Median level of Agreement 6 ("Agree")

21% "Somewhat Agree", 58% "Agree", 21% "Strongly Agree"

A consensus was reached for this statement

QoL: ADL (daily mobility and social interaction)

Median level of Agreement 6 ("Agree")

36% "Somewhat Agree", 43% "Agree", 21% "Strongly Agree"

Panellist feedback suggested that the FPI-6 is a semi-quantitative description of foot posture and should not be considered as an outcome measure. Panellist suggested the

following further knee flexed and e					_		
may also be used					_		
meter walk test a				_		_	
considered. No sp		•					
other outcomes t	•		•				
of the panel's res					•	the dist	i ibation
ar the paners res	p 0			. , o o p. o			
Please rank your	agreement	with the fo	llowing outc	omes.			
	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Foot Posture							
FPI-6							
Passive Ankle							
ROM measured							
with knee							
flexed and							
extended							
within child's							
limits							
Ankle ROM							
Weight Bearing							
lunge provided							
child can get							
heel to ground							
Spatiotemporal:							
Increase							
walking							
velocity,							
6MWT, TUG							
10 meter walk							
test Motor skill							
proficiency:							
Number of falls							
Motor skill							
proficiency:							
Gross Motor							
Skills (BOT-2)							
Physiological:							
Physiological Physiological							
Cost Index							
QoL: ADL (daily							
mobility and							
social							
interaction)							
	<u> </u>	<u> </u>	1		I	<u>I</u>	1

1	1	
1	ı	

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to stability footwear intervention in children with Mobile Pes Planus please use this optional area to provide us with your reasoning.

## **Toe Walking**

In the questions below you will be presented with the collective choices and opinions from Round 2

concerning suggested protocols and measurable outcomes of stability footwear as a clinical intervention for this condition.

(100%) panellists in Round 2 had clinical experience with this condition and provided the information for this section.

### 12)

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear for individuals with toe walking in Round 2.

The median level of agreement and relative distribution of response is detailed below.

Stability footwear may be a suitable treatment if used alongside other stiffened components (insole, sole) for ITW with no associated hypertonia Median level of Agreement 6 ("Agree")

21% "Neutral", 21% "Somewhat Agree", 37% "Agree", 21% "Strongly Agree"

Stability footwear may be used for toe walking in developmental conditions with hypermobility and gross motor delay

Median level of Agreement 6 ("Agree")

43% "Somewhat Agree", 29% "Agree", 28% "Strongly Agree"

Panellist feedback suggested better alternative assistive aids from their clinical experience with all cases of Idiopathic Toe Walking (ITW); such as Dynamic AFOs that inhibit plantarflexion and stimulate dorsiflexion offering more effective treatment than stiffened footwear, however, no specific feedback was given to inform modification of the statements.

Based on panellist feedback please rank your agreement with the following statements.\*

St	trongly Disa	gree Somewh	at Neutral S	omewhat	Agree	Strongly
D	isagree	Disagree	A	gree		Agree

	1	2	3	4	5	6	7
Stability footwear may be a suitable treatment if used simultaneously with other stiffened components (insole, stiffend sole) for ITW with							
no associated							
hypertonia  Stability footwear may be used for toe walking in developmental conditions with hypermobility and gross motor delay							
13) Panellists were a	asked to ra	nk their ag	reement with	the follo	wing stateme	ents con	cerning
the grade of mo for stability foot Round 2. The median leve Stability footwer when the child is Median level of	wear, both of agreen ar may be us a able to ac	as a sole and the used alongs the chieve a place	id or in comb ne relative dis side other stif antargrade po	ination w tribution fened cor	of response i	issistive is detaile	aid in ed below.
7% "Disagree", 1 Agree". Panellist feedba hyperextension requires mediola	.4% "Neutr ck suggeste if used in c	al", 43% "S ed stability onjunction	somewhat Ag footwear ma	y cause is	sues with kn	ee	
The following sta	atements h Strongly Disagre e	Disagre e	Slightly modifi Somewha t Disagree	ied based Neutra I	on panellist Somewha t Agree	feedbac Agre e	k.* Strongl y Agree

	1	2	3	4	5	6	7
Stability							
footwear may							
be used to							
provide							
mediolateral							
stability when							
used							
simultaneousl							
y with							
stiffened							
components							
for ITW Type							
1-2, when the							
child is able to							
achieve a							
plantargrade							
position							

14)

Panellists were presented with the following options in relation to the suitable age range for stability footwear intervention for toe walking in Round 2.

The relative distribution of response is detailed below.

Option 1, Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).77%

Option 2, 4-8 years (15%)

Option 3, 4-18 years (8%)

Option 4 1-18 years (0%)

Option 5 N/A I do not feel this condition is suitable for stability footwear intervention (0%)

A Consensus was reached for Option 1

15)

Panellists were asked to rank their agreement with the following statements concerning the clinical outcomes that would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with toe walking in Round 2:

The median level of agreement and the relative distribution of response is detailed below.

Passive Ankle ROM

Median level of Agreement 6 ("Agree")

8% "Neutral", 38% "Somewhat Agree", 46% "Agree"

8% "Strongly Agree"

Kinematics: Optimising gait movement patterns (Foot and Ankle)

Median level of	-		•				
21% "Somewhat	Agree", 36	% "Agree",	43% "Strong	ly Agree"			
Kinetic: In-shoe	oressure m	easuremen	t (Heel and F	orefoot lo	ading)		
Median level of			· -		O.		
7% "Somewhat [	_	9% "Neutr	al", 21% "Son	newhat A	gree", 29% " <i>A</i>	\gree"	
14% "Strongly Ag	gree"						
Spatiotemporal:	Increased v	walking ve	locity, 6MWT	, TUG, stri	de length, ca	dence	
Median level of	Agreement	6 ("Agree"	)				
7% "Neutral", 29	% "Somew	hat Agree,'	' 50% "Agree	", 14% "St	rongly Agree	"	
QoL: Pain							
Median level of	Agreement	6 ("Agree"	)				
14% "Somewha	_	_		gly Agree"			
A consensus was	reached fo	or this state	ement				
QoL: ADL (daily r	nobility and	d social inte	eraction)				
Median level of	•		-				
36% "Somewhat	Agree", 50	% "Agree",	14% "Strong	ly Agree"			
Panellist feedbac	sk suggosto	d modificat	tions and add	litions to t	ha autcamac		
The weight bear							n
children who car							
spatiotemporal r		•	•		•		
patterns of the f				-			
modification of t consider the dist							•
previous choice.	inbation of	the paners	response to	Citifici Citi	inge of main	tani you	ı
Please rank your							
	Strongly	Disagree	Somewhat Disagree	Neutral	Somewhat	Agree	Strongly
	Disagree 1	2	3	4	Agree 5	6	Agree 7
Passive Ankle							
ROM							
measured with							
knee flexed and extended							
within child's							
limits							
Ankle ROM							
Weight Bearing							
lunge provided child can get							
heel to ground							
	<u> </u>	1	<u>I</u>	1		<u>I</u>	1

Optimising gait movement patterns (Heel forefoot					
contact timing ankle ROM) Kinetic: In-shoe					
pressure measurement (Heel and Forefoot loading)			_		
Spatiotemporal Increased walking velocity, 6MWT, TUG 10-meter walk test					
QoL: ADL (daily mobility and social interaction)					
6) If your level of a relation to stabil optional area to	ity footwea	ar intervent	ion in childre		

(93%) of panellists in Round 2 had clinical experience with this condition and provided the information for this section.

(If you have no clinical experience in treating this condition, please move to the next condition)

#### 17)

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear for individuals with Duchenne Muscular Dystrophy (DMD) in Round 2.

The median level of agreement and the relative distribution of response is detailed below.

Stability footwear should only be issued to children with DMD after a critical assessment of the child's mobility needs in respect to other assistive aids

Median level of Agreement 7 ("Strongly Agree")

8% "Neutral", 31% "Agree", 61% "Strongly Agree"

A consensus was reached for this statement.

#### 18)

Panellists were asked to rank their agreement with the following statements concerning the grade of mobility impairment in children with DMD that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid in Round 2. The median level of agreement and the relative distribution of response is detailed below.

Stability Footwear may be used alongside foot orthoses to assist foot and ankle stability in early ambulatory stages.

Median level of Agreement 6 ("Agree")

8% "Neutral", 23% "Somewhat Agree", 54% "Agree", 15% "Strongly Agree"

Stability Footwear may be used alongside AFO's and walking frames to assist walking in late ambulatory stages.

Median level of agreement 6 ("Agree")

15% "Somewhat Disagree", 23% "Somewhat Agree", 54% "Agree", 8% "Strongly Agree"

Stability Footwear may be used simultaneously with AFO's and standing frames to assist standing and transfer in early non-ambulatory stages.

Median level of Agreement 5 ("Somewhat Agree")

15% "Somewhat Disagree", 8% "Neutral", 31% "Somewhat Agree", 31% "Agree", 15% "Strongly Agree"

Panellist feedback indicated there was potential ambiguity with the term "alongside"; panellists questioned did this mean stability footwear was to be used at different times or simultaneously with the other assistive aid.

The following statements have been slightly modified based on panellist feedback

Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
Disagree		Disagree		Agree		Agree

Stability Footwear may be used	2	3	4	5	6	7
simultaneously with foot orthoses to assist foot and ankle stability						
in early ambulatory stages.						
Stability Footwear may be used simultaneously with AFO's and walking frames to assist walking in late ambulatory stages.						
Stability Footwear may be used simultaneously with AFO's and standing frames to assist standing and transfer in early non ambulatory stages.						

Option 4, 4-18	years 8%
Option 5, N/A	I do not feel this condition is suitable for stability footwear intervention 8%
No specific par	nellist feedback was given to inform any further modification of these
options. Howe	ver, you may consider the distribution of the panel's response to either
change or mai	ntain your previous option.
	Option1, Initiation and end points of treatment indicated by functional
	ability and the mobility needs of the child (potential or actual)
	Option 2, 1-18 years
	Option 3, 4-9 years
	Option 4, 4-18 years
	Option 5, N/A I do not feel this condition is suitable for stability footwear
	intervention.

20)

Panellists were asked to rank their agreement with the following statements in relation to the clinical outcomes that would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with DMD in Round 2:

The median level of agreement and the relative distribution of response is detailed below.

Passive Ankle ROM

Median level of Agreement 5 ("Somewhat Agree")

8% "Somewhat Disagree", 8% "Neutral", 61% "Somewhat Agree", 15% "Agree" 8% Strongly Agree

Kinematics: Optimising gait movement patterns (Foot and Ankle)

Median level of Agreement 6 ("Agree")

23% "Somewhat Agree", 54% "Agree", 23% "Strongly Agree"

A consensus was reached for this statement.

Kinetic: In-shoe pressure measurement (Heel and Forefoot loading)

Median level of Agreement 5 ("Somewhat Agree")

8% "Somewhat Disagree", 16% "Neutral", 30% "Somewhat Agree", 30% "Agree" 16% "Strongly Agree"

Spatiotemporal: Increased walking velocity, 6MWT, TUG, stride length, cadence Median level of Agreement 6 ("Agree")

8% "Neutral", 15% "Somewhat Agree", 54% "Agree", 23% "Strongly Agree"

A consensus was reached for this statement

Gross motor proficiency: four square step test

Median level of Agreement 6 ("Agree")

15% "Neutral", 31% "Somewhat Agree", 46% "Agree", 8% "Strongly Agree"

Gross motor proficiency: Number of falls Median level of Agreement 6 ("Agree")

8% "Neutral", 15	% "Somew	hat Agree"	69% "Agree	" 8% "Str	ngly Agree"		
A consensus was		_	_	, 5,0 500	p.1 , 191CC		
QoL: Pain Median level of A 8% "Neutral", 8% A consensus was	6 "Somewh	at Agree",	76% "Agree",	8% "Stroi	ngly Agree"		
QoL: ADL (daily r Median level of A 15% "Somewhat A consensus was	Agreement Agree", 70	6 ("Agree" % "Agree",	) 15% "Strong	ly Agree"			
Panellist feedbace Use weight bearing children who can valid spatiotemp conditions and or of the capability was given to inforce consensus. Howe change or maintains	ing lunge to a get their horal measu utcomes, in of the child orm further ever, you m	est to meas neel to the re. A pragr n that they I to perforn modificati nay conside	ure Ankle RO floor. Conside matic point w need to cons m the tasks re on of the other the distribu	M in addier adding as raised ider the sequired. Ner outcome	tion to Passive the 10-meter in relation to tage of the coording specific partes that did n	e ROM in walk tended degener on dition neallist feach of reach	st as a rative in light edback
Please rank your					Carranilant	A = = = =	Chunnali
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Passive Ankle ROM							
measured with knee flexed and extended within child's limits							
Ankle ROM Weight Bearing lunge provided child can get heel to ground							
Kinetic: In-shoe pressure							

Spatiotemporal 10-meter walk test							
Gross motor proficiency: four square step test							
Outcomes for a degenerative condition must consider the stage of the condition and the capability of the child to perform the tasks.							
21) If your level of ag relation to stabili area to provide u	ity footwe	ar intervent	ion in childre				
If your level of ag relation to stabili	ity footwe	ar intervent	ion in childre				
If your level of ag relation to stabili	ity footwe	ar intervent	ion in childre				
If your level of ag relation to stabili area to provide u	ity footwea is with you below you ested proto	will be pres	sented with	the collecti	D please us	e this opt	ons
Spina Bifida  In the questions from Round 2 concerning sugges	below you ested proto ion for this	will be presocols and mass condition.	sented with	the collecti	ve choices a	and opinic	ons
Spina Bifida  In the questions from Round 2 concerning sugge clinical intervent  (86%) of panellist	below you ested proto ion for this ts in Round his section	will be presocols and mass condition.	sented with a easurable or cal experien	the collecti utcomes of	ve choices a stability for	and opinic	ons a ded the

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear children with Spina Bifida (SB) from Round 2.

The median level of agreement and the relative distribution of response is detailed below.

Stability footwear should only be issued to children with SB after a critical assessment of the child's mobility needs in respect to other assistive aids.

Median level of Agreement 6 ("Agree")

8% "Neutral", 42% "Agree", 50% "Strongly Agree"

A consensus was reached for this statement.

23)

Panellists were asked to rank their agreement with the following statements concerning the grade of mobility impairment in children with SB that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid in Round 2.

The median level of agreement and the relative distribution of response is detailed below.

Stability footwear may be used alongside foot orthoses to assist foot and ankle stability in mild level lumbar 5 vertebral involvement.

Median level of Agreement 5 ("Somewhat Agree")

8% "Strongly disagree", 42% "Somewhat Agree", "50% Agree",

Stability Footwear may be used alongside AFO's and walking frames to assist walking and standing in lumbar 1-5 vertebral involvement.

Median level of agreement 6 ("Agree")

8% "Strongly disagree", 8% "Somewhat Disagree", 26% "Somewhat Agree", 50% "Agree", 8% "Strongly Agree"

Panellist feedback suggested the recommendations should consider actual severity of dysraphism as well as spinal level (Occulta, Meningocele, Myelomeningcele) and incorporate assistive aid recommendations from 'Orthoses for Myelomeningocele' in the Atlas of Orthoses and Assistive Devices, 2019. L1-3 level lesions would need Hip Knee Ankle Foot Orthosis (HKAFO) or Knee Ankle Foot Orthoses (KAFO) to be able to stand/walk. Level L4-5 lesions would walk with AFOs and S1 walk without AFO.

There was potential ambiguity with the term "alongside"; panellists questioned did this mean stability footwear was to be used at different times or simultaneously with the other assistive aid.

The following statements have been modified and developed based on panellist feedback

	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Stability footwear							
may be used							
simultaneously							
with foot orthoses							

sacral level 1 (Meningocel								
Stability Foo may be used simultaneou AFO's and w frames to as walking and standing in level 4-5 (Meningocel Myelomening	I sly with alking sist umbar							
Stability Foo may be used simultaneou HKAFO or KA walking fram assist walkin standing in level 1-3	sly with AFO and nes to g and umbar							
Panellists we	gocele).			-	ncerning tl	ne suitable a	age range	for
Myelomenin  24)  Panellists we stability foot The relative  Option 1, Ini needs of the Option 2, 1-2 Option 3, 4-2 Option 4, N/	ere present twear inter distribution tiation and child (pot 18 years (w A I do not	vention for n of respond d end poin ential or a with assess with assess feel this o	or SB in Rou onse is deta its of treatn actual). (73% sed adult tr sed adult tr ondition is	ind 2. iled below. nent indicate 6) ansition care ansition care suitable for s	ed by funct e) (18%) e) (9%) stability fo	ional ability otwear inter	and the r	mobili 0%)
Panellists we stability foot The relative  Option 1, Ini needs of the Option 2, 1-2 Option 3, 4-2	ere present twear inter distribution tiation and child (pot 18 years (w 18 years (w A I do not canellist feat ou may con	d end poin ential or a with assess with assess feel this contact was edback was sider the	or SB in Rou onse is deta its of treatn actual). (73% sed adult tr ondition is as given to distribution	ind 2. iled below. nent indicate 6) ansition care ansition care suitable for s nform any fu	ed by funct e) (18%) e) (9%) stability fo urther mod l's respons	cional ability otwear inter dification of se to either o	and the revention ( these opto	mobil 0%) tions.
Panellists we stability foot The relative  Option 1, Ini needs of the Option 2, 1-2 Option 3, 4-2 Option 4, N/  No specific property of the pr	ere present wear interdistribution tiation and child (pot 18 years (w 18 years (w A I do not panellist feat ou may con ur previous Option and the	d end poin ential or a with assess that assess the deack was sider the soption.  1 Initiation mobility	or SB in Rou onse is deta its of treath actual). (73% sed adult treath ondition is as given to distribution on and end needs of the	ind 2. iled below. nent indicate 6) ansition care ansition care suitable for s	ed by funct e) (18%) e) (9%) stability for urther mod l's respons atment ind	cional ability otwear inter dification of se to either of dicated by fu	and the revention ( these opto	mobil 0%) tions.

Panellists were asked to rank their agreement with the following statements concerning the clinical outcomes that would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with SB in Round 2:

The median level of agreement and the relative distribution of response is detailed below.

Kinematics: Optimising gait movement patterns (Hoffer Ambulation Scale)

Median level of Agreement 6 ("Agree")

18% "Neutral" 9% "Somewhat Agree", 64% "Agree", 9% "Strongly Agree"

Spatiotemporal: Increased walking velocity, 6MWT, TUG,

Median level of Agreement 6 ("Agree")

9% "Somewhat Agree", 82% "Agree", 9% "Strongly Agree"

A consensus was reached for this statement

Motor skill proficiency: Hoffer Ambulation Score

Median level of Agreement 6 ("Agree")

9% "Neutral", 9% "Somewhat Agree", 73% "Agree", 9% "Strongly Agree"

A consensus was reached for this statement

Physiological Perceived exertion (BORG)

Median level of Agreement 6 ("Agree")

9% "Neutral", 82% "Agree", 9% "Strongly Agree"

A consensus was reached for this statement

QoL: Pain

Median level of Agreement 6 ("Agree")

9% "Somewhat Agree", 82% "Agree", 9% "Strongly Agree"

A consensus was reached for this statement

QoL: ADL (daily mobility and social interaction)

Median level of Agreement 6 ("Agree")

18% "Somewhat Agree", 73% "Agree", 9% "Strongly Agree"

A consensus was reached for this statement

No specific panellist feedback was given to inform any further modification of the outcomes for SB. However, you may consider the distribution of the panel's response to either change or maintain your previous level of agreement with the following outcome.

	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Kinematics:							
Optimising gait							
movement							
patterns							
(Hoffer							
Ambulation							
scale)							

11)

If your level of agreement was "somewhat agree" or lower for any of the statements in relation to stability footwear intervention in children with SB please use this optional area to provide us with your reasoning.

## **Down's Syndrome**

In the questions below you will be presented with the collective choices and opinions from Round 2

concerning suggested protocols and measurable outcomes of stability footwear as a clinical intervention for this condition.

(93%) of panellists in Round 2 had clinical experience with this condition and provided the information for this section.

(If you have no clinical experience in treating this condition, please move to the next condition)

27)

Panellists were asked to rank their agreement with the following statements concerning the issuing of stability footwear children with Down's Syndrome from Round 2.

The median level of agreement and the relative distribution of response is detailed below.

Stability footwear may assist mediolateral stability and proprioception of the foot and ankle in standing and walking in children with Down's syndrome

Median level of Agreement 6 ("Agree")

15% "Somewhat Agree", 62% "Agree", 23% "Strongly Agree"

A consensus was reached for this statement.

Stability footwear design should consider last adaptions to accommodate the foot dimensions of children with Down's syndrome

Median level of Agreement 6 (Agree)

8% "Neutral", 42% "Agree", 50% "Strongly Agree"

A consensus was reached for this statement.

28)

Panellists were asked to rank their agreement with the following statements concerning the grade of mobility impairment in children with Down's Syndrome that would be suitable for stability footwear both as a sole aid or in combination with another assistive aid in Round 2. The median level of agreement and relative distribution of response is detailed below.

Stability footwear may be used as a sole assistive aid in pre-walking and learning to walk stages with associated hypotonia and delayed motor milestones.

Median level of Agreement 6 (Agree)

8% "Strongly disagree", 42% "Somewhat Agree", 50% "Agree",

Stability Footwear may be used alongside foot orthoses to assist walking in individuals with ankle instability

Median level of agreement 6 (Agree)

8% "Somewhat Agree", 69% "Agree", 23% "Strongly Agree"

A consensus was reached for this statement

Stability Footwear may be used alongside foot orthoses to assist walking in individuals with knee instability

Median level of agreement 6 (Agree)

8% "Strongly disagree", 15% "Somewhat Agree", 54% "Agree", 23% "Strongly Agree" A consensus was reached for this statement

Although consensus was reached in respect to knee instability and the use of stability footwear a potential adverse event was elaborated from panellist feedback in that associated knee hyperextension would contraindicate stiffened sole therapy in combination with AFO, as this would increase hyperextension in midstance,

The following statements have been modified and developed based on panellist feedback

	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree		Disagree		Agree		Agree
	1	2	3	4	5	6	7
Stability							
footwear may							
be used as a							
sole assistive							
aid in pre-							
walking and							
learning to walk							
stages with							
associated							
hypotonia and							
delayed motor							
milestones.							
Stability							
Footwear may							
be used							
alongside foot							

assist walking in individuals with ankle instability  Stability  Footwear with a stiffened sole is		
ankle instability  Stability  Footwear with a stiffened sole is		
Stability		
Footwear with a stiffened sole is		
a stiffened sole is		
is		
contraindicated		
with		
simultaneous		
AFO use in		
individuals with		
knee		
hyperextension.		
Option 2, 1-18 years (with assessed adult transition care) (15%) Option 3, 4-18 years (with assessed adult transition care) (8%) Option 4, N/A I do not feel this condition is suitable for stability footw	ear intervention	(0%)
A consensus was reached for Option 1		
30)		
,	ments in relation	1 to
30)  Panellists were asked to rank their agreement with the following state the clinical outcomes that would be used to evaluate the effectiveness		
Panellists were asked to rank their agreement with the following state the clinical outcomes that would be used to evaluate the effectiveness	s of "Off the Shel	
Panellists were asked to rank their agreement with the following state the clinical outcomes that would be used to evaluate the effectiveness Stability footwear for children with Down's Syndrome in Round 2:	s of "Off the Shel	
Panellists were asked to rank their agreement with the following state the clinical outcomes that would be used to evaluate the effectiveness Stability footwear for children with Down's Syndrome in Round 2: The median level of agreement and relative distribution of response is Foot Posture FPI-6	s of "Off the Shel	
Panellists were asked to rank their agreement with the following states the clinical outcomes that would be used to evaluate the effectiveness. Stability footwear for children with Down's Syndrome in Round 2: The median level of agreement and relative distribution of response is Foot Posture FPI-6  Median level of Agreement 5 (Somewhat Agree)  8% "Disagree", 15% "Somewhat Disagree", 15% "Neutral", 23% "Somewhat Disagree", 25% "Neutral", 25% "	s of "Off the Shel	f"
Panellists were asked to rank their agreement with the following states the clinical outcomes that would be used to evaluate the effectiveness. Stability footwear for children with Down's Syndrome in Round 2: The median level of agreement and relative distribution of response is Foot Posture FPI-6  Median level of Agreement 5 (Somewhat Agree)  8% "Disagree", 15% "Somewhat Disagree", 15% "Neutral", 23% "Some "Agree",	s of "Off the Shel	f"
Panellists were asked to rank their agreement with the following states the clinical outcomes that would be used to evaluate the effectiveness. Stability footwear for children with Down's Syndrome in Round 2:  The median level of agreement and relative distribution of response is Foot Posture FPI-6  Median level of Agreement 5 (Somewhat Agree)  8% "Disagree", 15% "Somewhat Disagree", 15% "Neutral", 23% "Somewhat Disagree", 25% "Neutral", 25%	s of "Off the Shel	f"
Panellists were asked to rank their agreement with the following states the clinical outcomes that would be used to evaluate the effectiveness. Stability footwear for children with Down's Syndrome in Round 2: The median level of agreement and relative distribution of response is Foot Posture FPI-6  Median level of Agreement 5 (Somewhat Agree)  8% "Disagree", 15% "Somewhat Disagree", 15% "Neutral", 23% "Some "Agree",	s of "Off the Shel	f"

Spatiotemporal:	Increased v	walking vel	locity, 6MWT	,			
Median level of	_						
8% "Neutral", 15		_	_	", 23% "St	rongly Agree'	'	
A consensus was	reached fo	or this state	ment.				
Gross Motor skil	l proficienc	y: Number	of falls				
Median level of	-						
8% "Neutral", 8%		_	_	23% "Stro	ongly Agree"		
A consensus was	reached fo	or this state	ment				
Motor skill profi	ciency:						
Gross Motor Skil	ls (BOT-2)						
Median level of	Agreement	6 (Agree)					
31% "Somewhat	t Agree", 61	L% "Agree"	, 8% "Strongl	y Agree"			
QoL: Pain							
Median level of	Agreement	6 (Agree)					
8% "Somewhat A	•		23% "Strongly	Agree"			
A consensus was	reached fo	or this state	ement				
QoL: Comfort wi	th Footwea	r					
Median level of							
23% "Somewhat	_		23% "Strong	lv Agree"			
A consensus was	•	•	-	.,			
QoL: ADL (daily r	nobility and	d social inte	eraction)				
Median level of	Agreement	6 (Agree)					
15% "Somewhat	Agree", 62	% "Agree",	23% "Strong	ly Agree"			
A consensus was	reached w	ith this sta	tement.				
Panellist feedbad	ck suggeste	d that the I	FPI-6 is a sem	i-quantita	tive descripti	on of fo	ot posture
and should not b				•	•		•
walk test as a va						_	
inform further m	odification	of the other	er outcomes	that did n	ot reach cons	ensus. F	łowever,
you may conside	r the distril	oution of th	ne panel's res	ponse to	either change	or mair	ntain your
previous choice.							
Please rank your	agreement	t with the f	ollowing out	comes.			
. , , , , , , ,	Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
	Disagree	3	Disagree		Agree		Agree
	1	2	3	4	5	6	7
Foot posture							
FPI-6	_ <del>_</del>	_ <del>_</del>			_ <del>_</del>		
Kinematics:							
Optimising gait							
movement							
patterns							

(foot and							
ankle)							
Spatiotemporal							
10-meter walk							
test						$+$ $\overline{}$	
Gross motor proficiency:							
number of falls							
Motor skill							
proficiency:							
Gross Motor							
Skills (BOT-2)							
14)							
31)			"		C . I		
If your level of ago			•		•		
relation to stabilit				en with Dov	wn's Syndro	me pleas	e use this
optional area to p	provide us	with your r	easoning.				
Intoeing							
Intoeing							
In the questions b	pelow you	will be pres	sented with t	the collecti	ve choices a	and opinio	ons from
In the questions b	·	·				·	
In the questions b Round 2 concerning sugge	sted proto	ocols and m				·	
In the questions b	sted proto	ocols and m				·	
In the questions be Round 2 concerning sugge intervention for the	sted proto	ocols and m	easurable ou	utcomes of	stability foo	otwear as	a clinical
In the questions be Round 2 concerning sugge intervention for the (86%) of panellist	sted proto his condit s in Round	ocols and m ion. d 2 had clini	easurable ou	utcomes of	stability foo	otwear as	a clinical
In the questions be Round 2 concerning sugge intervention for the	sted proto his condit s in Round	ocols and m ion. d 2 had clini	easurable ou	utcomes of	stability foo	otwear as	a clinical
In the questions be Round 2 concerning sugge intervention for the (86%) of panellist information for the	sted proto his condit s in Round his section	ocols and m ion. d 2 had clini	easurable ou cal experien	utcomes of ce with this	stability foo	otwear as	a clinical
In the questions be Round 2 concerning sugge intervention for the (86%) of panellist information for the (If you have no cli	sted proto his condit s in Round his section	ocols and m ion. d 2 had clini	easurable ou cal experien	utcomes of ce with this	stability foo	otwear as	a clinical
In the questions be Round 2 concerning sugge intervention for the (86%) of panellist information for the	sted proto his condit s in Round his section	ocols and m ion. d 2 had clini	easurable ou cal experien	utcomes of ce with this	stability foo	otwear as	a clinical
In the questions be Round 2 concerning sugge intervention for the (86%) of panellist information for the (If you have no clicondition)	sted proto his condit s in Round his section	ocols and m ion. d 2 had clini	easurable ou cal experien	utcomes of ce with this	stability foo	otwear as	a clinical
In the questions be Round 2 concerning sugge intervention for the (86%) of panellist information for the (If you have no clicondition)	sted proto his conditi s in Round his section inical expe	ocols and m ion. d 2 had clini erience in tr	easurable ou cal experien eating this co	utcomes of ce with this ondition, p	stability for s condition	otwear as and provi	a clinical
In the questions be Round 2 concerning sugge intervention for the (86%) of panellist information for the (If you have no clicondition)	sted proto his condition in Round his section inical expe	ocols and mion. d 2 had clini erience in tr	easurable ou cal experient eating this co	utcomes of ce with this ondition, potential the follow	stability for s condition lease move	otwear as and provi	a clinical
In the questions be Round 2 concerning sugge intervention for the (86%) of panellist information for the (If you have no clicondition)  32)  Panellists were as issuing of stability	sted proto his conditions in Round his section inical expensions ked to rai	ocols and mion.  d 2 had clini .  erience in tr  nk their agre	easurable ou cal experient eating this content eement with ith Intoeing	ce with this ondition, plant the follow from Round	stability for s condition lease move ing statemed 2.	and provi	a clinical  ded the  xt  erning the
In the questions be Round 2 concerning sugge intervention for the (86%) of panellist information for the (If you have no clicondition)	sted proto his conditions in Round his section inical expensions ked to rai	ocols and mion.  d 2 had clini .  erience in tr  nk their agre	easurable ou cal experient eating this content eement with ith Intoeing	ce with this ondition, plant the follow from Round	stability for s condition lease move ing statemed 2.	and provi	a clinical  ded the  xt  erning the
In the questions be Round 2 concerning sugge intervention for the (86%) of panellist information for the (If you have no clicondition)  32)  Panellists were as issuing of stability The median level	sted proto his conditions in Round his section inical expensions sked to rail of agreen	ocols and mion. d 2 had clini derience in trank their agreement and the	easurable ou cal experient eating this co eement with ith Intoeing e relative dis	the follow	stability for s condition lease move ing statemed d 2. f response i	and provi	a clinical  ded the  xt  erning the
In the questions be Round 2 concerning sugge intervention for the (86%) of panellist information for the (If you have no clicondition)  32)  Panellists were as issuing of stability	sted proto his conditions in Round his section inical expensions ked to rail of footwear of agreem	ocols and mion.  d 2 had clini  erience in tr  nk their agre r children we nent and the	easurable ou cal experient eating this contempt the cement with ith Intoeing e relative distervention for the contempt to the	the follow	stability for s condition lease move ing statemed d 2. f response i	and provi	a clinical  ded the  xt  erning the

footwear may a suitable intervention for intoeing if associated with tripping Stability footwear may a suitable intervention for intoeing if associated with an underlying neurological condition	.7% "Disagree Agree",	", 17% "So	omewhat D	isagree", 41%	6 "Neutral	", 8% "Some	what Ag	ree", 17%
No specific panellist feedback was given to inform any further modification of the statements. However, you may consider the distribution of the panel's response to either change or maintain your previous level of agreement with the following statements.    Strongly   Disagree   Somewhat   Neutral   Somewhat   Agree   Agree   Agree     1   2   3   4   5   6   7	inderlying net Median level o 8% "Disagree"	urological of Agreeme	condition ent 4 (Neut	ral)				
statements. However, you may consider the distribution of the panel's response to either change or maintain your previous level of agreement with the following statements.    Strongly   Disagree   Disagree   Disagree   Agree   Agr	_	gree"						
Strongly Disagree Disagree Disagree Disagree Disagree Agree Agree Agree 1 2 3 4 5 6 7  Stability footwear may a suitable intervention for intoeing if associated with tripping Stability footwear may a suitable intervention for intoeing if associated with tripping Stability footwear may a suitable intervention for intoeing if associated with an underlying neurological condition	tatements. Ho	owever, yo	ou may con	isider the dist	tribution c	of the panel's	respons	se to either
Disagree Disagree Agree Agree  1 2 3 4 5 6 7  Stability footwear may a suitable intervention for intoeing if associated with tripping Stability footwear may a suitable intervention for intoeing if associated with an underlying neurological condition  Disagree Agree Agree Agree Agree  Agree Agree Agree  Agree Agree Agree  Agree Agree Agree  1 2 3 4 5 6 7   Disagree Agree Agree Agree  Agree Agree Agree  Agree Agree Agree  1 2 3 4 5 5 6 7   Disagree Agree Agree  Agree Agree Agree  For a sagree Agree  For a sagre   For a sagr					1		Ŧ	
Stability footwear may a suitable intervention for intoeing if associated with tripping Stability footwear may a suitable intervention for intoeing if associated with associated with an underlying neurological condition		0.	Disagree		Neutral		Agree	_ ,
Stability footwear may a suitable intervention for intoeing if associated with tripping Stability footwear may a suitable intervention for intoeing if associated with an underlying neurological condition	_		-		_			
footwear may a suitable intervention for intoeing if associated with tripping Stability footwear may a suitable intervention for intoeing if associated with an underlying neurological condition			2	3	4	5	6	7
suitable intervention for intoeing if associated with tripping Stability footwear may a suitable intervention for intoeing if associated with an underlying neurological condition	ootwear							
for intoeing if associated with tripping Stability	•							
if associated with tripping  Stability footwear may a suitable intervention for intoeing if associated with an underlying neurological condition	ntervention							
with tripping  Stability	_							
Stability footwear may a suitable intervention for intoeing if associated with an underlying neurological condition	vith							
footwear may a suitable intervention for intoeing if associated with an underlying neurological condition								
may a suitable intervention for intoeing if associated with an underlying neurological condition	,							
suitable intervention for intoeing if associated with an underlying neurological condition								
intervention for intoeing if associated with an underlying neurological condition 3)								
if associated with an underlying neurological condition  3)								
associated with an underlying neurological condition	or intoeing							
with an underlying neurological condition 3)	f							
underlying neurological condition 3)								
neurological condition 3)								
condition	, -							
3)	_							
	ondition						<u> </u>	
·	Į.							
Panellists were presented with the following options concerning the suitable age range f	anellists were	presente	d with the	following opt	tions conc	erning the su	itable a	ge range for
stability footwear intervention for intoeing in Round 2. The relative distribution of response is detailed below.	tability footw	ear interv	ention for i	ntoeing in R	ound 2.			
Option 1, Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual). (73%)						by functiona	l ability	and the

Option 2, N/A I do not feel this condition is suitable for stability footwear intervention (27%)
Option 3, 3 years onwards (0%)

No specific panellist feedback was given to inform any further modification of these options. However, you may consider the distribution of the panel's response to either change or maintain your previous option.

Option 1 Initiation and end points of treatment indicated by functional ability and the mobility needs of the child (potential or actual).

Option 2 N/A I do not feel this condition is suitable for stability footwear intervention.

10)

Panellists were asked to rank their agreement with the following statements concerning the clinical outcomes that would be used to evaluate the effectiveness of "Off the Shelf" Stability footwear for children with intoeing in Round 2:

The median level of agreement and the relative distribution of response is detailed below.

Kinematics: Optimising gait movement patterns (Angle of Gait)

Median level of Agreement 5 (Somewhat Agree)

18% "Neutral", 37% "Somewhat Agree", 37% Agree, 8% Strongly Agree

Spatiotemporal: Increased walking velocity, 6MWT, TUG2

Median level of Agreement 5 (Somewhat Agree)

46% "Neutral", 18% "Somewhat Agree", 27% "Agree", 9% "Strongly Agree"

Gross Motor skill proficiency: Number of falls

Median level of Agreement 6 (Agree)

36% "Somewhat Agree", 46% "Agree", 18% "Strongly Agree"

QoL: Pain

Median level of Agreement 6 (Somewhat Agree)

27% "Neutral" 27% "Somewhat Agree", 46% "Agree"

QoL: ADL (daily mobility and social interaction)

Median level of Agreement 6 (Agree)

46% "Somewhat Agree", 46% "Agree", 8% "Strongly Agree"

There was minimal feedback in relation to modifying the outcomes, other than the suggestion that standing Foot Progression Angle (Fick Angle) may be compared with foot progression angle in gait. No specific panellist feedback was given to inform further modification of the other outcomes. However, you may consider the distribution of the panel's response to either change or maintain your previous choice.

Please rank your agreement with the following outcomes

Strongly	Disagree	Somewhat	Neutral	Somewhat	Agree	Strongly
Disagree		Disagree		Agree		Agree
1	2	3	4	5	6	7

Kinematics:							
Optimising gait							_
movement							
patterns							
(Angle of Gait).							
Comparison of							
standing foot progression							
angle with							
walking foot							
progression							
angle .							
Spatiotemporal:							
Increased							
walking							
velocity, 6MWT, TUG							
Gross motor							
proficiency:	_		_				
reduction in							
tripping							
QoL: Pain							Ш
QoL: ADL (daily							
mobility and							
social							
interaction)							
11)							
If your level of agr			_		•		ts in
relation to stabilit				n with Into	eing please	use this	
optional area to p	roviae us v	with your re	easoning.				
Additional Con	ditions:						
A number of ad		conditions	s were nre	sented to	the pane	llists in R	ound
2 based on sugg							Juliu
- Dusca on sugg							Mear
Panellists were	SCKEU IT	tnev agred	<b>-() (</b> ()/////////////////////////////////				

The relative distribution of responses are detailed below,

(Panellists who had no clinical experience of the condition were discounted from the frequency calculation)

Charcot Marie Tooth, Hereditary Motor Sensory Neuropathy Agree 92%, Neutral 0%, Disagree 8% A consensus was reached for this statement

Hypermobility (Ehlers Danlos Type)
Agree 92%, Neutral 8%, Disagree 0%
A consensus was reached for this statement

Developmental Coordination Disorder Agree 100%, Neutral 0%, Disagree 0% A consensus was reached for this statement

Rett's Syndrome Agree 80%, Neutral 0%, Disagree 20% A consensus was reached for this statement

Foetal Alcohol Syndrome Agree 50%, Neutral 0%, Disagree 50%

Accessory navicular Agree 31%, Neutral 46%, Disagree 23%

Chronic lateral ankle instability
Agree 77%, Neutral 15%, Disagree 8%
A consensus was reached for this statement

Concerning the conditions below concerning their suitability for stability footwear clinical intervention.

36)

	I have no clinical experience with this condition	Disagree	Neutral	Agree
Foetal Alcohol syndrome				

Accessory		
navicular		



# **END OF SECTION 3 ROUND 3**

Thank you for taking the time to complete section 3 of round 2. You have now completed all sections of round 2 of this Delphi survey. Your time and participation is greatly appreciated.

Remember to submit your answers before closing this form.