

## Appendix 2 Search Strategies

### *Pubmed*

#1 "pain"[Title/Abstract] OR "pain"[MeSH Terms]

#2 (newborn OR neonat\* OR "newborn infant"[Title/Abstract] OR premature OR "preterm infant"[Title/Abstract] OR "premature infant"[Title/Abstract] OR "premature baby"[Title/Abstract] OR "premature babies"[Title/Abstract] OR "neonatal prematurity"[Title/Abstract] OR "term infant"[Title/Abstract] OR "low birth weight infant"[Title/Abstract] OR "low birth weight"[Title/Abstract] OR LBW OR ELBW OR VLBW OR "small for gestational age"[Title/Abstract]) OR ("infant, newborn" OR "Infant, premature" OR "infant, extremely premature" OR "infant, low birth weight" OR "infant, small for gestational age" OR "infant, very low birth weight"[MeSH Terms])

#3 (delivery[Title/Abstract] OR childbirth[Title/Abstract] OR labor[Title/Abstract]) OR ("Delivery, Obstetric" OR Parturition OR "Labor, Obstetric"[MeSH Terms])

#4 #1 AND #2 NOT #3

#5 non-pharmacological[Title/Abstract] OR nonpharmacological[Title/Abstract] OR non-drug[Title/Abstract] OR nondrug[Title/Abstract] OR "sweet solution"[Title/Abstract] OR "sweet tast\*"[Title/Abstract] OR "sugar solution"[Title/Abstract] OR sucrose[Title/Abstract] OR glucose[Title/Abstract] OR dextrose[Title/Abstract] OR fructose[Title/Abstract] OR "breast milk"[Title/Abstract] OR "formula milk"[Title/Abstract] OR "breast feeding"[Title/Abstract] OR breastfeeding[Title/Abstract] OR "formula feeding"[Title/Abstract] OR "non-nutritive sucking"[Title/Abstract] OR pacifier[Title/Abstract] OR "kangaroo mother care"[Title/Abstract] OR "kangaroo care"[Title/Abstract] OR "skin-to-skin care"[Title/Abstract] OR "skin-to-skin contact"[Title/Abstract] OR touch\*[Title/Abstract] OR massage[Title/Abstract] OR holding[Title/Abstract] OR swaddling[Title/Abstract] OR cuddling[Title/Abstract] OR voice[Title/Abstract] OR sound[Title/Abstract] OR music[Title/Abstract] OR "facilitated tucking"[Title/Abstract] OR postion\*[Title/Abstract] OR "postural support"[Title/Abstract] OR "olfactory stimulation"[Title/Abstract] OR "multisensory stimulation"[Title/Abstract] OR

"sensory stimulation"[Title/Abstract] OR distraction[Title/Abstract]

#6 Analgesia OR "Pain Management" OR "Acupuncture Analgesia" OR sucrose OR glucose OR fructose OR "Milk, Human" OR "Breast Feeding" OR pacifier OR "Kangaroo-Mother Care Method" OR massage OR voice OR sound OR "Music Therapy" OR "facilitated tucking" OR "Patient Positioning"[MeSH Terms]

#7 #4 AND (#5 OR #6)

Filters applied: Meta-Analysis, Systematic Review, in the last 5 years, Newborn: birth-1 month.

### *Embase*

#1 pain:ab,ti OR 'pain'/exp OR 'pain intensity'/exp OR 'pain severity'/exp OR 'pain parameters'/exp

#2 newborn:ab,ti OR neonat\*:ab,ti OR 'newborn infant':ab,ti OR premature:ab,ti OR 'preterm infant':ab,ti OR 'premature infant':ab,ti OR 'premature baby':ab,ti OR 'premature babies':ab,ti OR 'neonatal prematurity':ab,ti OR 'term infant':ab,ti OR 'low birth weight infant':ab,ti OR 'low birth weight':ab,ti OR lbw:ab,ti OR elbw:ab,ti OR vlbw:ab,ti OR 'small for gestational age':ab,ti OR 'newborn'/exp OR 'newborn period'/exp OR 'prematurity'/exp OR 'low birth weight'/exp OR 'very low birth weight'/exp OR 'small for date infant'/exp OR 'infant'/exp

#3 delivery:ab,ti OR childbirth:ab,ti OR labor:ab,ti OR 'obstetric delivery'/exp OR 'childbirth'/exp OR 'labor'/exp

#4 #1 AND #2 NOT #3

#5 non-pharmacological:ab,ti OR nonpharmacological:ab,ti OR non-drug:ab,ti OR nondrug:ab,ti OR 'sweet solution':ab,ti OR 'sweet tast\*':ab,ti OR 'sugar solution':ab,ti OR sucrose:ab,ti OR glucose:ab,ti OR dextrose:ab,ti OR fructose:ab,ti OR 'breast milk':ab,ti OR 'formula milk':ab,ti OR 'breast feeding':ab,ti OR breastfeeding:ab,ti OR 'formula feeding':ab,ti OR 'non-nutritive sucking':ab,ti OR pacifier:ab,ti OR 'kangaroo mother care':ab,ti OR 'kangaroo care':ab,ti OR 'skin-to-skin care':ab,ti OR 'skin-to-skin contact':ab,ti OR touch\*:ab,ti OR massage:ab,ti OR holding:ab,ti OR swaddling:ab,ti OR cuddling:ab,ti OR voice:ab,ti OR sound:ab,ti OR music:ab,ti OR

'facilitated tucking':ab,ti OR postion\*:ab,ti OR 'postural support':ab,ti OR 'olfactory stimulation':ab,ti OR 'multisensory stimulation':ab,ti OR 'sensory stimulation':ab,ti OR distraction:ab,ti

#6 'Analgesia'/exp OR 'sucrose'/exp OR 'glucose'/exp OR 'fructose'/exp OR 'breast milk'/exp OR 'artificial milk'/exp OR 'breast feeding'/exp OR 'sucking'/exp OR 'pacifier'/exp OR 'kangaroo care'/exp OR 'touch'/exp OR 'massage'/exp OR 'voice'/exp OR 'sound'/exp OR 'music therapy'/exp OR 'facilitated tucking'/exp OR 'sensory stimulation'/exp

#7 'systematic review':ab,ti OR 'systematic literature review':ab,ti OR 'systematic narrative review':ab,ti OR 'systematic qualitative review':ab,ti OR 'systematic quantitative review':ab,ti OR 'systematic meta-review':ab,ti OR 'systematic critical review':ab,ti OR 'systematic cochrane review':ab,ti OR 'systematic integrative review':ab,ti OR 'meta-analysis':ab,ti OR 'systematic review'/exp OR 'meta analysis'/exp

#8 (#4 AND (#5 OR #6) AND #7) AND (2016:py OR 2017:py OR 2018:py OR 2019:py OR 2020:py OR 2021:py)

### *Web of Science*

#1 TS=(pain)

#2 TS=(newborn OR neonat\* OR "newborn infant" OR premature OR "preterm infant" OR "premature infant" OR "premature baby" OR "premature babies" OR "neonatal prematurity" OR "term infant" OR "low birth weight infant" OR "low birth weight" OR LBW OR ELBW OR VLBW OR "small for gestational age")

#3 TS=(delivery OR childbirth OR labor)

#4 ((#1) AND #2) NOT #3

#5 TS=(non-pharmacological OR nonpharmacological OR non-drug OR nondrug OR "sweet solution" OR "sweet tast\*" OR "sugar solution" OR sucrose OR glucose OR dextrose OR fructose OR "breast milk" OR "formula milk" OR "breast feeding" OR breastfeeding OR "formula feeding" OR "non-nutritive sucking" OR pacifier OR "kangaroo mother care" OR "kangaroo care" OR "skin-to-skin care" OR "skin-to-skin

contact” OR touch\* OR massage OR holding OR swaddling OR cuddling OR voice OR sound OR music OR “facilitated tucking” OR postion\* OR “postural support” OR “olfactory stimulation” OR “multisensory stimulation” OR “sensory stimulation” OR distraction)

**#6** TS=("systematic review" OR "systematic literature review" OR "systematic narrative review" OR "systematic qualitative review" OR "systematic quantitative review" OR "systematic meta-review" OR "systematic critical review" OR "systematic Cochrane review" OR "systematic integrative review" OR "meta-analysis")

**#7** ((#4) AND #5) AND #6

### *CINAHL complete*

**S1** SU pain OR MH(pain)

**S2** SU ( newborn OR neonat\* OR "newborn infant" OR premature OR "preterm infant" OR "premature infant" OR "premature baby" OR "premature babies" OR "neonatal prematurity" OR "term infant" OR "low birth weight infant" OR "low birth weight" OR LBW OR ELBW OR VLBW OR "small for gestational age" ) OR ( MH (“infant, newborn” OR “Infant, premature” OR “infant, low birth weight” OR “infant, small for gestational age” OR “infant, very low birth weight”) )

**S3** SU ( delivery OR childbirth OR labor ) OR ( MH (“Delivery, Obstetric” OR childbirth OR labor) )

**S4** (S1 AND S2) NOT S3

**S5** SU ( non-pharmacological OR nonpharmacological OR non-drug OR nondrug OR “sweet solution” OR “sweet tast\*” OR “sugar solution” OR sucrose OR glucose OR dextrose OR fructose OR “breast milk” OR “formula milk” OR “breast feeding” OR breastfeeding OR “formula feeding” OR “non-nutritive sucking” OR pacifier OR “kangaroo mother care” OR “kangaroo care” OR “skin-to-skin care” OR “skin-to-skin contact” OR touch\* OR massage OR holding OR swaddling OR cuddling OR voice OR sound OR music OR “facilitated tucking” OR postion\* OR “postural support” OR “olfactory stimulation” OR “multisensory stimulation” OR “sensory stimulation” OR distraction )

**S6** MH ( Analgesia OR “pain management” OR sucrose OR glucose OR fructose OR “Milk, Human” OR “Milk Substitutes” OR “breast feeding” OR Pacifiers OR “Kangaroo Care” OR massage OR voice OR sound OR “Music Therapy” OR “Sensory Stimulation” OR distraction )

**S7** SU ( "systematic review" OR "systematic literature review" OR "systematic narrative review" OR "systematic qualitative review" OR "systematic quantitative review" OR "systematic meta-review" OR "systematic critical review" OR "systematic Cochrane review" OR "systematic integrative review" OR "meta-analysis" ) OR MH ( "systematic review" OR "meta analysis" )

**S8** S4 AND (S5 OR S6) AND S7

### *Google Scholar*

(newborn OR neonate OR premature) AND pain AND (non-pharmacological OR sucrose OR glucose OR “breast feeding” OR “sucking” OR “kangaroo care” OR music OR “facilitated tucking”) AND ("systematic review" OR "meta-analysis")

### *CNKI*

(SU = 疼痛 + 镇痛) AND (SU = 新生儿 + 足月儿 + 早产儿 + 低出生体重儿 + 小于胎龄儿 + 婴儿) AND (SU = 非药物 + 甜味剂 + 糖水 + 葡萄糖 + 蔗糖 + 母乳 + 母奶 + 配方奶 + 非营养性吸吮 + 安抚奶嘴 + 安慰奶嘴 + 袋鼠式护理 + 抚触 + 按摩 + 拥抱 + 襁褓 + 皮肤接触 + 肌肤接触 + 声音 + 音乐 + 屈曲体位 + 鸟巢) AND (SU = 系统评价 + 系统综述 + 荟萃分析 + Meta 分析) NOT (SU=剖宫产 + 分娩 + 产科 + 产妇 + 成人 + 老年人 + 妊娠)

The search strategies of other Chinese databases were slightly adjusted on this basis.