S2. Overview of the study in relation to the World Health Organization (WHO) trial registration data set.

<table>
<thead>
<tr>
<th>WHO item</th>
<th>Item description</th>
<th>Study description</th>
<th>Page number where item can be found.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Primary registry and trial identifying number</td>
<td>Primary registry at ClinicalTrials.gov registration number NCT05058547</td>
<td>Page 4, manuscript</td>
</tr>
<tr>
<td>2.</td>
<td>Date of registration in primary registry</td>
<td>27 September 2021</td>
<td>Page 4, manuscript</td>
</tr>
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<td>4.</td>
<td>Sources of monetary or material support</td>
<td>The Swedish Research Council for Health, Working Life and Welfare: Dnr 2019-01264</td>
<td>Page 19, manuscript</td>
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<td>5.</td>
<td>Primary sponsor</td>
<td>Linköping University</td>
<td>Page 1, manuscript</td>
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<td>6.</td>
<td>Secondary sponsor(s)</td>
<td>N/A</td>
<td></td>
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<td>7.</td>
<td>Contact for public queries</td>
<td><a href="mailto:Mathilda.bjork@liu.se">Mathilda.bjork@liu.se</a> +4611363531 Linköping University 581 83 Linköping Sweden Recruitment status: not yet recruiting</td>
<td>Page 1, manuscript</td>
</tr>
<tr>
<td>8.</td>
<td>Contact for scientific queries</td>
<td>Mathilda Björk <a href="mailto:Mathilda.bjork@liu.se">Mathilda.bjork@liu.se</a> +4611363531 Department of Health, Medicine and Caring Sciences Linköping University 581 83 Linköping Sweden</td>
<td>Page 1, manuscript</td>
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<tr>
<td>9.</td>
<td>Public title</td>
<td>An evidence-based digital support during one year after an Interdisciplinary Pain Rehabilitation Program for persons with chronic musculoskeletal pain to facilitate a</td>
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<tr>
<td><strong>10.</strong></td>
<td><strong>Scientific title</strong></td>
<td>An evidence-based digital support during one year after an Interdisciplinary Pain Rehabilitation Program for persons with chronic musculoskeletal pain to facilitate a sustainable return to work: a study protocol for a registry-based multicentre randomized controlled trial.</td>
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<tr>
<td><strong>11.</strong></td>
<td><strong>Countries of recruitment</strong></td>
<td>Sweden</td>
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<td><strong>12.</strong></td>
<td><strong>Health condition</strong></td>
<td>Chronic pain</td>
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<td><strong>13.</strong></td>
<td><strong>Intervention</strong></td>
<td>Participants randomized to the intervention group will receive the smartphone application SWEPPE to use as a digital support during the RTW process. SWEPPE is a smartphone application where the individual can create an action plan, perform daily registrations of health aspects, self-monitoring of health aspects and goals, have access to a library with evidence-based facts and a coach, and possibility to share information with the employer. The intervention starts at the end of the IPRP with self-rating of work conditions and goal setting in SWEPPE. The participants will use SWEPPE for 12 months. Data registered in SWEPPE by the participant about their goal, work condition and self-rating will be stored in the application and used for self-monitoring and visualizing progress for the participant. The participant invites his/her employer/employers to access the web application SWEPPE depending on what information the participant wants to share with the employer. The employer will receive e-mail reminders to use SWEPPE. Participants randomized to the control group will not receive any active intervention for RTW after IPRP.</td>
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<td><strong>14.</strong></td>
<td><strong>Key inclusion and exclusion criteria</strong></td>
<td>Inclusion Criteria: Patients entering the trial must have completed IPRP. The principal inclusion criteria for IPRP in Sweden are:</td>
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<td>• persistent or intermittent pain lasting ≥3 months</td>
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<td>• pain affecting daily activities to a large extent,</td>
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<td>• completed systematic assessment and non-pharmacological optimization is completed,</td>
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<td>• screening for psychosocial risk factors and differential diagnosis completed</td>
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<td>In addition, the following criteria will be applied:</td>
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<td>• Age 18-65 years</td>
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</table>
- Completed participation in an Interdisciplinary Pain Rehabilitation Program (IPRP) at any of the participating units.
- Having an employment to return to after IPRP or having returned to work but need continued support for creating a sustainable work situation after IPRP.

Exclusion criteria:
- Completed IPRP but are unemployed or unable to return to work.

| 15. | Study type | Registry-based randomized controlled trial. Stratification of sick leave history during the year before IPRP and block-randomization, using opaque sealed and numbered envelopes, to intervention (SWEPPE) or control group. Due to the nature of the intervention the participants will not be blinded to group allocation. |
| 16. | Date of first enrollment | Anticipated to spring 2022. |
| 17. | Target sample size | Total number of participants: 360 |
| 18. | Recruitment status | Pending |
| 19. | Primary outcome(s) | Sick leave. Time Frame: 12 months follow up after IPRP. Number of gross and net days with sickness cash benefit |
| 20. | Key secondary outcome(s) | 
1. Return to work. Time Frame: 12 months follow up after IPRP. Return to work (partially or full time) every month 
2. Sick-leave spells per months. Time Frame: 12 months follow up after IPRP. Number of sick-leave spells (per month) 
3. Return to work group level. Time Frame: 12 months follow up after IPRP. Proportions of a group who returns to full- or part-time work (per month) 
4. Working days before new sick leave. Time Frame: 12 months follow up after IPRP. Number of days in work before new sick leave during study period 
5. Proportion back to work. Time Frame: 12 months follow up after IPRP. Proportion of a group back to work >28 days (full- or part time) before a new sick-leave spell occurs 
6. Total sick-leave spells. Time Frame: 12 months follow up after IPRP. Number of sick-leave spells during study period |
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<td>7.</td>
<td>Length of total sick leave. Time Frame: 12 months follow up after IPRP. Length of total sick leave during study period</td>
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<td>10.</td>
<td>Overall emotional distress. Time Frame: Baseline and 12 months. Hospital Anxiety and Depression Scale Swedish version.</td>
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<td>12.</td>
<td>Goal fulfillment and satisfaction during the study period. Time Frame: Baseline and 12 months.</td>
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Explanatory Outcome Measures:

1. Self-reported fatigue the last 7 days. Time Frame: Baseline and 12 months. Numeric fatigue rating scale.
7. Self-reported demands, control, and support at the workplace. Time Frame: Baseline and 12 months. Demand Control Support Questionnaire Swedish version.
8. Self-reported physical work environment using a questionnaire inspired by the Swedish Work Environment Authority ergonomics checklist.
10. Self-reported work situation during the study period. Time Frame: Baseline and 12 months. Barriers for return to work, strategies to handle barriers and need of support from the employer reported as text answer.
11. Self-reported workload an average day. Time Frame: Baseline and 12 months. Number of hours per day for paid work and unpaid household work.

**Data collected from SWEPPE**
Mobile app usage, for example number of participants using the app, performing daily self-rating, sharing information with the employer, or asking questions to the coach will be retrieved from SWEPPE.

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<tr>
<td>21.</td>
<td>Ethics review</td>
<td>Approved</td>
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<tr>
<td>22.</td>
<td>Completion date</td>
<td>After the last subject’s last visit.</td>
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<tr>
<td>23.</td>
<td>Summary results</td>
<td>Summary results will be provided when the trial is completed.</td>
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<tr>
<td>24.</td>
<td>IPD sharing statement (individual clinical trial participant-level data)</td>
<td>Not planned to share individual clinical trial participant-level data (IPD)</td>
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