# RAMP I© (RAMP 2.0 Preliminary version, 2024)

## Checklist for screening physical risks for manual work

*RAMP - Risk Assessment and Management tool for manual work Proactively*

**Introduction**

This checklist (RAMP I) is intended for identifying (screening) and assessing physical ergonomics risk factors when working with manual work which may increase the risk of developing musculoskeletal disorders (MSDs). Manual work involves for example manual lifting, pushing or pulling of loads and working with hand-held tools. At high or sustained exposure to the risk factors the risk of developing or worsening MSDs increases.

Use this tool to assess a work, work task, or a work station during an average 8 hour work day. In some cases also rarely occurring extreme cases may warrant assessment. Assess the work of an employee who is representative for the group of employees who carry out this kind of work, or, alternatively two people so that the variation among employees is somewhat taken into account. This employee/these employees should be experienced in how the work should be carried out in an appropriate way. Those performing the assessment should be familiar with how the work is carried out. Otherwise, the assessment should be carried out in co-operation with someone with such knowledge. The person who carries out the assessment should have participated in a basic physical ergonomics course, an introduction in the RAMP-method and should have read the RAMP manual. During the assessment, choose the alternative which best matches the situation and mark the "Yes" or "No" box corresponding to the question/statement.

The results from the analysis show whether any risk factor has been identified or not. If no risk factor has been identified, the risk to develop MSD problems is assessed to be low for people with normal physical capacity. If one or more risk factors have been identified this implies that either there is a high risk to develop MSDs, or that a refined analysis is needed to assess whether the risk is low, moderate or high. A refined analysis can be carried out with the RAMP II module in most cases. The result of the RAMP I assessment is presented at three risk and priority levels:

**High risk**. The loading situation has such a magnitude and characteristics that many employees are at an increased risk of developing musculoskeletal disorders. Improvement measures should be given high priority.

**Investigate further**. An in more in depth analysis is required to assess the risk level. A refined analysis can be carried out for example with the RAMP II module.

**Low risk**. The loading situation has such a magnitude and characteristics that most employees are at a low risk of developing musculoskeletal disorders. However, individuals with reduced physical capacity may be at risk. Individually tailored improvement measures may be needed.

The result is intended to form a part of the decision making basis when prioritizing and choosing actions in order to reduce the risk for MSDs.

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Date:_____ Assessment of: ☐ Work/ work task ☐ Employee load

Work/work task: _____

Assessment ordered by: _____ Position _____

Assessment completed by: _____ Position _____

Company representative: _____ Position _____

Safety/work environment officer/employee: _____ Position _____

Other: _____ Position _____

_____

Department: _____

Other information: _____

| Note! Write an "x" (small x) in each " Yes" or "No" statement box under each question. | Yes | No | Comment: |
|---|---|---|---|
| **1. Postures** | | | |
| 1.1 Does work occur often or for a long time* in any of the following unfavourable postures?<br>** often = about 100 times per work day or more*<br>** a long time = about 30 minutes per work day or more* | | | |
| a head bent backwards | | | |
| b back/upper body bent or twisted - forwards, backwards or towards the side | | | |
| c arm almost or fully stretched forwards (the hand more than about 45 cm from the spine) | | | |
| d hand above shoulder height or below knee height | | | |
| e hand/arm brought outwards to the side (to the right or to the left) | | | |
| 1.2 Does work occur in any of the following unfavourable postures about 1 hour per work day or more? | | | |
| a head clearly twisted or bent - forwards or towards a side | | | |
| b hand clearly bent upwards, downwards or towards a side | | | |
| c legs or feet have insufficient space, or the surface is unstable or with a slope | | | |
| **2. Work movements and repeated work** | **Yes** | **No** | |
| 2.1 Does work occur in any of the following ways? | | | |
| a the work cycle is shorter than 30 seconds | | | |
| b the work cycle is between 30 seconds and 5 minutes | | | |
| c similar work movements are repeated more than 1/10 up to half of the work cycle time | | | |
| d similar work movements are repeated more than half of the work cycle time | | | |
| **If "No" on all in 2.1, go to 2.3. If "Yes" on any in 2.1, answer 2.2 below.** | | | |
| 2.2 How long time of the working day does such work occur? Choose one alternative. | | | |
| a the work or similar work tasks are carried out between 1 and 4 hours of the work day | | | |
| b the work or similar work tasks are carried out for more than 4 hours of the work day | | | |
| 2.3 Does work occur with repeated force exertion by the hand or fingers (e.g. grip a tool or push a button)? | | | |
| **If "No" on 2.3 go to 3. If "Yes" on 2.3, measure or assess the force and answer 2.4 below.** | | | |
| 2.4 Does the force exertion generally occur in any or some of the following ways? | | | |
| a the force exertion is at least moderately strenuous (at least about 30% of max) | | | |
| b the force exertion is at least somewhat strongly strenuous (at least about 40% of max) | | | |
| c the force exertion occurs more often than once per minute | | | |
| d the force exertion's duration is in average longer than 2 seconds | | | |
| e the force exertion is generally carried out with clearly bent wrist upwards or downwards | | | |
| **3. Lifting work** | **Yes** | **No** | |
| 3.1 Does lifting of loads occur? If "No", go to 4. | | | |
| 3.2 How heavy are the loads and how often are they lifted? | | | |
| a less than 3 kg | | | |
| - more than 100 times per work day | | | |
| b 3-7 kg | | | |
| - more than 40 times per work day | | | |
| c more than 7 kg - 14 kg | | | |
| - more than 20 times per work day | | | |
| d more than 14 kg - 25 kg | | | |
| - more than 5 times per work day | | | |
| e more than 25 kg | | | |
| 3.3 Do the lifts generally occur in any of the following unfavourable postures? | | | |
| a back/upper body clearly bent | | | |
| b back/upper body clearly twisted | | | |
| c hand above shoulder height | | | |
| d hand below knee height | | | |
| e hand outside forearm distance | | | |
| f arm clearly brought outward (to the right or to the left) | | | |
| g lifting/holding with overhand grip (palm facing downward) | | | |
| h one-hand lift where the load exceeds 6 kg | | | |
| i lifting while seated where the load exceeds 7 kg | | | |

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| | Yes | No | Comment: |
|---|---|---|---|
| **4. Pushing and pulling work** | | | |
| 4.1 Does pushing and pulling work occur? If "No", go to 5. | | | |
| 4.2 How large is the exerted force in the pushing or pulling work? | | | |
| a the starting force (the force to start the object moving) exceeds 150 Newton | | | |
| b the starting force (the force to start the object moving) exceeds 300 Newton | | | |
| c the continuous force (the force to keep the object moving) exceeds 100 Newton | | | |
| d the continuous force (the force to keep the object moving) exceeds 200 Newton | | | |
| 4.3 Does the pushing and pulling work generally occur in any of the following unfavourable conditions? | | | |
| a the gripping height clearly deviates from elbow height | | | |
| b the work is carried out with the back/upper body clearly twisted | | | |
| c the force is exerted towards the side or upwards (i.e. not straight forwards or backwards) | | | |
| d the force is exerted with one hand | | | |
| e the pushing or pulling is carried out often (approx. more than 100 times per work day) | | | |
| f the pushing or pulling distance exceeds 30 meters | | | |
| 4.4 Are load carriers with 1-2 wheels (e.g. two-wheel cart) or similar used, under the following condition? | | | |
| the employee bares the whole or part of the load, and the load weight exceeds 100 kg | | | |
| **5. Influencing factors** | **Yes** | **No** | |
| **5.1 Influencing physical factors hand/arm - do the following occur? The times refer to "per work day".** | | | |
| a the employee is exposed to hand-arm vibrations more than 20 minutes (10 for strongly vib) | | | |
| b the employee is exposed to hand-arm vibrations more than 90 minutes (60 for strongly vib) | | | |
| c warm or cold objects are handled manually | | | |
| d the hand is exposed to impact, reaction load or shock (e.g. as an impact tool) often/long time* | | | |
| e holding hand tools weighing more than 2.3 kg for more than 30 minutes | | | |
| f holding precision tools weighing more than 0.4 kg for more than 30 minutes | | | |
| **5.2 Other physical factors - do the following occur? The times refer to "per work day".** | | | |
| a the employee is exposed to whole-body vibrations more than 1 hour | | | |
| b the employee is exposed to whole-body vibrations more than 6 hours | | | |
| c the visual conditions are insufficient for the task | | | |
| d the work is carried out in hot or cold temperatures or in draughty environments | | | |
| e standing or walking on a hard surface more than half of the work day | | | |
| f prolonged sedentary work without possibility to change to do the work standing up | | | |
| g prolonged standing work without possibility to change to do the work sitting down | | | |
| h kneeling/squatting more than 30 times or more than 30 minutes | | | |
| **5.3 Work organisational and psychosocial factors - do the following occur?** | | | |
| a there is no possibility to influence at what pace the work is performed | | | |
| b there is no possibility to influence the work setting or how the work shall be carried out | | | |
| c it is often difficult to keep up with the work tasks | | | |
| d the employees often work rapidly in order to be able to take a longer break | | | |
| e there is no possibility for recovery time during the work (other than formal breaks) | | | |
| **6. Reports on physically strenuous work** | **Yes** | **No** | |
| 6.1 Do documented reports exist on physically strenuous tasks (near misses, incident reports, journal notes, or other) when carrying out the work task? | | | |
| 6.2 If "Yes" on 6.1 , what type of work that has led to this? If "No", go to 7. | | | |
| lifting | | | |
| holding/carrying | | | |
| pushing/pulling | | | |
| pushing with hand or fingers | | | |
| other: (if any, please replace this text) | | | |

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| **7. Perceived physical discomfort. Ask five people who perform this work task** | **Yes** | **No** | |
|---|---|---|---|
| 7.1 Are there parts of the work which lead to physical discomfort (e.g. in muscles or joints) during the work day? Answer "Yes" if any employee experiences such discomfort. | | | |
| 7.2 If "Yes" on question 7.1, which is the worst task? | | | |
| Person 1 | | | |
| Person 2 | | | |
| Person 3 | | | |
| Person 4 | | | |
| Person 5 | | | |

**Assessment comments (if any, please write below):**