# Key Indicator Method for assessing and designing physical workloads with respect to manual Lifting, Holding and Carrying of loads ≥ 3 kg (KIM-LHC)

| | | | |
|---|---|---|---|
| Workplace/sub-activity: | | | |
| Duration of the working day: | | Evaluator: | |
| Duration of the sub-activity: | | Date: | |

## 1st step: Determination of time rating points

| Frequency [up to … times per sub-activity and working day]: | 5 | 20 | 50 | 100 | 150 | 220 | 300 | 500 | 750 | 1000 | 1500 | 2000 | 2500 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time rating points: | **1** | **1.5** | **2** | **2.5** | **3** | **3.5** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |

## 2nd step: Determination of the rating points for other indicators

| Effective load weight[1)] | Load rating points for men | Load rating points for women |
|---|---|---|
| 3 up to 5 kg | **4** x | **6** x |
| > 5 up to 10 kg | **6** | **9** |
| > 10 up to 15 kg | **8** | **12** |
| > 15 up to 20 kg | **11** | **25** |
| > 20 up to 25 kg | **15** | **75** |
| > 25 up to 30 kg | **25** | **85** |
| > 30 up to 35 kg | **35** | **100** |
| > 35 up to 40 kg | **75** | |
| > 40 kg | **100** | |

[1)] *"Effective load weight" refers to the physical workload which the employee actually has to apply. When tilting a cardboard box, only approximately 50 % of the load weight has an effect and when carrying a load in pairs, approximately 60 % of the load weight has an effect per person (in case of increased requirements with respect to load control and coordination, more than 50 % must be assumed).*

| Load handling conditions | Rating points |
|---|---|
| Load is handled with both hands and symmetrically | **0** x |
| Load is handled temporarily with one hand and/or asymmetrically, uneven load distribution between the two hands | **2** |
| Load is handled predominantly with one hand or unstable load centre | **4** |

### Body posture[2)]

*The movement may take place in both directions, i.e. the pictograms shown can represent both start and finish of the load handling operation. If there are several pictograms in one field, they are to be considered to be equal. In addition to this, twisting/lateral inclination of the trunk, the load position / gripping at a distance from the body, working with raised hands and gripping above shoulder level must be taken into consideration (additional points).*

| Start / finish | Finish / start | Rating points | Start / finish | Finish / start | Rating points |
|---|---|---|---|---|---|
|  |  | **0** x |  |  | **10**[3)] |
|  |  | **3** |  |  | **13**[3)] |
|  |  | **5** |  |  | **15**[3)] |
|  |  | **7** |  |  | **18**[3)] |
|  |  | **9**[3)] |  |  | **20**[3)] |

### Additional points (max. 6 points)

*Only relevant where applicable.*

| | |
|---|---|
| Occasional twisting and/or lateral inclination of the trunk identifiable | **+1** |
| Frequent / constant twisting and/or lateral inclination of the trunk identifiable | **+3** |
| Load centre and/or hands occasionally at a distance from the body | **+1** |
| Load centre and/or hands frequently / constantly at a distance from the body | **+3**[3)] |
| Arms raised occasionally, hands between elbow and shoulder level | **+0.5** |
| Arms raised frequently / constantly, hands between elbow and shoulder level | **+1** |
| Hands occasionally above shoulder height | **+1** |
| Hands frequently / constantly above shoulder height | **+2**[3)] |

| BP rating points | + | Additional points (max. 6 points) | = | Total |
|---|---|---|---|---|
| | | | | |

[2)] *The typical body postures when picking up and putting down the load are to be taken into account in particular. Rare deviations can be ignored. If the lifting / holding work is carried out in a sitting position, e.g. when relocating something, the pictograms are to be used accordingly. Higher load weights should be avoided when handling loads in a sitting position.*

[3)] ***Please note**: If this category was chosen, it is recommended to evaluate this sub-activity also using the KIM-BP (body postures)!*

| **Unfavourable working conditions** (specify only where applicable)<br>*Indicators not mentioned in the tables are to be taken into account accordingly.*<br>*Rare deviations can be ignored.* | | **Intermediate rating points IRP** | **∑ IRP** |
|---|---|---|---|
| **Hand/arm position and movement:**  | occasionally at the limit of the movement ranges | **1** | |
| | frequently/constantly at the limit of the movement ranges | **2** | |
| **Force transfer/application restricted:**<br>loads difficult to grip / greater holding forces required / no shaped grips / work gloves | | **1** | |
| **Force transfer/application considerably hindered:**<br>loads hardly possible to grip / slippery, soft, sharp edges / no/unsuitable grips / work gloves | | **2** | |
| **Adverse ambient conditions**: unfavourable weather conditions and/or physical workloads caused by heat, draught, cold, wet | | **1** | |
| **Spatial conditions restricted**:<br>work area of less than 1.5 m², floor is moderately dirty and slightly uneven, slight inclination of up to 5°, slightly restricted stability, load must be positioned precisely | | **1** | |
| **Spatial conditions unfavourable**:<br>significantly restricted freedom of movement or space for movement is not high enough, working in confined spaces, floor is very dirty, uneven or roughly cobbled, steps / potholes, stronger inclination of 5-10°, restricted stability, load must be positioned very precisely | | **2**[4)] | |
| **Clothes**: additional physical workload due to impairing clothes or equipment (e.g. when wearing heavy rain jackets, whole-body protection suits, respiratory protective equipment, tool belts or the like) | | **1** | |
| **Difficulties due to holding / carrying**: The load has to be held between > 5 and 10 seconds or carried over a distance between > 2 m and 5 m. | | **2** | |
| **Significant difficulties due to holding / carrying**: The load has to be held > 10 seconds or carried over a distance > 5 m. | | **5**[4)] | |
| **None:** there are no unfavourable working conditions | | **0** x | |

[4)] *Please note: If there are unfavourable spatial conditions when carrying loads or if the load has to be carried over distances > 10 m, this sub-activity is to be evaluated using the KIM-BM!*

| **Work organisation / temporal distribution** | **Rating points** |
|---|---|
| **Good:** frequent variation of the physical workload situation due to other activities (including other types of physical workload) / without a tight sequence of higher physical workloads within one type of physical workload during a single working day. | **0** x |
| **Restricted**: rare variation of the physical workload situation due to other activities (including other types of physical workload) / occasional tight sequence of higher physical workloads within one type of physical workload during a single working day. | **2** |
| **Unfavourable**: no/hardly any variation of the physical workload situation due to other activities (including other types of physical workload) / frequent tight sequence of higher physical workloads within one type of physical workload during a single working day with concurrent high load peaks. | **4** |

## 3rd step: Evaluation and assessment

| | Men | Women |
|---|---|---|
| **Effective load weight** | | |
| **Load handling conditions** + | | |
| **Total body posture** + | | |
| **Unfavourable working conditions (∑ IRP)** + | | |
| **Work organisation / temporal distribution** + | | |

| **Time rating points** | x | **Total of indicator rating points:** | | | = | **Results** Men | Women |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

**The risk score calculated and the table below can be used as the basis for a rough evaluation:**

| **Risk** | **Risk range** | | **Intensity of load**[*)] | **a) Probability of physical overload**<br>**b) Possible health consequences** | **Measures** |
|---|---|---|---|---|---|
| | **1** | < 20 points | low | a) Physical overload is unlikely.<br>b) No health risk is to be expected. | None |
| | **2** | 20 - < 50 points | slightly increased | a) Physical overload is possible for less resilient persons.<br>b) Fatigue, low-grade adaptation problems which can be compensated for during leisure time | For less resilient persons, workplace redesign and other prevention measures may be helpful. |
| | **3** | 50 - < 100 points | substantially increased | a) Physical overload is also possible for normally resilient persons.<br>b) Disorders (pain), possibly including dysfunctions, reversible in most cases, without morphological manifestation | Workplace redesign and other prevention measures should be considered. |
| | **4** | ≥ 100 points | high | a) Physical overload is likely.<br>b) More pronounced disorders and/or dysfunctions, structural damage with pathological significance | Workplace redesign measures are necessary. Other prevention measures should be considered. |

[*)] *The boundaries between the risk ranges are fluid because of the individual working techniques and performance conditions. The classification may therefore only be regarded as an orientation aid. Basically,it must be assumed that the probability of physical overload will increase as the risk scores rise.*