TECHNICAL SPECIFICATION

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Ergonomic procedures for the improvement of local muscular workloads

Procédures ergonomiques pour l'amélioration des charges de travail musculaire locales

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Foreword

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The committee responsible for this document is ISO/TC 159, *Ergonomics*, Subcommittee SC 3, *Anthropometry and biomechanics*.

ISO/TS 20646 cancels and replaces ISO/TS 20646-1:2004, of which it constitutes a technical revision.

Introduction

The onset of work-related musculoskeletal disorders, such as low back pain and upper and lower limb disorders, is becoming a great ergonomic concern in both industrialised and industrialising countries. The high incidence of work-related musculoskeletal disorders is an important problem to be solved not only to improve workers' health and the quality of working life, but also to improve productivity.

In order to solve the problem of work-related musculoskeletal disorders, it is important to work out primary preventive measures, through improving working conditions and providing adequate health guidance and training, as well as to establish measures for secondary prevention, treatment, and reassignment of the workers after a long sick leave.

Above all, the establishment of primary preventive measures, mainly measures to improve musculoskeletal workloads (MSWL), are considered to be the most cost-effective solution and improve the quality of working life. Various activities to improve MSWL have already been promoted. In addition, regarding ISO/TC 159/SC 3, new standards are developed to improve working conditions relating to the factors causing MSWL. However, in order to improve MSWL, it is indispensable to take a comprehensive work-related perspective and find a solution, in consideration of the aforementioned factors.

Ergonomic procedures for the improvement of local muscular workloads

1 Scope

This Technical Specification provides information and guidelines to properly utilize various ergonomics standards concerning the factors related to musculoskeletal workload (MSWL), and helps develop activities to reduce or optimize MSWL in workplaces and non-professional activities, in an effective and efficient manner. The activities are intended to be based on a risk assessment. This Technical Specification is intended primarily for employers, ergonomics and occupational health-related staff and workers in enterprises, and workers. Prevention of MSWL is not always a matter of reducing the load. The approach to reducing MSWL also involves assessing the work environment and organization as a system to identify how changes can help to safely manage MSWL. Although this Technical Specification provides ideas of effective and efficient measures to reduce or optimize MSWL, it does not certify the complete prevention of health problems caused by MSWL.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
musculoskeletal workload
MSWL
loads on the musculoskeletal system required for working motions, maintaining working postures, and exerting forces

2.2
harm
physical injury or damage to health

[SOURCE: ISO 12100]

2.3
hazard
potential source of harm

[SOURCE: ISO 12100]

2.4
risk
combination of the probability of occurrence of harm and the severity of that harm

[SOURCE: ISO 12100]

2.5
risk assessment
overall process comprising a risk analysis and risk evaluation

[SOURCE: ISO 12100]

2.6
risk analysis
combination of the specification of work description, hazard identification, and risk estimation

2.7
risk estimation
defining likely severity of harm and probability of its occurrence

[SOURCE: ISO 12100]

2.8
risk evaluation
judgment on the basis of successive risk analysis of whether the risk reduction objectives have been achieved

[SOURCE: ISO 12100]

2.9
work space
volume of space allocated to one or more persons in the work system to complete a work task

[SOURCE: ISO 9241-5]

2.10
workstation
combination of work equipment for a particular person in a work space

Note 1 to entry: It is possible that several persons share a particular workstation, or that several persons alternate between several workstations within any period of time (i.e. hourly, daily, weekly basis).

[SOURCE: ISO 11064-2]

3 General guiding principles

3.1 Basic principles to improve MSWL

Management should clarify in writing existing and predicted MSWL and possible health- and productivity-related problems, and publish improvement goals and targets, a basic schedule to achieve the targets, and the organization to implement the improvement (see Annex A).

3.2 Basic framework and responsibilities of MSWL-improvement activities

3.2.1 General

As organizations draft, implement, and assess MSWL-reduction plans, organizations at the enterprise level and department level, and advisory organizations, should develop activities in a collaborative manner. The participation of workers and/or their representatives is essential.

3.2.2 Enterprise level

A structure to manage MSWL should be established at the enterprise level, either as part of existing management systems for work design or occupational safety and health, or as a specifically designated project activity. The owner or executive director with overall management authority should be responsible for the establishment and the conduct of this organization.

3.2.3 Department level

This refers to an organization within an individual department, for which the departmental manager should be responsible. Its function is to draft, implement, and assess the improvement plans for the department.

3.2.4 Advisory level

This refers to an organization offering advice concerning the validity of drafting, implementation, and assessment of improvement plans. The organization can be established inside or outside the enterprise.

3.3 Processes for MSWL risk assessment including implementation of risk reduction activity

3.3.1 General

An MSWL risk reduction plan should not be limited to a few specific factors causing loads. It should be based on MSWL risk assessment in the workplace. On the basis of comprehensive risk assessment using this multi-factorial analysis, specific action targets should be set to eliminate or reduce unacceptable risks. Basic processes in achieving this target(s) are given in 3.3.1 to 3.3.4 (see ISO 12100).

3.3.2 Risk assessment

3.3.2.1 General

To study necessary activities to reduce the risks of MSWL, risk assessment should be implemented. This includes a risk analysis with work description, hazard identification, and risk estimation as well as a risk evaluation. Priority risks should be addressed immediately, so as to reduce risks or reinforce the ongoing measures.

3.3.2.2 Specification of work situation

To study the characteristics of work, the following items should be described:

a) production process, contents of work, and tasks to be performed at the workplace;

b) statistics on occupational accidents, incidence of work-related diseases and other diseases, sick leave, etc.;

c) work organization and shift systems;

d) work hours per day, week, month, or year;

e) operating time per day, continuous operating time, and a rest system;

f) characteristics of the workers, such as body size, muscle strength, history of injuries and diseases affecting work, work experience, vocational education and training, and age;

g) characteristics of the work, such as static workload, physical inactivity, repetitive work, and manual handling.

3.3.2.3 Hazard identification

The following factors are the main hazards for MSWL (see Annex B). They are divided into six sections.

3.3.2.3.1 Checklist section 1 — Work hours and work concentrations

a) long working shifts more than 8 h a day

b) frequent and long overtime work

c) long continuous operating time

d) insufficient rest breaks

e) insufficient days off

f) uneven work concentrations in a day, week, month, or year

g) uneven work concentrations between the workers

h) insufficient rest between shifts (less than 11 h)

3.3.2.3.2 Checklist section 2 — Type of work

a) lifting and carrying heavy objects (see ISO 11228-1)

b) work requiring great force

c) high pushing and pulling forces (see ISO 11228-2)

d) high repetitive work (see ISO 11228-3)

e) work requiring frequent finger, hand, or arm motions (see ISO 11228-3)

f) using hand-arm vibrating tools during the work

g) work using vehicles transmitting whole-body vibration

h) intensive work with a keyboard or other data entry devices

i) precision work

j) high visual requirements

3.3.2.3.3 Checklist section 3 — Postures and motions

a) awkward postures and motions (see ISO 11226)

b) continuous and/or highly frequent change in joint positions (see ISO 11228-3)

c) long-duration constrained posture (see ISO 11226)

d) long-duration and/or long-distance walking (horizontal as well as on an inclined surface)

e) frequent stair climbing

f) prolonged sedentary/standing work

3.3.2.3.4 Checklist section 4 — Influencing work space and task factors

a) inadequate work space forcing an awkward posture or limited movement

NOTE For consistency references, see ISO 11226.

b) layout of the workstation forcing excessive movement or awkward postures

c) inadequate height and dimensions of the work surface

d) handling work objects above the shoulder or below the knee

e) work space forcing the worker to maintain the same working posture

f) work objects which are heavy and/or require high physical force

g) work objects which are difficult to hold or slippery

h) cold/hot work environment and/or objects handled

i) high contact stress or local pressure acting on the body

3.3.2.3.5 Checklist section 5 — Influencing psychosocial factors

a) mental overload or underload

b) time pressure and high demands

c) work-related stress

d) low job satisfaction

e) lack of autonomy (low influence, low control)

f) social support

3.3.2.3.6 Checklist section 6 — Influencing environmental factors

a) slippery and/or uneven floor surface

b) whole-body vibration (see ISO 2631)/hand-arm vibration (see ISO 5349)

c) hot and cold work environment

d) poor visual conditions (e.g. insufficient lighting)

3.3.3 Risk estimation

Risk estimation should take into account the severity of the hazard(s) and probability of its occurrence and the number of workers who will be affected.

3.3.4 Risk reduction measures

3.3.4.1 Specifying risk reduction measures followed by a small trial of the improvement

To study the importance of risk factors and evaluate possible preventive measures for risk reduction, the following factors should be considered:

— results of the risk analysis;

— ease of implementation of the risk reduction plan;

— effect of the improvement after reducing the risk;

— number of workers who will benefit;

— cost-efficiency of the plan.

Use of an action-oriented checklist is recommended to perform risk analysis, and to get hints for improvement (see Annex C). The recommended procedure for using the checklist is as follows.

a) Organize a group to implement a checklist practice. In the group, the owner or executive director with management authority, managers and workers of concerned sections, and occupational health and safety personnel should be involved.

b) Define the workplace to be checked.

c) Fill out the checklist individually.

d) Organize small group discussions on the risk factors found at the workplace and the factors with priority of improvement.

e) Make an action plan to reduce risks for MSWL at the workplace.

f) Carry out a small trial to ensure the effect of the improvement before implementing the improvement on a large scale.

3.3.4.2 Implementation of risk reduction measures and monitoring the effectiveness of the intervention

To check the effectiveness or insufficiency of the risk reduction measures, scheduled monitoring of the MSWL level and health problems of the workers should be provided. It is recommended that the subjective estimation of MSWL levels both before and after the implementation is checked (see Annex D). Statistics of sick leave relating to MSWL, productivity, and incidence of musculoskeletal diseases are also useful to evaluate the effectiveness of the risk reduction measures.

3.3.4.3 Risk evaluation and drafting of new risk reduction plans

To check the effectiveness of risk reduction measures and to find any new or remaining problems, periodic evaluations should be carried out. Evaluations should be performed if changes are made to the product manufactured, the process used, or the workstation, or if increased incidence and complaints are noticed (see Annex E).

Annex A
(informative)

Schedule form for principles, plan, and implementation

A.1 Principles

(Enter the management's statement of commitment to improvement of work conditions here.)

A.2 Motivation for improvement

[Describe the present state of the workplace. Specifically, state the overview of the characteristics of works at the workplace, and describe the following points concerning MSWL so that readers can understand the reason why work conditions improvement should be promoted: "possible hazards that work entails", "foreseeable problems in the context of health management and productivity", "severity of problems and extent of their possibilities", and "the present state of foreseeable problems (including conditions for the onset of the disorder and productivity)".]

A.3 Improvement target

(Describe the work conditions that should be improved and to what the goal will be, with deadlines clarified.)

A.4 Implementation schedule of improvement projects

(Clarify the schedule of the project, mainly the following actions

a) Identify hazards concerning musculoskeletal workload.

b) Risk assessment and selection of improvement plan.

c) Drafting of improvement plan.

d) Implementation of improvement plan.

e) Measurement of consequences of implementation of improvement plans.

f) Records of improvement actions taken and in-house announcement.)

A.5 Budget

(Enter the budget amount allocated by the management for this project.)

A.6 Department/section responsible for the project

(Enter the department/section responsible for the project.)

Annex B
(informative)

Checklist for hazard identification concerning musculoskeletal workload

B.1 How to use the checklist

Possible factors causing MSWL are divided into six sections: “work hours and work concentrations”, “type of work”, “postures and motions”, “characteristics of work space and objects handled”, “influencing psychosocial factors”, and “influencing environmental factors”. In each section, all factors with the box “Yes” ticked will be examined. Depending on the work, the same factors can be marked with “Yes” in more than one section. Regarding the factors with “Yes”, identify the type, magnitude, and location of possible muscular load, and work out measures to reduce it, referring to the Notes at the end of this checklist.

B.2 Example of a checklist

B.2.1 Checklist section 1 — Work hours and work concentrations

Does the condition of work hours and work concentrations include any of the following?

Table B.1 — Checklist section 1

	YES	NO
Long working shifts more than 8 h a day		
Frequent and long overtime work		
Long continuous operating time		
Insufficient rest breaks		
Insufficient days off		
Uneven work concentrations in a day, week, month, or year		
Uneven work concentrations between the workers		
Insufficient rest between shifts (less than 11 h)		

B.2.2 Checklist section 2 — Type of work

Does the work include the following conditions?

Table B.2 — Checklist section 2

	YES	NO
Lifting and carrying heavy objects [See item a) in B.2.6.]		
Work requiring high force [See item b) in B.2.6.]		
High pushing and pulling forces [See item b) in B.2.6.]		
Repetitive monotonous work [See item c) in B.2.6.]		

Table B.2 *(continued)*

	YES	NO
Work requiring frequent finger, hand, or arm motions		
Work using vibrating tools, etc.		
Intensive work with a keyboard or other data entry devices [See 7) of item e) in B.2.6.]		
Precision work/work requiring high mental loads [See item d) in B.2.6.]		
High visual requirements		

B.2.3 Checklist section 3 — Postures and motions

Do postures and movements that the work involves include the following?

Table B.3 — Checklist section 3

	YES	NO
Awkward postures and motions [See item e) in B.2.6.]		
Continuous and/or highly frequent change in joint positions [See item f) in B.2.6.]		
Long-duration constrained posture [See item g) in B.2.6.]		
Long-duration and/or long-distance walking (horizontal as well as on inclined surfaces) [See item h) in B.2.6.]		
Frequent stair climbing		
Prolonged sedentary work		

B.2.4 Checklist section 4 — Influencing work space and task factors

Do work space and objects handled correspond to any of the following situations?

Table B.4 — Checklist section 4

	YES	NO
Inadequate work space forcing an awkward posture or limited movement[a]		
Layout of the workstation forcing excessive movement or awkward postures		
Inadequate height and dimensions of the work surface [See 2) and 3) of item e) in B.2.6.]		
Handling work objects above the shoulder or below the knee [See item i) in B.2.6.]		
Work space forcing the worker to maintain the same working posture		
Work objects which are heavy and/or require high physical force		
Work objects which are difficult to hold or slippery		
Cold/hot work environment and/or objects handled		
High contact stress or local pressure acting on the body		

[a] For consistency references, see ISO 11226.

B.2.5 Checklist section 5 — Influencing psychosocial factors

Are the following influencing psychological factors present?

Table B.5 — Checklist section 5

	YES	NO
Mental overload or underload		
Time pressure and high demands		
Work-related stress		
Low job satisfaction		
Lack of autonomy (low influence, low control)		
Social support		

B.2.6 Checklist section 6 — Influencing environmental factors

Do premises include any of the following?

Table B.6 — Checklist section 6

	YES	NO
Slippery and/or uneven floor surface		
Whole-body vibration (see ISO 2631)/hand-arm vibration (see ISO 5349)		
Hot and cold work environment		
Poor visual conditions (e.g. insufficient lighting)		

The following items explain Tables B.2 to B.4:

a) This work can cause excessive load on the whole body and localized parts of the body, resulting in musculoskeletal disorders, such as low back pain. For recommendations and risk assessments concerning mass limits of objects, frequency and distance of moving objects, etc., see ISO 11228-1.

b) The work includes pushing, pulling, work requiring power grip, and pedalling. Depending on the type of work, it can cause musculoskeletal disorders in muscles and joints of upper or lower limbs (see ISO 11228-2).

c) As is the case with assembly work on a plant production line, repetitive monotonous work can cause load on muscles, even if it does not require high physical force. Moreover, such work can often require long-time constrained posture (see NOTE 7) (see ISO 11228-3).

d) This type of work includes precise assembly work, such as using a magnifying glass, and precise positioning to the target point, work entailing risks of damage or potential for injury. Generally, instead of great force exertion, this type of work can cause static tension in muscles of the neck and upper or lower limbs, and if the tension persists, it can cause muscle strain. Moreover, there is a strong possibility that precise work can cause persisting bow-backed posture because the eyes were brought close to the object handled. A proper hold/rest support for upper limbs (or lower limbs) used can provide effective assistance. Also better lighting can be helpful.

e) The following fall under “awkward postures and motions.”

   1) Frequent stretching up causes load primarily on ankle joints and lower limb muscles.

2) Repeated lifting and holding of the upper arms cause greater loads on the neck, shoulders, and arms. For acceptable shoulder-joint angles, duration of holding the posture, etc., see ISO 11226.

3) Low back bending and inclination of the trunk pose strong stress on the lower back, and holding and repeating these postures can increase risks of injuries, such as low back pain. Moreover, handling a heavy object and great force exertion while taking such postures markedly increases risk. For acceptable low back bending and trunk inclination, duration of holding the postures, etc., see ISO 11226.

4) Sustained or repeated inclination of the head or flexion/extension of the neck can cause loads primarily on the cervical spine and surrounding muscles. For acceptable inclination of the head and flexion/extension of the neck, see ISO 11226.

5) Sustained or repeated twisting of the trunk can cause loads primarily on the lower back. In addition, this is often accompanied by movement of upper and lower limbs, possibly resulting in load on associated muscles. For recommendations, see ISO 11226.

6) Sustained or repeated twisting of the neck causes loads primarily on the neck. For recommendations, see ISO 11226.

7) Sustained or repeated excessive deviation of hand and wrist joints causes loads primarily on hands, wrists, and forearms. As is the case with data input with a keyboard, movement of hand joints is often repeated over a long period during work. Such work can cause hand injuries, such as arthritis and entrapment injuries. Particularly, excessive flexion or extension of hand or wrist joints, or radial or ulnar abduction of the wrists, or pronation or supination of the forearms must be avoided as much as possible. For recommendations, see ISO 11226.

8) Standing on tiptoe, stretching up of upper limbs (particularly, raising upper arm and hand above the shoulder), knee-flexion posture with no support, or extreme joint positions when reaching for something located at a distance, or difficult to access, also fall under inappropriate working postures and motions.

9) Postures or motions requiring great flexion or extension of joints generally cause high loads in joints and surrounding muscles and ligaments, even if the postures and motions do not fall under the conditions mentioned above.

f) Keeping part of the body in the same position for a long time, and moving part of the body at high frequency are also included in this factor, even if they are not awkward postures and motions.

g) Holding the same posture, even a comfortable one, can cause load. In such work, static tension persists in relevant local muscles in order to stabilize the body position against gravity, possibly resulting in muscular blood stagnation or subcutaneous blood stagnation. It is necessary to introduce enough space to allow continuous slight posture changes, and a break time is required for frequent significant changes in posture or motion and exercise.

h) Not only moving horizontally but also moving vertically on stairs or using a ladder are included in this factor.

i) “No support to the whole body or body segments” and “excessive muscle tension and awkward postures to prevent falling/sliding down” are included in this factor.

Annex C
(informative)

Action-oriented checklist

C.1 General

The action-oriented checklist aims at checking overall working conditions relating to MSWL, finding improvement points with priority, and getting hints to improve them. The checklist can be used by a variety of people. It is recommended that all the members of a committee or task force responsible for the improvement of MSWL become users of the checklist. The check items shown below are just examples of action-oriented checklist items. Users can delete unnecessary items and add specific items for checking their own workplace. Users can also refer to References [20] and [25] when they add new check items.

C.2 How to use the checklist

a) Organize sub-groups of five to eight members in the committee or task force.

b) Ask the manager any questions you have. The members should learn about the main products and production methods, the number of workers (male and female), the hours of work (including breaks and overtime), and any important labour problems.

c) Define the work area to be checked. In the case of a small enterprise, the whole production area can be checked. In the case of a larger enterprise, particular work areas can be defined for separate checking.

d) Each member should read through the checklist and spend a few minutes walking around the work area before starting to check.

e) Conduct a walk-through survey and individually apply the checklist. If necessary, ask the manager or workers questions. If the measure has already been applied or it is not needed, mark NO under "Do you propose action?" If the member thinks the improvement measure mentioned in the check items would be worthwhile, mark YES. Use the space for remarks to write a description of users' suggestions or its location.

f) After each member has finished the check, choose a few where the benefits seem likely to be the most important. Mark PRIORITY for these items.

g) Before finishing, make sure that all the items have been marked either NO or YES, and some items have been marked PRIORITY.

h) After the walk-through, organize a group discussion using each member's own checklist as guidance material. In the group discussion, good working conditions and good work practices should be mentioned. Then list the points to be improved and points which have priority for improvement after a walk-through referring to the items marked PRIORITY. Also list good working conditions and good work practices found during the walk-through.

i) Based on the results of the small group discussion, conduct a plenary discussion to make an action plan for the improvement of MSWL.

C.3 Example of an action-oriented checklist

		YES	NO	Priority	Remarks
1	Use carts, hand trucks, and other wheeled devices or rollers, when moving materials. Do you propose action?				
2	Reduce manual handling of materials by using conveyers, hoists, and other mechanical means of transport. Do you propose action?				
3	Eliminate tasks that require bending or twisting while handling materials. Do you propose action?				
4	Eliminate or reduce tasks requiring holding of the hands or arms above shoulder level. Do you propose action?				
5	Provide handholds, grips, or good handling points for all packages and containers. Do you propose action?				
6	Instead of carrying heavy weights, divide them into smaller lightweight packages, containers, or trays. Do you propose action?				
7	Handle a heavy item by two persons. Do you propose action?				
8	Take short pauses between repeated operations of handling heavy items continuously. Do you propose action?				
9	Place frequently used materials and tools within easy reach from the normal working position. Do you propose action?				
10	Provide standing workers with chairs or stools for occasional sitting. Do you propose action?				
11	Provide sitting workers with good adjustable chairs with a backrest. Do you propose action?				
12	Use jigs and fixtures to make machine operation stable, safe, and efficient. Do you propose action?				
13	Examine the design of a device or a tool, and make sure that workers can operate or hold it without excessive extension, flexion, or deviation of hands or wrists. Do you propose action?				
14	Choose tools that can be operated with minimum force or alternatively suspended or counterbalanced. Do you propose action?				
15	Use a hand tool made of the lightest materials possible and with its gravity centre located near the palm of the hand. Do you propose action?				
16	Adjust the working height for each worker at elbow level or slightly below it. Do you propose action?				
17	Provide hand support when using precision tools. Do you propose action?				
18	Provide short and frequent pauses during continuous visual display work. Do you propose action?				
19	Introduce a work rotation system to avoid repetition of the same type of work and continuous VDT operation. Do you propose action?				
20	Protect the workplace from excessive heat and cold. Do you propose action?				
21	Provide sufficient lighting for workers so that they can work efficiently and comfortably at all times. Do you propose action?				
22	Arrange for rest areas or rooms to be easily accessible during breaks and provided with good furniture and refreshing drinks. Do you propose action?				

		YES	NO	Priority	Remarks
23	Involve workers in the improved design of their own workstations, material-handling equipment, or chairs. Do you propose action?				
24	Consult workers on improving working time arrangements. Do you propose action?				
25	Insert short breaks or opportunities for physical activity to shorten the time of continuous workload. Do you propose action?				

Annex D
(informative)

Questionnaire for monitoring the effects of risk reduction measures concerning musculoskeletal workloads

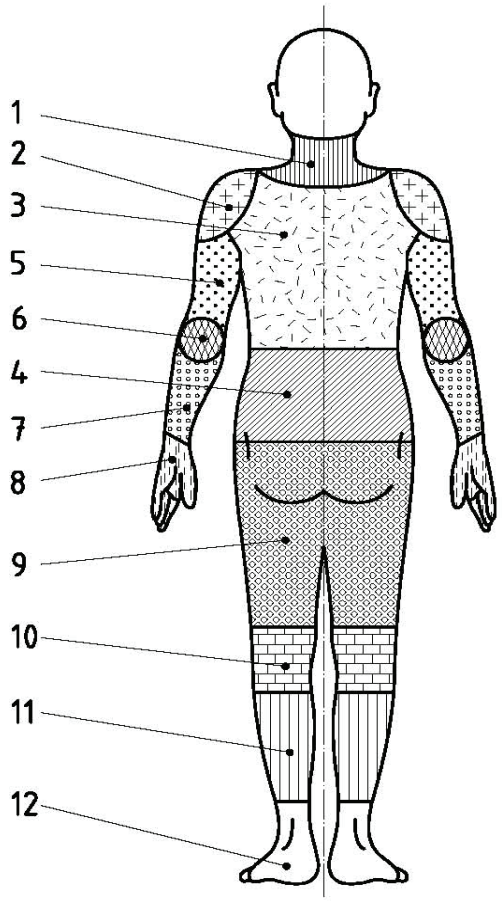
Before and after the intervention, ask Questions I and II and compare the scores.

Question I — Do you feel any tiredness or pain during or after work? Please indicate the intensity of pain and discomfort according to the scale shown below.

Table D.1 — Scale to indicate the intensity of pain and discomfort

0	1	2	3	4
Not at all	Slight	Moderate	Strong	Excessive

Key		Body part	Score	
			Left	Right
1		Neck		
2		Shoulders		
3		Upper back		
4		Lower back		
5		Upper arms		
6		Elbows		
7		Forearms		
8		Wrists/Hands		
9		Hips/Thighs		
10		Knees		
11		Lower legs		
12		Ankles/Feet		



NOTE This figure shows the back of a human body. Please consider also the front region.

Figure D.1

Question II — Are you satisfied with your work situation in general?

☐ Very satisfied ☐ Satisfied ☐ Dissatisfied ☐ Very dissatisfied

After the intervention, ask Question III.

Question III – In general, has your pain or discomfort been reduced?

☐ No, not at all ☐ Yes, a little ☐ Yes, markedly

NOTE In general, it is useful to have some time (weeks) before asking Question III.

Annex E
(informative)

Evaluation form for the risk reduction measures

E.1 Identification

Date:

Enterprise:

Department or section:

E.2 Outline of the intervention

— Work contents

— Improvement targets

— Implemented improvement including its schedule

— Organization of the activities and people involved

E.3 Budget

(Enter the budget amount allocated by the management for this project.)

E.4 Achievement of the target

(If there are data of muscular workloads, other workloads, and/or productivity before and after the activity, add the description of the outline of them.)

E.5 Satisfaction of the results

E.5.1 Section manager

☐ Very satisfied ☐ Satisfied ☐ Dissatisfied ☐ Very dissatisfied

E.5.2 Workers

☐ Very satisfied ☐ Satisfied ☐ Dissatisfied ☐ Very dissatisfied

E.6 Additional steps

— Attach the data showing the changes in MSWL, general workloads, or productivity, if any.

— Remaining and newly noticed risks to be improved after the activity.

— Proposal of a new risk reduction plan (see Annex A).

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