

Checklist for preventing bad working postures

Part A: Introduction

A good working posture is a prerequisite for preventing work-related musculoskeletal disorders (MSDs). These are impairments of the bodily structures such as muscles, joints, tendons, ligaments and nerves, or localised blood circulation systems that are caused or aggravated primarily by the performance of work and by the effects of the immediate environment where the work is carried out. A good posture is one that is comfortable and in which the joints are naturally aligned – the neutral body posture. Working with the body in a neutral position reduces stress and strain on the muscles, tendons, and skeletal system, and therefore reduces the risk of workers developing MSDs.

Awkward postures are those where the various parts of the body are not in their natural position. As a joint moves further away from its natural position, more muscular effort is needed to achieve the same force and muscle fatigue occurs. Moreover, non-neutral positions can increase the strain on tendons, ligaments and nerves. They increase the risk of injury and should be avoided if at all possible,

Figure 1: Awkward postures – body parts are not in their natural positions



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Figure 2: Proper working postures – body parts in their natural position



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This checklist includes questions on working postures of the back and neck, arms and hands, legs during sitting and standing tasks. It also gives examples of the type of action at a technical, organisational and individual level that can be put in place to prevent or reduce the risks caused by awkward postures.

The checklist applies to tasks or activities where bad working postures may occur. If working postures are accompanied by manual handling, repetitive movements or the use of vibrating vehicles or tools, this checklist will prove insufficient.

How to use a checklist

- A checklist can help identify hazards and potential prevention measures and, used in the right way, forms part of a risk assessment.
- This checklist is **not intended to cover all the risks** of every workplace but to help you put the method into practice.
- A checklist is only a **first step in carrying out a risk assessment**. Further information may be needed to assess more complex risks and in some circumstances you may need an expert's help.
- For a checklist to be effective, you should **adapt it to your particular sector or workplace**. Some extra items may need to be covered, or some points omitted as irrelevant.
- For practical and analytical reasons, a checklist presents problems/hazards separately, but in workplaces they may be intertwined. Therefore, you have to take into account the interactions between the different problems or risk factors identified. At the same time, a preventive measure put in place to tackle a specific risk can also help to prevent another one; for example, air conditioning put in place to combat high temperatures can also prevent stress, given that high temperatures are a potential stress factor.



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- It is equally important to check that any measure aimed at reducing exposure to one risk factor does not increase the risk of exposure to other factors; for example, reducing the amount of time a worker spends reaching above shoulder level may also increase the time spent working in a stooped posture, which may lead to back disorders.

Important issues that need to be addressed

- Are managers and workers aware of the potential workplace risks caused by awkward postures and committed to their prevention?
- Has a practical **participative approach** (workers involvement) to problem-solving been adopted within the organisation?
- Have risk assessments been undertaken by appropriately trained staff?
- How is the effectiveness of the measures taken to prevent the risks caused by poor working postures evaluated and monitored?

Part B: Checklist for the prevention of bad working postures

Are there awkward working postures at the workplace?

Are the hazards controlled to minimise the exposure of workers to poor working postures?

Answering **`NO`** to the following questions indicates a **need** for **improvements** to be made in the workplace.

Head – Neck – Back – Shoulders		YES	NO
Are the neck kept vertical and relaxed, and the head upright (bending and/or rotation of the neck avoided)?	 Copyright Prevent	<input type="checkbox"/>	<input type="checkbox"/>
Is the back maintained in an upright position? Is bending forward or to the side of the trunk (without trunk support) avoided?		<input type="checkbox"/>	<input type="checkbox"/>
Is work with the hands behind the body avoided?		<input type="checkbox"/>	<input type="checkbox"/>
Is excessive reaching avoided?		<input type="checkbox"/>	<input type="checkbox"/>
Do the elbows remain below the level of the chest?		<input type="checkbox"/>	<input type="checkbox"/>



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<p>Are the shoulders relaxed and is working with raised shoulders avoided?</p>	 Copyright Prevent	<input type="checkbox"/>	<input type="checkbox"/>
<p>Is a prolonged bent posture of the lower back avoided when sitting?</p>	 Copyright Prevent	<input type="checkbox"/>	<input type="checkbox"/>
<p>Are seats available for sitting tasks and are the seat, back and arm rests sufficiently adjustable for individual body dimensions?</p>	 Copyright Prevent	<input type="checkbox"/>	<input type="checkbox"/>
<p>Is working in a standing position on a hard surface, for example, cement floors, avoided?</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>.....</p>		<input type="checkbox"/>	<input type="checkbox"/>
<p>Arms – Hands</p>		<p>Yes</p>	<p>No</p>
<p>Is rotation of the forearm avoided?</p>	 Copyright Prevent	<input type="checkbox"/>	<input type="checkbox"/>
<p>Is forward bending, backward bending (extension) or side-to-side bending of the wrist avoided?</p>	 Copyright Prevent	<input type="checkbox"/>	<input type="checkbox"/>
<p>If a hand-held tool is used: Has attention been paid to the shape of the hand grip? Is the tool curved instead of the wrist being bent?</p>	 Copyright Prevent	<input type="checkbox"/>	<input type="checkbox"/>
<p>Is the use of a finger (pinch) grip avoided?</p>	 Copyright Prevent	<input type="checkbox"/>	<input type="checkbox"/>
<p>Are clothes wringing motions of the wrists/hands avoided?</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>.....</p>		<input type="checkbox"/>	<input type="checkbox"/>
<p>Knees – Legs</p>		<p>Yes</p>	<p>No</p>
<p>Does the workplace design ensure the mobility of the legs (and thighs)?</p>	<input type="checkbox"/>	<input type="checkbox"/>	



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<p>Is there sufficient room for the legs and feet to allow the worker to get close enough to a work item without bending forward?</p>	 <p>Copyright Prevent</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>If a foot pedal is used, is the pedal large enough? Can it be used with both feet? Is it located at ground level to avoid uncomfortable foot and leg positions?</p>	 <p>Copyright Prevent</p>	<input type="checkbox"/>	<input type="checkbox"/>	
<p>Is frequent or prolonged kneeling or squatting avoided?</p>	<input type="checkbox"/> <input type="checkbox"/>			
<p>If kneeling cannot be avoided entirely, is the length of kneeling limited and are knee protectors available?</p>	<input type="checkbox"/> <input type="checkbox"/>			
<p>.....</p>				
<p>Other</p>	<p>Yes</p>	<p>No</p>		
<p>Is working in the same posture (sitting or standing) for long periods of time without any change or break avoided?</p>	<input type="checkbox"/> <input type="checkbox"/>			
<p>Is physical activity during work and breaks stimulated?</p>	<input type="checkbox"/> <input type="checkbox"/>			
<p>Have workers been informed about the risks associated with (awkward) working postures and how to prevent these risks; for example, adjusting their workplace and taking breaks?</p>	<input type="checkbox"/> <input type="checkbox"/>			
<p>Have workers been trained in adopting the proper working postures to perform their task?</p>	<input type="checkbox"/> <input type="checkbox"/>			
<p>.....</p>				

Actions to be taken to control the risks

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Part C: Examples of preventive measures

First, consider whether the work can be designed and organised in such a way that awkward postures are avoided completely, or at least restricted to a minimum. The general rules are:

- apply ergonomic principles when designing a production process; too often the consequences of the production process for the workers' physical work load are not taken into account. Therefore, it is important to bring ergonomists into the design team;
- design the work process; for example, change the serial assembly of parts of a product into assembly of the total product by one person to bring more variety into the job and consequently into the working postures;
- consult the workers concerned when designing the production and work processes.

Technical measures	
Head — Neck — Back — Shoulders	
<p>Adapt work heights to the type of task that is performed:</p> <ul style="list-style-type: none"> ○ precision work (left): male, 100–110cm; female, 95–105cm ○ light work (middle): male, 90–95cm; female, 8 –90cm ○ heavy work (right): male, 75–90cm; female, 70 – 85cm. 	 <p>Copyright Prevent</p>
<p>Provide adjustable work heights for workers of different heights so that an upright back and neck position can be maintained and shoulders are not raised. Do not use platforms: they are a tripping hazard, cumbersome to clean and hamper transport along floors. They also require extra working space and are not practical to use if their height has to be regularly adjusted for different people or to different working heights.</p>	 <p>Copyright Prevent</p>
<p>Install automated systems for tasks that require prolonged sitting/standing and repetitive movements; for example, sorting, assembling or packing tasks.</p>	
<p>Provide sufficient visibility for the task (sufficient light, no reflections, sufficient size of characters, etc) so the worker does not have to bend forward.</p>	



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<p>Provide an inclined work surface to reduce forward bending of the neck for tasks with high demands on visual feedback or hand-eye coordination such as reading, drawing or precision work with tools.</p>	 <p>Copyright Prevent</p>
<p>Position frequently used materials, tools and controls within close reach at the front of the person, in order to avoid the need for bending, turning or rotating the head or back or elevating the arms.</p>	
<p>Working with hands behind or aside of the body should be avoided: this kind of posture occurs when sliding away objects; for example, at check-outs in supermarkets.</p>	
<p>The hand and elbows should be well below shoulder level when carrying out a task. If work above shoulder level is unavoidable, the duration of the work must be limited and regular breaks must be taken.</p>	
<p>Arms – Hands</p>	
<p>Provide arm supports if manipulative tasks must be performed in a raised position. Arm supports reduce the load on the shoulders and the spine.</p>	
<p>If a hand-held tool is used, select a model that is best suited for the task and posture so that the joints can be kept in the (near) neutral position. Bending the wrist can be prevented by ergonomic handgrips (correct location of the handgrips of the tool).</p>	 <p>Copyright Prevent</p>
<p>Proper selection and maintenance of equipment can reduce bodily stress. Blunt knives, saws or other equipment require greater force. Proper selection and maintenance of motorised hand-held tools can also reduce wear, noise and vibrations.</p>	
<p>The shape and location of handgrips on trolleys, loads, machines and equipment must take into consideration the position of the hands and arms. The handgrip must be somewhat convex in shape to increase the contact surface with the hand. The use of pre-shaped handgrips is not advised: the fingers are constrained, too little account is taken of individual differences in finger thickness and the grips are not suitable for use with gloves.</p>	



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Knees – Legs	
<p>Provide sufficient room for the legs and feet so that workers can get close to a work item without bending.</p>	 <p>Copyright Prevent</p>
<p>Provide a horizontal bar or rail at the base of workbenches or counters for foot support, but ensure there is sufficient room for legs and feet. By putting a foot on a bar or rail, the hip will tilt and this eases strain on the lower back muscles.</p>	 <p>Copyright Prevent</p>
<p>If a foot pedal is used, make sure the pedal is large and can be used by each foot. Locate it at floor level to avoid uncomfortable foot and leg positions. Also ensure that the required force to control the pedal is not too strong.</p>	
<p>Provide anti-fatigue mats. The mats are designed to reduce fatigue that is caused by standing for long periods on hard surfaces; for example, cement floors. Fatigue-reducing mats can be made of various materials including rubber, carpeting materials, vinyl and wood.</p>	
<p>Provide a sit-stand workplace or a pedestal stool. This will allow the user to vary sitting and standing postures while carrying out the task.</p>	 <p>Copyright Prevent</p>
Organisational measures	
<p>(Re)design jobs to ensure there is alternation between sitting, standing and walking tasks. Organise systematic task rotation between tasks with different types of work load. This creates a better distribution of the work load between all employees.</p>	
<p>Organise regular breaks of at least 15 minutes after each two hours and 10-30 seconds (microbreaks) after each 30 minutes; for example, by implementation of breaks software in VDU work.</p>	
<p>Stimulate physical activity during work and breaks; for example, using the stairs instead of the lift, organise lunchtime activities (taking a walk or playing sport), or performing relaxation or stretching exercises during microbreaks.</p>	



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Information and training for workers

Provide information to the workers on the risks of prolonged sitting/standing, awkward working postures and lack of recovery, and how to prevent these risks.

Organise on-the-job training sessions to teach workers the proper working postures to perform a task.

Provide information sheets that describe/show the best and most ergonomic way to perform a task.

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