

Checklist for the prevention of lower limb disorders

Part A: Introduction

Work-related lower limb disorders (LLDs) are impairments of bodily structures such as a tendon, muscle, nerve, joint and bursa caused or aggravated primarily by the performance of work and by the effects of the immediate environment where the work is carried out. They can affect the lower extremities, mainly hip, knee and feet.

The main risk factors of work-related lower limb disorders include squatting, kneeling, pushing on pedals, and prolonged standing or walking.

This checklist concerns hazards for injury or development of disorders to the lower limb and is targeted at people engaged in workplace hazard identification. Though limits have been indicated, these are based on the associations that have been reported in the current literature and so may change with future research that provides better scientific evidence. In addition, this checklist offers examples of preventive measures that can help to reduce LLDs risks.

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.
- 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.



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- Although the checklist may state some numerical limits, such as working in a particular manner for two hours during a shift, these values should not be seen as exact safety limits but as an indication of an increase in the size of the exposure to risk, and to identify priorities for action.

Important issues that need to be addressed

- Are managers and workers aware of the potential causes of LLDs and committed to their prevention?
- Has a practical, **participative approach** (worker involvement) to problem-solving been adopted within the organisation?
- Have risk assessments been undertaken by appropriately trained staff?
- Are any reported cases of LLDs being managed?
- How is the effectiveness of the measures taken to prevent LLDs being evaluated and monitored?

Part B: Checklist for the prevention of LLDs

Does the hazard exist at the workplace?

Are the hazards controlled to minimise the exposure of workers to the risk of developing a LLD?

Answering '**YES**' to the following questions indicates a need for improvements to be made in the workplace.

Questions	YES	NO
Manual handling of heavy loads		
Loads heavier than about 10 kg are lifted when kneeling or squatting	<input type="checkbox"/>	<input type="checkbox"/>
Loads are lifted this way more than 10 times in a week	<input type="checkbox"/>	<input type="checkbox"/>
Kneeling		
Occurs continuously (at one location) for at least half an hour	<input type="checkbox"/>	<input type="checkbox"/>
Occurs intermittently (at two or more locations) for more than 2 hours a day	<input type="checkbox"/>	<input type="checkbox"/>
Squatting		
Occurs continuously (at one location) for at least half an hour	<input type="checkbox"/>	<input type="checkbox"/>
Occurs intermittently (at two or more locations) for more than 2 hours a day	<input type="checkbox"/>	<input type="checkbox"/>
Bending of knees		



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Occurs more than about 50 times a day such as may be seen when loads are lifted from low positions. Bending of the knees during normal gait or during stairs climbing is not included	<input type="checkbox"/>	<input type="checkbox"/>
Climbing stairs or ladders		
Occurs more than about 30 times a day or 10 times an hour	<input type="checkbox"/>	<input type="checkbox"/>
More than about 30 flights of steps or 30 rungs of ladder at a time	<input type="checkbox"/>	<input type="checkbox"/>
Jumping from height		
Jump down from a height at least 1 m several times a day	<input type="checkbox"/>	<input type="checkbox"/>
Hazards of slipping or tripping		
Are there hazards of slipping or tripping on the pathways (e.g. holes, uneven or slippery surfaces)?	<input type="checkbox"/>	<input type="checkbox"/>
For detailed assessment see Risk Assessment Tool ⁱ Part III: Checklist 1: Uneven or slippery flat surfaces		
.....		
.....	<input type="checkbox"/>	<input type="checkbox"/>

Part C: Examples of preventive measures

Eliminate/redesign
<ul style="list-style-type: none"> • Arrange that the work can be done in a standing position by changing the tools used or the working methods • Redesign tasks requiring manual handling while kneeling or squatting or when the knees are considerably flexed • Arrange the pathways and surfaces so that the risks of slipping or falling will be reduced (Risk assessment toolⁱ Part III: Checklist 1: Uneven or slippery flat surfaces)
Reduce exposure
<ul style="list-style-type: none"> • Avoid or reduce the amount of time spent in kneeling or squatting work positions • Avoid or reduce the number of times and/or duration that work is done with the knees considerably flexed • Avoid or reduce the number of times and/or number of flights that workers need to climb up or down stairs/ladders. Change working processes or use appropriate lifting devices • Avoid or reduce the number of times that workers need to jump down from a height. Change working processes or reduce the height at

ⁱ European Agency for Safety and Health at Work. Risk assessment essentials, 2007. <http://hwi.osha.europa.eu/about/material/rat2007>



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which the work is done
Assistive devices
<ul style="list-style-type: none">• Use appropriate knee protection while kneeling on hard floor surfaces• Use an appropriate device for support of the buttox/thigh when considerably flexed knee positions must be adopted• Use assistive devices in manual material handling
Organisational/training
<ul style="list-style-type: none">• Ensure that workers are educated (well informed) about the hazards for injury to the lower limb from the work done• Ensure that workers are well trained in the tasks they perform• Ensure that workers are able to work as normally as possible with little time pressure



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References

Manual handling of heavy loads (Baker *et al.*, 2003; Coggon *et al.*, 2000; Sulsky *et al.*, 2002)

Kneeling (Lau *et al.*, 2000; Dawson *et al.*, 2003)

Squatting (Coggon *et al.*, 2000; Zhang *et al.*, 2004)

Bending of knees (Baker *et al.*, 2003; Coggon *et al.*, 2000)

Climbing stairs or ladders (Baker *et al.*, 2003; Coggon *et al.*, 2000)

Jumping from height (Sandmark *et al.*, 2000)

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