Manual handling at work

A brief guide



01/20 INDG143(rev4)

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TSO London

Introduction

As an employer, you must protect your workers from the risk of injury and ill health from hazardous manual handling tasks in the workplace. This leaflet will help you do that. It includes simple risk filters to help you identify which manual handling activities are hazardous.

Manual handling means transporting or supporting a load by hand or bodily force. It includes lifting, lowering, pushing, pulling, moving or carrying a load. A load is a moveable object, such as a box or package, a person or an animal, or something being pushed or pulled, such as a roll cage or pallet truck.

What's the problem?

Manual handling injuries are part of a wider group of musculoskeletal disorders (MSDs). The term 'musculoskeletal disorders' includes injuries and conditions that can cause pain to the back, joints and limbs.

This leaflet focuses on manual handling, which is one of the main causes in the development of musculoskeletal disorders, particularly back pain. For the latest statistics, visit the HSE website.

Manual handling risks can be found across all kinds of workplaces – on farms and building sites, in factories, offices, warehouses, hospitals and while making deliveries. Heavy manual labour, repetitive handling, awkward postures and previous or existing injuries or conditions are all risk factors for developing MSDs. Work may also make worse an injury which was not caused at work, such as a sports injury. There is more advice on MSDs on the HSE website.[1]

Taking the action described here will help prevent injuries and ill health, but you can't prevent all MSDs. Encourage workers to report any signs and symptoms to you or their worker representative at an early stage, before they become more serious, so you can take steps to reduce the risk.

If your workers have developed symptoms, consider taking advice from an occupational health provider on a worker's fitness for work and any restrictions or adaptations to their work that may be required.

What does the law say?

The Management of Health and Safety at Work Regulations[2] require you to assess the risks to the health and safety of your workers. Where this identifies hazardous manual handling of loads, you should also comply with the Manual Handling Operations Regulations (the Manual Handling Regulations).[3]

The Manual Handling Regulations set out a clear hierarchy of measures you must follow to prevent and manage the risks from hazardous manual handling:

- **avoid** hazardous manual handling operations, 'so far as reasonably practicable';*
- **assess** the risk of injury to workers from any hazardous manual handling that can't be avoided;
- **reduce** the risk of injury to workers from hazardous manual handling to as low as reasonably practicable.

Workers have duties too. They should:

- follow systems of work in place for their health and safety;
- use properly any equipment provided for their health and safety;
- cooperate with you on health and safety matters;
- inform you if things change or they identify hazardous handling activities;
- take care to make sure their activities do not put others at risk.

Consult and involve your workforce. Your workers and their representatives know first-hand what the risks in the workplace are and can often suggest practical solutions to control them.[4]

*This means balancing the level of risk against the measures needed to control the real risk in terms of money, time or trouble. However, you do not need to take action if it would be grossly disproportionate to the level of risk.

Avoid hazardous manual handling

Eliminate handling the load

Can you eliminate hazardous manual handling by not moving loads, for example, by looking at whether the work could be done in a different way:

- Does the item really need to be moved, or can the activity be done safely where it already is by redesigning the task?
- Can products or materials be delivered directly to where they will be used?

Automation or mechanisation

If handling the load cannot be avoided, consider whether the operations can be automated or mechanised to eliminate the manual part of the handling. The best time to make decisions about this is when plant or systems of work are being designed.

- Can you use materials handling equipment or mechanical aids to eliminate or reduce the risks you identify in your risk assessment? Can you use, for example, a conveyor, a chute, an electric-powered pallet truck, an electric or hand-powered hoist, or a lift truck to reduce the risk of injury? See *Making the best use of lifting and handling aids* for more information.[5]
- Can you use robotics technology, for example, in production lines?
- When introducing automation or mechanisation, make sure you avoid introducing new risks (for example, when maintaining equipment or when things break down).
- Make sure your workers are trained to use any equipment you introduce, such as lift trucks.

Assess the risks

Where you identify risks from hazardous manual handling in your workplace that cannot be avoided, you must do a manual handling risk assessment to help you decide what you need to do to manage these risks. Make sure your workforce is fully involved in the risk assessment process.

Consider risks arising from:

- the task;
- the load;
- the working environment;
- individual capacity;
- any materials handling equipment or handling aids used;
- how you organise and allocate work;
- the pace, frequency and duration of the work.

Make sure you take account of the individual requirements of workers who may be especially at risk, for example:

- new or expectant mothers;
- people with disabilities, which may make it more difficult to do a particular task;
- those returning to work after a recent manual handling injury, who may be on a phased return to work;
- inexperienced new, young or temporary workers;
- older workers;
- contractors, homeworkers or lone workers;
- migrant workers who may not have English as their first language.

You also need to take account of psychosocial risk factors. These may affect workers' psychological responses to their work and workplace conditions. Examples are high workloads, tight deadlines and lack of control over the work and working methods, which may make people more likely to develop MSDs.

How detailed should my risk assessment be?

The amount of detail required by your manual handling risk assessments will depend on a number of factors, including the level of risk and complexity of the tasks being carried out. Using HSE's simple risk filter(s) as a first step can help you to initially identify low- and high-risk tasks. This will help you decide your priorities for more detailed assessments of your higher-risk tasks.

HSE's guidance on the Manual Handling Regulations (L23) *Manual handling*[3] contains in-depth advice on risk assessment. If you choose to use HSE's suggested approach, there are three levels of detail:

- **simple filters** to distinguish low-risk tasks from those which need a more detailed assessment;
- **HSE's risk assessment tools**, the *Manual handling assessment charts (the MAC tool)*[6] and *Risk assessment of pushing and pulling (RAPP) tool*[7] which help you identify high-risk handling operations and prioritise action to control the risks if the tasks fall outside the simple risk filters;
- **a full risk assessment**. There are online checklists[8] available if you need to carry out a full risk assessment for lifting and carrying or pushing and pulling.

Simple filters

Use the guideline filters for lifting and lowering in Figure 1 to help you identify low-risk tasks. The Manual Handling Regulations do not set specific weight limits, so the guidelines are **not** 'safe limits' for lifting and carrying. They use broad assumptions or generalisations where, if met, the risk of injury is considered to be low. But working outside the limits is likely to increase the risk of injury, which can lead to ill health. The guidelines are derived from lifting capacity data which show differences between men and women in the population (rather than individuals).

The filter for pushing and pulling in Figure 2 looks at the posture of your workers during pushing or pulling operations.

Where the handling task falls within the filter guidelines, you do not normally need to do any other form of risk assessment unless you have individual workers who may be at significant risk. If you are unsure, complete a more detailed assessment.

Lifting and lowering risk filter

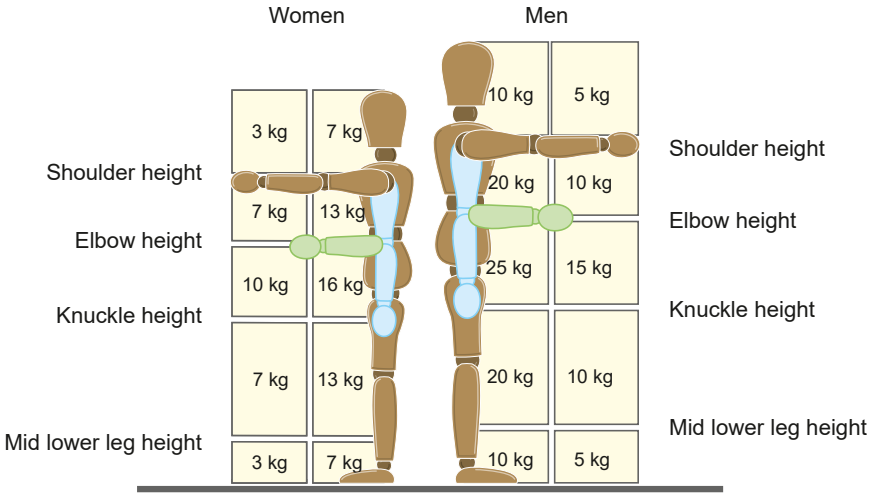


Figure 1 Lifting and lowering risk filter

- Figure 1 assumes that the load is easily grasped with both hands and is handled in reasonable working conditions, with the worker in a stable body position.
- Each box in Figure 1 contains a filter value for lifting and lowering in that zone. The filter values in the boxes are reduced if handling is done with arms extended, or at high or low levels, as that is where injuries are most likely to happen.
- Observe the work activity you are assessing and compare it to Figure 1. First, decide which zone or zones the worker's hands pass through when moving the load. Then assess the maximum weight being handled. If it is less than the value given in the matching box, it is within the guidelines.
- If the worker's hands enter more than one zone during the operation, use the smallest weight. Use an in-between weight if the hands are close to a boundary between zones.

Lifting and lowering: Do I need to make a more detailed assessment?

You will need to make a more detailed assessment using the MAC tool or full risk assessment checklists (or equivalent) if:

- the handling operation must take place with the hands outside the zones in Figure 1;
- the weight exceeds those in Figure 1;
- the handling involves torso twisting;
- the handling is more frequent than one lift every two minutes;
- the handling is done by a team;
- the handling operations are complex, for example, the weights vary significantly or there are several start and finish locations;
- the lift does not meet the conditions given for using the guidelines, for example, if the load is difficult to grasp or handle;
- the person lifting may be at significant risk, for example, new or expectant mothers, young workers, those new to the job, or those with a disability, significant health problem or recent injury.

Carrying risk filter

You can apply the filter weights for lifting and lowering in Figure 1 to carrying operations where the load:

- is held against the body;
- is carried no further than about 10 m without resting;
- does not prevent the person from walking normally;
- does not obstruct the view of the person carrying it;
- does not require the hands to be held below knuckle height or much above elbow height.

Where you can carry the load securely on the shoulder without lifting it first (for example, by sliding it onto your shoulder), you can apply the filter values up to 20 m.

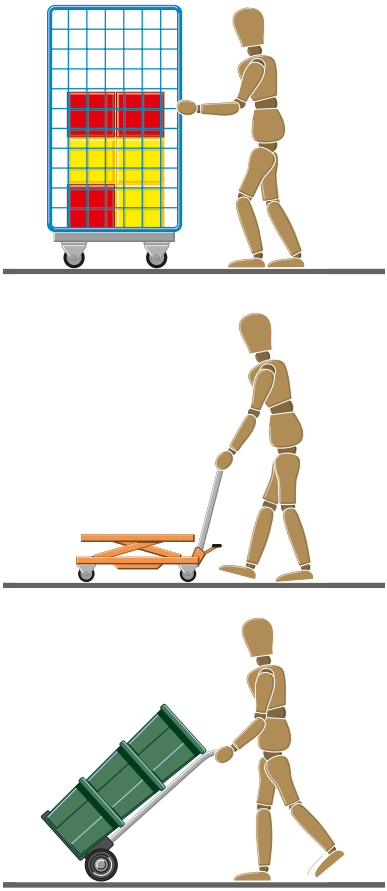


Figure 2 Acceptable push/pull postures

Pushing and pulling risk filter

In pushing and pulling operations, the load might be slid, rolled or moved on wheels. Observe the worker's general posture during the operation. Figure 2 shows some acceptable push/pull postures. The task is likely to be low risk if:

- the force is applied with the hands;
- the torso is largely upright and not twisted;
- the hands are between hip and shoulder height;
- the distance moved without a pause or break is no more than about 20 m.

Pushing and pulling: Do I need to make a more detailed assessment?

If the load can be moved and controlled very easily, for example with one hand, you do not need to do a more detailed assessment. You should make a more detailed assessment using, for example, the RAPP tool or full risk assessment checklists (or equivalent) if:

- the posture shows that the task requires significant forces, for example, leaning;
- there are extra risk factors like slopes, uneven floors, constricted spaces or trapping hazards.

Handling while seated

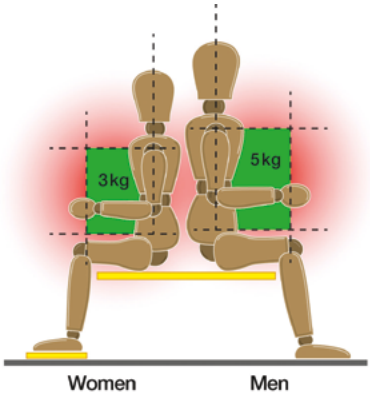


Figure 3 Handling while seated

The filter values for handling operations carried out while seated, as shown in Figure 3, are **Men: 5 kg** and **Women: 3 kg**. These values only apply for two-handed lifting and when the hands are within the green zone shown. If handling beyond the green zone is unavoidable, you should make a full assessment.

Record and review

Make a record of your significant findings – the hazards, how people might be harmed by them and what you have in place to control the risks. Any record should be simple and focused on controls. If you have fewer than five employees you do not have to write anything down, but it is useful to do this so you can review it later, for example, if something changes.

Regularly review your work activities to make sure the risks are being adequately controlled and that your risk assessment remains relevant – few workplaces stay the same because production processes or workers may change.

What about manual handling training?

Providing information and training alone will not ensure safe manual handling.[9] The first objective should always be to design the handling operations to be as safe as reasonably practicable. Manual handling training is important to further manage the risk of injury if the task cannot be avoided and you have already taken action to reduce the risk. However, on its own, it can't overcome:

- a lack of mechanical aids;
- badly designed tasks;
- unsuitable loads;
- an unsuitable working environment.

The information covered by manual handling training should be specific to the job and should include:

- manual handling risk factors and how injuries can happen;
- appropriate systems of work for the individual's tasks and environment;
- use of mechanical aids;
- how to carry out safe manual handling, including good handling techniques;[1]
- practical work relevant to the job to allow the trainer to identify and put right anything the trainee is not doing safely;
- how to report symptoms and injuries.

Risks and controls

Table 1 includes some practical advice on what to look for when making an assessment and suggests ways to control the risks.

Table 1 Risks and how to control them

Risks to look for when making an assessment	Ways of reducing the risk of injury
The tasks Do they involve: ■ holding loads away from the body? ■ twisting, stooping or reaching upwards? ■ large vertical movement? ■ long carrying distances? ■ strenuous pushing or pulling? ■ repetitive handling? ■ risk of sudden movement of loads? ■ insufficient rest or recovery time? ■ a work rate imposed by a process?	Can you: ■ use a lifting aid? ■ change workplace layout to improve efficiency? ■ reduce the amount of twisting and stooping? ■ avoid lifting from floor level or above shoulder height, especially heavy loads? ■ reduce carrying distances? ■ use powered handling devices to eliminate pushing and pulling? ■ avoid repetitive handling? ■ take steps to reduce fatigue? ■ vary the work, allowing one set of muscles to rest while another is used?
The loads Are they: ■ heavy or bulky? ■ difficult to grasp? ■ unstable or likely to move unpredictably? ■ harmful, eg sharp or hot? ■ awkwardly stacked? ■ too large for the handler to see over?	Can you make the load: ■ lighter or less bulky? ■ easier to grasp? ■ more stable? ■ less harmful? ■ evenly stacked? If the load comes in from elsewhere, have you asked the supplier to help, eg by providing handles or smaller packages?

Risks to look for when making an assessment	Ways of reducing the risk of injury
The working environment Are there: ■ restrictions on posture? ■ bumpy, obstructed or slippery floors? ■ variations in floor levels? ■ hot/cold/humid conditions? ■ gusts of wind or other strong air movements? ■ poor lighting conditions? ■ restrictions on movements from clothes or personal protective equipment (PPE)?	Can you: ■ remove obstructions to free movement? ■ provide better flooring and/or slip-resistant footwear? ■ avoid steps and steep ramps? ■ prevent extremes of hot and cold? ■ improve ventilation? ■ improve lighting? ■ provide suitable protective clothing or PPE that is less restrictive?
Individual capacity Does the job: ■ require unusual capability, eg above average strength or agility? ■ pose a risk to those with a health problem or learning/physical disability? ■ pose a risk to new or expectant mothers? ■ pose a risk to new or young workers? ■ call for special information or training?	Can you: ■ consider the design of the task? ■ pay particular attention to those who have a physical weakness? ■ take extra care of, eg new or expectant mothers and new/young workers? ■ give your workers more information, eg about the range of tasks? ■ provide more training? ■ get advice from an occupational health advisor if you need to?

Risks to look for when making an assessment	Ways of reducing the risk of injury
Handling aids and equipment Consider: ■ is the device the correct type for the job? ■ is it well maintained? ■ are the wheels on the device suited to the floor surface? ■ do the wheels run freely? ■ is the handle height between the waist and shoulders? ■ are the handle grips in good condition and comfortable? ■ are there any brakes? If so, do they work?	Can you: ■ provide equipment that is more suitable for the task? ■ carry out planned preventive maintenance to prevent problems? ■ change the wheels, tyres and/or flooring so that equipment moves easily? ■ provide better handles and handle grips? ■ make the brakes easier to use, reliable and effective?
Work organisation factors Consider: ■ is the work repetitive? ■ is the work machine or system-paced? ■ do workers feel the demands of the work are excessive? ■ do workers have little control of the work and working methods? ■ is there poor communication between managers and workers?	Can you: ■ change tasks to increase variety? ■ adjust the work rate? ■ make more use of workers' skills? ■ make workloads and deadlines more achievable? ■ involve workers in decisions? ■ encourage good communication and teamwork? ■ provide better training and information?

Find out more

1 HSE's website on musculoskeletal disorders:
www.hse.gov.uk/msd

2 *Risk assessment: A brief guide to controlling risks in the workplace* Leaflet INDG163(rev4) HSE 2014
www.hse.gov.uk/pubns/indg163.pdf

3 *Manual handling. Manual Handling Operations Regulations 1992. Guidance on Regulations* L23 (Fourth edition) HSE 2016
www.hse.gov.uk/pubns/books/l23.htm

4 *Consulting employees on health and safety: A brief guide to the law* Leaflet INDG232(rev2) HSE 2013
http://www.hse.gov.uk/pubns/indg232.pdf

5 *Making the best use of lifting and handling aids* Leaflet INDG398(rev1) HSE 2013
http://www.hse.gov.uk/pubns/indg398.pdf

6 *Manual handling assessment charts (the MAC tool)* Leaflet INDG383(rev3) HSE 2018
www.hse.gov.uk/pubns/indg383.htm

7 *Risk assessment of pushing and pulling (RAPP) tool* Leaflet INDG478 HSE 2016
www.hse.gov.uk/pubns/indg478.htm

8 *Full manual handling risk assessment: Examples of assessment checklists*
http://www.hse.gov.uk/pubns/ck5.pdf

9 For help seeking the right type of manual handling advice, see 'Getting help with manual handling risks in your business'
http://www.hse.gov.uk/msd/external-help.htm

Further information

For information about health and safety visit https://books.hse.gov.uk or http://www.hse.gov.uk.

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First published 01/20

01/20 INDG143(rev4)

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