

Manual Handling



Manual Handling is when you hold, lift, push, pull, shove or use your body to move things or people.

The *Occupational Health and Safety (Manual Handling) Regulations 2007* are the regulations for heavy work and everyday tasks such as using computers, carrying laptops, shifting photocopy paper and moving books.

Manual handling injuries cause approximately 50 per cent of injuries in schools and other workplaces.

A serious manual handling injury can not only affect your whole working life but also your personal, family and social life. Manual handling injuries are also a problem for your work colleagues and school. Schools have a moral and legal duty to prevent injuries from happening. Please note that manual handling principles (and regulations) also apply to office work and the safe use of computers and electronic devices.

Manual handling Injuries

Manual handling problems most often cause back and shoulder injuries but they can also result in injuries to the neck, arms and knees, as well as fractures and dislocations particularly when slips, trips and falls are involved.

Although manual handling injuries can be caused suddenly by a single incident, these injuries are often caused by an accumulation of stresses placed on your body by various risk factors over a period of time.

Common causes of manual handling injuries

Manual handling injuries at schools are commonly caused when you:

- move heavy items – the heavier something is the riskier it is
- repeat tasks or maintain postures for long periods of time without variation or breaks
- carry items over long distances
- shift large but lightweight objects which are difficult to control
- bend the back instead of the knees to pick up items
- twist your spine instead of turning sideways with your feet
- lift objects above shoulder height
- have not warmed up or stretched before moving items
- make sudden tugging motions to move heavy items
- use faulty equipment such as trolleys with flat tyres.

Managing manual handling risks

Manual handling risks can be managed by identifying the manual handling hazards in the school, assessing which ones are high risk, implementing solutions to reduce the risk of injuries and then checking to see if they are working.



Reducing the risk of manual handling injuries

The best way to reduce manual handling risks is to eliminate the task by not lifting heavy or bulky objects in the first instance.

If something has to be moved, reduce the risk by (1) altering the environment where the manual handling task is carried out, (2) altering your work system or the way you move an item, (3) changing the objects you are moving or (4) using mechanical aids.

1. Altering the environment or the workplacelayout:

- improve the workplace layout so that manual handling tasks are made easier and heavy items do not need to be moved
- place items closer to where they are needed so that they do not need to be carried repeatedly
- improve storage so that there is less need to shift items to get at other things
- ensure that items are not stored in cramped areas which force people to adopt difficult postures to access them
- lower the height of shelving or use safety steps so that people do not need to lift above shoulder height.

2. Altering the systems of work:

- arrange for deliveries such as photocopy paper to be taken to the actual location where they will be used
- store heavy objects (and items accessed regularly) between waist and shoulder height
- remove obstructions and trip hazards before you start to move things
- move objects over a number of trips or carry fewer items at a time
- warm up and stretch before lifting
- move things later in the day in winter or during cooler mornings on very hot days
- lift in teams.

3. Changing the objects being moved:

- use smaller boxes such as half-sized archive boxes instead of full-sized ones
- break bulky packages down into smaller sizes
- buy items in smaller containers such as 1 kg instead of 20 kgs
- place items in smaller tubs so that they are easier to move
- reduce the weight of tubs and boxes by taking some of the items out of them before shifting them
- add handles and grips
- remove unnecessary packaging and loose materials before lifting.

4. Mechanical aids:

- include levers, trolleys and other types of equipment.

Common manual handling problems and prevention methods

The four tables below list common manual handling problems, explains why they are a problem and what to do to reduce their risk. The solutions in the right hand column are listed in order from the most effective to the least effective solution. However, the best approach is to use a combination of solutions.

Table 1: Incorrect actions and postures that can cause serious injuries





PROBLEMS	EXPLANATION	SOLUTIONS
<p>Twisting</p> 	<p>Twisting your back while lifting loads can result in serious soft tissue damage and permanent disability.</p>	<ul style="list-style-type: none"> • Improve your planning and storage so that you do not have to twist. • Use equipment. • Turn with your feet instead of twisting your body and spine.
<p>Bending over and handling loads below mid-thigh height</p>	<p>Bending your back places stress on the back. Bending your knees enables you to lift with your thigh muscles which are the strongest muscles in your body.</p>	<ul style="list-style-type: none"> • Store items between thigh and shoulder height. • Use equipment. • Bend your knees not your back.
<p>Reaching forward or sideways</p> 	<p>Bending forward or reaching sideways places stress on your back.</p>	<ul style="list-style-type: none"> • Re-design tasks. • Move closer to the item. • Use equipment to avoid reaching forward.
<p>Reaching up and handling loads above shoulder height</p> 	<p>The higher you reach above shoulder height, the greater the stress on your shoulders and the more likely your centre of gravity will change.</p>	<ul style="list-style-type: none"> • Place items between thigh and shoulder height. • Use equipment, a safe ladder or a platform. • Break up items so that they weigh less.
<p>Carrying loads over a long distance or for a long time</p> 	<p>The longer the distance and time spent, the greater the strain on your body.</p>	<ul style="list-style-type: none"> • Break loads down into smaller items and do not carry them far. • Shorter distances and less time equals lower risk. • Use trolleys.



Table 1: Incorrect actions and postures that can cause serious injuries (continued)

PROBLEMS	EXPLANATION	SOLUTIONS
Repetition (or quantity) of tasks	A variety of movement is important as a repetition of even a low risk task can lead to an accumulation of stresses. The more frequently you repeat a task without adequate breaks, the greater the chance of injury.	<ul style="list-style-type: none"> • Break up repeated tasks into smaller lots and intersperse them with a variety of activities over a longer time frame. • Share the work with others.
Carrying loads on one side of the body	Uneven loads place strains on your back, shoulders and arms.	<ul style="list-style-type: none"> • Use a trolley. • Use two buckets instead of one. • Make the load smaller so that you can use separate arms.
Holding loads out from your body	<p>The further a load is held from the body, the greater the leverage effect and resulting body strain.</p> <p>A 10 kg object held out 30 cm from the body places a strain of around a 100 kg on the back and shoulders.</p>	<ul style="list-style-type: none"> • Use a trolley. • Get help and discuss before you lift. • Keep objects close to the centre of the body.

Table 2: The heavy and awkward load


PROBLEMS	EXPLANATION	SOLUTIONS
Heavy loads	The heavier the load the higher the risk	<ul style="list-style-type: none"> • Do not lift objects if they are too heavy. • Break loads down into smaller sizes. • Use equipment. • Get help and discuss how to lift beforehand.
Bulky, large, liquid or awkward loads 	<p>Even light loads can be awkward with shifting centres of balance that place uneven strain on your body. The load can also be effected by wind if outside on windy days.</p>	<ul style="list-style-type: none"> • Where possible break loads down into smaller sizes. • Use trolleys or equipment. • When large items are relatively light, use a team for lifting.



Table 3: The school environment




PROBLEMS	EXPLANATION	SOLUTIONS
<p>Constraints on posture</p> 	<p>Cramped areas, under desks, storerooms, basements, etc.</p>	<ul style="list-style-type: none"> • Inspect and tidy areas before lifting or storing items. • Store items elsewhere. • Use trolleys.
<p>Constraints on posture when reaching under desks, into large boxes. Picking up small items from the floor, etc.</p> 	<p>Supporting your back by placing your free hand on a bench, object (or your knee) reduces the cantilever strain on your back when bending over.</p>	<ul style="list-style-type: none"> • Store items elsewhere. • Place your free hand on a bench, object or your knee for support so that there is less strain on your back when bending down. • Use trolleys.
<p>Heat and cold</p>	<p>You need to stretch and warm up – especially on cold days. Very hot weather also places stress on your body and increases your risk of injury.</p>	<ul style="list-style-type: none"> • Warm up and do stretches on cold mornings especially if you do not do manual handling work on a regular basis. • Reduce manual handling on very hot days.

Table 4: Characteristics of individual people

PROBLEMS	EXPLANATION	SOLUTIONS
<p>Fitness</p>	<p>Poor fitness, pre-existing injuries and not warming up makes you more vulnerable to injury.</p>	<ul style="list-style-type: none"> • Lift within your capacity. • Keep fit and do warm up stretches before performing manual handling tasks especially after you have been on holidays.
<p>Clothing or Personal Protective Equipment that hinders movement or postures</p> 	<p>Clothing can restrict movement. Inappropriate shoes such as thongs and high heels increase the risk of manual handling injuries.</p>	<ul style="list-style-type: none"> • Sensible, flat-heeled shoes with non-slip soles reduce the risk of manual handling injuries, and slips, trips and falls. • Remove unnecessary jackets, scarves and coats.



Trolleys

It is advisable to use levers, trolleys or mechanical equipment to move heavy or repetitive loads. They reduce the force needed and help to improve your posture and movement.

There are dozens of trolley designs available and it is important to choose a design that suits the items being moved, the school environment and the needs of the people involved. Trolleys with larger wheels are generally easier to push.

In many cases waist-high trolleys are preferable to trolleys that have trays on the ground as they do not require you to place items on the ground and then pick them up again at the end of each move. Also trolleys that have trays on the ground are more suited to moving objects which are stored at ground level.

Take the following precautions when using trolleys:

- make sure that the trolley suits the individuals who will be using them
- choose the correct trolley for the task being undertaken
- ensure the path is clear and smooth where possible
- check that the trolley moves easily and any tyres are inflated
- avoid using trolleys on loose gravel, boggy areas, long grass and sand
- do not overload your trolley and make sure the load is stable
- do not stack boxes too high on the trolley
- where possible, push the trolley forward with your leg muscles (rather than pull it backwards) as they are the strongest muscles in your body
- avoid heaving and sudden movements especially when overcoming static friction forces
- if moving a heavy load of books or archive boxes, carry less boxes so that is easier to get the trolley moving.

Lifting objects

Before lifting something such as a box you should inspect the area, check what you are lifting and plan the lift.

Correct lifting techniques

Correct lifting techniques need to be adapted to each situation. In general, it is advisable to:

- check the weight and make sure that it is not too heavy by reading the label or nudging it
- if the object is too heavy to lift on your own, break it down into smaller sizes, use a trolley, get help or do not lift it
- get closer to the load so that there is less cantilever stress on your back
- stand with your feet shoulder width apart
- bend your knees, not your back
- grip the object firmly so as not to drop it or have to re-grip it while you are lifting



- lift up smoothly with your leg muscles and do not twist your back or jerk the load
- hold the load and its centre of gravity close to your body (holding a 10 kg load 30 cms from your body places approximately a 100 kg load on your back and shoulders)
- keep your head up and look where you are going
- where possible, put the object down at a height between your shoulders and knees (this is safer for you and the next person who handles the item).

Team Lifting

Lifting with others can be risky if people have pre- existing injuries or have to adopt awkward postures to fit in with one another. When lifting with others make sure:

- there are enough people and they do not have existing injuries
- somebody coordinates the lift
- everybody is of a similar size and strength
- you have all had appropriate training
- you discuss what you are going to do before you start lifting

It is also a good idea to do a rehearsal before you lift the object.

Summary

Manual Handling Summary

There are a number of factors that can cause manual handling injuries. The greater the number of risk factors that you are exposed to over time, the greater the chance that you will be injured and the worse that it will be. The fewer risk factors you are exposed to, the less likely you are to be affected and the less discomfort you will suffer over the long term.

Resources

- *The Code of Practice for Manual Handling, published by WorkSafe Victoria, contains information on how to identify hazardous manual tasks and control the risks of musculoskeletal disorders.*
- *WorkSafe Victoria, 2005, Occupational Health and Safety Act 1985: Code of Practice for Manual Handling, No. 25, 20 April 2000, accessed 1 November 2012 <www.worksafe.vic.gov.au/wps/wcm/connect/9f06fe004071f5a8a8c6fee1fb554c40/COP25_manualhandling.pdf?MOD=AJPERES>.*

Further assistance

- You can contact the Catholic Education Commission of Victoria (CECV) on 03 9267 0228
- or visit <www.cecv.catholic.edu.au> for advice, safety guidelines, checklists, online resources and other information on safety matters relevant to Catholic schools.