

# Manual Handling



MAJOR WORKPLACE HAZARDS



Government of South Australia  
SafeWork SA

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# MANUAL HANDLING

## INTRODUCTION

Poor manual handling practice is one of the most common hazards confronted by people in all workplaces. No industry or workplace is free from manual handling hazards. However, the degree of risk differs significantly from one workplace to another and from one activity to another. Manual handling seldom kills or disfigures anyone, but the injuries that occur, although invisible, are often disabling, long term and costly.

### WHAT IS MANUAL HANDLING?

Manual handling is **any activity** involving the use of muscular force (or effort) to lift, move, push, pull, carry, hold or restrain any object, including a person or animal. It covers **more than lifting** heavy weights and affects more than the back.

Manual handling also includes the repetitive activity seen in assembly work; the sustained muscle exertion required to restrain or support a load; and the effort needed to maintain the fixed postures that occur in the back and neck while typing.

Injuries often occur due to wear and tear, accumulated from frequent periods of manual handling activity that stress the body, such as repetitive work or heavy lifting. The effects of these injuries often become more disabling as workers become older.

### WHO IS AT RISK?

National Occupational Health & Safety Commission statistics indicate that manual handling injuries continue to be a serious problem, across **all industries**. Musculoskeletal injuries arising from manual handling contribute to around 40% of all compensable injuries <sup>(1)</sup> and cost the South Australian community around \$28.5 million each year. Men and women are affected in similar numbers, but the nature of injury differs across industries.

SA WorkCover statistics <sup>(2)</sup> suggest that high risk occupations include heavy truck drivers, construction workers, commercial cleaners, store persons, process workers, factory hands, personal care attendants, nurses, meat work labourers and metal fabricators.

<sup>(1)</sup> & <sup>(2)</sup> WorkCover Corporation Statistical Review 2002-2003

The Manual Handling legislation referred to in this booklet aims to reduce the occurrence and severity of manual handling injuries at work.

## LEGAL REQUIREMENTS FOR MANAGING MANUAL HANDLING AT WORK

The Occupational Health, Safety and Welfare Regulations describe how manual handling risk should be managed at work. These Regulations apply to all South Australian workplaces.

The purpose of these Regulations is to prevent the occurrence and reduce the severity of manual handling injuries. The theme throughout this legislation is that any risk in manual handling must be identified, assessed and controlled, by redesigning and eliminating the risks out of the job. This process must involve the people who perform the job. The legislation also places responsibility on employers and employees to ensure that plant and equipment used in the workplace is designed for safe manual handling activity.

## WHAT YOU NEED TO DO

Occupational Health, Safety and Welfare Regulations require employers and employees to work together to manage manual handling risks. The legislation places duties on both employers and employees. As the employer has greater control over the way in which the work is done, they also have a greater share of the responsibility for managing the risk.

The Manual Handling legislation requires employers and employees to work together to identify and assess the risk of injury arising from manual handling activities at work.



## TO ACHIEVE AN ADEQUATE ASSESSMENT:

Identify the tasks that involve manual handling which are likely to stress the body. All tasks include elements of manual activity. Identify the significant manual tasks. If in doubt, include the task and assess it later.

- ◆ To decide which tasks are likely to stress the body:
  - observe the tasks to see what activity is actually involved
  - review incident, injury and first aid reports to identify the tasks that have caused injuries and difficulties in the past
  - talk to people doing the job to find out their experience of the job – is it difficult or tiring?
  - find out how many people actually do the various jobs and for how long
  - consider all of the risk factors for body stressing in your assessment. See the Section on “Assessing the Risk” on page 9 for more information.

## TO KEEP THE RISK AS LOW AS POSSIBLE:

- ◆ Put into place controls that remove or reduce the need for stressful postures, movements and effort while carrying out tasks. Design changes are usually the most effective way to reduce the risk.
- ◆ Make sure that employees involved in manual handling tasks are trained for each task, including training on safe manual handling techniques.
- ◆ Check that controls are effective and are being used as intended.
- ◆ Review the control methods in consultation with those doing the job, particularly if the job, equipment or those involved change.

This booklet addresses Division 2.9 Manual Handling, of the Regulations, 1995, made under the *Occupational Health, Safety and Welfare Act, 1986*. These Regulations are supported by the Approved Code of Practice for Manual Handling (1990)

Regulation 2.9 3 (1)  
*An employer must ensure that any manual handling task that is likely to be a risk to health and safety is identified and assessed.*



*Purpose built workplace equipment helps improve handling and efficiency.*

- ◆ Check for manual handling risks **before purchasing** new plant, equipment or handling aids. An effective way of doing this is to trial before purchase, where this is feasible.

## HOW TO DO IT

Managing manual handling risk, like running a business, requires a planned approach.

The following steps are based on the Approved Code of Practice for Manual Handling, and provide an example of how to gather information and deal with manual handling at work. By integrating this process into existing business practices, manual handling risks may be more easily managed.

### WHO SHOULD DO IT?

The legislation sets out general responsibilities for employers and employees. As part of a planned approach, it is useful to decide specifically who is responsible for a task, and when they are to do it.

This approach involves identifying the manual handling hazards, assessing the risk of injury and putting into place control measures to eliminate, or reduce, the risk.

To be effective, the process needs input from employers, supervisors and people doing the task. Health and safety representatives should also be included. This helps ensure that the important issues are identified and that the assessment tasks are shared across a range of people. This way, the experience of all people involved is used to improve work practices.

### MAKING A START

The first step involves identifying the tasks. In a large organisation, the work activities could be divided into departments, process lines or work areas. If the workplace is small the work activity could be broken down into the steps that occur as the work process is followed e.g. from purchasing and receiving materials to the finished product.

#### Regulation 2.9.2

*An employer must ensure, as far as reasonably practicable,*

- that the plant and containers used in the workplace are designed, constructed and maintained so as to be safe and without risk to health and safety when handled manually; and*
- that the work practices that involve manual handling are so designed, implemented and maintained to be safe and without risk to health and safety; and*
- that the working environment is so designed, constructed and maintained to be consistent with safe manual handling practices.*

See SA Government, 1990  
"The Approved Code of Practice for Manual Handling"

## IDENTIFYING THE HAZARDS

All activities in the workplace involve some degree of manual handling activity. The activities most likely to cause an injury must be identified first, and then assessed, to decide how to manage them most effectively. If you are in any doubt about whether a task should be assessed, include the activity on your list and assess it later.

Developing a list of manual handling tasks can be quite helpful. It can be used as a planning tool to help:

- determine which tasks have priority for attention
- assign people to carry out the assessments
- identify time frames for completing the assessments
- track your progress on improving your work practices.

### HOW DO WE IDENTIFY TASKS WITH MANUAL HANDLING RISK?

There are several ways to identify the tasks likely to cause body stress when carrying out manual work.

1. Look at injury, incident or first aid reports to see if any of these involve muscle sprains, strains or spasms; bruises; back pain; or joint aches and pains. Your injury, incident and first aid reporting records should include a record of the activity being done at the time of the incident. From this, you can identify the tasks with possible manual handling risks.
2. Observe the work tasks being done to see if the worker needs to:
  - bend (particularly if the hands pass below mid thigh height)
  - stretch
  - over-reach (particularly where there are objects blocking the way)
  - work or reach above shoulder height
  - twist



- carry out the task for long periods of time
  - handle heavy objects
  - work rapidly doing a repetitive activity, such as typing, wrapping, sorting or packing
  - work in an area that is slippery, uneven or has restricted space.
3. Talk to the workers about their experience of doing the job:
- Is anything about the job difficult, tiring, or uncomfortable?
  - Has the worker had training?
  - Is special clothing needed while doing the job?

## ASSESSING THE RISK

Assessing the risk means - consider the exposure of workers to the tasks and the possible effects of that exposure.

The hazardous activities you have identified on your list, have been included because they expose the body to stress that could result in an injury. These activities are stressful mainly because of the **postures and movements** required by the task, the **force** that must be used and the **environment** in which the task is performed. As you look at the tasks consider how likely it is that a sprain, strain or joint injury will occur. The risk increases as the number of risk factors involved increases. Also consider **how much time a person spends doing this task (the duration)** and **how often it is done (the frequency)**, as this will significantly affect the overall stress on the body.

As you work through assessing the risk factors you may find it useful to give each factor a risk rating of low, medium or high as a way of helping to decide the priority for action.

**The assessment must take the following list of factors into account:**

- ◆ ***The actions and movements required***  
Actions and movements should be done smoothly and without pain or discomfort. Twisting, bending and over-stretching stress the joints, ligaments, muscles and tendons. The risk is increased if these actions are jerky or uncoordinated. If these stressful actions are done frequently

Regulation 1.3 .1

*An employer must consult with any relevant health & safety representative and health & safety committee in complying with the identification, assessment and control provisions of these Regulations.*

*The Approved Code of Practice for Manual Handling includes a checklist to assist with the identification of risk factors.*



The Manual Handling Regulations (Regulation 2.9.3) prescribe the risk factors that must be taken into account in the risk assessment. The Approved Code of Practice for Manual Handling provides an assessment tool to help you work through the process.

there is a great risk of damage to joints and soft tissues.

- ◆ ***The layout and design of the workstation or workplace***

The design of the workplace largely determines the way in which workers have to do the task. The placement of controls, tools and items that have to be viewed influence the posture used while doing the work. Cartons placed on the floor mean that workers have to bend to pick them up. A work bench or computer workstation that is too high causes the worker to raise their shoulders while working. A conveyor line that does not allow easy access to each side makes workers reach to remove parts. These activities increase the risk of injury, particularly if the job is done for long periods or performed repeatedly.

- ◆ ***The postures and positions used by each person to do the task***

Work activities should allow the worker to use different postures, vary the tasks and have the opportunity to take brief rest breaks. Extreme postures, like bending forward or sideways, twisting or over stretching increase fatigue and the risk of damage to muscles and joints. The actual weight of the body itself can create a significant load in certain positions e.g. when stretching an arm to reach an object. The weight of the arm and the object both have to be supported by muscular effort. These postures and movements generally make the job more difficult and tiring.



## ◆ *The location of loads and the distances they have to be moved*

The distances that loads have to be moved should be as short as possible. The longer the distance, the lighter the load that can be safely carried. If the load is located above the shoulders or below the knees, this forces the worker to use extreme postures. The effort that can be exerted by muscles is much less when the joint is in an extreme position. This makes the work more difficult and increases risk of injury.

## ◆ *Weights and forces involved*

**Weight, although an important factor, is only one of the risk factors that have to be considered.**

Handling tasks from a seated position does not allow the operator to use the stronger leg muscles. Therefore, the risk of injury is increased, particularly if loads are greater than 4 kilograms. The risk of back injury significantly increases if handling loads greater than 16 – 20 kilograms. Certainly no person should be expected to lift, lower or carry loads above 55 kilograms without mechanical assistance, or team handling, to reduce the risk. This type of load is common where the manual handling of people is necessary e.g. in nursing or ambulance work. Apart from lifting, lowering or carrying, many tasks in the workplace require force to move, hold or restrain objects. When pushing, pulling or sliding objects, the amount of force required is determined by the weight, the nature of the load and the surface it has to be moved across.

Muscle stress and rapid fatigue occurs when the same muscles are held in sustained tension, without movement, during a task e.g. in the neck and shoulders while holding a load, during typing tasks or when painting above shoulder height. When this type of work is carried out without the opportunity to take rest breaks or vary the work there is an increased risk of muscular pain and strain.

## ◆ *Characteristics of the load and equipment*

In addition to the weights and forces you need to consider the size, shape, texture, stability and temperature of the load. Also consider whether there are grips and handles to assist in moving the load. When handling "live loads" such



as a person or an animal there is an added risk of unexpected movements. Often “live loads” require special care during handling due to the person or animal suffering from fear, discomfort or agitation as a result of injury, illness or being affected by drugs.

### ◆ *Work Organisation*

The risk of injury may influence the way in which the work is organised and includes:

- the number of staff available to do the work
- the type and availability of equipment
- deadlines or production targets
- the pace of work
- the opportunity to do tasks requiring different physical demands
- the opportunity to take rest breaks.

### ◆ *Skills, experience & personal factors*

The physical conditions of individual employees may make it more difficult to adopt a comfortable posture while carrying out a task e.g. pregnancy or a limitation in movement, as occurs with an injury or disability affects the posture.

Also, young workers may be at greater risk if they are still developing physically. For older workers, as age increases,

wear and tear injuries are more common. However, assessments of risk based on age alone, are not adequate. Other personal factors that will influence the risk of manual handling injury include:

- strength and degree of bodily development
- general state of health and fitness
- physical dimensions, such as height, reach and hand grip size
- physical readiness to carry out the work e.g. if an employee has just returned from an extended period of leave they are likely to be less physically prepared for the task.

The type of clothing worn by an employee may hinder safe manual handling e.g. tight clothing can restrict movement, or personal protective equipment may interfere with the task.

## ◆ *Working Environment*

The working environment includes factors such as extremes of temperature, uneven floor surfaces and poor housekeeping. If the manual handling task is carried out close to sources of heat, cold or vibration, this may add to the physical load on the body.

The physical environment can affect the postures adopted by the employee e.g. handling a dirty, hot, cold or sharp object may cause the person to carry the load away from the body. If prolonged, heavy manual work is carried out in a hot or humid environment, this will increase fatigue, making handling movements less coordinated.

Uneven floors may prevent the use of trolleys or other handling equipment and also increase the risk of slips and trips e.g. a worker is likely to use extreme postures or movements or greater than necessary force to complete the task such as pushing a trolley or cleaning the floor.

**The risk assessment must consider all of the risk factors relevant to the task.**



## CONTROLLING THE RISK

Control measures must be determined, based on their order of effectiveness in reducing the risk. Firstly, it must be determined whether the risk can be eliminated by either:

- (1) altering the workplace design
- (2) altering the systems of work used to carry out the task
- (3) changing the objects used in manual handling in your workplace (e.g., by changing the size or weights of objects handled, or attaching handles).

The tasks you have assessed as high risk require attention first. Where practical to do so the first priority is to eliminate the risk. If that is not feasible, then the risk must be reduced as far as reasonably possible.

Employers have a duty to control the risk of injury. Some options to consider in developing your solutions include:

- using the risk management approach outlined in the Code of Practice
- consulting with designers and manufacturers who supply products for use in your workplace
- looking at solutions used across your industry
- seeking advice from specialist professionals such as ergonomists and engineers.

### ◆ *Consultation*

A team approach is the most effective way of deciding suitable control measures. When determining the controls to be used, health and safety representatives and those doing the job must be consulted. This type of involvement brings in their knowledge and experience of the task and helps to identify potential complications. When determining suitable controls it is important to come up with as many ideas as possible.

**Only when it is established that risk control measures for changing design or using mechanical aids are not practical, can you rely purely on information, training or instruction in manual handling techniques to control the risk. If training is used as the primary control you must consider longer-term changes to improve the situation.**

The Manual Handling Regulations (Regulation 2.9.4) require the employer to control the risk identified in any manual-handling task by:

- (a) redesigning the task; ensuring that the employees involved in the task receive appropriate training and supervision; and
- (b) where redesign is not reasonably practicable, take one or a combination of measures of providing mechanical aids, personal protective equipment and team lifting. Employers must ensure that employees receive training and appropriate supervision in the correct use of the equipment and procedures associated with the control measures implemented.

### *Choosing Risk Control Solutions.*

When considering the measures available for controlling the risk, it is important to come up with as many ideas as possible. Often a combination of controls will be the most effective and practical way to manage the risk.

**Remember that you are still required to control the risks arising from tasks that fall into the low risk group!**

## WHAT CAN BE CHANGED?

Solutions must deal with all of the risk factors you identified when you assessed the task. You may find it worthwhile to consider changes to a number of the contributing factors. It is not adequate to alter only the factor that contributes most of the risk although, of course, it is the one that requires attention first. However, the risk assessment will have highlighted the factors that require attention. The following list considers possible changes to risk factors, to improve the task.

### 1. *Workplace layout*

Altering the layout of the plant, equipment and furniture in the workplace can greatly improve the workflow and reduce the risk from manual handling. This should also include attention to housekeeping and maintenance of equipment.

Good design principles should be applied to the design of work-stations. One characteristic of a well-designed work-station is that the operator can work in an upright posture, with the shoulders resting and the arms close to the trunk. The working height should be about level with the employee's elbows, whether the work is being done from a seated or standing position. If the work involves handling weights, then the work surface should be about 2-3 cm below the elbow height.

The most effective way of ensuring that all employees are protected from the risk of musculoskeletal injury is to provide adjustable work stations so that employees are able to adjust working heights to suit their needs.

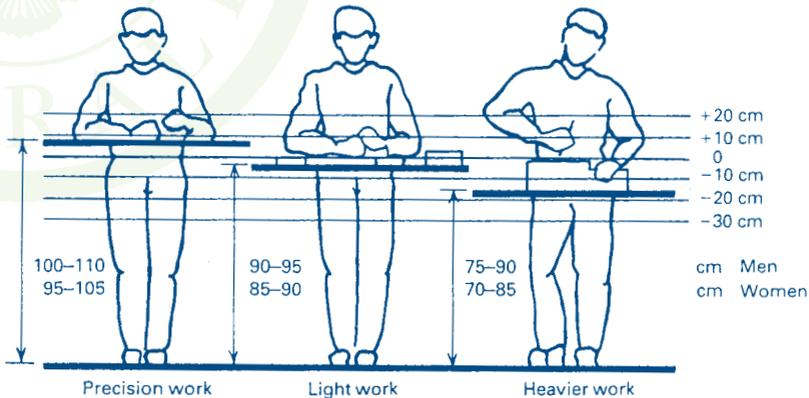
The Manual Handling Regulations (Regulation 2.9.5) describe the duties of employees.

An employee must, as far as is reasonable, apply any training provided and comply with any instruction given in the supervision of the manual-handling task.



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If the work-station is shared by a number of people, it should be designed to allow quick and easy adjustment. **A basic principle of good design is to ensure that the smallest person can reach easily and the largest person has enough space.**



## 2. *Changing the object*

Changing the size, shape and weight of the object must be considered when controlling manual handling risk. The weight of the object is very important as it determines the amount of effort needed to move it. Consider whether the object can be repackaged into a larger, smaller or different shape or weight. This may need to be negotiated with your suppliers. In particular, an object that is to be carried should not be larger than 50 cm in depth as this places greater stress on the spine when the load is carried in front of the body and makes the load difficult to grasp securely. The height of the load is also important as this can hinder the employee's ability to see the path ahead.

Handles are very useful for improving the stability of the load during movement, especially if the load is lifted, carried or pulled. Handles also indicate the most suitable lifting position to maintain the balance of the object.

## 3. *Tools and equipment*

Some tasks require the person to use a tool or piece of equipment. The design of these tools will determine the forces, movements and postures used by the person.

Well-designed hand tools should:

- be able to be used left or right handed
- have grips that distribute the pressure evenly over the hand
- allow neutral positioning of the wrist and arm
- be well balanced
- damp out vibration to the hands
- be as light as possible.

#### 4. *Work Organisation*

Employees sometimes have to work too long, or too rapidly on fast paced production lines or when trying to meet deadlines. These workers are more likely to tire, become uncoordinated and make errors.

Job rotation may reduce the exposure of employees to these risk factors. This also allows employees to gain experience in a variety of job tasks e.g. people doing keyboard work could spend time doing reception tasks at the front desk. Smoothing out peak demands such as tight deadlines will also help reduce exposure to risk factors.

Occasionally when it is not possible to redesign lifting tasks, it may be appropriate to use team lifting procedures. This must be organised to ensure that adequate personnel are available and trained for the task.

#### 5. *Task design*

The tools, equipment and furniture selected will affect the postures and forces used by the person performing the task. Where possible, provide the opportunity for the employee to sit or stand. Tasks requiring precision, such as computer work, sewing or inspection require stability and are best done seated. Seated work is often necessary where the task requires the use of foot pedals. Seated work requires less physical effort by the body, but it is much less efficient for exerting force. Tasks requiring the use of force are best done standing, where the transfer of body weight from one leg to the other can be used. Transferring weight in this way will also help to increase the range of reach while doing the task.

Some tasks may be done either sitting or standing using a sit-stand seat. If a job has to be done standing, it is important that there is an opportunity to sit down during short breaks or there is rotation to other jobs that provide an opportunity to sit.

Tasks that cause the person to work in extreme bent, twisted or stretched positions are likely to put the joints under great stress. Examples include movements and postures with severely bent wrists, the hands held above shoulder height, below knee level or outstretched. If these activities are repetitive and/or frequent the task must be changed. Design changes for these examples may include altering the angle of the tool handle, lowering high storage or raising the worker to a more suitable working height, raising storage off the floor and providing aids such as trolleys. If the task requires postures that are both bent and twisted the risk of injury is very high and the job must be changed.

Some specific examples for changing particular manual handling activities follow:

### Reducing lifting and carrying

Consider using wheels, e.g. trolleys, sack trucks, forklifts or dollies. Stairs add to the risk of severe manual handling injury and should therefore be avoided, especially in high traffic areas.

If it is not possible to use wheels, then consider how the forces can be changed. Pushing forces can be reduced if a sliding task can be changed to a rolling task. Suspending a load from an



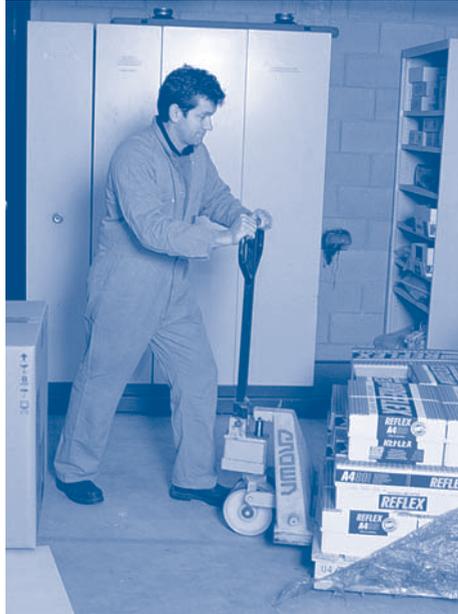
overhead track or counterbalance reduces the carrying and holding forces, but will still require pushing forces. If considering an overhead track, remember that holding and lifting forces may be required to position the load on to the track. These need to be considered in an assessment.

Consideration should also be given to whether it is possible to:

- handle objects mechanically in bulk, e.g. using a forklift to move pallets and bulk bins
- use mechanical aids to reduce the handling effort, e.g. scissor lift tables, cranes, hoists, barrel handlers, conveyors and rollers
- use gravity to assist in the task, e.g. chutes or inclined roller tables
- use pushing or pulling forces, e.g. by using ball castor tables, slides, chutes, monorails and trolleys.

Some examples of simple mechanical aids that can be used to reduce manual handling effort in lifting and carrying include:

- levers
- lifting devices, such as jacks (which should always be marked with a safe working load)
- winches
- slings and
- wheelbarrows.



**Remember that where mechanical handling equipment is used, it should be supported by an effective maintenance program. This is essential to ensure equipment is safe and serviceable at all times and does not increase the risk of injury.**

**Reduce upper body twisting and over reaching by:**

- placing all tools, equipment controls and materials in front of the worker (within 400-mm reach)
- seating the worker on a chair that swivels
- providing adequate space to step and move to reach materials and equipment that are used less frequently
- enabling the worker to walk around the load or rotate it and
- providing knee space for seated tasks.

**Reduce holding forces by:**

- providing a jig to stabilise the object being assembled or the tool being used
- supporting and counterbalancing hand tools
- providing handles on the objects to be handled, e.g. by using a sling, or placing smaller items in boxes with cut out space for the hands.

6. *Physical Environment*

The physical environment can have a serious impact on the way in which manual handling is carried out in the workplace. Some examples include:

- **Floor surfaces** that are rough and uneven make pushing tasks more difficult e.g. pushing a trolley will require greater force to be exerted; so improving the floor surface will decrease the risk of injury and fatigue.
- **Lighting** will affect the postures that are adopted to carry out the task e.g. if the lighting is poor, the person may hunch over the work. If there is glare then the worker may adopt an awkward posture to avoid the glare in the line of vision. The lighting may be improved by providing additional task lighting, providing stronger globes and moving the task from in front of windows. Providing adjustable blinds will help to reduce glare and regular maintenance of light fittings will help improve the quality of general lighting.

When considering control measures which involve the use of mechanical equipment or plant, you should also consider the requirements for risk assessment for plant. The Plant Regulations (Regulation 3.2.1 & 3.2.15) require that the needs of people using and maintaining plant must be assessed.

- **Housekeeping** is important to ensure clear pathways for moving around safely and covering the shortest distance. An untidy work environment increases the risk of trips and falls and is likely to limit the use of trolleys and other handling equipment.
- **High temperature and humidity** is likely to increase the effort required to do the task. Thermal comfort may be improved by using fans. Insulating hot or cold objects will help to protect people if they come into contact with them.
- **Clothing** may influence the postures and movements of a person while carrying out handling tasks. Insulated or bulky clothing will limit movements and require extra space for performing some tasks. Changing the location for the task, reducing the time spent on the task and improving the space around the task may reduce the risk of injury and fatigue.

## 7. *Individual Factors*

Individual factors include the age, skill, physical characteristics and experience of the worker e.g. young workers (under the age of 18) have a greater risk of injury than adult workers as they are still developing physically. Individuals will differ in their physical dimensions, strength and endurance. Therefore, tasks should be designed to reduce the physical effort required so that the majority of workers are able to carry out the tasks safely. Reducing the time spent in physically demanding tasks, training personnel to use equipment safely and providing extra assistance will help to reduce these risks. This may involve special training such as acquiring a forklift or crane licence.

## 8. *Information, training and supervision*

Training is essential in supporting the range of control measures that should be put in place to manage the risk of manual handling injuries. However, training is not a substitute for removing the risk and should not be used as the primary method for controlling risk (unless it can be justified that it is not feasible to change the task, provide mechanical assistance or redesign the work area). Training should cover issues that are specific to the task to enable the worker to develop skill in performing that task. Your risk

assessment should have highlighted a range of factors for which training needs to be provided.

Training is an important part of an overall risk management plan, but if most of your control measures are based on training you may be relying on the workers to practise safe behaviour while working in a hazardous environment. It is more effective to improve the working environment by reducing the risk through redesign and providing equipment.

**Remember that training should be supported by adequate supervision.**

## PUTTING YOUR IDEAS INTO ACTION

All of the work you have done so far has been focussed on collecting ideas for effective controls. For this process to actually work to prevent injuries these ideas need to be put into action. Consider all of the risk control ideas that came forward and consider which ones are the most feasible. It may be reasonable to combine a number of the control options to improve the task. Consider the time frames that are necessary for making changes. Use your risk ratings from your risk assessment as a guide to determine whether action should be short, medium or long term. Controls for hazardous tasks may require a combination of short and long term solutions e.g. short term controls to reduce risk for a packaging line may involve training and job rotation, while the longer term control may involve redesigning the work stations.

In many cases it will be worthwhile to trial your ideas before they are permanently put into place. It is often valuable to trial equipment and gather feedback from a range of users before purchasing or to test a mock up floor plan for moving equipment around.

Review your risk controls to see if they continue to remain effective. Ensure the changes have been implemented correctly and the task is actually safer and easier.

Keep records of your identification and assessment activities and make sure that there are effective ways for ideas and issues to be identified and discussed in your workplace.

Regulation 1.3.4 of the Occupational Health Safety and Welfare Regulations, 1995 describes the requirements for training and instruction, while Regulation 1.3.6 specifies requirements for supervision. Training records must be kept for a period of 5 years from the date of the last entry (Regulation 1.3.4)

The workplace is constantly changing and so are the hazards and risks. You need to review activities on a regular basis to ensure that your workplace remains as safe as possible.

## USING A MANAGEMENT SYSTEMS APPROACH TO REDUCE MANUAL HANDLING RISK

Adopting a management systems approach to reduce the risk of manual handling injuries means considering *all aspects of your business activity* and looking at the interaction between activities.

Information in the following section is based on the draft Victorian Code of Practice Manual Handling 1999 Victorian WorkCover authority.

### 1. Roles and Responsibilities

- Make sure you are aware of your responsibilities, as an employer or employee. Also consider other people associated with your business activities such as contractors, designers and building owners. Find out what their responsibilities are for managing risk.
- Decide what needs to be done to ensure that everyone meets his or her responsibilities.
- Decide when key activities should be carried out. Consider how these responsibilities and activities can be dovetailed into the day to day operations in your work place.
- Establish the roles that everyone involved in manual handling can play.
- Decide what information needs to be recorded and kept for future reference.

### 2. Share Information

- Provide information to everyone in the workplace about the systematic approach, how it will work, their role in it, what happens and when it happens.
- Develop a process for consultation.
- Provide information about the way in which hazard identification, risk assessment and control will be carried out.

### 3. When & who to consult

Consult those affected:

- When considering purchasing new plant, equipment or designing new work areas or tasks.
- During hazard identification, risk assessment and when

deciding on control solutions.

- When evaluating the effectiveness of solutions.

#### 4. *Plan, design and purchase to reduce the risk of manual handling injury*

- Provide suppliers with specifications for products and equipment to reduce the risk of injury. This may include requirements for packaging, delivery, design, arrangement and labelling.
- Ensure that designers, engineers and architects involved in the design or modification of equipment, tools, tasks or spaces are informed about the manual handling tasks likely to be involved. It is essential that adequate space be allowed at the design stage for movement of equipment and people.

#### 5. *Provide training and information*

- Train managers, supervisors, in-house designers and engineers as well as employees.
- Provide training on the hazards associated with musculoskeletal injury on how these hazards can be recognised and the ways being used to manage the risk.
- Train all workers involved in carrying out and managing activities involving manual handling.
- Provide training in specific manual handling techniques and on the use of the particular mechanical aids provided for all those who need to carry out the task.
- Provide training in risk assessment and risk control planning to those who will be directly involved in these activities.

#### 6. *Manage your contractors*

- Ensure all contractors are aware of your requirements for manual handling before they carry out work for you.
- Ensure that either you or the contractors have carried out an adequate risk assessment for the relevant tasks before work is conducted on your site.
- Make sure that the work contractors carry out does not increase the risk for work done by your employees and vice versa.
- Supervise your contractors and their employees.

## 7. *Identify your hazardous activities*

- Talk to your personnel and their health and safety representatives, about their manual handling activities.
- List new tasks being planned that involve manual handling.
- Note any tasks that are likely to be changed because the work process, equipment or work areas are being used differently.
- Watch the work being done.
- Check reports of pain, injury or complaints about difficulty or fatigue.
- Check tasks that have been assessed before to make sure the assessment is still accurate.
- Make a list of tasks and decide realistic dates for each assessment.

## 8. *Complete the risk assessments*

- Decide which tasks are similar enough to be covered by a generic assessment and consider the various conditions to be included for each group of tasks.
- In each assessment, take into account the risk factors for musculoskeletal injury. These are the factors that physically stress the body, and include:
  - the postures used
  - movements
  - forces exerted
  - the period of time (duration) and frequency that the activities are performed and
  - the environmental conditions in which the task is carried out.
- Identify any contributing factors and determine which ones have the greatest risk in each task. Contributing factors may include workplace layout, tools and equipment, work organisation, physical environment and individual factors such as skill and experience, age and physical dimensions.
- Where tasks are inter-related consider how the tasks and their risks affect each other.

## 9. *Control the risks*

- Decide what changes need to be made to reduce the risk of injury for each task.

## MANUAL HANDLING

- Consider changes to the layout of the workplace, the object, tools, equipment or containers used in the task.
- Provide mechanical equipment.
- Provide safe systems of work. Often combinations of controls are necessary to eliminate or reduce the risk.
- Decide which changes can be put into place immediately, and which ones are longer term.
- Record your risk control decisions for each task assessed and decide time lines for completing each change.
- Trial the changes in consultation with those who will use them (or will be affected by them) before they are permanently put in place.
- Regularly maintain all equipment used in manual handling tasks.
- Provide training in the methods of manual handling necessary to reduce the risk in the task.

### 10. *Evaluate the control measures*

- Check that the changes are working effectively.
- Check that the risks have actually been reduced.

### 11. *Review and evaluate your management system*

- Check that all the actions planned and agreed on have actually been carried out.
- Review injury and incident reports.
- Consult with employees and health and safety representatives about tasks that were difficult before and check whether they are easier.
- Consider how the system needs to be adapted to improve it.

## **SAFEWORK SA**

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