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What is a manual task?

Manual tasks are those that require you to push, pull, lift, carry, move, hold or lower any object, person or animal. Manual tasks include tasks that have repetitive actions, sustained postures and may involve exposure to vibration.

Manual handling results in 20% of all workers compensation claims at UNSW. The types of injuries related to manual handling include:-

- Muscle injuries
- Nerve injuries
- Bone injuries
- Injuries to the ligaments or tendons
- Injuries from falling objects

Identifying Hazardous Manual Tasks

Not all manual tasks are hazardous. A manual task becomes hazardous when it involves one or more of the following:-

- Repetitive or sustained application of force
  Examples: - Typing, Bricklaying, Repetitive Lifting and moving, Pushing and pulling a trolley, pipetting
- Repetitive or sustained awkward posture
  Examples: - Reaching sideways to move objects from a conveyor belt, Bending down to stack items on a pallet, Reaching and twisting to unload items from a trolley, Bending over a desk or table, Sustained sitting with no breaks
- Repetitive or sustained movement
  Examples: - Painting, typing, pipetting
- Application of high force
  Examples: - Lifting and carrying heavy objects, operating hand tools with a tight squeeze, pushing or pulling an object that is hard to move
- Exposure to sustained vibration
  Examples: - Driving forklifts, Using sanders, Using high pressure hoses
- Tasks involving handling people and animals
- Tasks involving the handling of unstable or unbalanced loads
Controlling the risk

Assessing the risks
When conducting a risk assessment of manual handling tasks the following factors must be taken into consideration.

1. The posture of the worker
2. The forces exerted by the worker and any forces exerted on the worker by the object, person or animal
3. Speed of movements by the worker
4. Exposure of the worker to vibration; and
5. The duration and frequency of the task

In addition to the above risk factors the following must be considered as they can contribute to the risk.

6. The layout of the work area
7. The work environment
8. The characteristics of any relevant item; and
9. Work organisation and the system of work.

Risk Controls
One or more of the following must be used to eliminate the risk or if this is not reasonably practicable, to minimise the risks by

1. Altering the workplace:- For example, use an adjustable platform to reduce stooping
2. Altering the environmental conditions, including heat and cold and vibration.
3. Altering the work organisation or systems of work.
4. Modifying items used or substituting items: - For example, change the shape of bulky objects so that they are easier to hold, or pack products in smaller cartons.
5. Using aids designed to assist in manual handling
6. Providing information, training, instruction and supervision in task specific method for performing a manual task, personal protective equipment or a combination of these.

Note: The methods used in 6 should only be used as the sole means of controlling the risk where it can be demonstrated that it not reasonably practicalable to achieve risk control by the use of 1-5
Layout of workarea

It is important that the work area is arranged to prevent excessive bending, twisting and stretching.

- Workbenches should be at waist height or be adjustable to prevent bending

![Self-adjusting platform automatically matches worker's height.](image)

- Ensure that there is enough room to turn around to prevent twisting.

![Tool suspender reduces muscular effort and compression on the back.](image)

- Use adjustable supports or suspenders to operate heavy tools.
Tool support eliminates over-stretching and overreaching.

- Use bins that allow easy access.

Lift-and-tilt device and side opening on bin reduces bending.

Layout of storage areas

- Store materials most frequently used and heaviest items at waist height
- Leave the lowest shelf unused if necessary.
- Use bin racks for storing small items.
• Do not store materials at floor level.

• Use hand trucks with elevating devices in storage and loading areas.

• Use trucks with a tilting device to avoid bending.
Manual handling aids reduce the physical effort needed to lift and move objects, making it safer. When providing manual handling aids for the workplace it is important to ensure that:

1. The right equipment is selected for the task
2. That all staff are trained in the correct use of the equipment
3. The equipment is visually inspected for defects before use
4. The wheels are suitable for the floor surface
5. The wheels move freely

- Use elevating platforms or step stools or step ladders to reach overhead items
6. The handle grips are comfortable and are in good order
7. The handle height is between the waist and shoulder
8. If they have brakes do they work?
9. The aids are regularly inspected and maintained to ensure it is good working order
10. The load secured before moving

Examples of aids

- Use hand trolleys to move bulk loads

![Hand Trolley]

- Use rolling platforms to assist in carrying and handling heavy objects where limited space does not allow for comfortable body position.

![Rolling Platform]

- Use a shelf truck to move a variety of objects.

![Shelf Truck]

- Use a platform truck to move heavy, irregularly shaped objects.
Use a semi-live skid for temporary storage of work.

Use stair climbing trolleys for stairs

Safe techniques

The S.M.A.R.T lifting technique.

This technique can be used to pick up small light loads from low levels.

Size up the Load

- Assess the load (size, shape and weight);
- Assess whether the load needs to be moved;
- Where is it going to be placed? Check that there are no obstructions;
- Assess whether mechanical or human assistance is required.

Move the Load as close to the body as possible

- A load is heavier to lift or carry if it is not close to the body.
- The whole hand should be used to ensure a firm grip.
Always bend your knees

- Maintain balance.
- Keep feet apart and in a comfortable position.
- Minimise lower back bending.
- Bend knees preferable at as large an angle as possible but not at a right angle - use a semi squat in preference to a full squat.

Raise the load with your legs

- Achieve the lift smoothly and without jerkiness.
- Maintain the normal curvature of the spine to allow the force of the load to be distributed evenly from the spine to the pelvis.

Turn your feet in the direction that you want to move the load.

- Avoid unnecessary bending, twisting and reaching.
- Change direction by turning your feet and not your back.
- To set the load down, squat down, keep your head up and let your legs do the work.

Team Lifting

When performing a team lift it is important that everyone involved uses the smart lifting technique. It is also important that the lift is coordinated.

The following steps should be followed when performing a team lift

- Team members should, wherever possible, be of around the same height and build. If this is not possible, taller members should be at the back.
- Lift should be planned and coordinated by one person.
- Decide who will be the leader
- The Leader should give simple and clear instructions.
- Assess the weight
- Correct positioning of feet
- Straight back
- Correct grip
- Lift together
- Safe lifting techniques should be employed by all team members.
- The leader should ensure that all team members are comfortable once the load has been lifted. If not, the load should be carefully lowered.
Overhead loads

- Always use a step-stool or ladder to lift overhead loads
- Test weight before removing shelf
- Slide object toward you
- Hold load close body as you descend

Lifting and carrying awkward loads

Different techniques need to be used to lift and carry awkward loads. Especially where objects are hard to reach or where objects are odd sizes or shapes.

**Over-sized or odd shaped loads:**
In many cases oversized loads may be light enough to carry, but block vision or may be difficult to hold.

In such cases you should:-

- Use mechanical help
- Or ask someone to help

**Long light objects:**
- Support load on your shoulder
- Keeping the front end higher than the rear

**Long heavy loads requiring 2 people:**
- Each of you should shoulder load on the same side
- Keep object level
- Keep in step when walking
Reaching into containers or other storage devices:

- Stand with shoulder width apart
- Slightly bend knees and start to squat, bending at the hip joints (like lowering yourself into a chair)
- Slide load close to body as possible
- Raise yourself using your leg and hip muscles

Common lifting problems

- Lifting with back bent and legs straight: - When you lift this way you are using your back muscles to perform the lift and placing strain on your discs in your back. When you perform a lift with your knees bent you are using your stronger leg muscles to perform the lift.
- Holding load to far from body: - :- The further the load is away from your body the greater the force placed on your muscles in order to keep your body balanced.
- Contorting the body in order to lift and carry loads in cluttered areas
- Poor coordination between two or more people during the lift.
- Twisting while lifting or carrying
- Losing your balance whilst lifting because:-
  1. The load is too heavy
  2. The load is uneven or unstable
  3. Feet are too close together

Tips for safe lifting and carrying

- Whenever possible use the smart lifting technique
- But if the load is awkward use the preceding tips to lift.
- Finally, use your safety sense- If the load is too heavy, awkward or too hard to reach- get help!
Rest Breaks and exercises

If you are performing manual handling tasks it is important to take adequate rest breaks.
If you are working for longer than 30mins you should take a 1-2min rest break every 1/2hr and if you are working for longer than 4 hrs you should have a longer break of 30mins.
Performing stretches in your rest breaks will help relieve tension.

Hand stretches

- 5 sec, 3 times

Forearm stretches

Hold for 10-15 seconds each side

Shoulder and arm stretches

- 5 sec, 2 times
- 10 sec
Low Back Stretch

Place Hands on hips, lean back from top down. Hold 2 Secs and repeat 5 Times

Upper back stretch

Stand with very straight posture. Clasp hands behind head and bring your elbows back. Hold for 5 secs. Repeat 3 times.

References and Acknowledgements

National Standard and Code of practice for Manual Tasks