

Manual Tasks Risk Management Guideline

Section 1 - Purpose and Objectives

(1) The purpose of this Guideline is to offer advice regarding the management of musculoskeletal disorder risks associated with manual tasks, including the selection of manual handling controls and design of work areas with manual tasks.

Section 2 - Definitions, Terms, Acronyms

Terms	Definitions
Musculoskeletal Disorder	Sprain or strain to soft tissues of the body, including muscles, nerves, tendons, ligaments, blood vessels, and intervertebral discs. Examples: back pain, sciatica, neck strain.
Manual Task	A task that requires a person to lift, lower, push, pull, carry or otherwise move, hold or restrain any person, animal or thing.
PPE	Personal protective equipment.
Hazardous Manual Task	A manual task requiring repetitive or sustained force, high or sudden force, repetitive movement, sustained or awkward posture or exposure to vibration.

Section 3 - Guideline Scope/Coverage

(2) This Guideline applies to all University staff and students who may be required to perform manual tasks as part of their role at the University.

Section 4 - Guideline Statement

(3) The University is aware that musculoskeletal disorders can occur during hazardous manual tasks and offers guidance on how these tasks may be carried out to minimise risk of musculoskeletal disorders.

Section 5 - Risk Management

Risk Identification

(4) The risk of sustaining musculoskeletal disorders to the back, upper and lower limbs when performing manual tasks is dependent on a number of factors:

- a. size and weight of the object;
- b. the heights at which the lift is carried out;
- c. the distance of the object from the person;
- d. the ease with which the object can be grasped;
- e. the stability of the object;

- f. the duration of handling;
- g. the frequency of handling;
- h. the availability of appropriate mechanical assistance; and
- i. the fitness and skill of those carrying out the manual handling tasks.

Risk Management Plan

(5) As outlined in the [Manual Tasks Risk Management Procedure](#) and in accordance with [Hazardous Manual Tasks Code of Practice 2021](#), a risk assessment and risk management plan should be developed for manual tasks at the University. The information in this Guideline should be used to assist in the development of local risk management plans and for the planning of safe manual tasks.

(6) The [hierarchy of controls](#) should be used to identify the most suitable risk controls. Higher level controls are more effective and reliable controls for the minimisation of musculoskeletal disorder risks associated with manual tasks.

(7) Examples of manual tasks risk controls and assistive equipment are related to the hierarchy of controls in the table below.

Hierarchy	Control type	Example
1	Elimination	Delivery of items directly to the point of use is an example of elimination of the manual task.
2	Substitution	Ordering smaller quantities or requesting items are packaged in smaller boxes to reduce weight of items and force required of worker.
3	Isolation	Automated mail/book sorters, conveyor belts, tugs.
4	Engineering	Height adjustable work platforms, trolleys.
5	Administrative	Reduce duration of manual tasks through task variation, manual tasks risk management training.
6	Personal Protective Equipment	Steel capped boots to reduce risk of foot injuries, safety glasses to reduce risk of eye injuries, etc.

Section 6 - Manual Tasks for Pregnant Workers

(8) Pregnancy may increase the risk of injury associated with manual tasks due to the changing shape of the body and hormonal changes causing softening of tissues and increasing laxity of joints and ligaments in the lower back, hips and pelvis. The physical demands of pregnancy may also hasten the onset of fatigue and decrease the worker's tolerance to heat. Pregnant workers working in hot or humid environments should take care to increase water intake and take more frequent rest breaks.

(9) Pregnant workers should also reconsider tasks such as horseback riding, handling large animals, off-road driving and exposure to whole-body vibration which may increase risk of miscarriage.

(10) In some cases, a worker may be provided with medical guidance from their treating practitioner regarding their physical capabilities while pregnant. In these instances, manual tasks should be assessed for risks and reasonable control measures meeting their doctor's requirements implemented.

(11) Pregnant workers are encouraged to seek confidential advice from the Occupational Health Nurse Advisor (Health, Safety and Wellness Division) to discuss any potential HSW concerns related to their pregnancy. Refer to the University's [Guidelines for Reproductive Hazards and Work](#) for information regarding biological, chemical and radioactive hazards and pregnancy.

Section 7 - Manual Tasks Associated with University Events

(12) When planning and coordinating events, a risk assessment should be conducted to ensure risks to event attendees, those who set-up and dismantle event equipment are identified and managed.

(13) When setting up events requiring a variety of large equipment (tables, marquees, tents, etc.) consider use of a University vehicle to reduce manual handling and increase the efficiency of event set-up staff. Use of vans or utility vehicles will maximise storage capability while maintaining easy access.

(14) When food is ordered or catering provided, request the catering be delivered directly to the event site to reduce unnecessary handling.

(15) Consider use of trolleys that can also be used as food/beverage service stations to reduce manual handling (i.e. serve coffee/tea directly from the trolley).

Section 8 - Manual Handling Assistive Equipment

Selection of Assistive Equipment

(16) When selecting assistive equipment, refer to the hierarchy of controls to best minimise musculoskeletal disorder risks associated with manual tasks.

(17) Trolleys eliminate the need for the worker to carry goods and equipment and allow workers to transport a higher volume and/or larger and/or heavier items than could be moved by a worker or group of workers. Trolleys also facilitate the transport of goods to variable distances across level surfaces.

(18) Height-adjustable equipment or work surfaces will accommodate different types of work as well as workers of different heights, reducing risk of musculoskeletal disorders. Height-adjustable trolleys or work platforms may eliminate lifting and lowering of goods or equipment between work surfaces of different heights.

(19) Hydraulically and electrically operated equipment may help to reduce the force required of the worker to lift, lower, push or pull goods or equipment. For example, use of a hydraulic drum lifter is less likely to cause a musculoskeletal disorder compared to a worker lifting a drum manually. Electrically operated tail gates for vehicles eliminate the force required and drastically reduce the shoulder movements required to manually raise or lower the tail gate.

(20) For further information, refer to section 4.5 in the [Hazardous Manual Tasks Code of Practice 2021](#), which outlines selection and use of mechanical aids.

Trolley Selection

(21) When selecting and purchasing trolleys, consider the size and shape of items that need to be transported. To minimise risk of musculoskeletal disorders when using trolleys, consider the following:

- a. height and shape of handles;
- b. height of the trolley bed (i.e. flat bed, shelf trolleys, etc.);
- c. access to stored items on trolley;
- d. type of wheels; and
- e. size of trolley.

Handles

(22) To reduce awkward postures when pushing or pulling trolleys, handles should allow for comfortable use close to user's elbow height. Handles should allow for comfortable gripping and steering of trolley. Handles that allow workers to push from behind rather than pull are preferable.

Trolley Height and Storage Characteristics

(23) Trolleys should help to reduce awkward postures such as repeated bending, stopping or lifting from low level surfaces. If a trolley has a low shelf, consider only using that section for lightweight or rarely accessed items. Heavy or bulky items should be stored on the most accessible shelf, preferably at worker's elbow height. Try to avoid deep bins that require bending down to pick up items (i.e. large laundry trolleys). Consider trolleys or bins with spring loaded or mechanically adjustable platforms to reduce lifting requirements, and awkward postures when lifting or lowering items.

Wheel Selection

(24) Consider the floor surface in the work area where the trolley will be used and the weight of the items to be transported using the trolley. Larger wheels reduce push/pull forces and pneumatic wheels are easier to manoeuvre across uneven surfaces.

Trolley Size

(25) Consider the size, shape and weight of the items to be transported when deciding on trolley size. Larger trolleys will hold more objects but will also require greater force to push, pull and steer - potentially increasing the risk of musculoskeletal disorders.

Section 9 - Hand Tools

(26) Use of hand tools can increase risk of musculoskeletal disorders through the force required and repetitive nature of work involving hand tools. Poor tool design or incorrect tool selection may lead to awkward hand and wrist postures and sustained gripping of tools may further increase risk of musculoskeletal disorders.

(27) Hand-held power tools transmit vibration through the hand and arm of the worker, increasing risk of musculoskeletal disorder. Refer to the [Controlling Risks From Exposure to Vibration Guideline](#) for more information regarding managing exposure to vibration.

(28) The [Hazardous Manual Tasks Code of Practice 2021](#) outlines the following strategies to reduce muscular effort required by use of hand tools:

- a. use power tools where possible;
- b. suspending or supporting tools where they are used repetitively and in the same location;
- c. counterbalancing heavy tools that are used repetitively and need to be kept away from the body;
- d. using the trigger locks where the grip has to be sustained for more than 30 seconds;
- e. holding the work piece in place with jigs or fixtures;
- f. selecting tools that produce the least vibration;
- g. reducing impact shocks; and
- h. limiting torque or 'kick back' reactions.

(29) Additional considerations to minimise risk of musculoskeletal disorder include:

- a. wearing appropriate PPE and keep all guards in place;

- b. selecting the appropriate tool and attachment for the material and the task;
- c. avoiding using tools in way they were not designed to be used;
- d. ensuring appropriate tool maintenance;
- e. avoiding use of faulty or unsafe tools; and
- f. operating the tool at the correct speed.

(30) Advice regarding the design and maintenance of hand tools is outlined in section 4.4 of the [Hazardous Manual Tasks Code of Practice 2021](#).

(31) For advice regarding the safe use of specific hand tools, refer to the UQ online [Hand Tool Safety training module \(via the Health and Safety Training and Induction website\)](#). Workers who use hand tools as part of their work at the University are required to complete this module.

Section 10 - Safe Storage

(32) Poor design and layout of storage areas can increase the risk of musculoskeletal disorder if equipment or materials are difficult to access or not stored effectively.

(33) Below is a list of general storage principles to minimise risk of musculoskeletal disorders when storing or accessing stored furniture, equipment or materials.

- a. large, heavy or awkward items should be stored at worker's chest/elbow height;
- b. frequently accessed items should be stored at worker's chest/elbow height;
- c. ensure workers know how the weight of items before handling, either with manufacturer/supplier labels or University labels;
- d. in warehouses, ensure aisles are wide enough for trolleys, order pickers or tow motors;
- e. consider available space and frequency of orders when selecting quantity or volume of items to be shipped or stored;
- f. limit need to store items by only ordering the volume or quantity needed; and
- g. when selecting items, consider how easily they can be stored (i.e. stackable chairs, vs. chairs that are not stackable).

(34) Those in control of the design of storage facilities and warehouses should also consider:

- a. shape, size and weight of items to be stored;
- b. how frequently items in storage will need to be accessed;
- c. location of storage facility in relation to where items will be transported to; and
- d. access to storage area for workers, trolleys, carts and vehicle.

Section 11 - Shipping and Receiving Areas

(35) Poor design of shipping and receiving areas or ineffective shipping/receiving processes may increase the risk of musculoskeletal disorders.

(36) Consider the following principles to reduce the risk of musculoskeletal disorders when working in shipping/receiving areas:

- a. use appropriate manual handling equipment; height adjustable pallets and trolleys, pallet jacks, drum lifters,

forklifts etc;

- b. try to use packing benches that allow relaxed shoulder postures when packing; consider use of height adjustable benches or modifying existing benches to accommodate size of boxes;
- c. limit depth of benches, docks or work surfaces to reduce over-reaching;
- d. pallets and large equipment is best stored/received at floor height to be moved easily with a pallet jack or forklift;
- e. ensure shipping/receiving areas are easily accessible to all vehicles; and
- f. whether goods can be delivered directly to point of use to reduce manual handling.

(37) Those in control of the design of shipping/receiving areas should also consider:

- a. capacity or size of shipping/receiving area based on current and potential future needs;
- b. loading/receiving docks should be 600-800 mm in depth to limit forward reaching and strain on upper and lower back; and
- c. loading/receiving docks should be an appropriate height to reduce forward benching, over-reaching or stooping.

Section 12 - Additional Information

(38) For additional information, contact the Ergonomics and Rehabilitation Advisor of the Health, Safety and Wellness Division on hsw@uq.edu.au.

Status and Details

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