

Adelaide Quality Care

Manual Handling

Non Clinical Staff





Preventing injuries from manual tasks in the workplace

A risk management approach



Overview



Introduction

Legal Setting

Anatomy/Biomechanics

Manual Task Code & the Regulations

Hazard Identification

Risk Assessment

Risk Control

Who's Responsible?

Conclusion



Manual tasks

Definition

Any activity or sequence of activities that requires a person to use their physical body (musculoskeletal system) to perform work



Hazardous Manual Tasks

Many things that workers do involve performing activities that can be considered to be manual tasks.

The term *hazardous manual tasks* is used to describe those that have the potential to cause injury

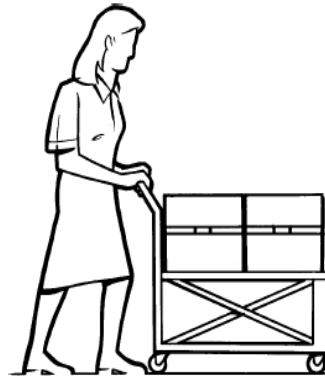
Examples of manual tasks



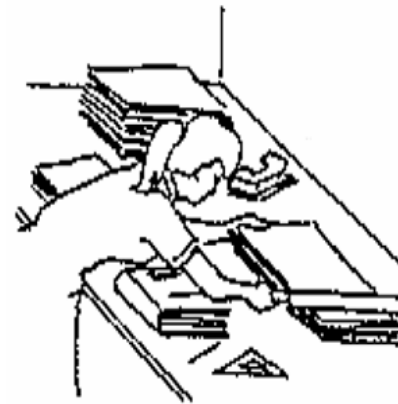
CARRYING



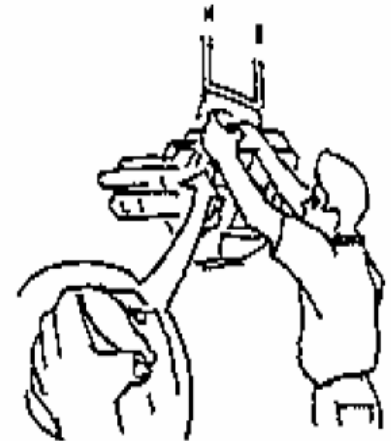
LIFTING



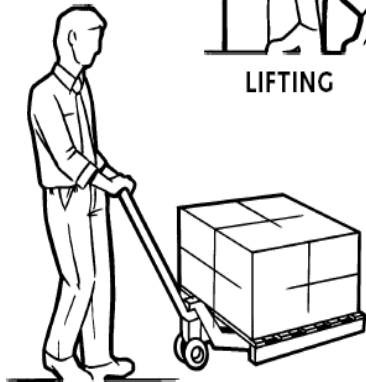
PUSHING



AWKWARD POSTURES



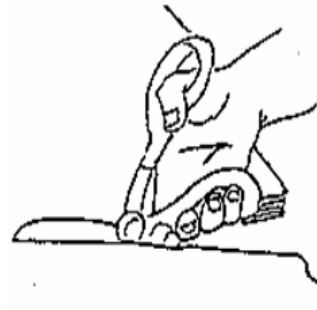
SUSTAINED POSTURES



PULLING



HOLDING



REPETITIVE MOVEMENT



Relevant Legal Requirements

- General Duty of Care
- Reporting & investigation requirements
- Risk management regulations
- Requirements to consult and co-operate
- Codes of Practice

Injuries from Manual Tasks

The types of injuries that can result from performing manual tasks include:

- Sprains/ strains – muscles, ligaments & tendons
- Injuries or chronic pain affecting joints
- Disc injuries of the back or neck
- Injury to or compression of nerves
- Disorders affecting muscles or blood circulation
- Soft tissue injuries



How injuries occur

Injuries can occur from:

- Gradual wear and tear
- Sudden damage
- Direct trauma from unexpected events



Cost of Manual Task Injuries

1 in every 3 lost time injuries is a result of performing manual tasks.

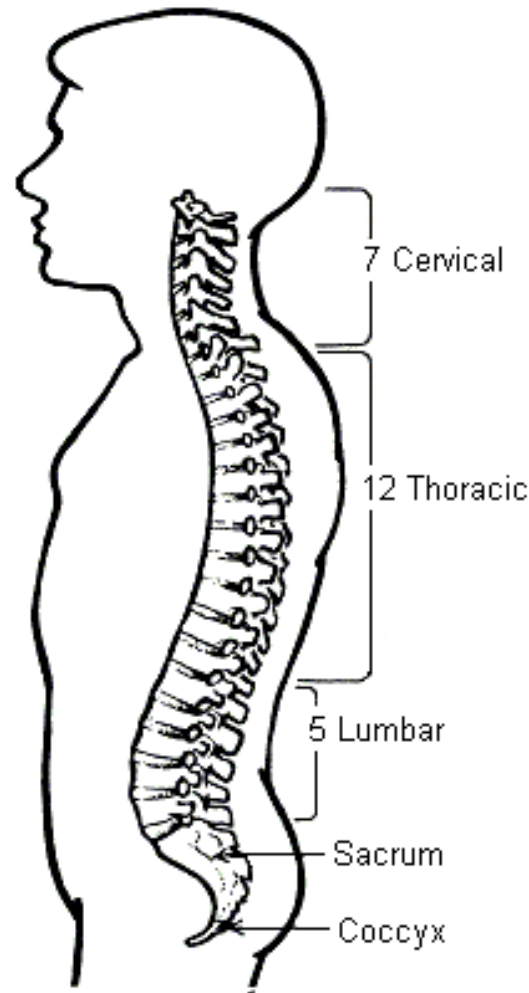
1 in every 4 workers who suffers a manual task related lost time injury is off work for at least 3 months.



Anatomy & biomechanics

- Anatomy of the spine
- Body positions & postures
- Types of muscle work
- Principles of biomechanics
- The relationship between the human body and risk of injury

Anatomy of the spine



Trunk (spine) positions

flexion & extension



Neutral posture (standing straight) = decreased risk of injury
Awkward postures (bending forwards/backwards) = increased risk of injury

Trunk (spine) positions

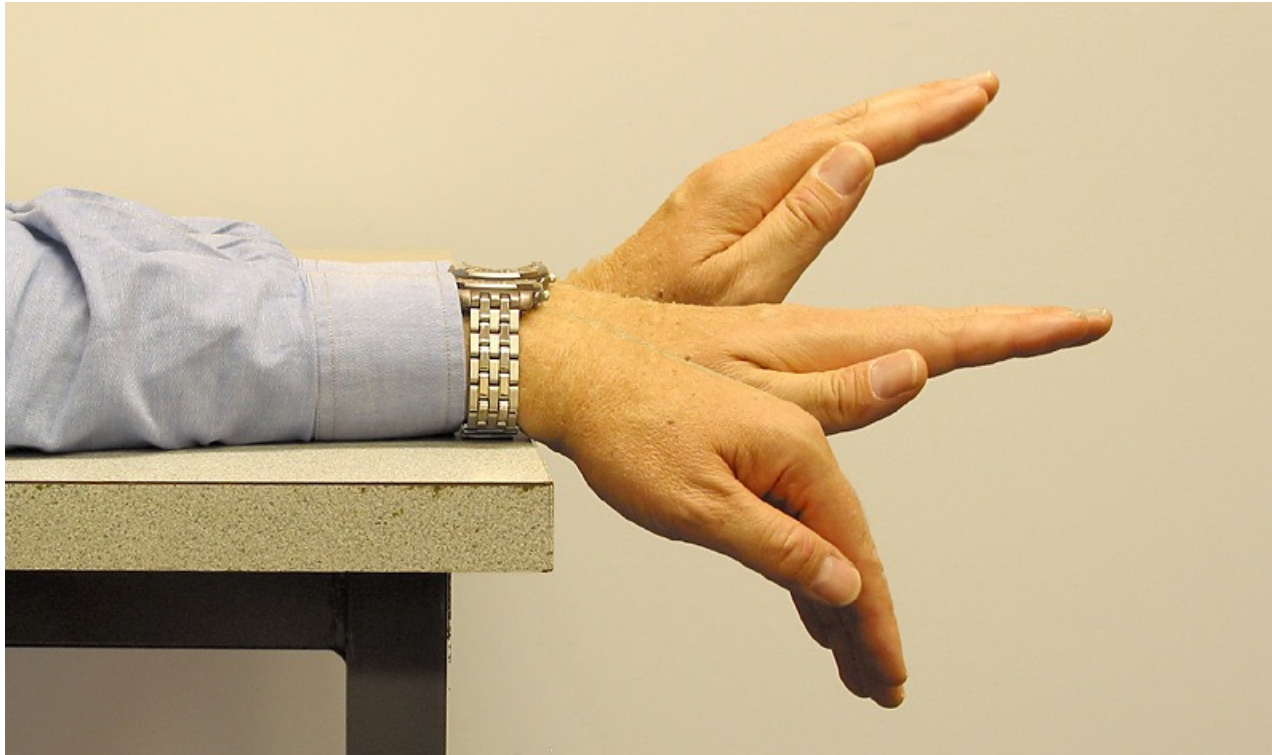
side flexion & rotation



Neutral posture (shoulders aligned over hips and toes) = decreased risk of injury
Awkward postures (bending sideways or twisting) = increased risk of injury

Wrist positions

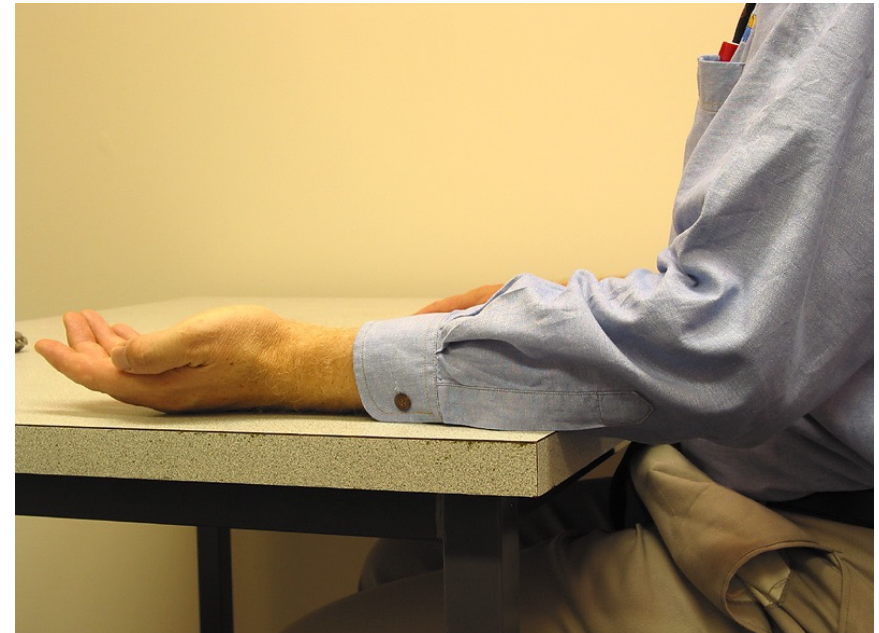
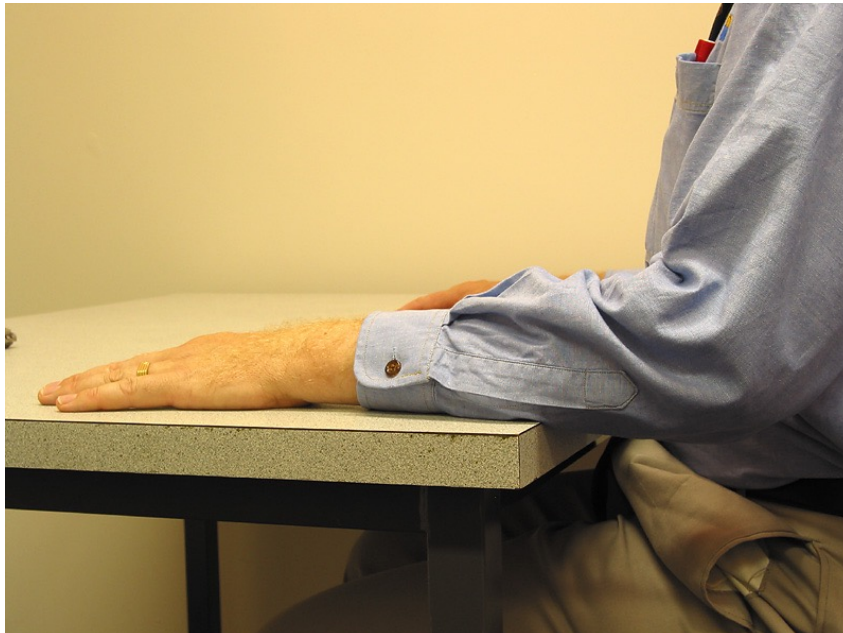
extension, neutral & flexion



Neutral posture (hand in line with forearm) = decreased risk of injury
Awkward postures (hand bent forwards or backwards) = increased risk of injury

Hand & forearm positions

pronation & supination



Neutral posture (hand at mid-range: “handshake” position) = decreased risk of injury
Awkward postures (hand palm up or palm down) = increased risk of injury

Types of muscle work

- Dynamic

Muscle contraction & movement.

- Static

Muscle contraction & no movement.

Static muscle work (prolonged standing, sitting, holding hand/arm in one position) =
increased risk of injury

REPETITIVE dynamic muscle work over time = increased risk of injury

Principles of biomechanics

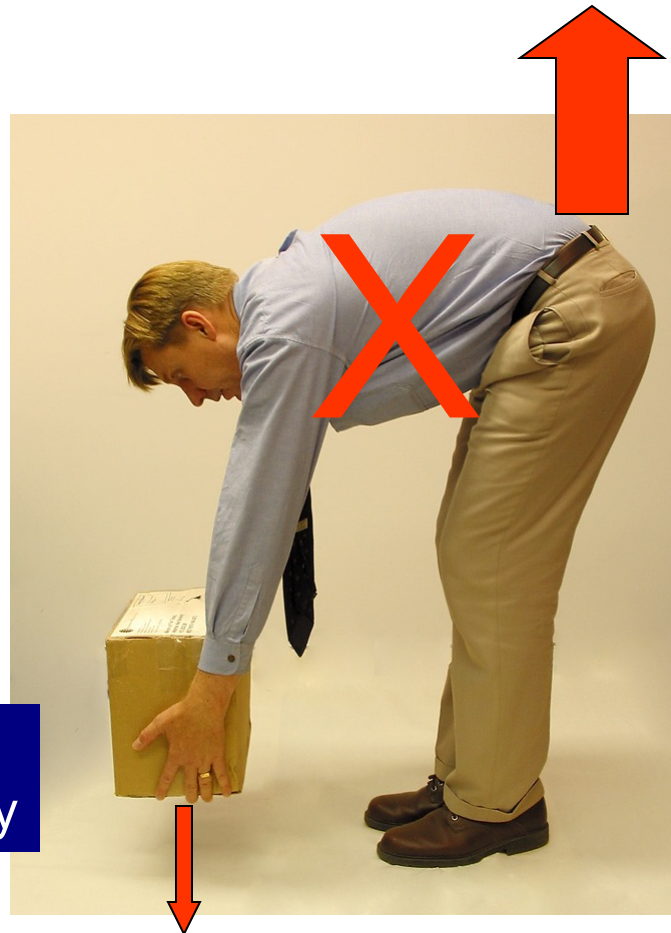


Load close to body =
decreased risk of injury



Load further from body
= increased risk of injury

Using the spine as a crane



Load further from body
= increased risk of injury

Principles of Biomechanics: Back

- Obtain a wide base of support for stability
- Become familiar with the load and try to get a good grip of the load.
- Maintain neutral curves of spine
- Maintain load close to body
- Use the stronger larger muscles of the legs to create force where possible
- Execute smooth, controlled movement
- Stabilise the back by using abdominal muscles and deep back muscles where possible.



Principles of Biomechanics: Shoulders & Wrist

- Avoid work where the upper arm is away from the side of the body
- Avoid twisting
- Avoid holding one position for long periods of time
- Avoid repetitive movement
- Avoid long distance carrying
- Try to maintain the wrist and forearm in neutral postures

Relationship between the human body and the risk of injury

The risk of injury increases when:

- The body is using awkward postures, rather than preferred neutral postures
- Muscles are involved in static work (contraction without movement) or in highly repetitive movements
- The body is exposed to high/intense (one-off), cumulative (ongoing) or unexpected forces

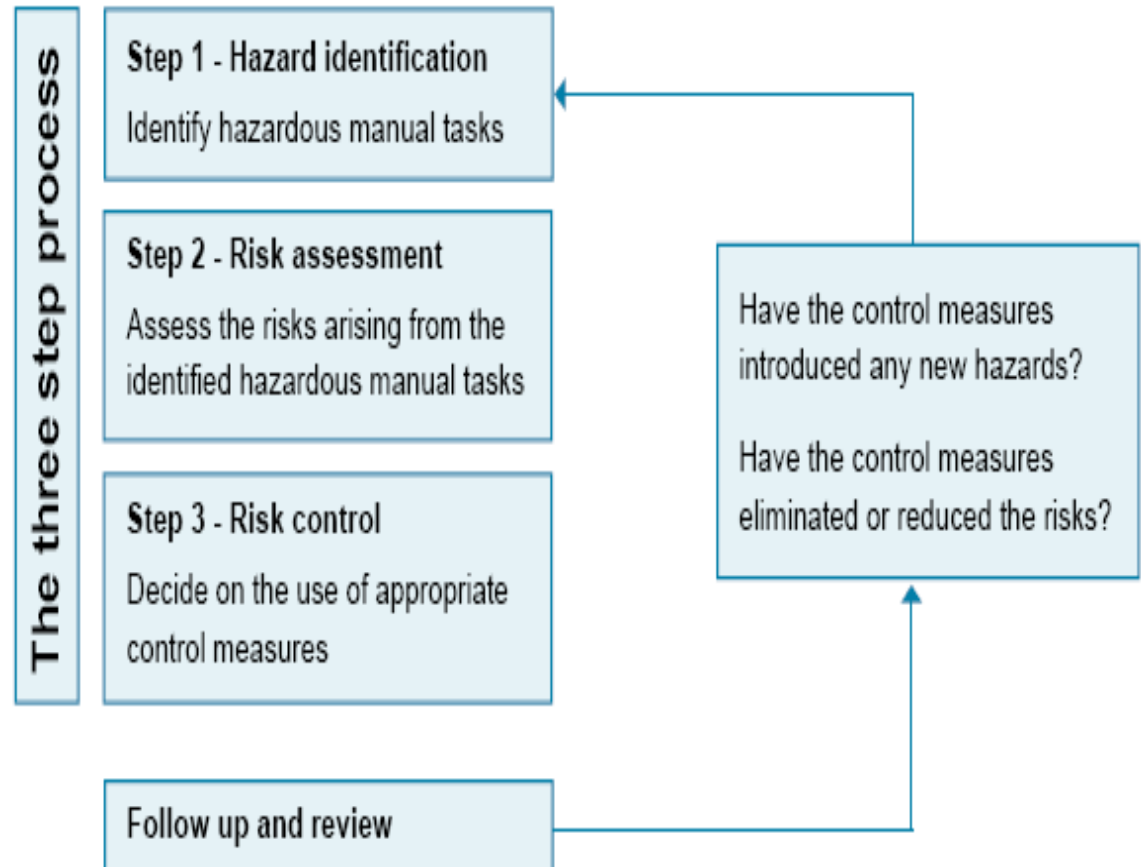
Where does this risk come from?

The sources of risk that create these body conditions where injury may occur include:

- Work area design and layout
- Nature of the item, equipment or tool
- The nature of the load
- The working environment
- Systems of work, work organisation and work practices

Code of Practice: Manual Tasks

- Step 1. Hazard ID
(spotting the problem)
- Step 2. Risk Assessment
(understanding the problem)
- Step 3. Risk control
(dealing with the problem)





Code of Practice: Manual Tasks

Step 1. Hazard Identification (spotting the problem)

Regulations 3.1(a) and 3.4(2)(a) requires the employer, the main contractor or a self-employed person to identify each hazard that is likely to arise from manual tasks at the workplace, as far as is practicable.



Code of Practice: Manual Tasks

Step 2. Risk Assessment (understanding the problem)

Regulations 3.1(b) and 3.4(2)(b) requires the employer, the main contractor or a self-employed person to assess the risk of injury or harm (if any) to a person resulting from each hazard identified within manual tasks, as far as is practicable.

Code of Practice: Manual Tasks

Step 3. Risk control (dealing with the problem)

Regulations 3.1(c) and 3.4(2)(c) requires the employer, the main contractor or a self-employed person to consider the means by which the risk (from hazards in manual tasks) may be reduced, as far as is practicable.

Additionally, Section 19 (1) of the Act requires employers, as far as is practicable, to provide and maintain a working environment in which employees are not exposed to hazards.



Hazard identification

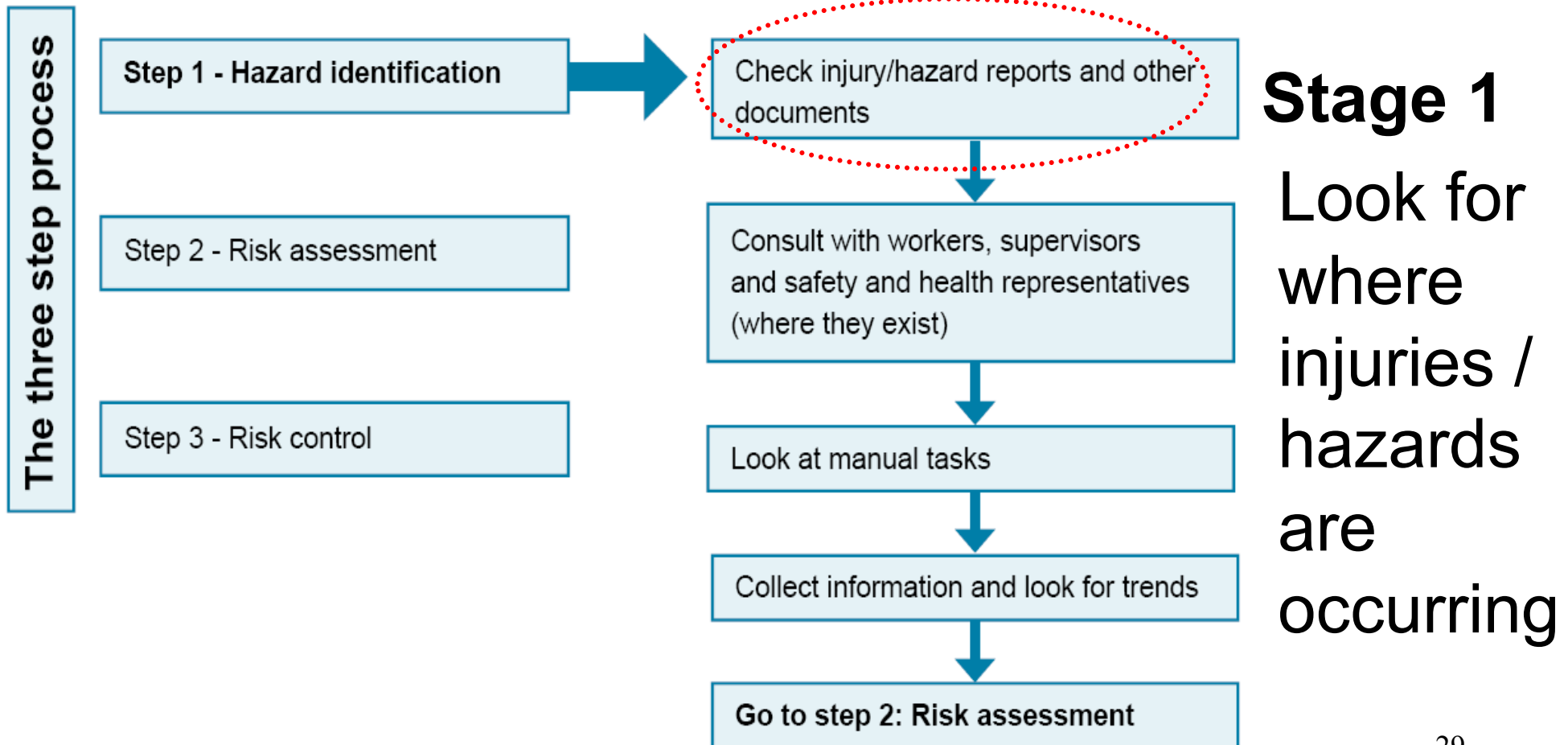
What is it?

- The process of identifying factors within a manual task which could result in injury.

Why do we do it?

- To collect information and look for trends on risk factors within manual tasks.

Hazard identification process



Hazard identification process

Stage 2

Talk to workers & OSH Reps about the tasks that cause problems

The three step process

Step 1 - Hazard identification

Step 2 - Risk assessment

Step 3 - Risk control

Check injury/hazard reports and other documents

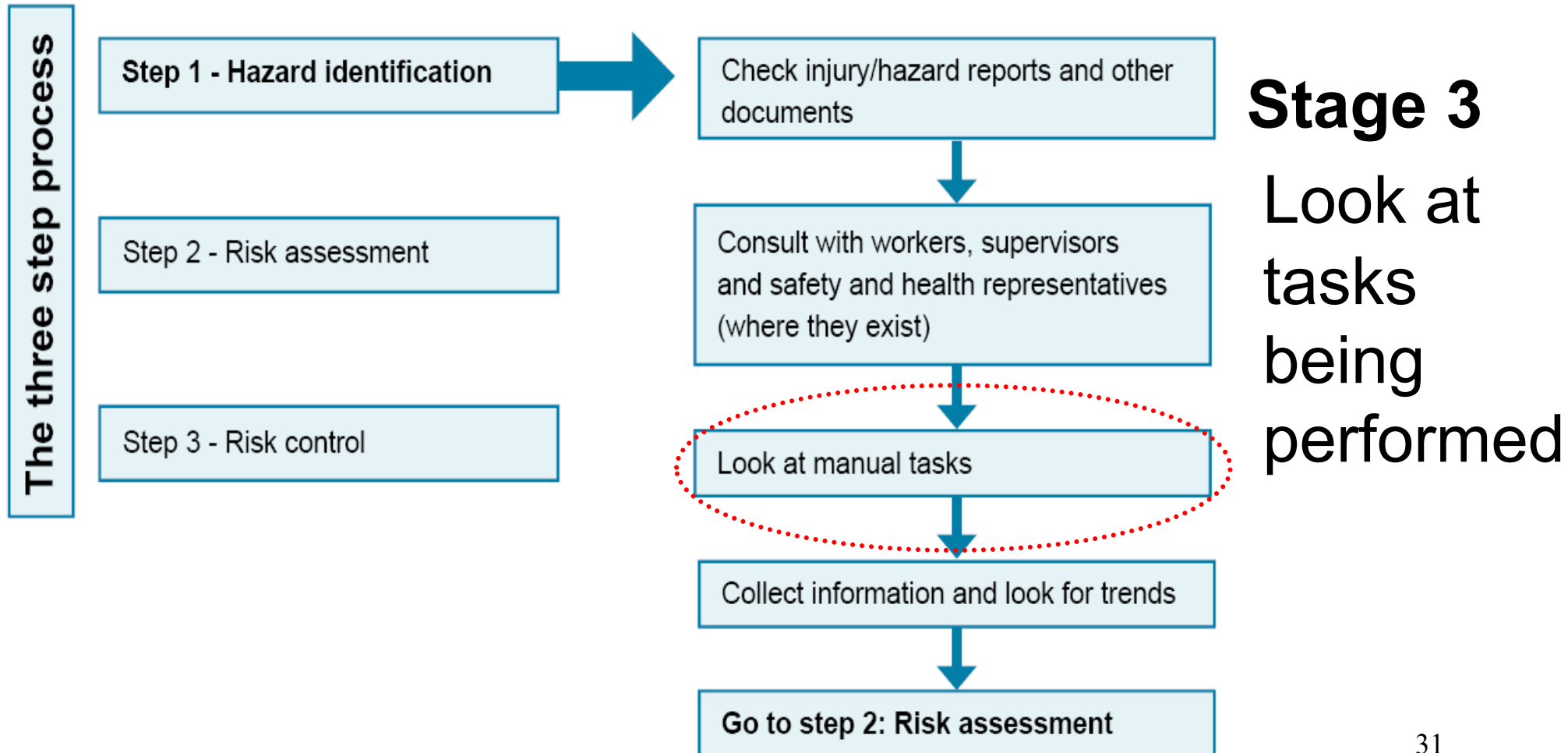
Consult with workers, supervisors and safety and health representatives (where they exist)

Look at manual tasks

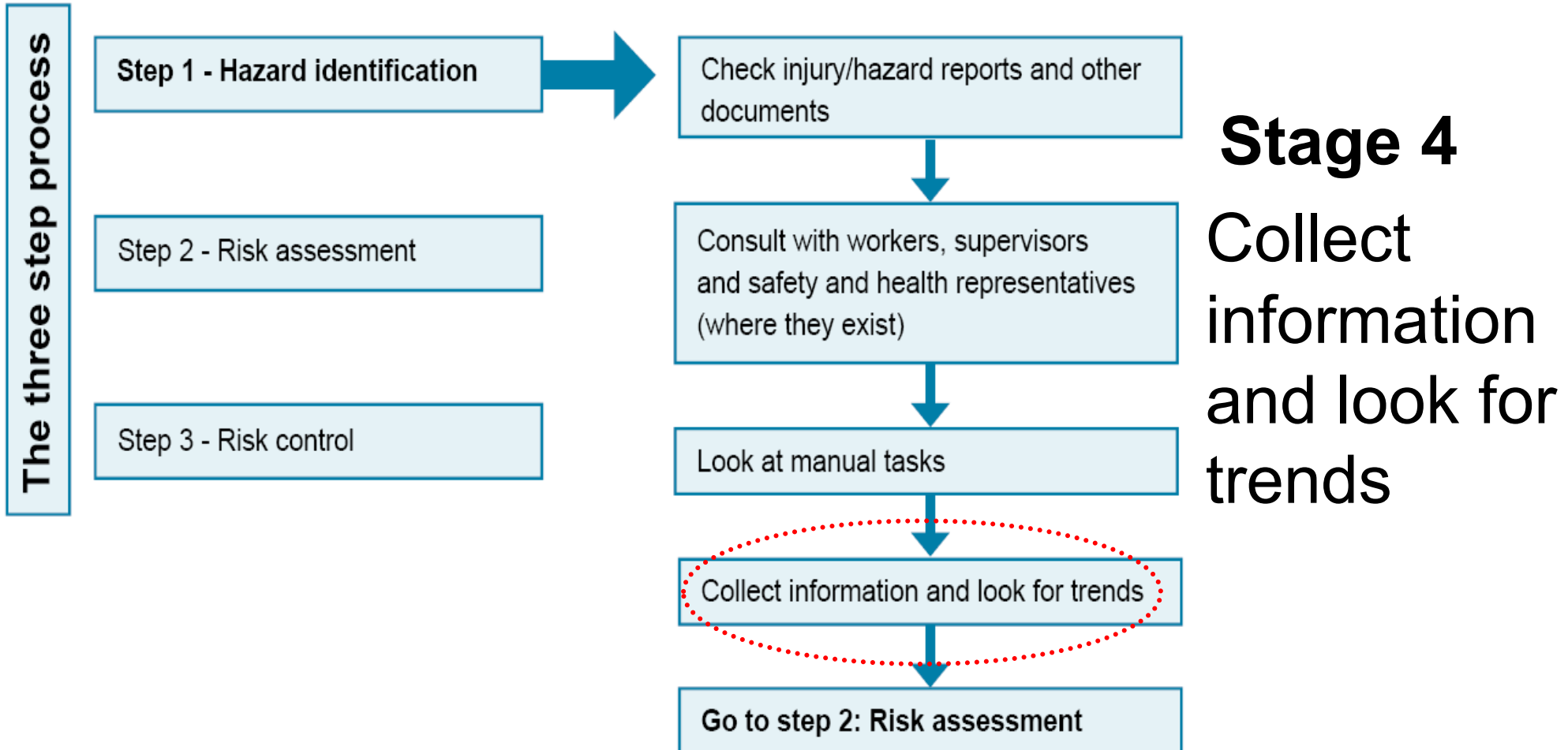
Collect information and look for trends

Go to step 2: Risk assessment

Hazard identification process



Hazard identification process



Risk assessment

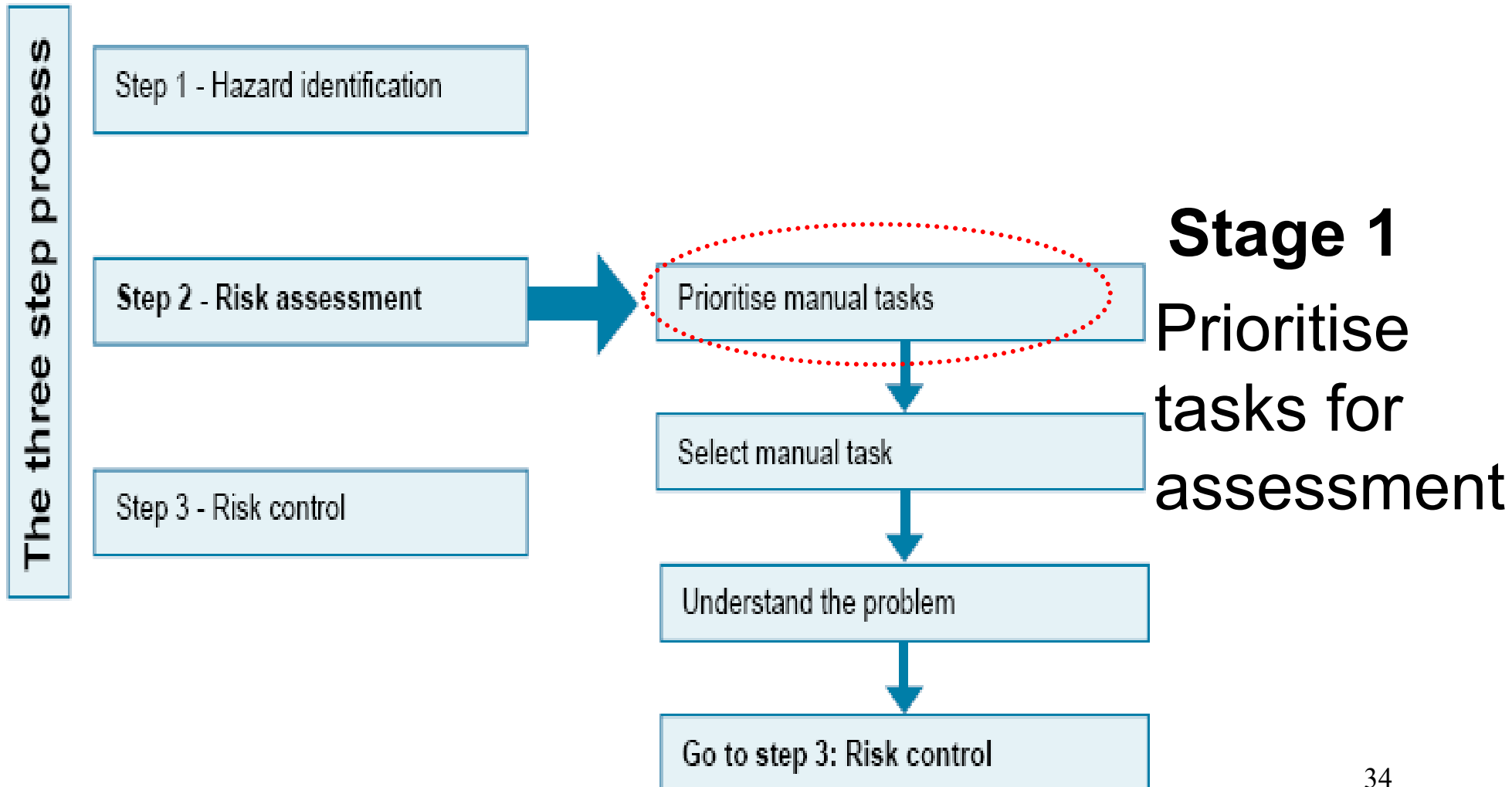
What is it?

- The process of determining which identified factors within a manual task have potential to cause injury, and why.

Why do we do it?

- To determine appropriate ways of dealing with hazards.

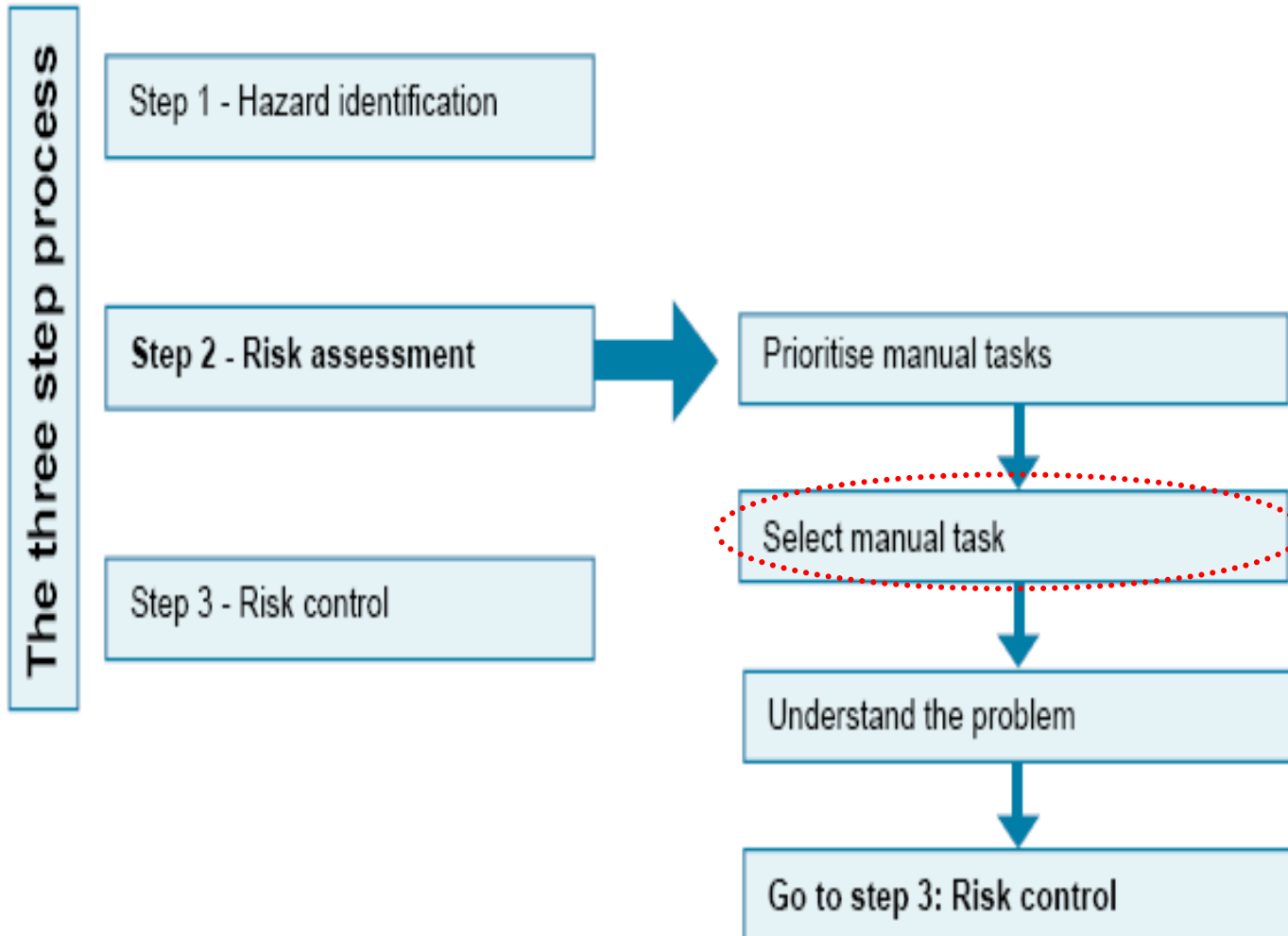
Risk assessment process



Risk Assessment Matrix

CONSEQUENCE	LIKELIHOOD			
	Very Likely	Likely	Unlikely	Highly Unlikely
Fatality	HIGH	HIGH	HIGH	MEDIUM
Major injuries	HIGH	HIGH	MEDIUM	MEDIUM
Minor injuries	HIGH	MEDIUM	MEDIUM	LOW
Negligible injuries	MEDIUM	MEDIUM	LOW	LOW

Risk assessment process

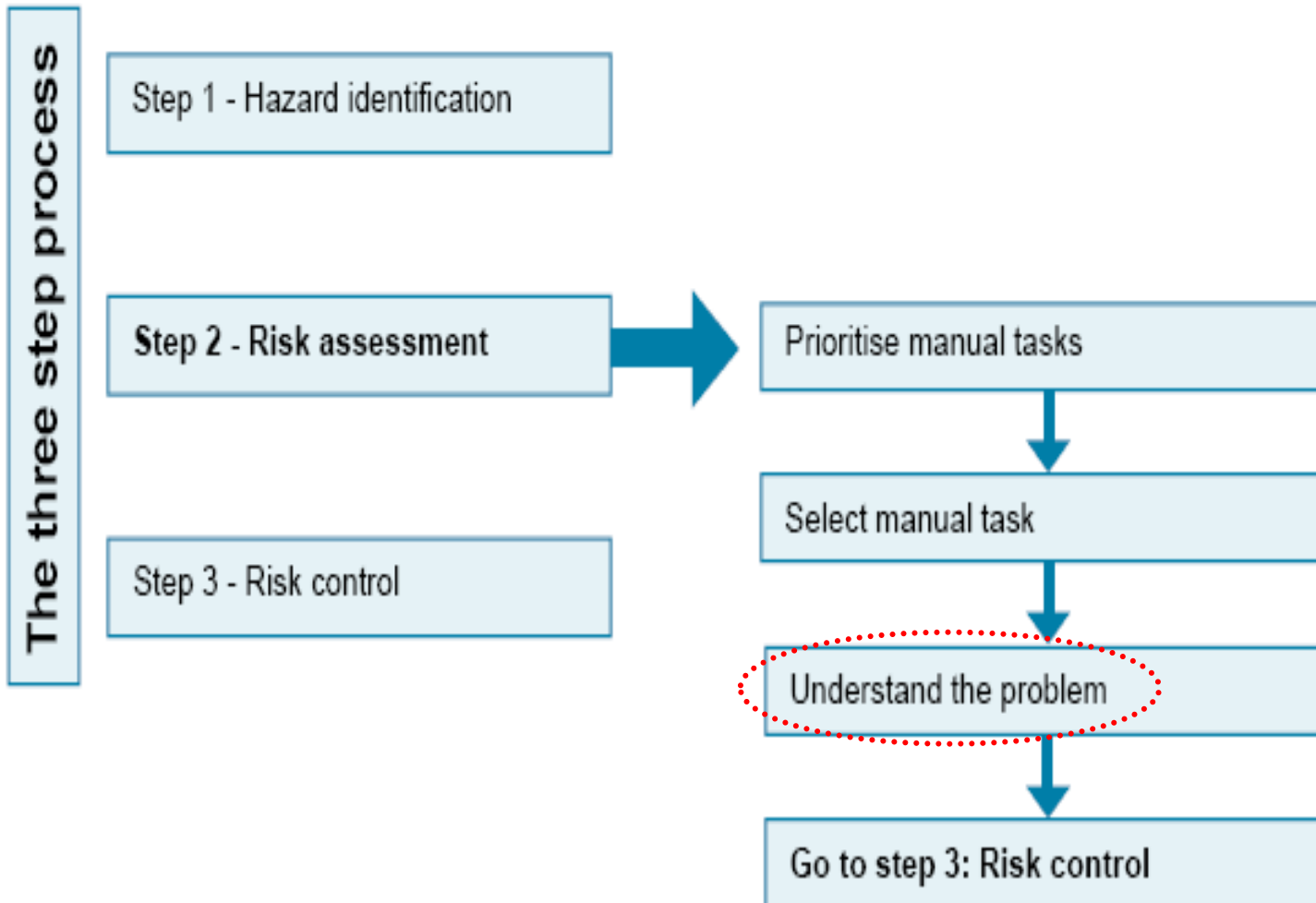


Stage 2.

Select a manual task

Break the task down into activities involved

Risk assessment process



Stage 3.

Understand
the problem

Look at the
principle
risk areas

Risk Factors: Actions and Postures

- Holding loads or arms away from trunk
- Reaching upwards or handling loads above shoulder height
- Bending back or neck forwards and handling loads below mid-thigh height
- Twisting the back or neck
- Sideways bending or load handling on one side
- Long carrying distances

Risk Factors: Actions and Postures cont....

- Sudden, jerky, rapid or unexpected movements
- Bending hands or wrists forwards or to the side
- Reaching behind
- Crawling, kneeling, crouching, squatting, lying or semi-lying
- Twisting or wringing using fingers or hands
- Maintaining the same posture for long periods
- Repeating similar movements or actions

Risk Factors: Forces and loads

- Heavy, bulky, large or awkward
- Difficult or uncomfortable to grasp
- Unstable, unbalanced or unpredictable
- Harmful or fragile
- Handling animals or people
- Sudden, jerky, rapid or unexpected forces
- Strenuous lifting, lowering or carrying
- Strenuous pushing and pulling
- Sustained application of force or grip



Risk factors : Vibration



- Whole-body vibration
- Hand-arm vibration

Risk factors : Work environment

- Posture or movement constraints
- Rough or slippery floors
- Uneven ground or variation in levels
- Adverse climatic conditions
- Poor lighting
- Narrow or obstructed thoroughfares
- Poor ventilation
- Distracting or loud noises

Risk Factors: Systems of work, work organisation, & work practices

- Job demands and control
- Task design
- Work load
- Task duration, frequency and variety
- Pace of work and time constraints
- Peak demand
- Working hours
- Support in the workplace

Risk Factors: Worker characteristics

- Young or older persons
- Pregnant (or recently birthed) women
- Special needs and physical limitations
- Special skills, capabilities and knowledge
- Personal protective clothing & equipment
- Language or cultural barriers

Risk assessment process

Summarise the information on the risk assessment form

Risk Control

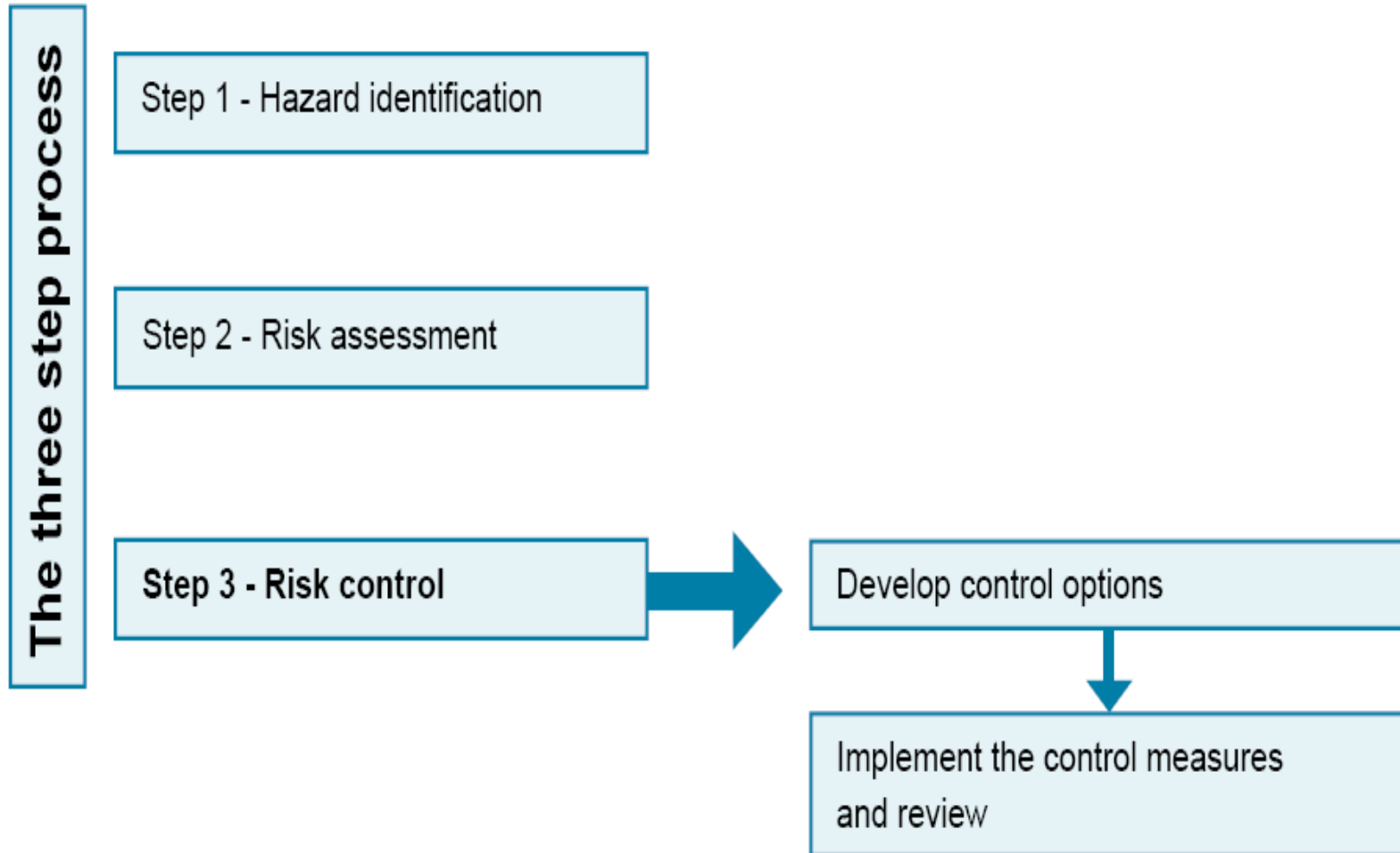
What is it?

The process of eliminating or reducing risk associated with identified and assessed risk factors

Why do we do it?

To make the job or task safer for workers and prevent/ reduce injuries from manual tasks

Risk control



Risk control process

- Eliminate the hazardous manual task;
- or
- Redesign the load, work area, work practices or equipment to minimise the risk of injury;
- and
- Provide appropriate manual task training.

Risk control strategies

Risk factors can be reduced by addressing the source of the risk in a number of ways, such as redesigning, modifying, altering and substituting:

- **work area and layout;**
- **nature of items, equipment and tools;**
- **nature of the load;**
- **working environment; or**
- **systems of work, work organisation and work practices.**

Work area & layout



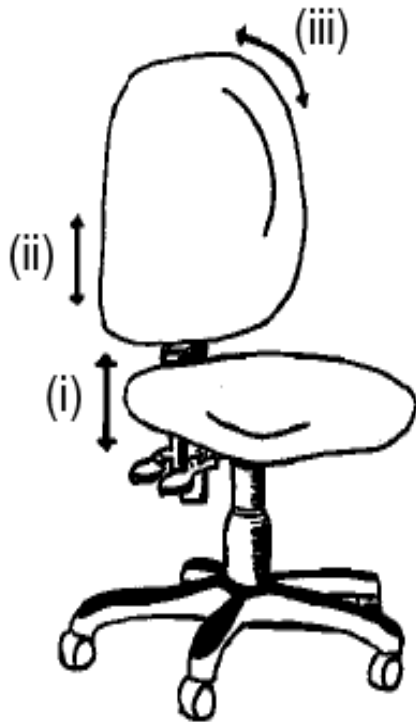
Before



After

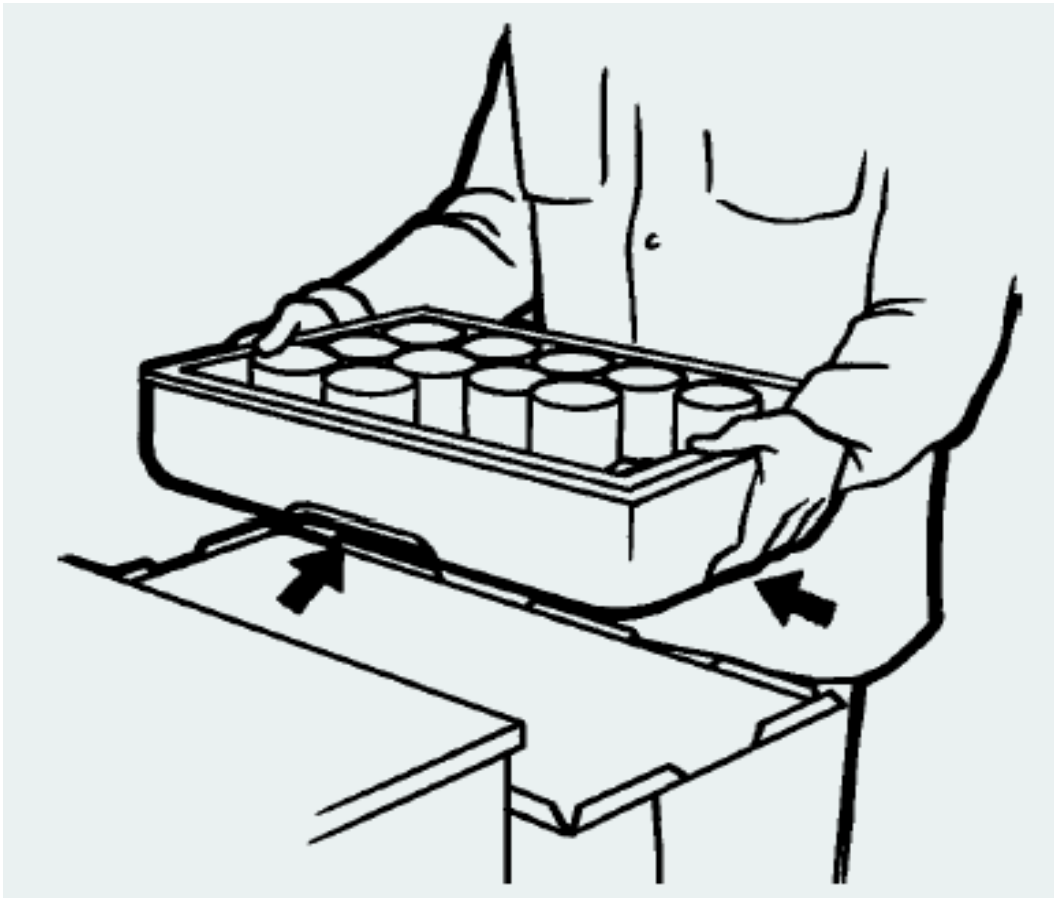
Raising the height allows people to work in more upright postures.

Nature of items, equipment and tools



Provide adjustable chairs for computer based tasks

Nature of the load



Improving grip
by providing hand
holds

Working environment



This foundry worker is at increased risk of injury due to the hot environment and protective clothing required. The hot item also requires the worker to hold the item away from the body

Systems of work, work organisation & work practices

Design safe jobs and work practices by considering the following:

- duration & frequency
- work rates and job demands
- mix of activity & breaks
- peak demand
- working hours
- special individual needs

Summary

