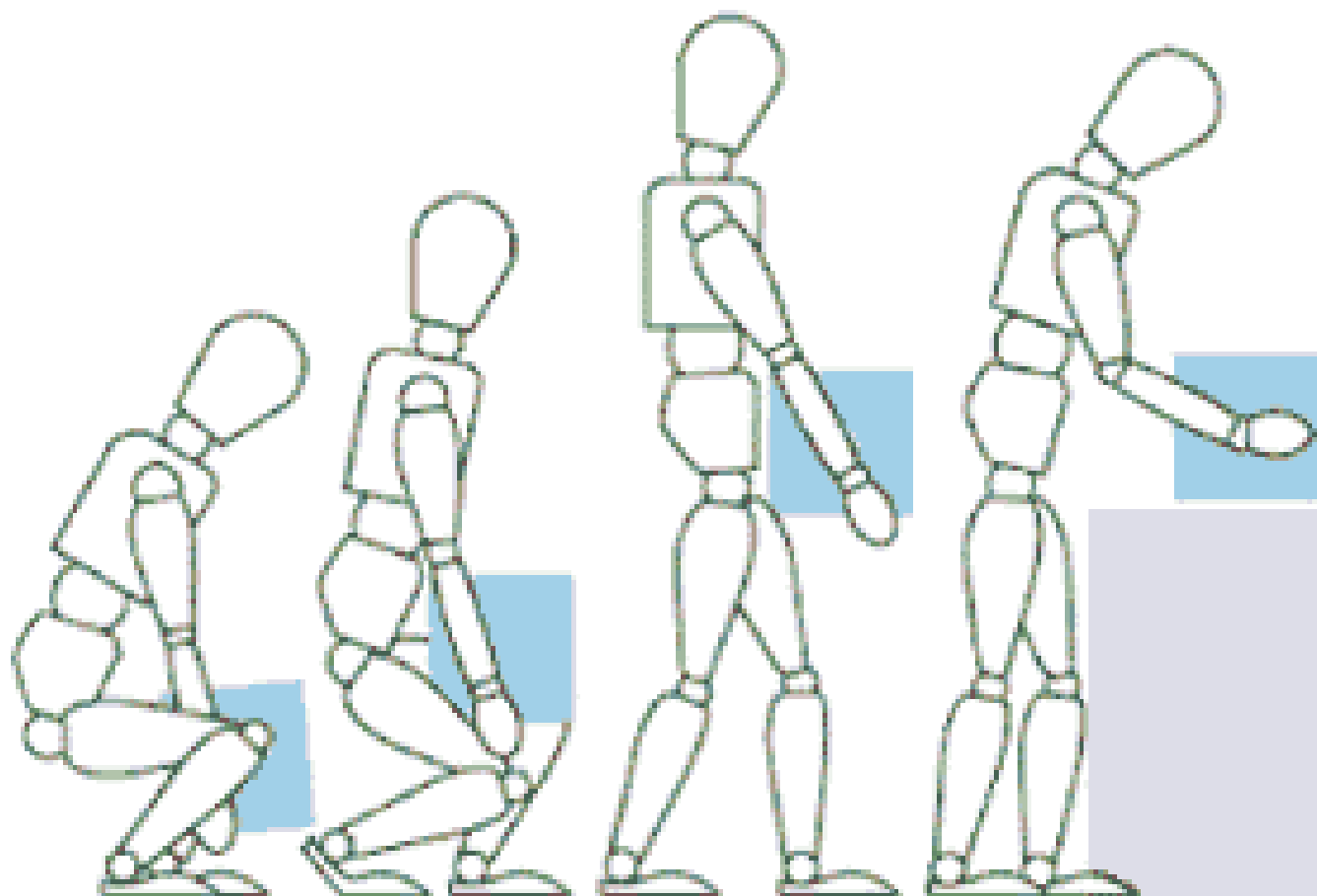




# Moving and Handling





# Aims and Objectives

Provide sufficient understanding and knowledge of Manual Handling, the risks involved and the control measures available.





# What Is Manual Handling?

- Any transporting or supporting of a load by hand or bodily force

This includes:

- Lifting, putting down, pushing, pulling, carrying or moving



# What Is Manual Handling?

This human effort can be applied indirectly:

- Such as hauling on a rope
- Pulling a lever
- Applying a force to manipulate a load supported on a:
  - Spade
  - Fork
  - or similar implement



# Manual Handling Facts

- Low back pain occurs with the same frequency in people with sedentary occupations as those in heavy labour
- Musculo-skeletal disorders arising from work situations have an estimated annual cost in the region of £3 billion and account for 30 million lost work days each year
- Smokers are more likely to suffer back pain than non-smokers



# Manual Handling Facts

- Being overweight increases the likelihood of back pain
- Age doesn't necessarily make any difference, bad backs affect people of all ages
- Poor handling techniques when you are young will contribute to problems in later life
- Those who have suffered from a back injury are three times more likely to suffer injury again



# Reasons for Manual Handling Training

- Reduce lost working days through injury
- The Law
- Looking after one of the most important parts of the body



# The Law & Manual Handling

- The Health and Safety at Work etc Act 1974 (HASAWA)
- The Management of Health and Safety at Work Regulations 1999 (MHSWA)
- The Manual Handling Operations Regulations 1992 (MHOR)





# HASAWA

General duty to ensure the health, safety and welfare at work of their employees (volunteers).

In particular, they have a duty to ensure the safe use, handling, storage and transport of articles and substances so far as is reasonably practicable.



# MHSWR

Regulation 3(1) requires employers to risk assess work activities.

This risk assessment should identify whether there is a risk of injury from manual handling operations in the workplace.



# MHOR

These regulations are based on an ergonomic approach to preventing manual handling injuries.

This involves fitting the job to the worker (volunteer), taking into account anatomy, physiology and psychology.



# The Handling of People - Law

- Human Rights Act 1998
- Disability Discrimination Act 1995
- Care Standards Act 2000



# The Law & Manual Handling

Whereas previous legislation set limits on the weight of loads that can be lifted, these regulations require a number of relevant factors to be taken into consideration.

These are known as ELITE:

Environment

Load

Individual Capability

Task

Equipment



# Environment

Includes factors such as:

- Lighting
- Noise
- Temperature
- Weather conditions



# Load

Includes factors such as:

- Weight
- Size
- What it is?
- Stability



# Individual

Includes factors such as:

- Fitness
- Age
- Previous injury
- Height





# Task

Includes factors such as:

- Distance to cover
- Terrain
- Vertical movement
- Obstacles
- Hazards



# The Law & Manual Handling

These regulations set out a hierarchy of measures employers should work through to prevent or reduce the likelihood of injury:

- Avoid manual handling
- Assess the task
- Reduce the risk
- Monitor the task
- Inform and train staff/volunteers on residual risks



# Avoid Manual Handling

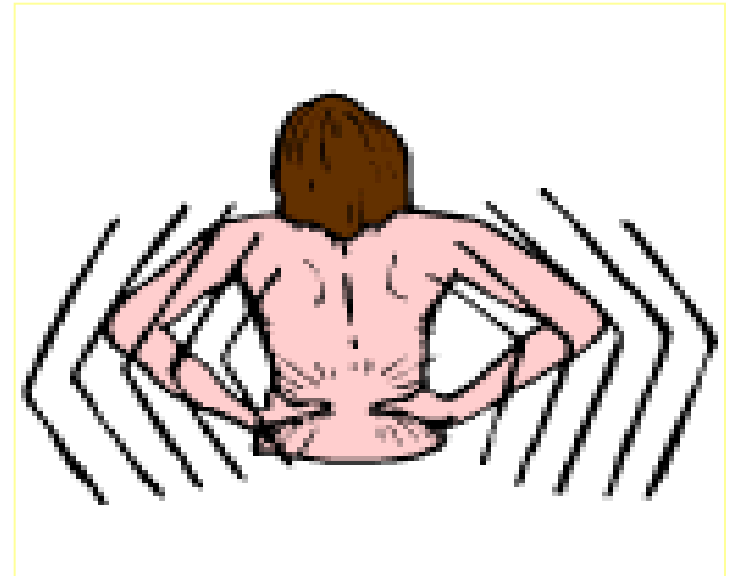
Eliminate:

- By design- Reduce heavy structural materials, layout of workplace to minimise manual handling operations
- Automation/mechanisation:- Cranes, hoists, forklift trucks, sack trolleys etc
- Management- Delivery of heavy articles to point of use, storing heaviest materials at waist level



# Main Types of Injury

- Traumatic: Strain/Sprain, Slipped Disc
- Repetitive: Effects overtime, Arthritis





# Cumulative Manual Handling Injuries

- Back Pain
- Neck
- Shoulders
- Knees
- Feet
- Wrist/Elbows
- Hernia
- Overall Fatigue
- Many Others



# Work Related Upper Limb Disorders (WRULD)

Affects shoulders, arms and wrists

Main Causes:

- Excessive force
- Excessive repetition
- Lack of recovery time or rest
- Poor static posture
- Stress
- Individual susceptibility



# Causes of Back Pain

Not just caused by heavy work and heavy weights

Can be due to:

- Poor static posture
- Sitting too long in one position
- Sudden movement
- Vibration during handling
- Psychological stress



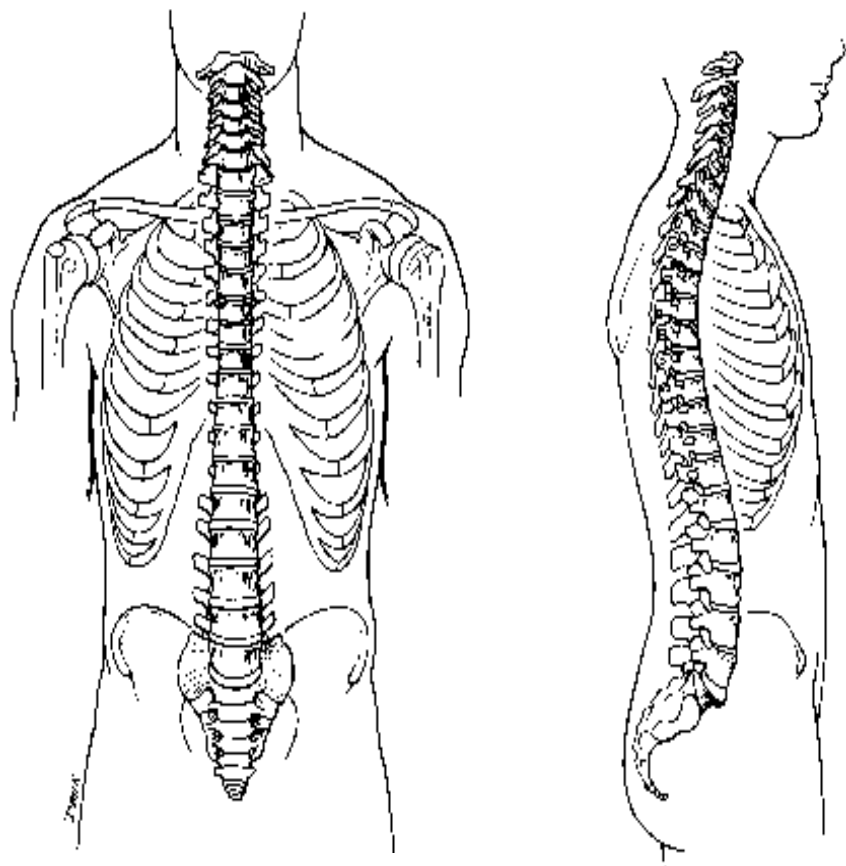
INJURIES CAUSED BY  
MANUAL HANDLING ARE  
RARELY FATAL, BUT....

Can cause permanent disability





# The Spine



Spine - 3 main functions:

- To protect the spinal cord
- To allow movement
- To support the upper body



# The Structure & Function of the Spine

- Provides a flexible connection between the upper and lower half of the body
- Encloses and protects the spinal cord
- Is involved in most movements of the trunk and limbs by providing key attachment points for muscles
- Has a very significant function in weight bearing but only with correct posture
- Is very prone to injury if used incorrectly



# The Human Spine (backbone, spinal column)

Consists of a column of small bones each called a VERTEBRA

- If numbered 1-33 (starting with 1 nearest the skull):
- 1-7 are known as "CERVICAL VERTABRAE"
- 8-19 are known as "THORACIC VERTABRAE"



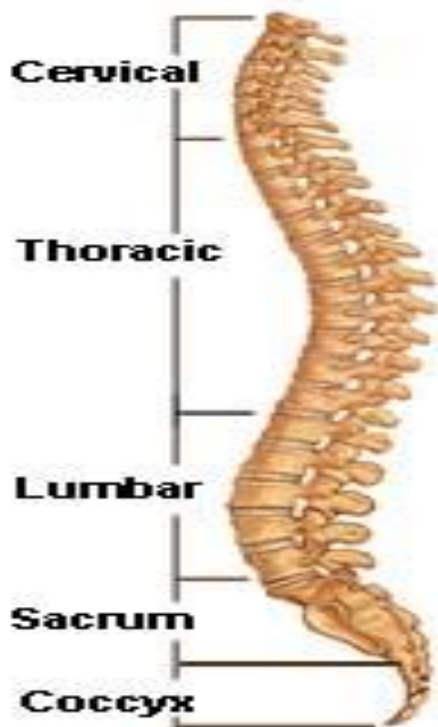
# The Human Spine (backbone, spinal column)

- 20-24 are known as "LUMBAR VERTABRAE"
- 25-30 Fused Vertebrae known as "SACRUM"
- 30-33 Fused Vertebrae known as "COCCYX"

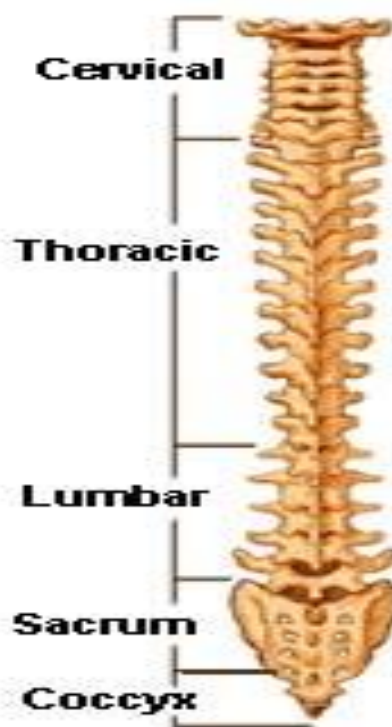


# The Human Spine (backbone, spinal column)

**Lateral (Side)  
Spinal Column**



**Posterior (Back)  
Spinal Column**





# The Spine

Each muscle in the back can move 1.25 cm

- Multiply this movement by 33 vertebrae and this allows us to bend
- The body is 20mm shorter at the end of the day than at the start

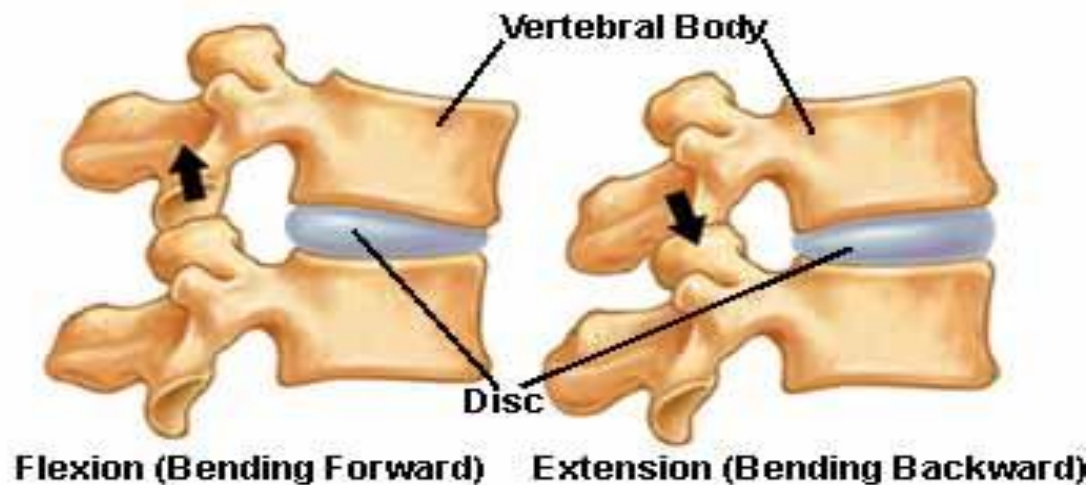




# The Spine

- Each vertebrae is separated by a gel like substance, the disc. These discs bend and stretch as we move

## Facet Joints in Motion





# The Spinal Cord

The Spine protects the spinal cord.

The spinal cord and the nervous system controls all systems in the body.

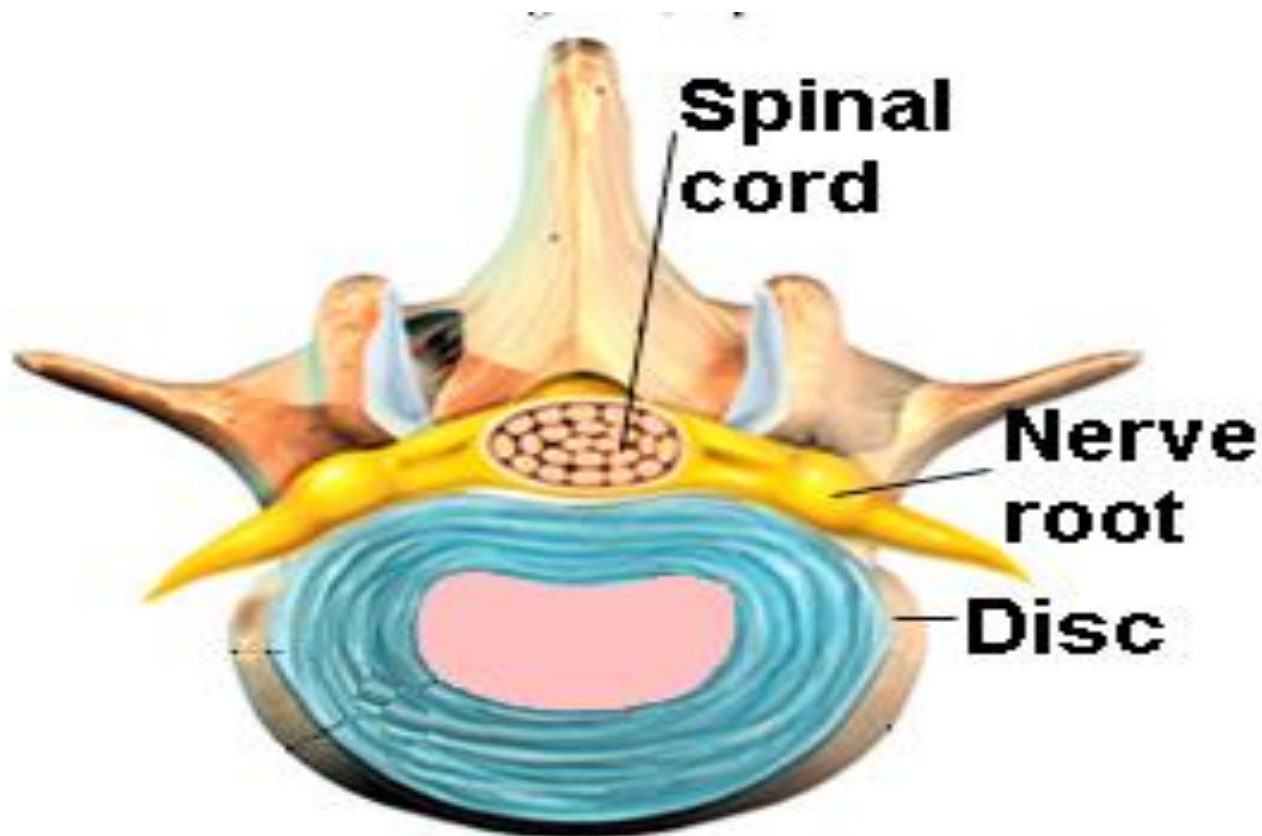
As the cord descends from the brain nerves peel away from the cord at each vertebrae, leading to all other parts of the body.

Damage to the cord will result in the blockage of signals from the brain to the area affected.



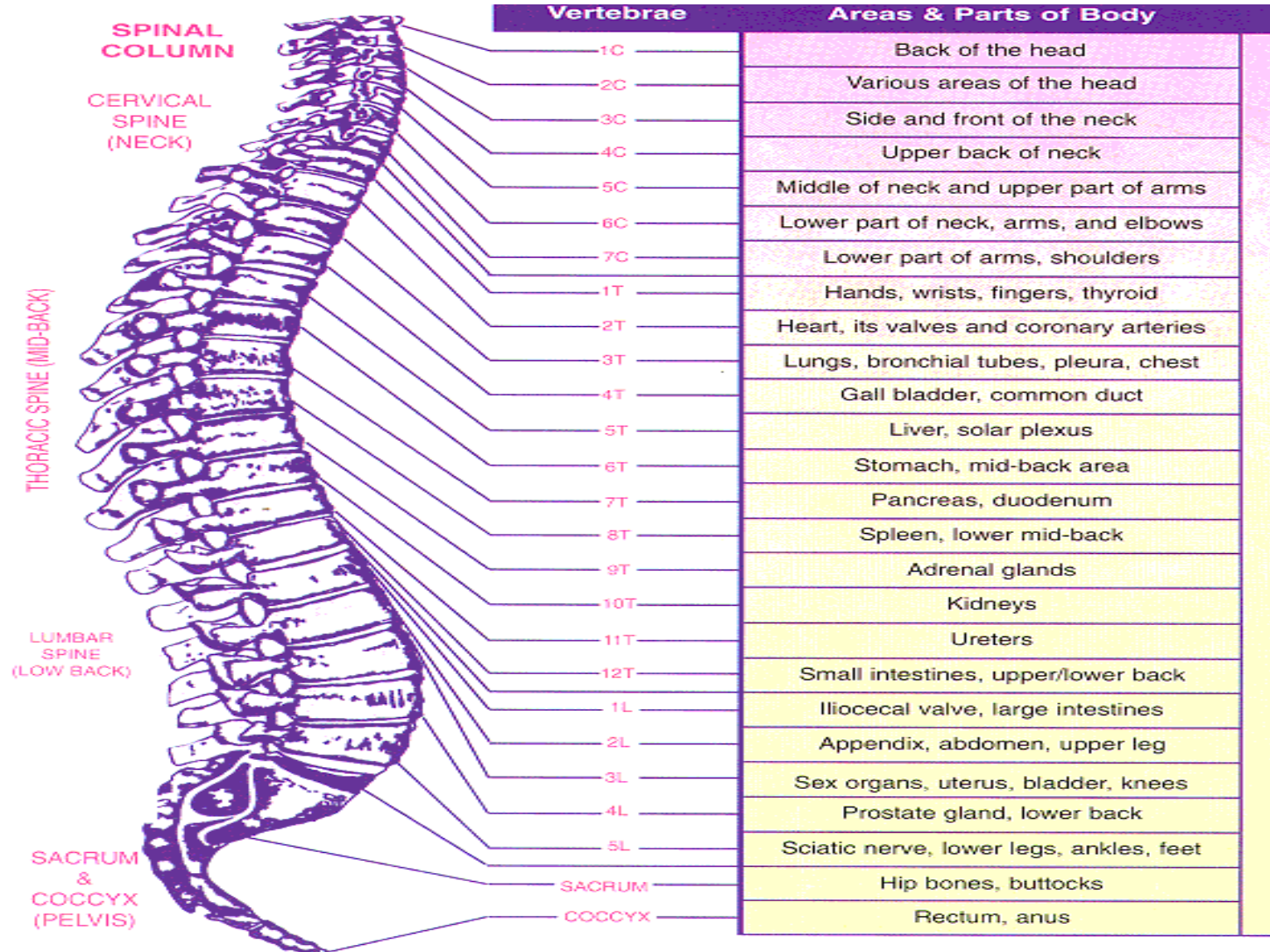


# The Spinal Cord





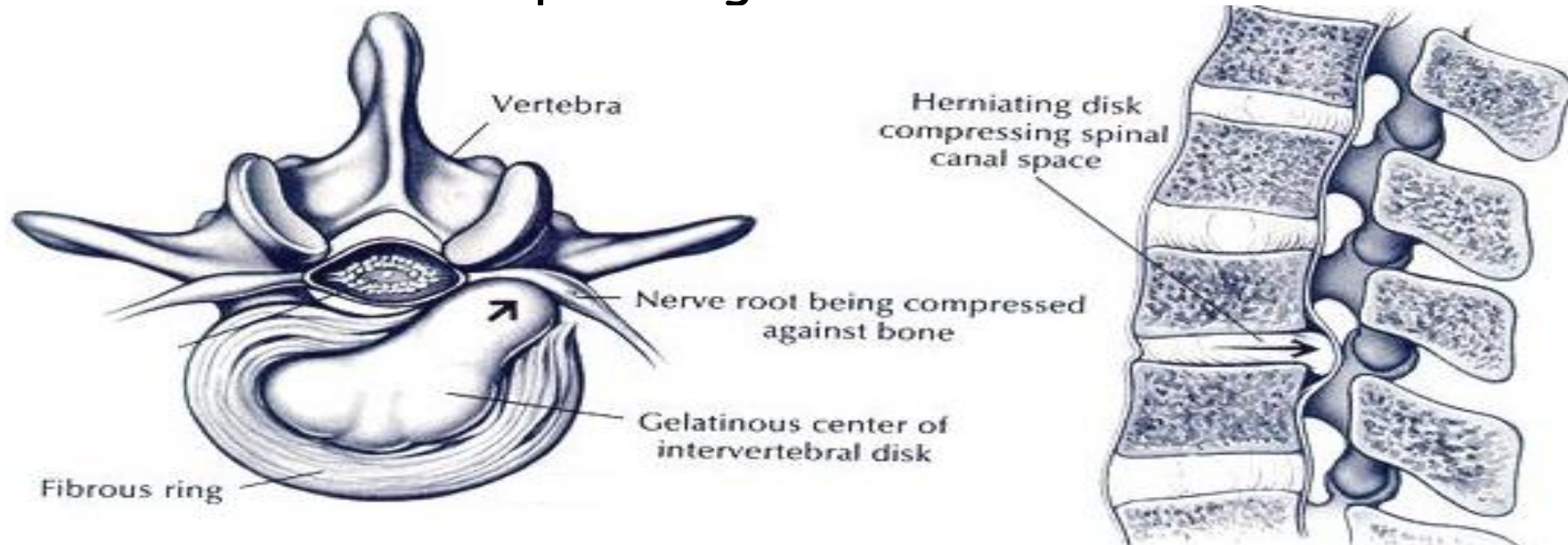
# The Nerves





# Slipped Disc

- A slipped disc is also called a "herniated or prolapsed" disc
- It is a bulge in the wall of one of the discs between the vertebrae pressing onto the nerve





# Slipped Disc

- Main symptom is sciatica (pain in legs, back and buttocks)
- Other damage often occurs at the same time, such as muscles strain and tears

## Treatment:

- Minimum stress to the spine
- Correct posture
- Time to heal



# Forces

1kg Weight close to the body exerts 10kg force onto muscles of the back (1:10)

1kg Weight held at arms length exerts 100kg force onto the muscles of the back (1:100)



# How to Lift



# 1. Stop and Think





## 2. Place the feet







## 3. Get a Firm Grip





## 4. Don't Jerk





# 5. Move the Feet, Keep Close to the Load





# 6. Put down, Then adjust

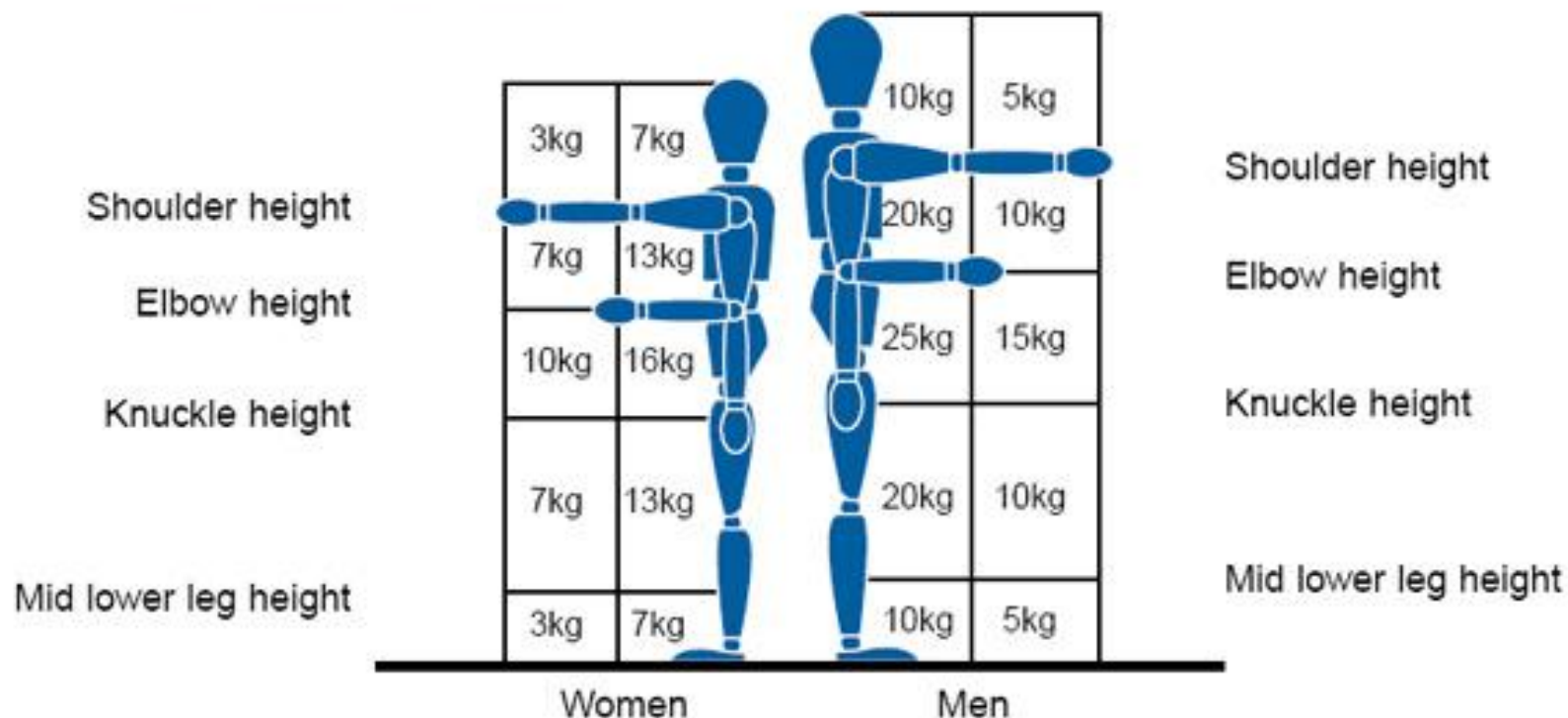




# Lifting and Lowering Limits

Guidance for tasks performed less than 30 per hour

## HSE Manual handling requirements





# Manual Handling Principles

- Stay balanced
- Keeping your centre of gravity close to the load's centre of gravity
- Bending from the knees
- Keeping the back straight, and head up
- Staying compact when pushing
- Moving the feet to turn, not the body
- Moving smoothly, particularly when setting loads down



# Moving People

- Good communication
  - Ready, Steady, Lift
- Posture and position
- Get in close
- Relax your knees
- Adopt a balanced position
- Adopt a secure comfortable hold



# Moving People

- Pull in your stomach muscles
- DO NOT twist, stoop or bend to the side
- Lead with your head
- Move slowly and smoothly





## Techniques to avoid where possible

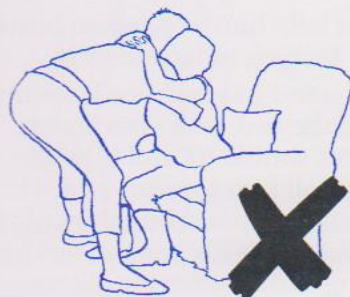
There are a number of techniques that are considered to be high risk because they either place you or the person you are assisting in unbalanced or awkward positions or include holds that could cause harm.

To prevent you and the person you care for being injured you should try to avoid the following techniques whenever possible.

- Pulling on a person's arms (shoulder joints are very vulnerable and can be easily damaged).



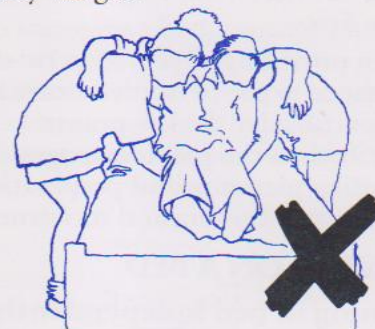
- Allowing a person to hold on to you when you are moving them e.g. a front transfer with the person's arms round your neck or back.



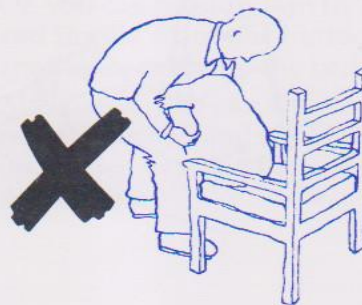
- Holding a person under their arms (drag lift).



- Lifting all or most of a person's body weight.



- Being in poor postures that are prolonged or frequent when providing care or support: e.g. overreaching, stooping, side bending and twisting of your back or neck.





# Important

- Knowledge and training alone will not guarantee safe handling
- A risk assessment needs to be undertaken
- Avoid if possible
- Know your own limits
- Put training into action at work as well as home



REMEMBER  
PREVENTION  
IS  
BETTER  
THAN  
CURE



And Finally



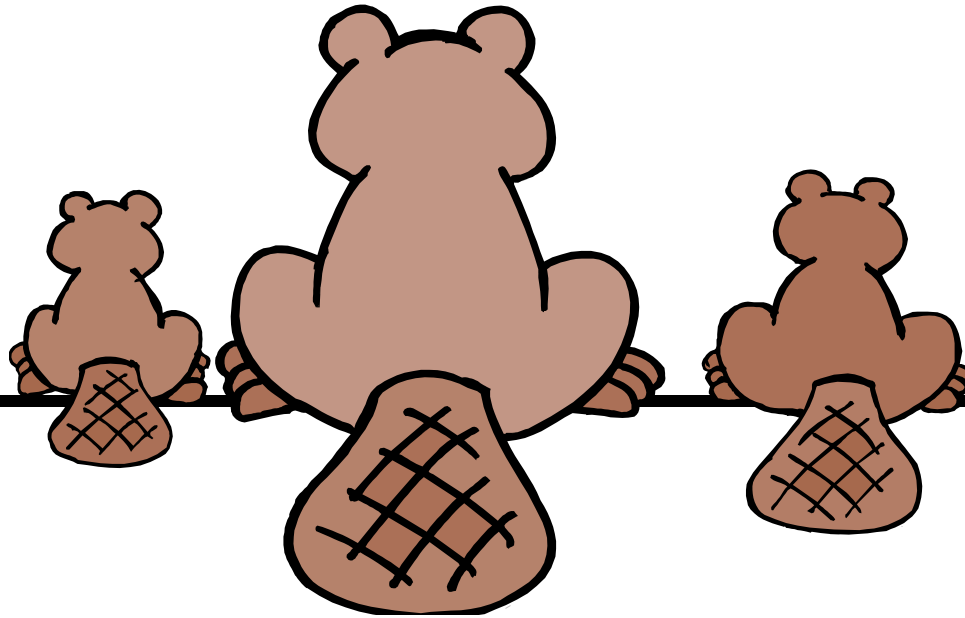
# Hurt at Work

- You've carefully thought out all the angles.
- You've done it a thousand times.
- It comes naturally to you.
- You know what you're doing, its what you've been trained to do your whole life.
- Nothing could possibly go wrong, right ?



# Think Again!





No beavers were actually injured during the generation of this presentation!