Manual Handling For Scaffolders

Before we start

- Please sign the sign in sheet.
- At the end of the course we will have a little refresher exam sheet.

SHEQ Strategy

Why do a course?

- Legal requirement
- Help Protect Employees From Injury
- Injuries cost Money
    - To Employers
    - To The State
    - **To YOU !**

Did you Know

- Back pain affects 80% of the population of the western world,
- 70,000 back injuries in the work force between UK and Ireland,
- The strain of lifting can rupture the stomach wall,
- Nearly one third of people experience back injury in any one fortnight.
- 1/3 of all workplace accidents are due to manual handling.

Did you know

- They are exceedingly painful, difficult to heal, and have an effect on everything you do.
- After suffering one back injury, you are much more likely to experience another one later on.
- You will be restricted from doing most jobs, even jobs requiring minimal effort.

Course Programme

- Law
- Manual handling
  - Anatomy & Injuries
  - Principles of lifting
  - Exercise
  - Risk Assessment
- Practical session

The Law

- Safety Health And Welfare At Work Act 2005.
- General Application Regulations 2007.
- Duties of the employer.
- Duties of the employee.

Duties of the Employer

- To Provide:
- A Safe Place of Work.
- Safe Access & Egress
- Safe Plant & Machinery
- Safe Systems of Work
- Safety Statement & Risk Assessments
- Training
- Information
- Supervision
- Suitable Protective Clothing (PPE)

Duties of the Employee

- To comply with Safety Laws and Co-operate with the Employer
- To maintain the safe place of work, access & egress
- Not to misuse equipment and report any defects
- To adhere to the Safe Systems of work
- To attend Training
- To co-operate with supervision
- To use the PPE provided correctly
- And not to come to work under the influence of Drugs or Alcohol and to submit to tests if requested

Definition of Manual Handling

- **The transporting or supporting of a load by hand or bodily force including:-**

Carrying or moving a load

Lifting and putting down

Pulling

Pushing

Manual Handling Regulations

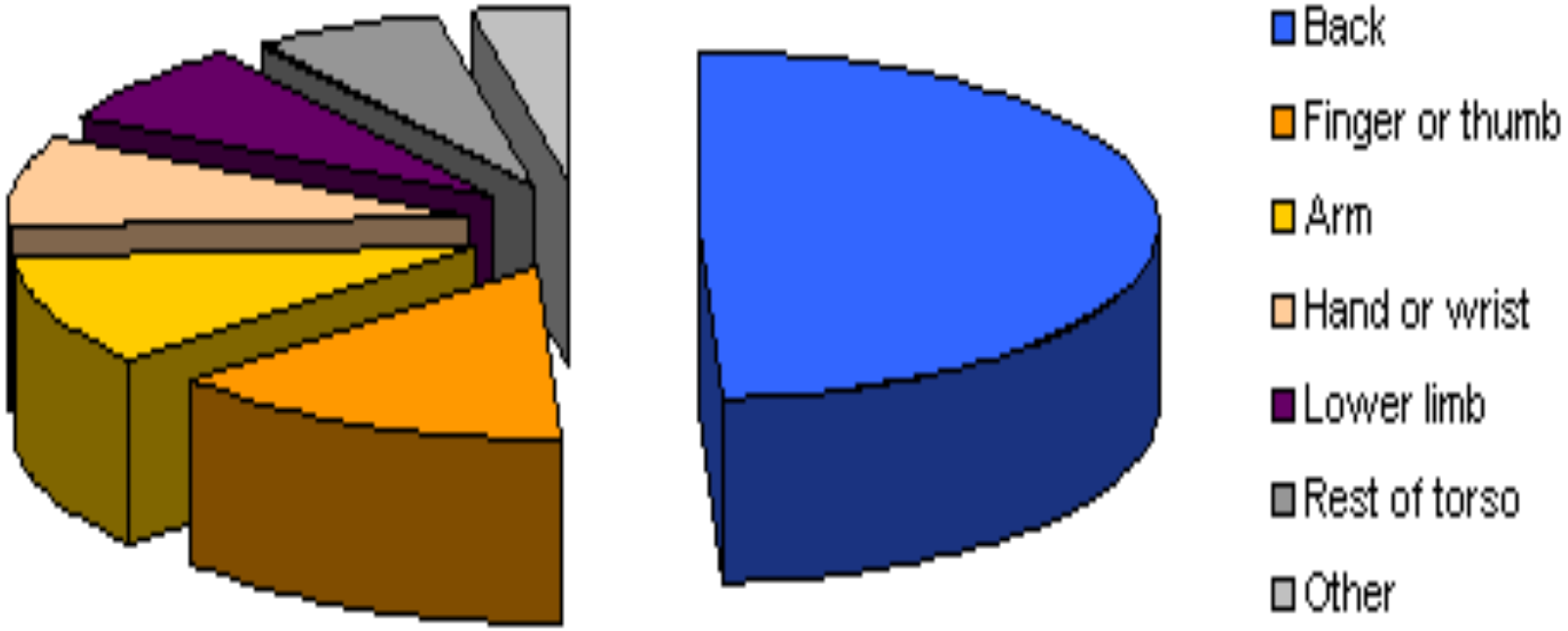
- **Employer duties**

- **Avoid the need for hazardous manual handling, as far as reasonably practicable.**

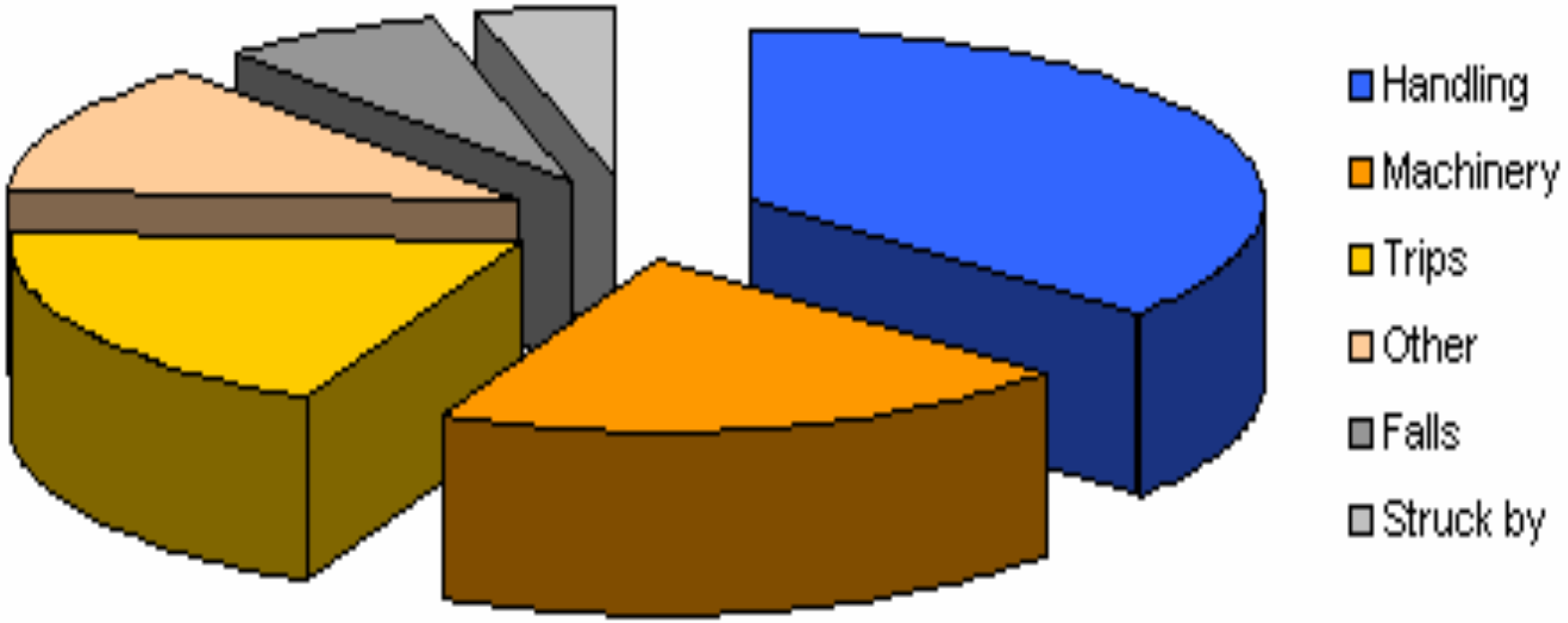
- **Assess the risk of injury from any hazardous manual handling that can not be avoided.**

- **Reduce the risk of injury from hazardous manual handling, as far as reasonably practicable.**

Injury to:


Back
Finger or thumb
Arm
Hand or wrist
Lower limb
Rest of torso
Other

Reason for injury



Interpreted another way :

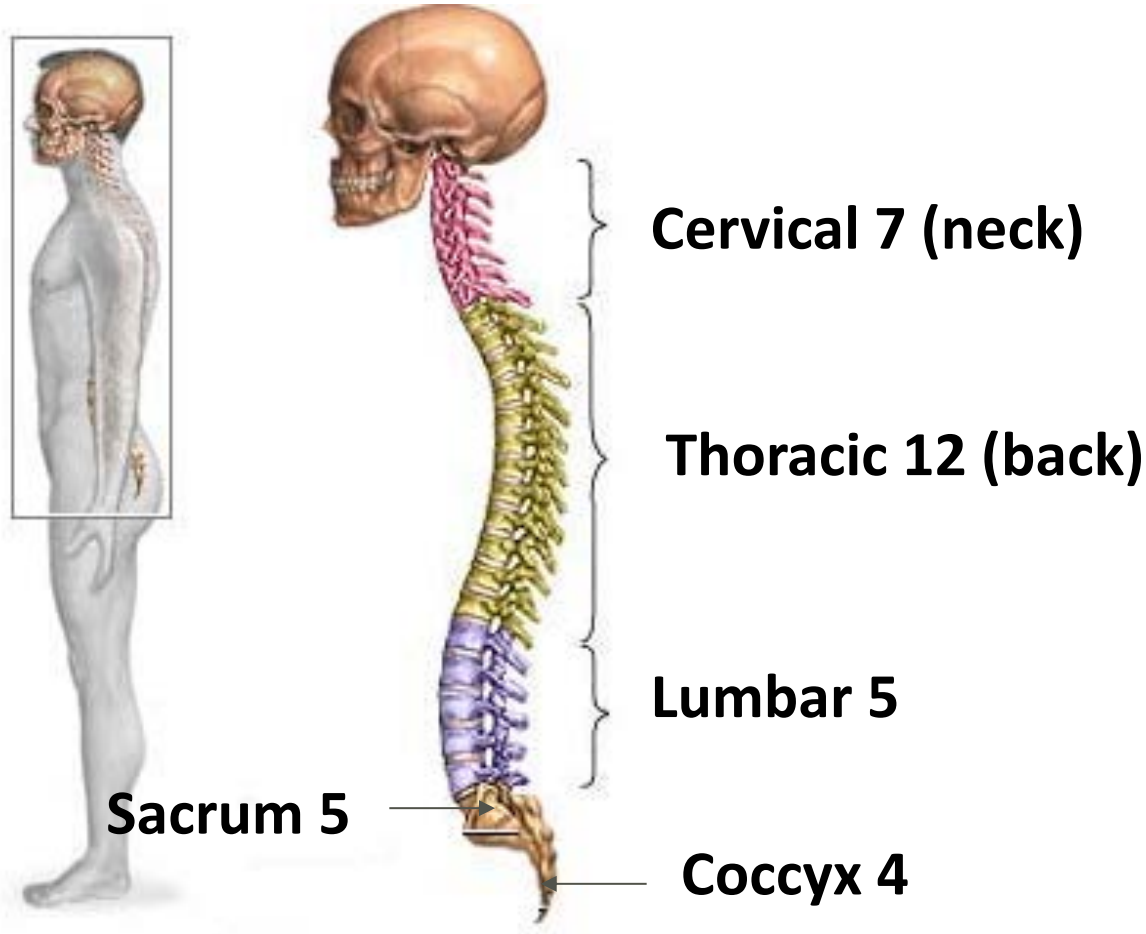
- Over a 3rd of Injuries in the work place relate to back injuries.
- Over a 3rd of Injuries are caused by incorrect Manual Handling

- In terms of suffering each injury results in an average of 20 days off work – some never fully recover.
- Four out of five people suffer with back related problems at some time.

The Spine

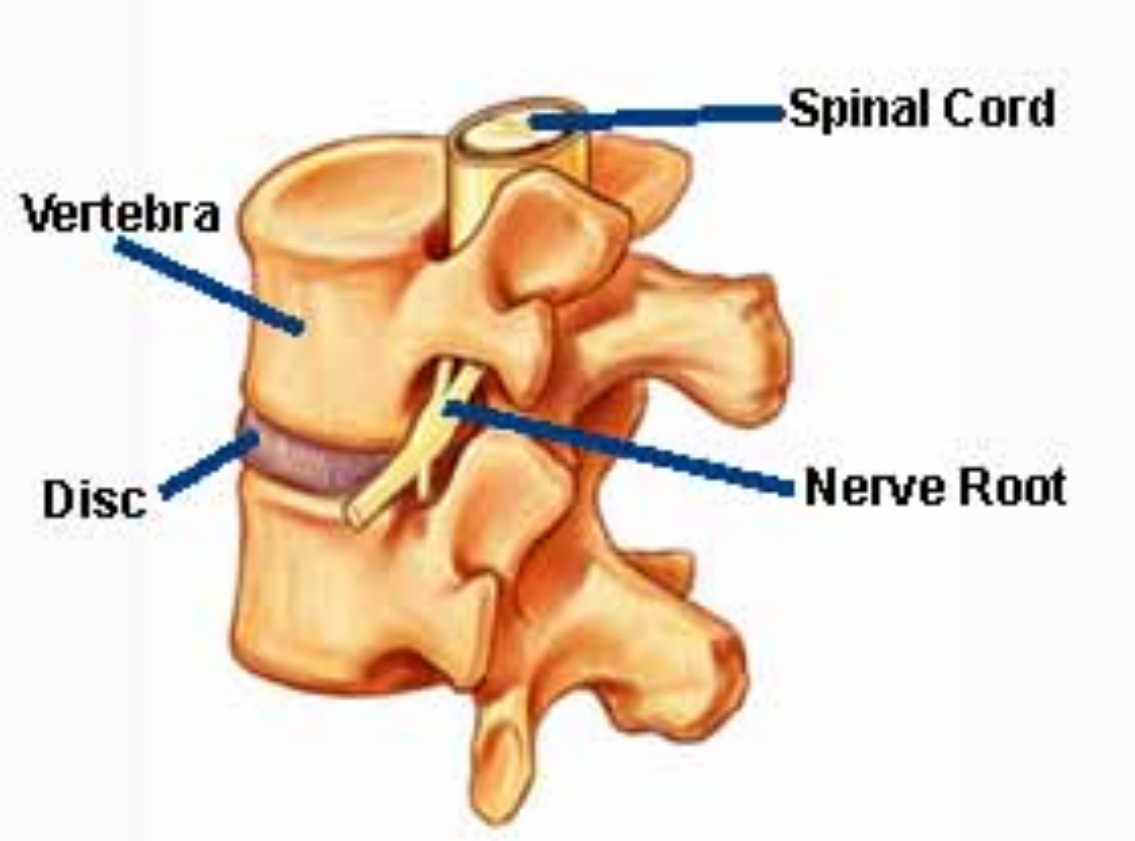
- The spine is a flexible column of vertebrae (bones) which supports your weight.
- The S shape makes the spine elastic to absorb the shock of movements like running, walking, jumping, etc.
- The spine is compressed with gravity and activities like lifting and lowering add to these stresses.

The Spine

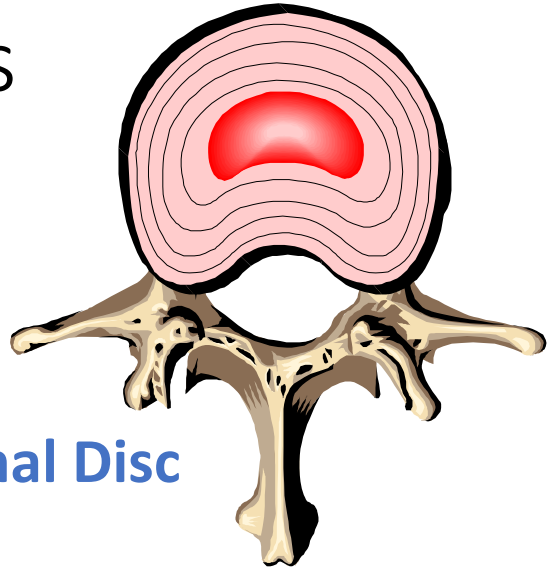


The Spine

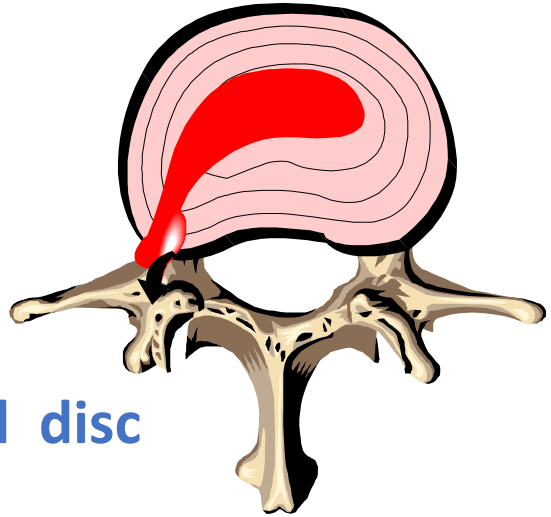
- **The spine is composed of:**



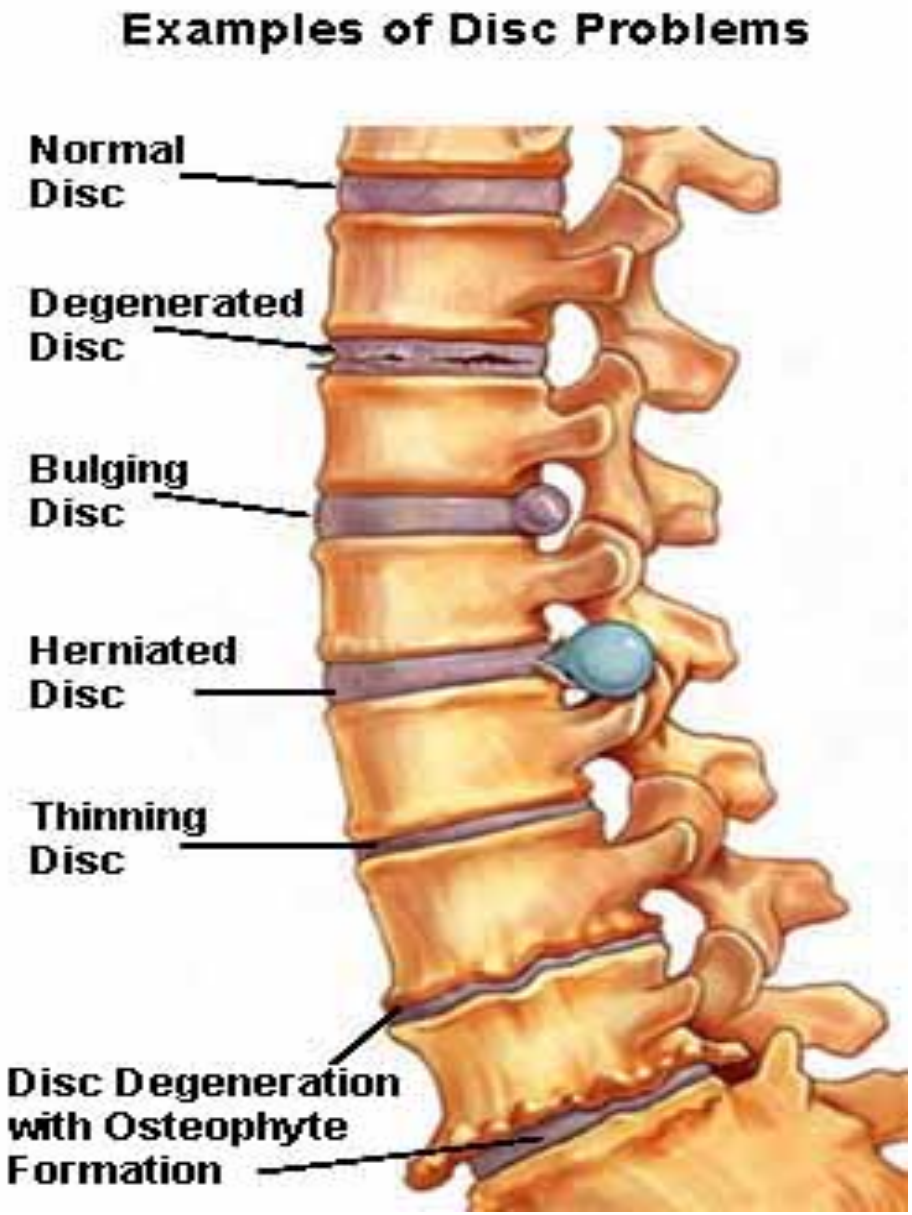
Discs



Normal Disc



Herniated disc



Common Causes

- Many back injuries tend to be the result of cumulative damage suffered over a long period of time.
- Certain actions, motions and movements are more likely than others to cause or contribute to back injuries…
- Any time you find yourself doing one of these things, you should think:

- **DANGER!** **My back is potentially at risk!**

Affects on the Body

- Disorders can be caused or aggravated by single exertions or movements of the body or repeated exertions or movements of the body
- Affected areas can be muscles, tendons, ligaments and nerves
- Manual handling problems are equally common in men and women and can occur at all ages

Common Causes

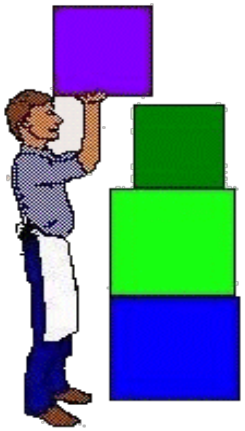
Working in odd, uncomfortable positions

…gardening, kneeling, tasks that require you to bend over for long periods of time…

Twisting at the waist

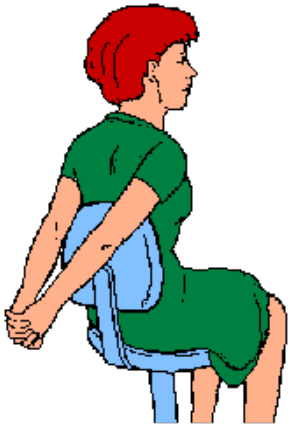
…while lifting or holding a heavy load…

Common Causes



Reaching and lifting

…over your head, across a table, or out the back of a truck…



Sitting or standing too long in one position

…(sitting can be very hard on the lower back)…

Common Causes

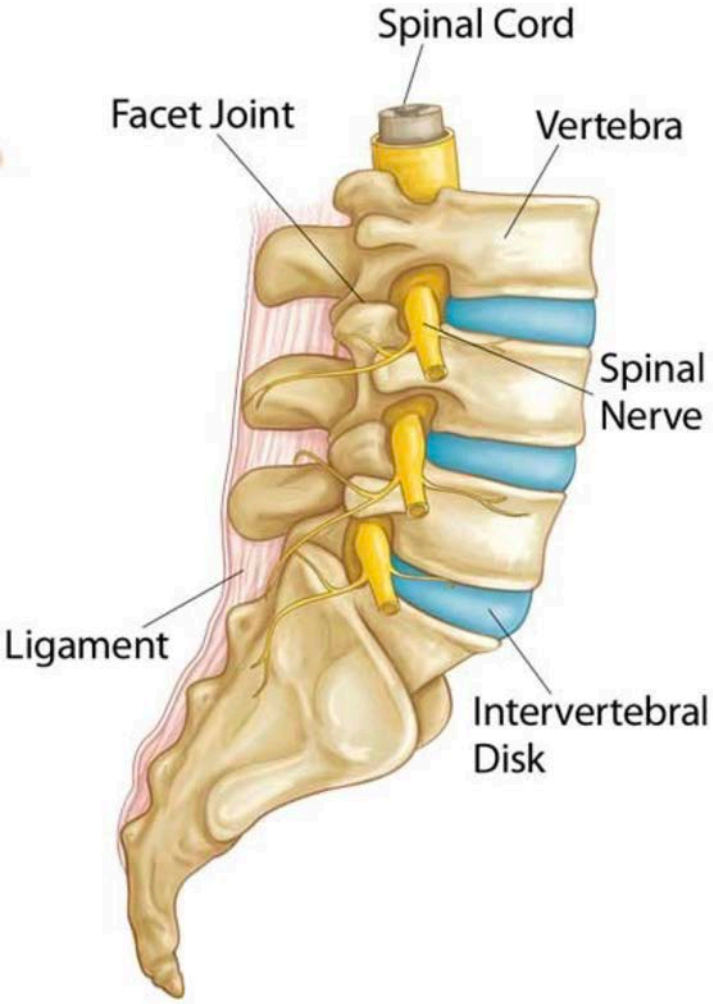
Heavy Lifting

…especially repetitive lifting over a long period of time…

Lifting or carrying objects with awkward or odd shapes…

Always try to reduce the distance you move material, where possible have it positioned as close to the workface as possible

Why do they occur?



- The lower part of the back holds most of the body's weight.
- Every time you bend over, lift a heavy object, or sit leaning forward, you put stress on your spine.
- Over time, the discs between your vertebrae can start to wear out and become damaged.

Contributing Factors

Overdoing it -

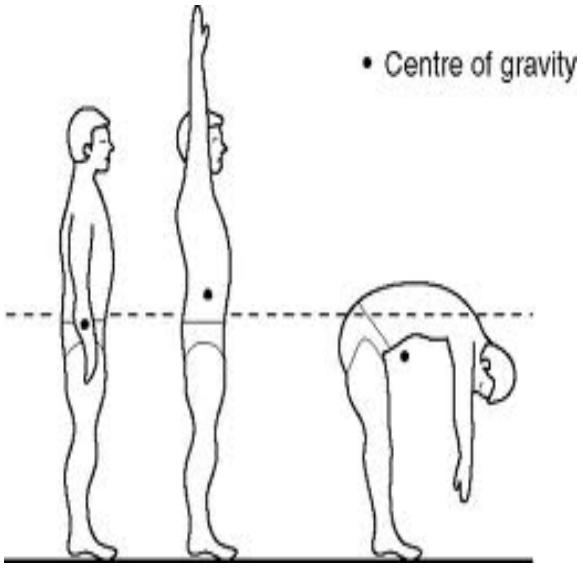
Don’t be afraid to say,

“This is too heavy for me to lift alone.”

Many people have injured their backs because they were afraid to ask for help.

Biomechanics

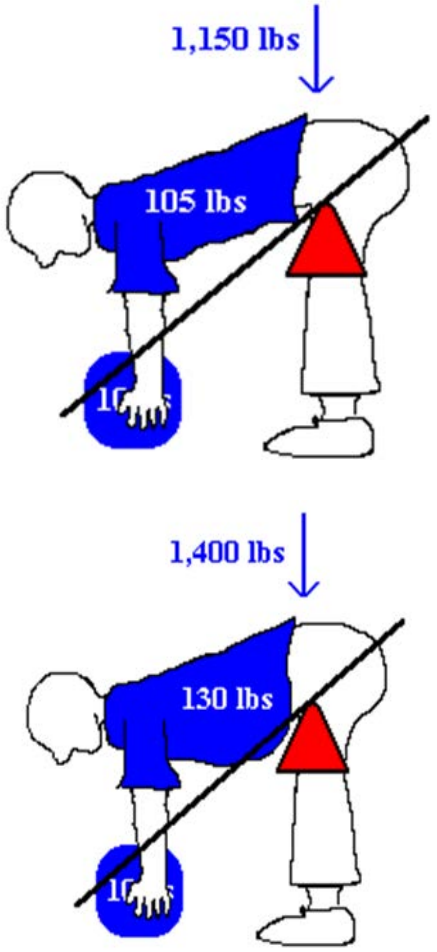
- **Biomechanics?**
- It is the study of how the body works to ensure we use it efficiently and safely
- **The biggest force that acts on the body?**
- Gravity
- **The centre of gravity?**
- The centre point that gravity acts on



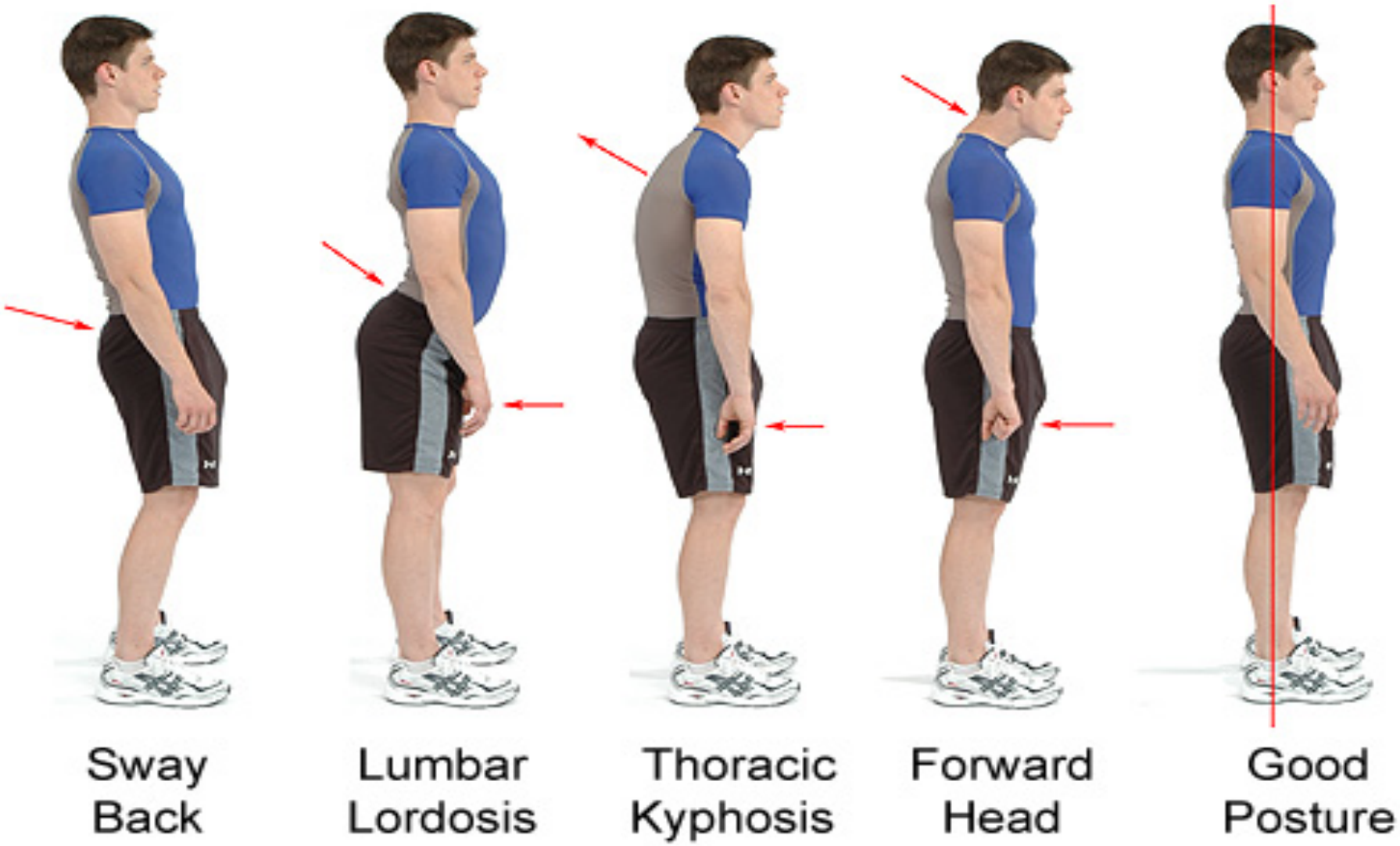
- **Line of gravity?**
- An imaginary line that runs straight down from COG

The Lever Effect

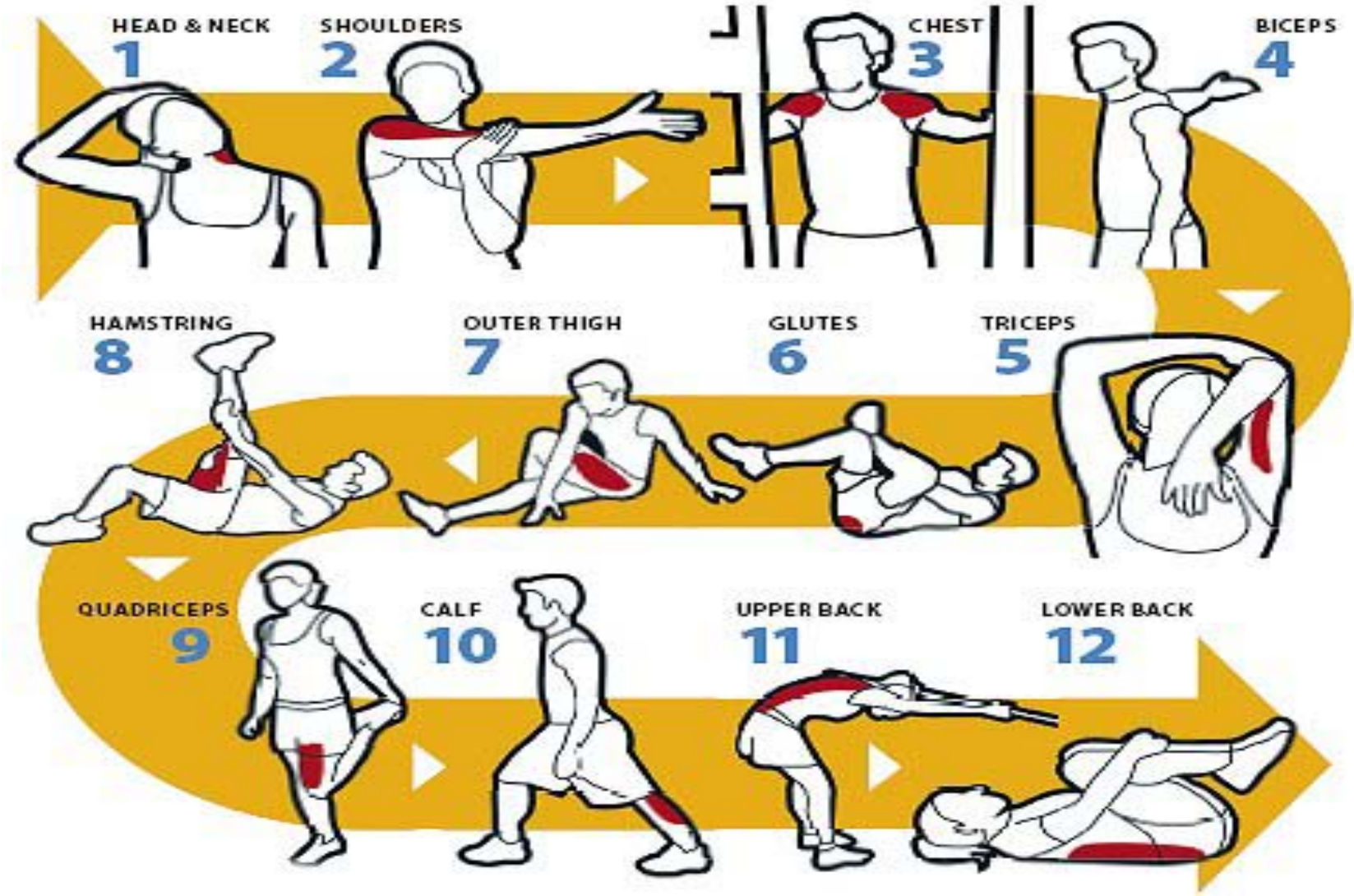
- When you add in the 105 pounds of the average human upper torso, you see that lifting a ten pound object actually puts 1,150 pounds of pressure on the lower back.
- **If you were 25 pounds overweight, it would add an additional 250 pounds of pressure on your back every time you bend over.**



Posture/ Stature



Stretches


HEAD & NECK
1
SHOULDERS
2
CHEST
3
BICEPS
4
HAMSTRING
8
OUTER THIGH
7
GLUTES
6
TRICEPS
5
QUADRICEPS
9
CALF
10
UPPER BACK
11
LOWER BACK
12

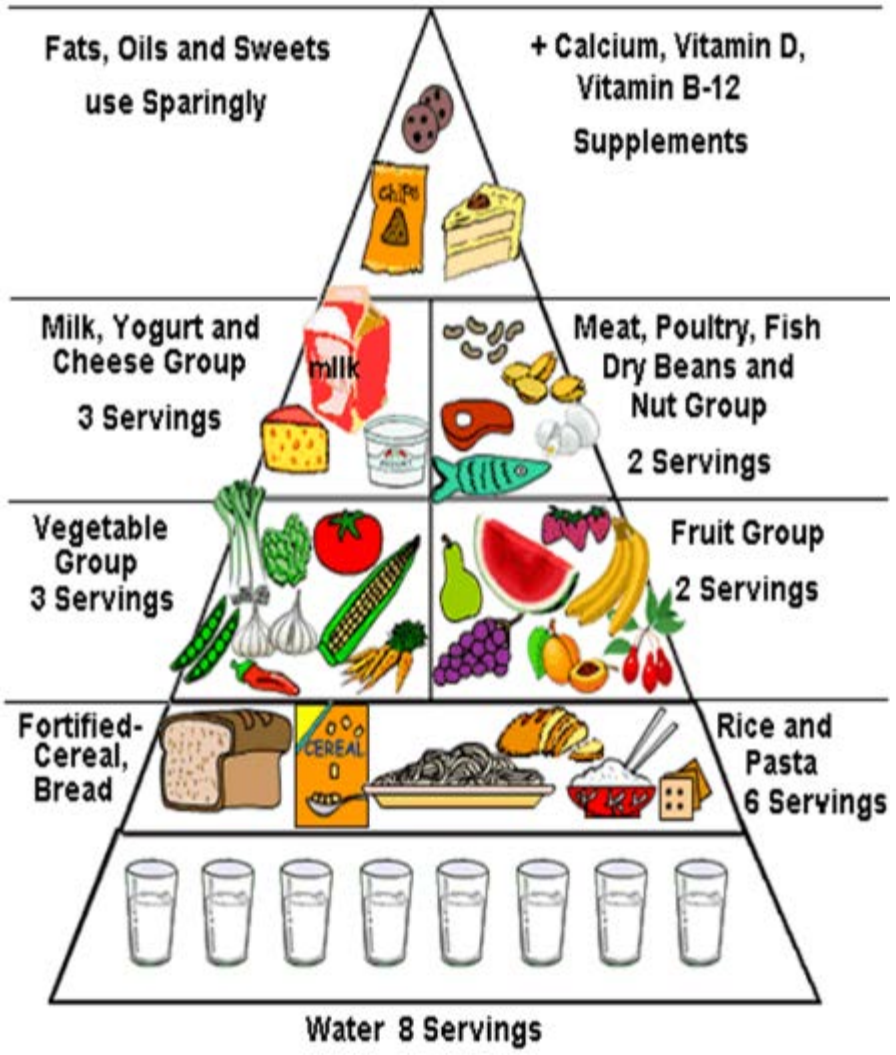
Food/ Nutrition

- **What is nutrition?**
- “Utilisation of food to grow repair and maintain our body”..

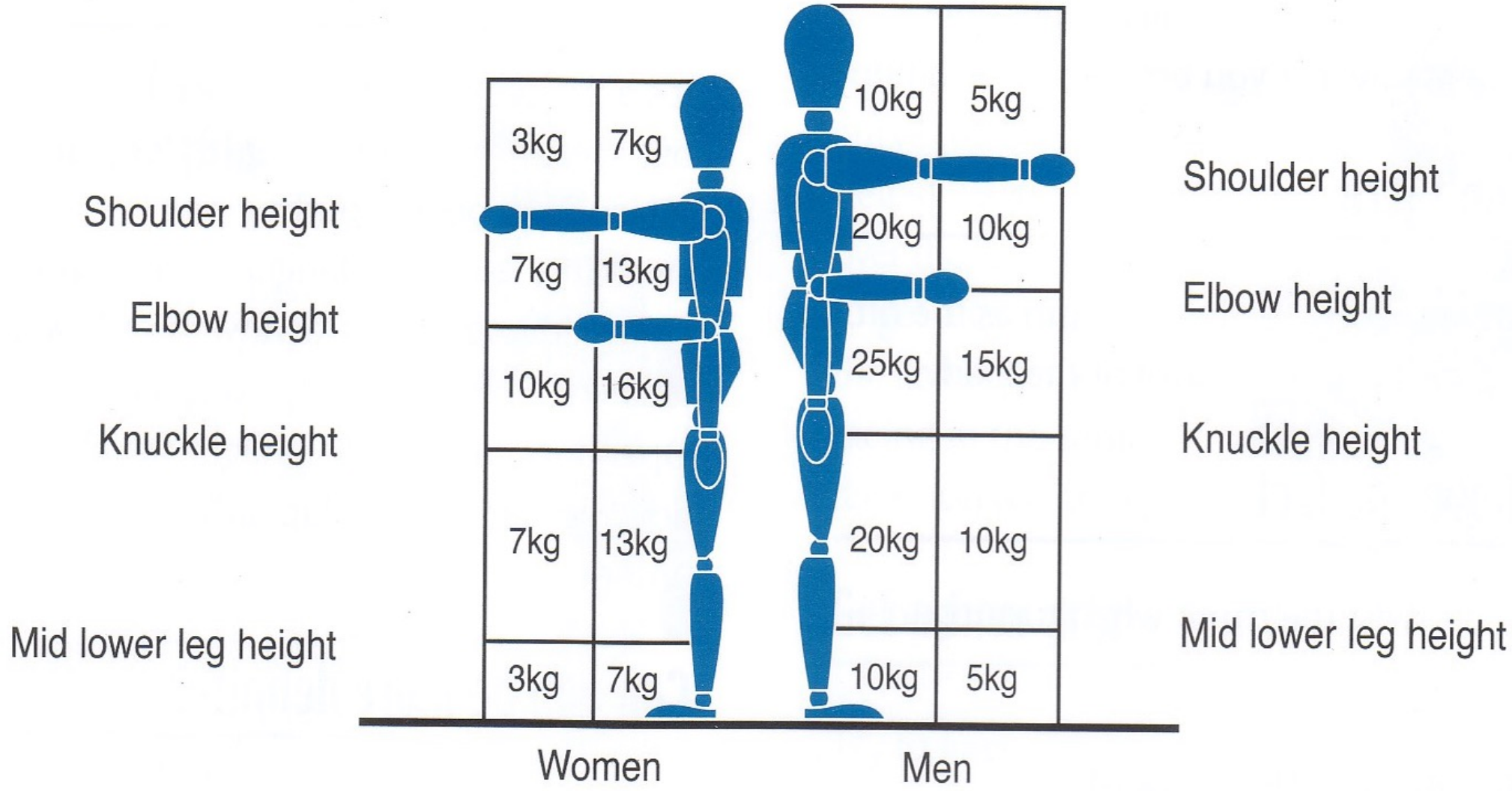
- **What are the food groups?**
- Carb, Calcium, Protein,

- **What are they for?**

- Fuel, Bones, Muscle repair



Guidelines for lifting and lowering



Guidelines for lifting and lowering

- **REMEMBER THE FIGURES SHOWN ARE ONLY *GUIDELINES***
- **ONLY *THE* *INDIVIDUAL* KNOWS WHAT THEY ARE CAPABLE OF LIFTING**

The Handling System

TILE ASSESSMENT

- **T**ask
- **I**ndividual
- **L**oad
- **E**nvironment

The Handling System

- **What does the TASK require ?**

- The load to be held near the body
- There is no over-frequent or prolonged physical effort
- Good Team Co-ordination & Communication

- **No Excessive :-**
- Lifting or Lowering or Carrying Distances
- Rest periods if required

- **Always try to have materials located as close to the job as possible to reduce the distance material is carried!**

The Handling System

- **When may the Individual be at risk ?**

- **Depending on age. Peak Mid 20's**
- **Insufficient strength or working capacity for manual work**
- **Suffering from Ill health or physically disability**
- **Stature**
- **Pregnant Woman / Young Persons Particularly vulnerable**
- **Call for special information/training?**

The Handling System

- **What problems may you have with the LOAD ?**

- Too heavy (or unexpectedly light)
- Too large
- Unwieldy
- Sharp
- Hot or Cold
- Slippery
- Stuck

- **A combination of any of these problems means more RISK**

The Handling System

- **What problems may you have with the Environment (Workplace)**

- Temperature (too hot / cold)
- Fumes
- Poor Lighting
- Noise
- Slip / Trip
- Hazards
- Dust
- Distance
- Destination **(always try to reduce the distance material is carried)**
- Lack of space including headroom
- Surfaces :- slippery, uneven, variations of levels

The Handling System

- **Personal Protective Equipment**

- Is movement or posture hindered by clothing or PPE?
- Is there an absence of the correct/suitable PPE being worn?

- Is the PPE fit for purpose and in good condition especially footwear?
- Pushing and pulling of loads:

- Further training and/or Risk Assessments may be require.

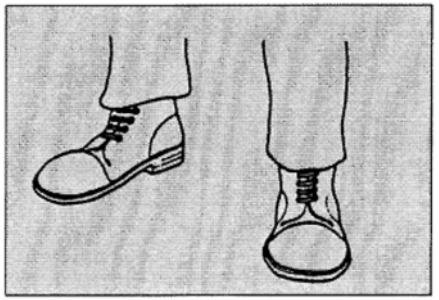
Kinetic Handling

- Always plan your manual handling operation prior to commencing the lift
- There are six key points to remember when you undertake a manual handling task
- **1. Feet**
- **2. Legs**
- **3. Head**
- **4. Back**
- **5. Arms**
- **6. Grip**

Kinetic Handling

1. Feet

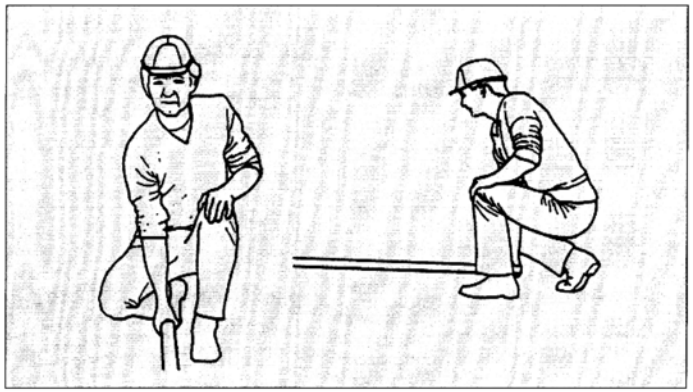
- **It is essential that the feet are placed so that a good balance is maintained at all times**
- **Feet should be on firm stable surface**
- **In general terms the feet should be in line with the lift, comfortably apart, with one foot slightly in front of the other**



Kinetic Handling

2. Legs

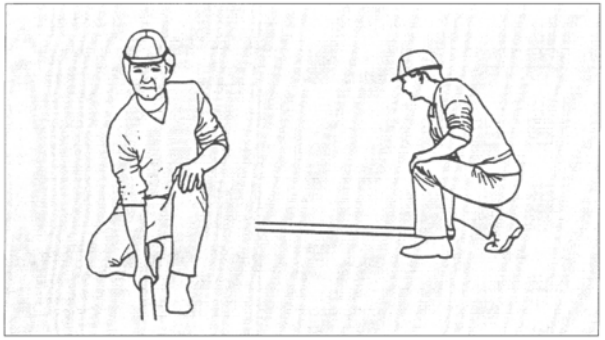
- **Having established a good base, it follows that the legs must be relaxed sufficiently to achieve flexibility**
- **To obtain this, both knees must be unlocked to allow the feet to adjust automatically**



Kinetic Handling

3. Head

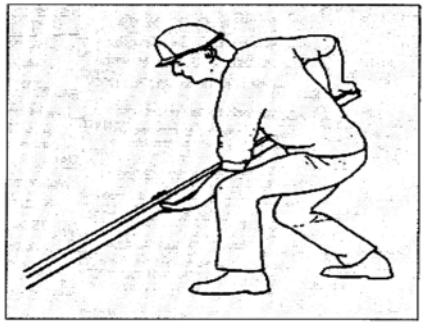
- **The head should be gently raised and the chin tucked firmly in**
- **This will straighten the neck and spine to assist in an efficient lifting action**



Kinetic Handling

4. Back

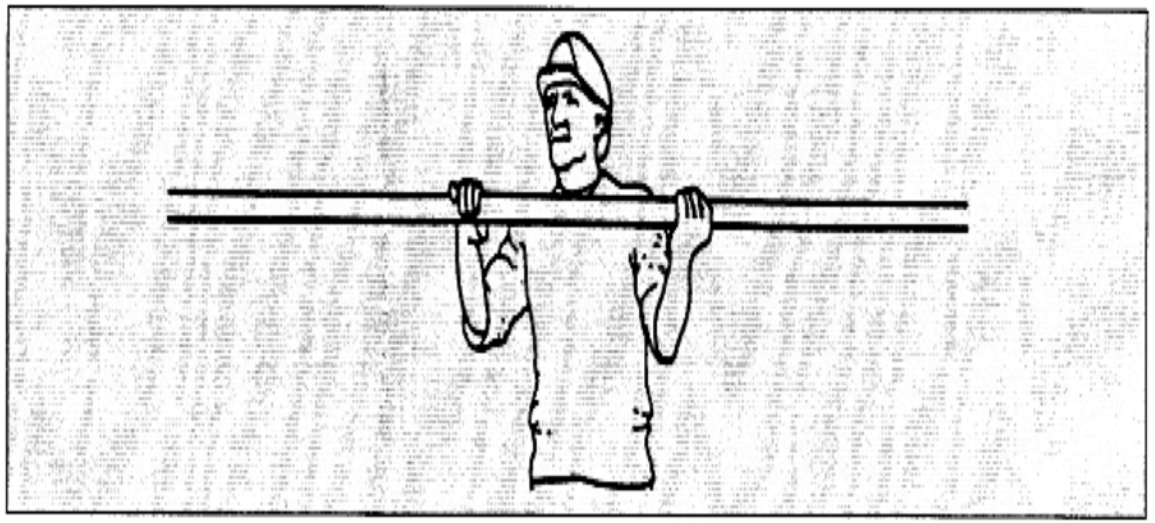
- **A bent back is a weak back.!**
- **Keeping your back straight and your chin tucked in will prevent injuries during manual handling and lifting**
- **A straight back ensures lifting using your powerful leg muscles and also ensures your safety whilst carrying this out**



Kinetic Handling

5. Arms

- **Your arms should be as close to the body as is possible and the elbows kept into the body**



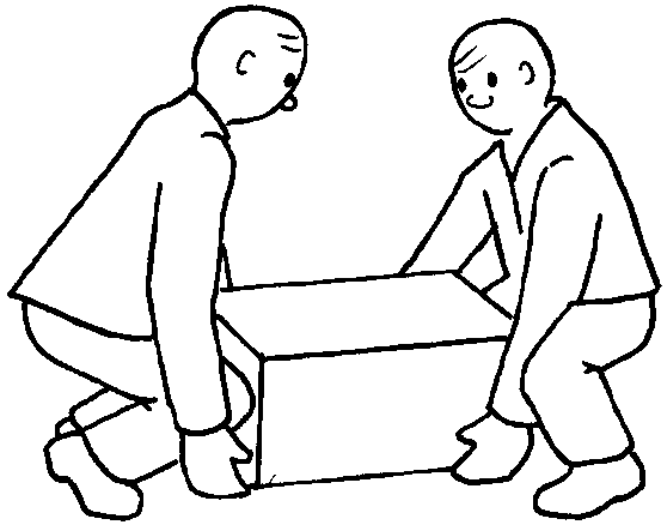
Kinetic Handling

6. Grip

- **A good grip is essential for a Scaffolder as he will spend most of his time handling tube**

- **The load should be grasped below and the weight in the palm and fingers of the hand**

Team Lifting



- **If the load requires more than one person then where possible the persons should be the same height and strength**
- **If a load requires more than one person to lift then the combined individuals lifting capacity must be reduced**

The correct way to Lift

Right way to lift

Wrong way to lift

The following information identifies both good practice within scaffolding operations

Removing Tube From Packs

Section 1:

Removing Tube From Packs

- **The practice of inserting your fingers or thumbs into the tube can lead to significant injury due to burred ends etc.**
- **Even with your gloves on, a severe injury can be sustained**

Removing Tube From Packs

- **Good practice is to use a spanner or piece of bar like this**

Handling tube

Section 2:

Handling Tube

- **The weight of a single 21ft Tube can pull your back if incorrectly lifted**
- **It is important to find the centre of gravity before you try to lift**

Handling Tube

- **This is the correct way to prepare to lift the tube Knees bent with chin up and spine rigid**

Handling Tube

- **Ensure you have a positive grip on the tube**
- **This is the preferred positive grip / hold**

Handling Tube

- **Stand with feet slightly apart, arms close to the body & twist the tube onto your shoulder**

Handling Tube

- **Ensure the tube is evenly balanced before you set off**

Handling boards

Section 3:

Handling Boards

- **Moving boards without gloves will cause injury to hands**
- **Splinters and cuts will occur from the end plate & board**
- **Gloves must be worn at all times**

Handling Boards

- **Slide the boards into a balanced position ready to lift**

Handling Boards

- **Lift & roll the boards onto your shoulder**

Handling Boards

- **Ensure the boards are evenly balanced on your shoulder before you move off. If not re-adjust**

Handling ladders

Section 4:

Handling Ladders

- **Have someone foot the ladder and guide it while you move your hands up the outside of the stile**

Handling Ladders

- **Whilst the ladder is still footed roll it over onto your shoulder like this**

Handling Ladders

- **Ensure the ladder is evenly balanced before you move off. If not re-adjust.**

Handling Ladders

- **Using 2 people to transport longer ladders is preferred**

Handling ladder/ unit beams

Section 5:

Handling Ladder / Unit Beams

- **Ladder / Unit beams should be moved by 2 people**
- **Ensure a positive grip & communicate with the other person**

Handling Ladder / Unit Beams

- **Roll it upwards onto the shoulder & ensure it is comfortable & ask the other person if they are ready before you move off**

Manual handling techniques

Section 6:

Manual Handling Techniques

- **Keep your knees bent back straight and chin tucked in when lifting**

Manual Handling Techniques

- **Push the tube against a solid object when you are standing it up**

Manual Handling Techniques

- **Alternatively have someone foot the tube**

Manual Handling Techniques

- **Balance the tube, knees bent with back straight & smoothly lift**

Manual Handling Techniques

- **Follow the same principles for Climastage**
- **Gloves must be worn at all times no matter what you are moving**
- **Stand the material up and assess the balance and weight**

Manual Handling Techniques

- **Bend your knees and get down to the load**
- **Keep the spine straight**
- **This will allow your legs to take the weight**

Manual Handling Techniques

- **Ensure the load is balanced before you move off If not re-adjust**

Manual Handling Techniques

- **Lift with your legs not your back**

Manual Handling Techniques

- **Find the centre of the load and keep your knees bent**

Manual Handling Techniques

- **Adjust the load so that it is comfortable & balanced before you move off**

Manual Handling Techniques

- **Stand the board on the floor and find the centre of gravity**

Manual Handling Techniques

- **Ensure the board is evenly balanced**

Movement of material

Section 7:

Movement of Material

- **The correct installation of a gin wheel & rope will reduce unnecessary manual handling & should be installed as soon as possible**
- **End stop for the Gin Wheel**
- **Tube spliced to prevent movement**

Movement of Material

- **Do not stand underneath any load that it is being raised or lowered**

Movement of Material

- **A 3 point contact must be maintained whilst walking up or down ladders**
- **Do not carry fittings or any material whilst ascending / descending**
- **Do not overload the ladder**

Movement of Material

- **Do not carry fittings like this, use a fittings bag**

Movement of Material

- **Fittings should be raised and lowered in a purpose made bag**
- **When using a hand line do not overload the bag**
- **An average load would not exceed 20Kg**
- **A gin wheel and rope is a preferred method of raising and lowering fittings**

Movement of Material

- **When a gin wheel is not practicable, material should be passed up & down the structure like this with the area barriered off**
- **This must be done by controlled passing agreed with the persons involved with the task good communication is key to prevent incident / injuries!**

Movement of Material

- **Each person behind handrails within a safe zone**

Movement of Material

- **Care must be taken when lowering to the ground**
- **Back strain may occur if the load is not smoothly received**

Movement of Material

- **Scaffold boards should be passed one at a time**

Movement of Material

- **Each person behind handrails within a safe zone**

Movement of materials

Movement of Material

- **Lowering materials by "bombing" is bad practice & will not be tolerated by the Company**

Movement of Material

- **Damaged boards due to bombing tube**
- **Imagine if it was your foot that was hit!**

Summary

- **As an employee you have a duty for the Health, Safety & Welfare of yourself and of others who may be affected by your actions**
- **Cork Scaffolding CSC consider that your Safety & Well-being are of prime importance. Please remember the good practices you have just seen and adopt them**
- **If you have any questions regarding what you have seen, ask your Manager/Supervisor or a Company Safety Advisor**
- **For more information please consult NASC guidance document SG6**

Theoretical Test Questions

- **1. Manual Handling includes which of the following activities?**
- A Pushing
- B Pulling
- C Putting down
- D Lifting

- **2. What percentage of workplace accidents are due to Manual Handling?**
- A 10%
- B 20%
- C 33%
- D 50%

- **3. In terms of Injury what is the average time of work lost due to Manual Handling Injury?**
- A 5 Days
- B 10 Days
- C 15 Days
- D 20 Days

Theoretical Test Questions

- **4. If You Injure yourself whilst carrying out a Manual Handling Activity. What should you do?**
- A Stop what you are doing immediately
- B Try to work it off
- C Stretch it Out
- D Report it

- **5. Which motions are most likely to cause back injuries?**
- A Twisting
- B Sitting Down
- C Standing Upright
- D Reaching/ over stretching

- **6. What is the most common area of injury due to Bad Manual Handling?**
- A Hand
- B Feet
- C Back
- D Head

Theoretical Test Questions

- **7. What letter of the alphabet does the spine resemble?**
- A S-Shaped
- B I- Shaped
- C J- Shaped
- D L- Shaped

- **8. Which is the Layer that separates the vertebrae of the spine?**
- A Chord
- B Ligament
- C Disc
- D Muscle

- **9 . Where can you get help or information about Manual Handling at Work?**
- A Your Safety Advisor
- B Your Manager
- C Your Supervisor
- D On Sky sports

Theoretical Test Questions

- **10. How can you look after your Back?**
- A Regular Exercise
- B Proper Lifting
- C Good Posture
- D Good Nutrition

Theoretical Test Answers

1

- A Pushing
- B Pulling
- C Putting down
- D Lifting

2

- C. 33%

3

- D. 20 days

4

- A. Stop What you are doing
- D. Report it

5

- A. Twisting
- B. Sitting Down
- D. Reaching/ over stretching

6.

- C. Back

7.

A. S- Shaped

8.

- **C. Disc**

9.

- **A. Your Safety Advisor**
- B. Your Manager
- C. Your Supervisor

10

- **A. Regular Exercise**
- B. Proper Lifting
- C. Good Posture
- D. Good Nutrition