

Health & Safety at Work

Session 2





WORK SAFETY

Health and Safety –

1. Ergonomics
2. Helps achieve good performance of work
3. Financially beneficial to business

Is Ergonomics a
modern problem?



Is Ergonomics a
modern problem?



Charlie Chaplin – Modern Times

1936



Early days of industrialisation

Workers had to fit the job, not the job made to fit the worker



Wojciech Jastrzebowski, 1857



The first ergonomic concepts to **help workers operate more productively**.

At that time industry still demanded a great deal of physical exertion for workers.

Between WW1 and WW2

The main focus was on **improving machinery** like aircraft and came to the conclusion that many of the accidents occurred because of illogical or poor design concepts.

1960 - 2000

The discipline extended to computers, software, internet and automation.





Health Effects

Different types and categories

Health Effects

• Immediate vs Latent



• Acute vs Chronic

**ACUTE
PAIN**

A sudden sensation that alerts us to possible injury.

**CHRONIC
PAIN**

Pain that persists—often for months or even longer.

Most common Occupational accidents (introduction)

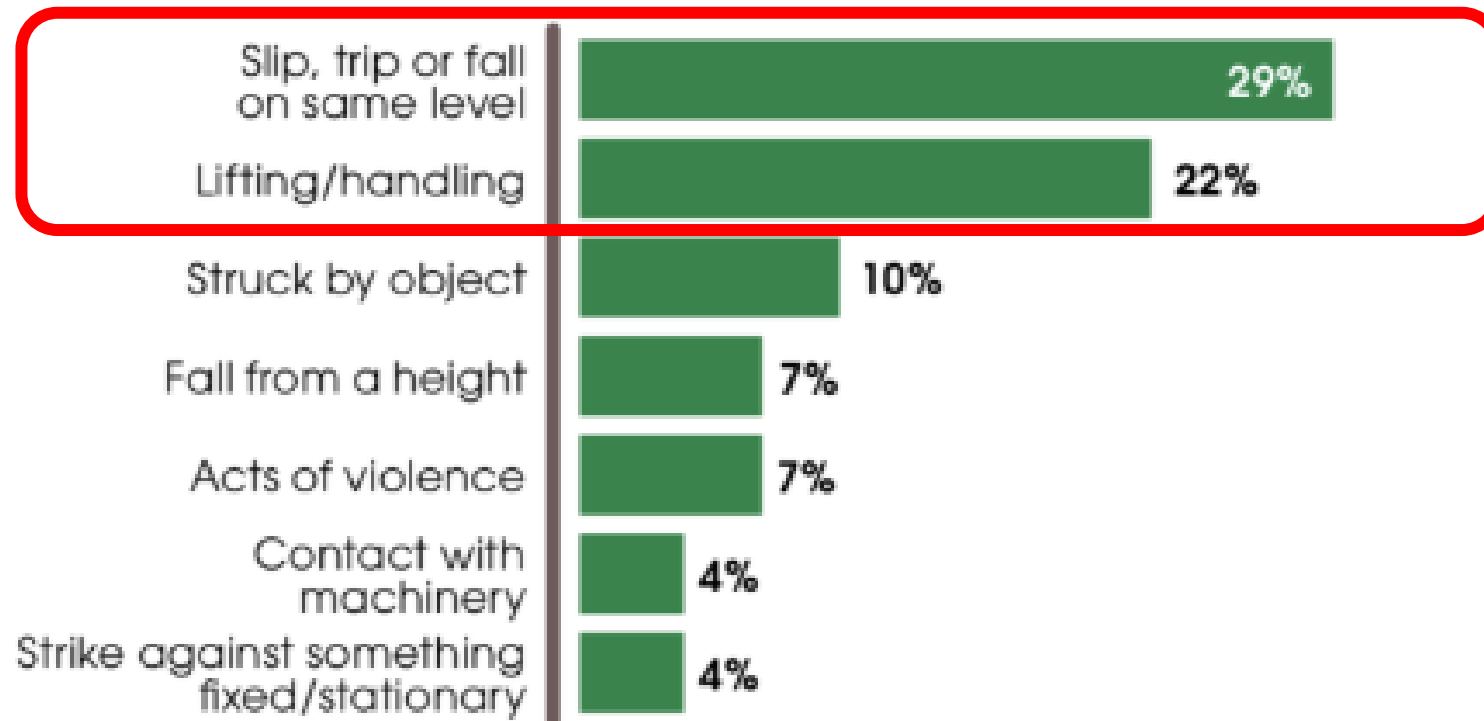
- Falls (slips and trips)
- Manual handling injuries
- Physical Strain
- Noise
- Electrical
- Fire
- Chemical



Manual Handling

Example of Statistical information

Non-fatal injuries to employees by main accident kinds (as reported by employers), 2016/17



Falls (slips and trips)

One of the most commonly occurring incidents in the workplace.

Why?



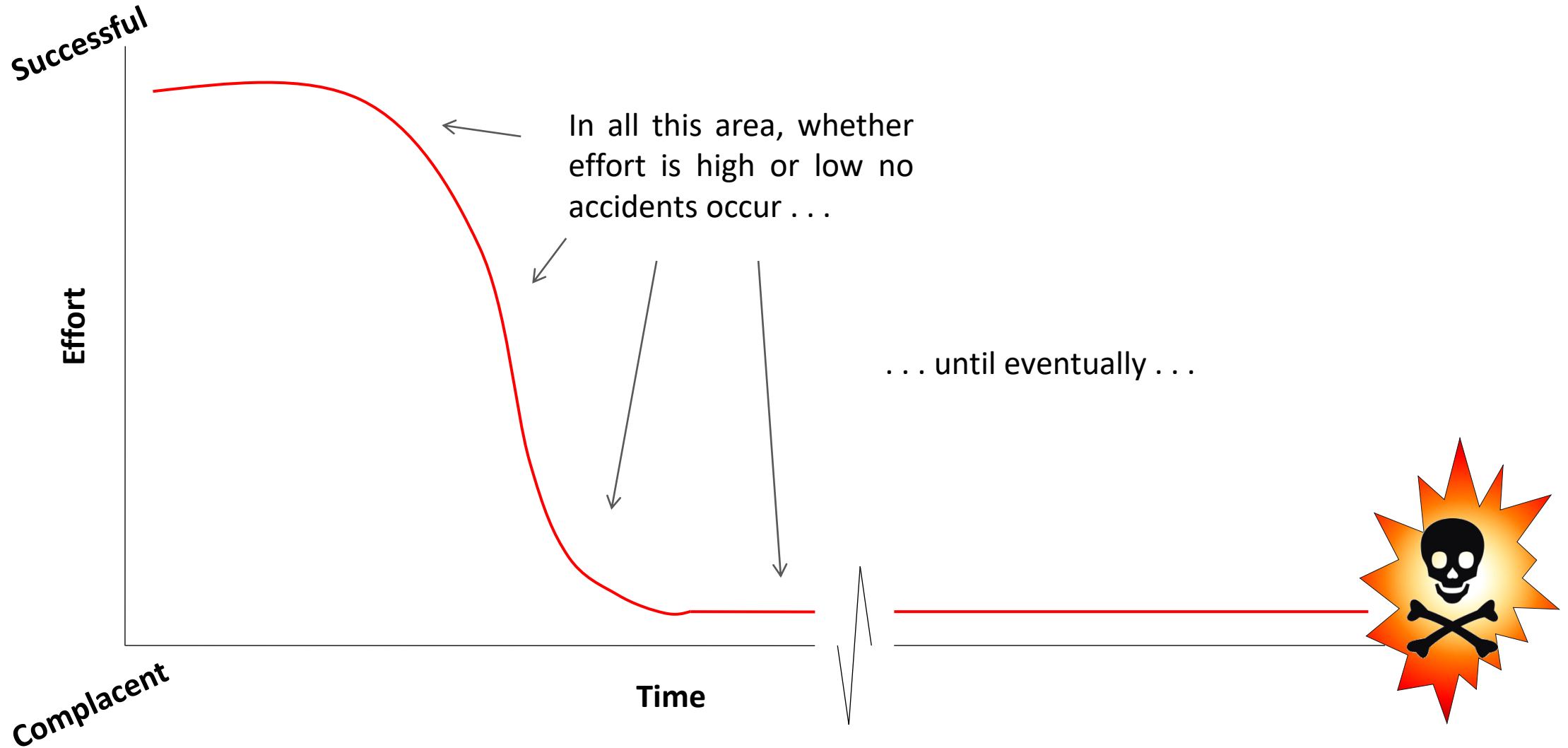
Complacency

Definition:

- **A feeling of quiet pleasure or security...**
... often while unaware of potential danger, self-satisfaction with an existing situation.
- **A feeling of contented self-satisfaction...**
... especially when unaware of upcoming trouble.



Effort / Time Curve



Slips and trips

Remove obstacles from walkways and always keep them free of clutter.



Clean all spills immediately. Mark spills and wet areas with warning signs and barricades.



Cover cords and cables that cross walkways.



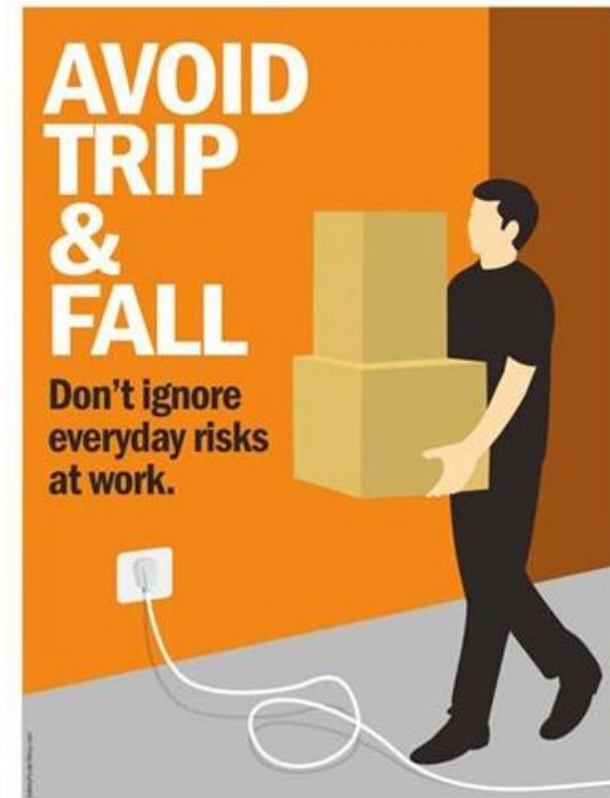
Keep working areas and walkways well lit. Replace burned-out light bulbs and faulty switches.



Secure mats, rugs, and carpets that do not lay flat by tacking or taping them down.



Never carry or push loads that block your vision.



Risk Assessment Control Measures



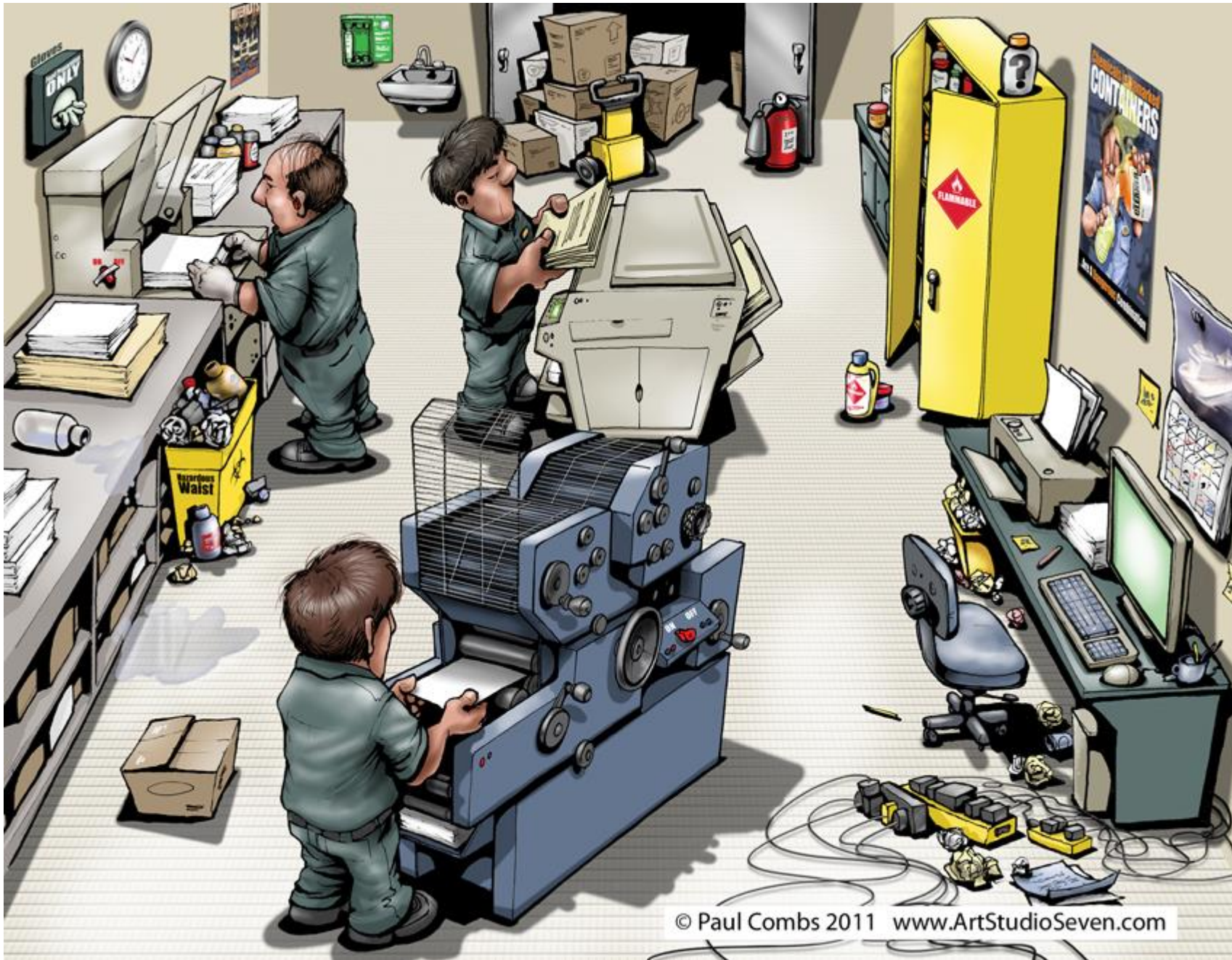
Once the risks have been identified:

- | |
|---|
| 1. Avoid the risk |
| 2. Isolate, insulate, ventilate, etc... |
| 3. Safe system of work, training |
| 4. PPE |





Short Exercise 1





The accident cost iceberg

- Most of the costs of an accident are indirect
- Some of them do not present themselves until much later.

The Iceberg Impact

Direct vs. Indirect Costs of Injuries

Direct Costs

Paid by Worker's Comp Insurance

- Medical (doctor visits, physical therapy, etc.)
- Claim mitigation
- Time loss from work

Indirect Costs

Paid by Businesses

- Reduced or lost productivity
- Lost contracts
- Increased administrative costs
- Lost time at the supervising level
- Costs of training replacements
- Overtime costs
- Potential legal fees
- Equipment repair
- Negative publicity
- Damage to customer relationships
- OSHA investigations or fines
- Increased insurance costs
- More...

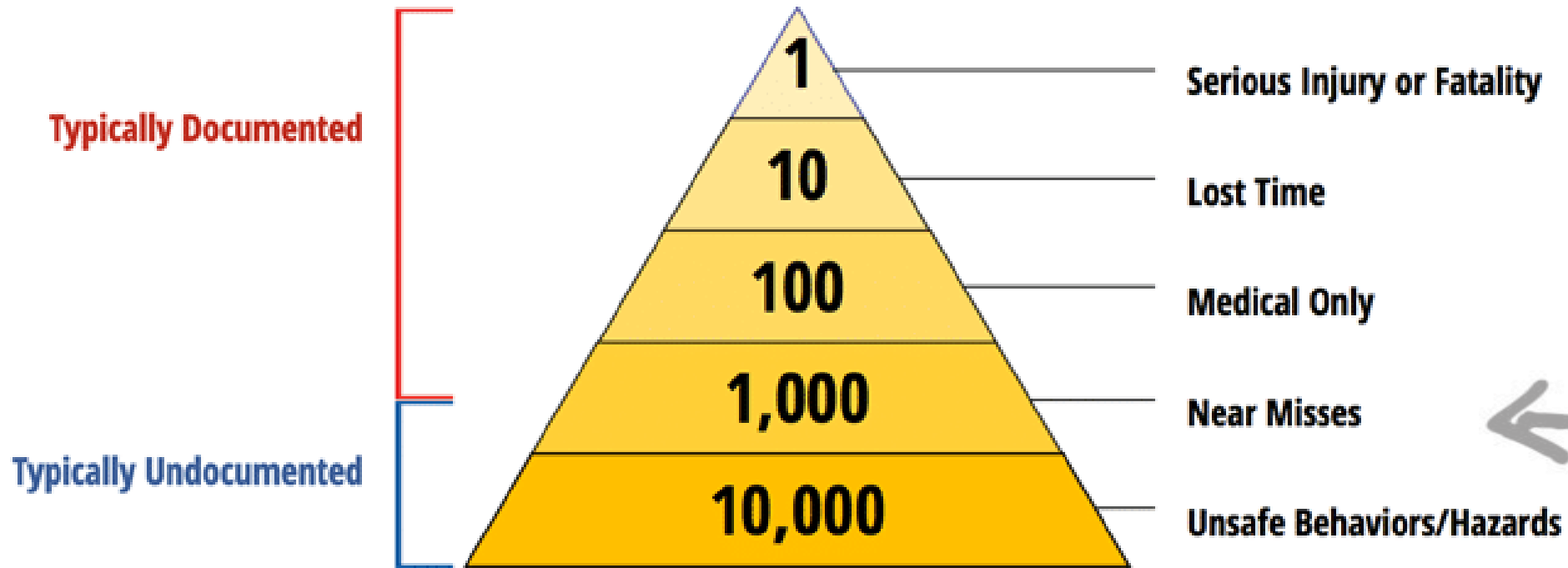


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Incidents leading to Serious Events



Near miss - a narrowly avoided accident



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Near Miss

A narrowly avoided accident

An unplanned event that has the potential to cause injury or harm, **but does not actually result in injury**, damage or interruption of normal operation.



Manual Handling

Manual handling is the **use of bodily force** to handle, support or move objects.

Pushing



Moving



Lifting



Putting down



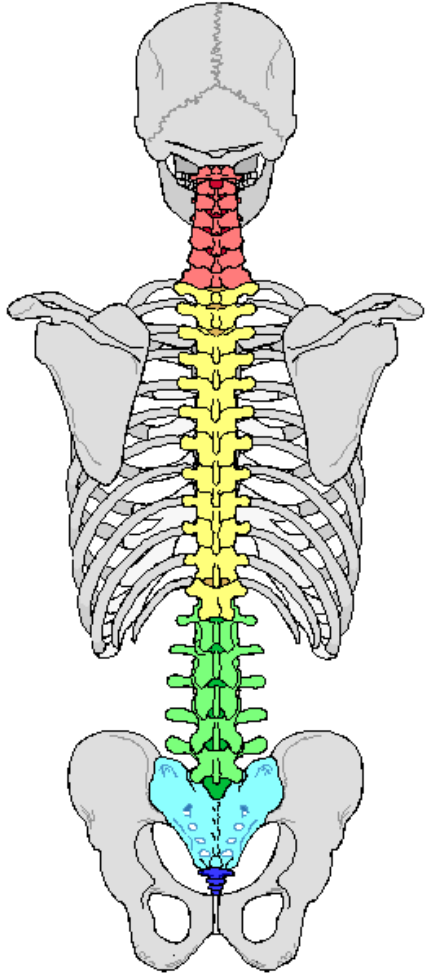
Carrying



Pulling



The Back bone, (spinal column)



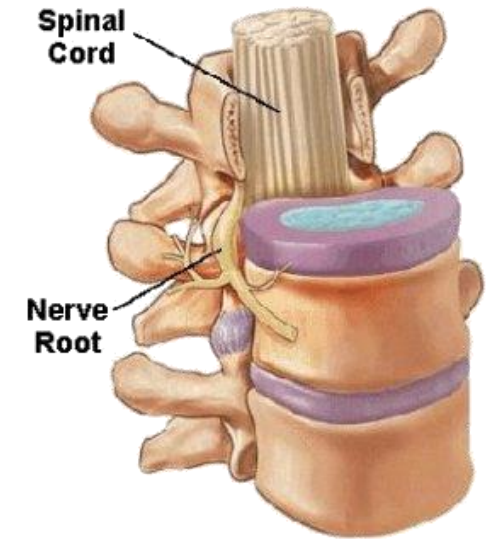
Formed by individual bones called **vertebrae**.
Intervertebral discs separate the vertebrae.

- allow **movement**,
- **hold** them together,
- acts as a **cushion**.

The **spinal cord** transmits signals between the brain and the rest of the body.

- long bundle of *nerves* that extends from the brain.

The spinal cord is protected in the canal of the vertebral column.





- **Lowering the load correctly is as important as lifting it.**

One will need to adapt the position depending on the load...

... but the basics will still be the same.

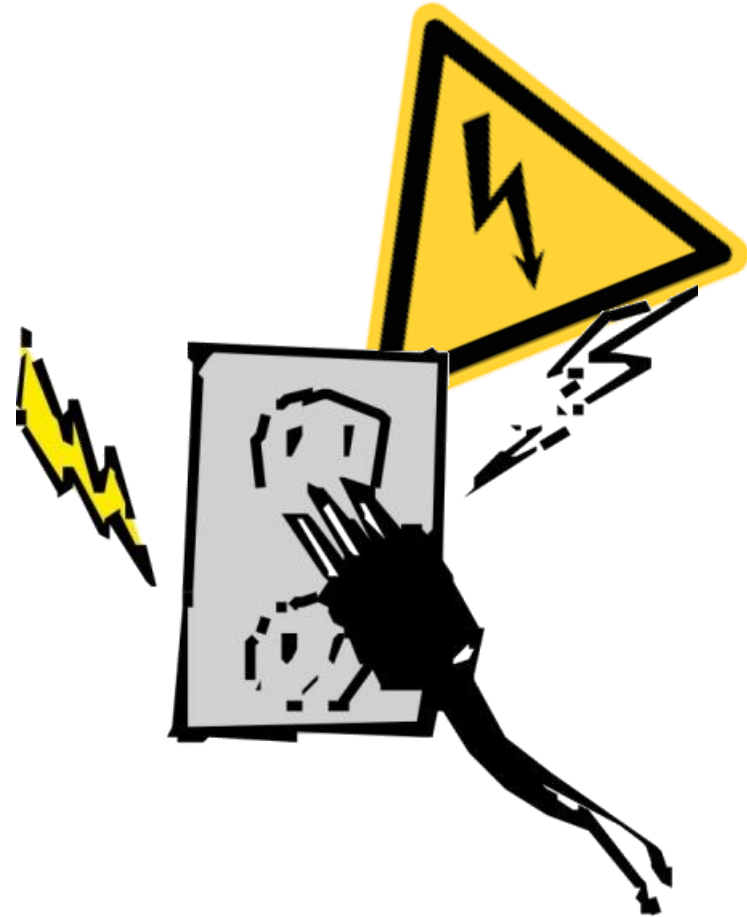
1. Back straight
2. Knees bent
3. Feet apart



Electrical Hazards

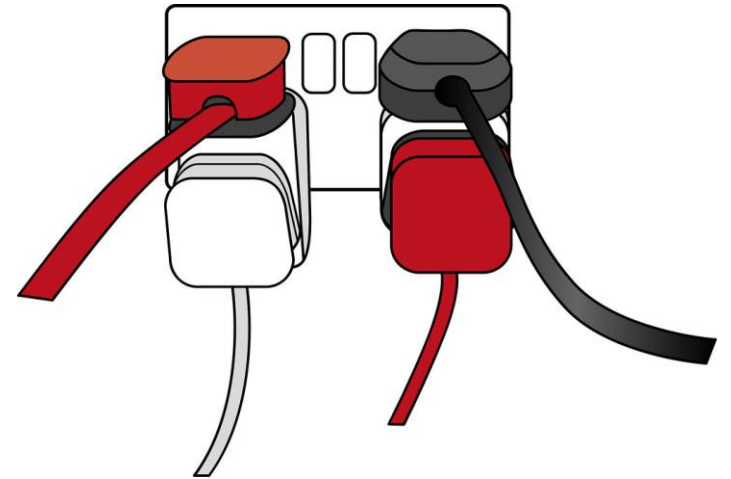
Electricity can cause:

- Electrical shock
- Electrical burns
- Fire



Electrical Hazards

- Do not over load
- Do not leave where damage is possible
- Switch off before removing
- Check regularly



Fire Safety

The Fire Triangle



Fire Hazards

- Prevent fires
- Confine
- Proper storage
- Means of escape
- Fire Fighting equipment
- Instructions and training



Fire Extinguisher Colour Coding



Body colour is red

Identification zone colour will depend on extinguishant:



Water



Foam



Powder



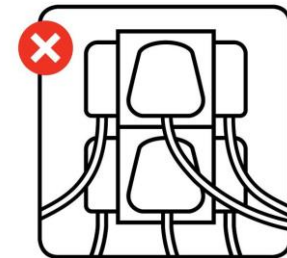
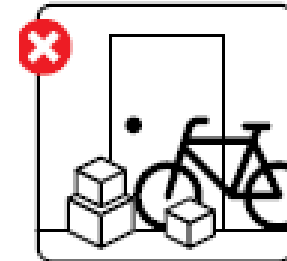
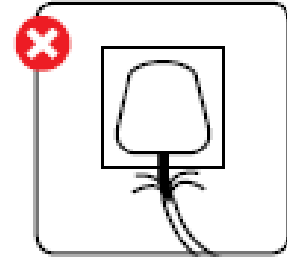
Carbon dioxide

Body colour is red



Fire Prevention

- Proper Maintenance
- Good house keeping
- Do not overload sockets
- Do not cover equipment's ventilation
- Do not let waste accumulate
- Do not leave electrical devices no overnight
- Be careful with cigarettes and matches



Put them out.
Right out!

Chemical and Biological

Although some illnesses might not lead to death they can lead to many years of discomfort and pain.

Chemical agents can be used or produced by normal day to day processes. These may include:

- Dusts
- Gases
- Vapours
- Liquids
- Mists
- Fumes



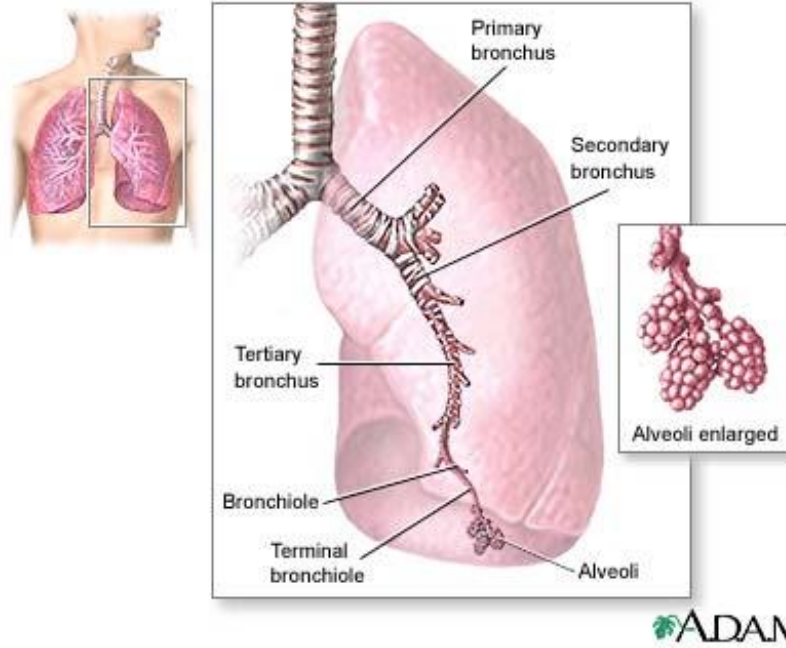
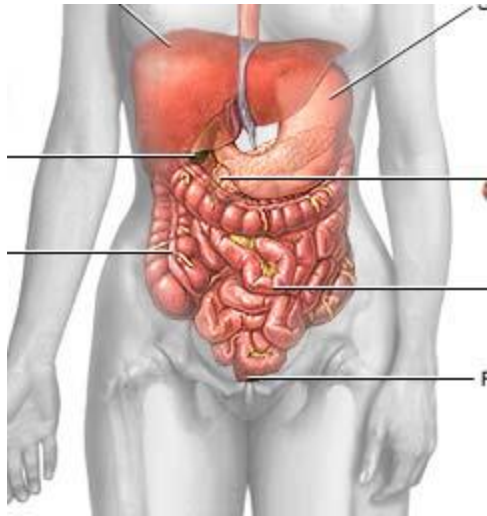
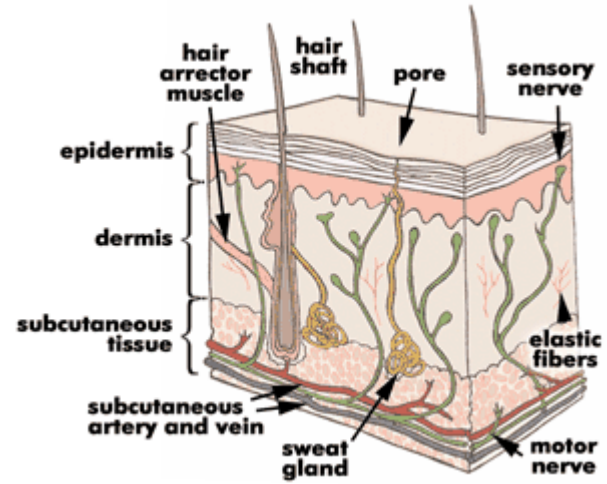
Classification of hazards:

- Irritant
- Corrosive
- Harmful
- Toxic
- Carcinogenic



Routes of entry

- Inhalation
- Absorption through the skin
- Ingestion
- Injection



Remote working/ Working from home

- Safer?
- Any additional/ different risks?
- Different equipment requirements?
- Who's responsibility is it?





Short Exercise 2

Likelihood

How probable is it that an accident will happen.



Likelihood

What is the likelihood of an accident occurring in each of these two pictures?



Mark the number that you think corresponds to the likelihood of an accident occurring.

1	2	3	4	5
Very unlikely	Unlikely	May occur	Likely	Very likely

1	2	3	4	5
Very unlikely	Unlikely	May occur	Likely	Very likely

Severity

How bad would it be if the accident had to occurred?



Severity

How bad would it be if the accident had to occurred.



Mark the number that you think corresponds to the likelihood of an accident occurring.

1	2	3	4	5	1	2	3	4	5
Slight harm	Injury or moderate harm	Serious Injury	Very serious Injury	Extreme Injury or death	Slight harm	Injury or moderate harm	Serious Injury	Very serious Injury	Extreme Injury or death

Thank You!



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