GIC Sample Slides
Extracted from Element 6: Musculoskeletal health

6.1 Work-related upper limb disorders

6.2 Manual handling

6.3 Load-handling equipment

nebosh

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Definitions

Musculoskeletal Disorders (MSDs)

Injuries or disorders of muscles, nerves, tendons, joints, cartilage and intervertebral discs

Ergonomics

The relationship or interface between the worker, the equipment they are using, the way in which they are using the equipment and the environment in which the work is taking place.

Poorly designed tasks and workstations

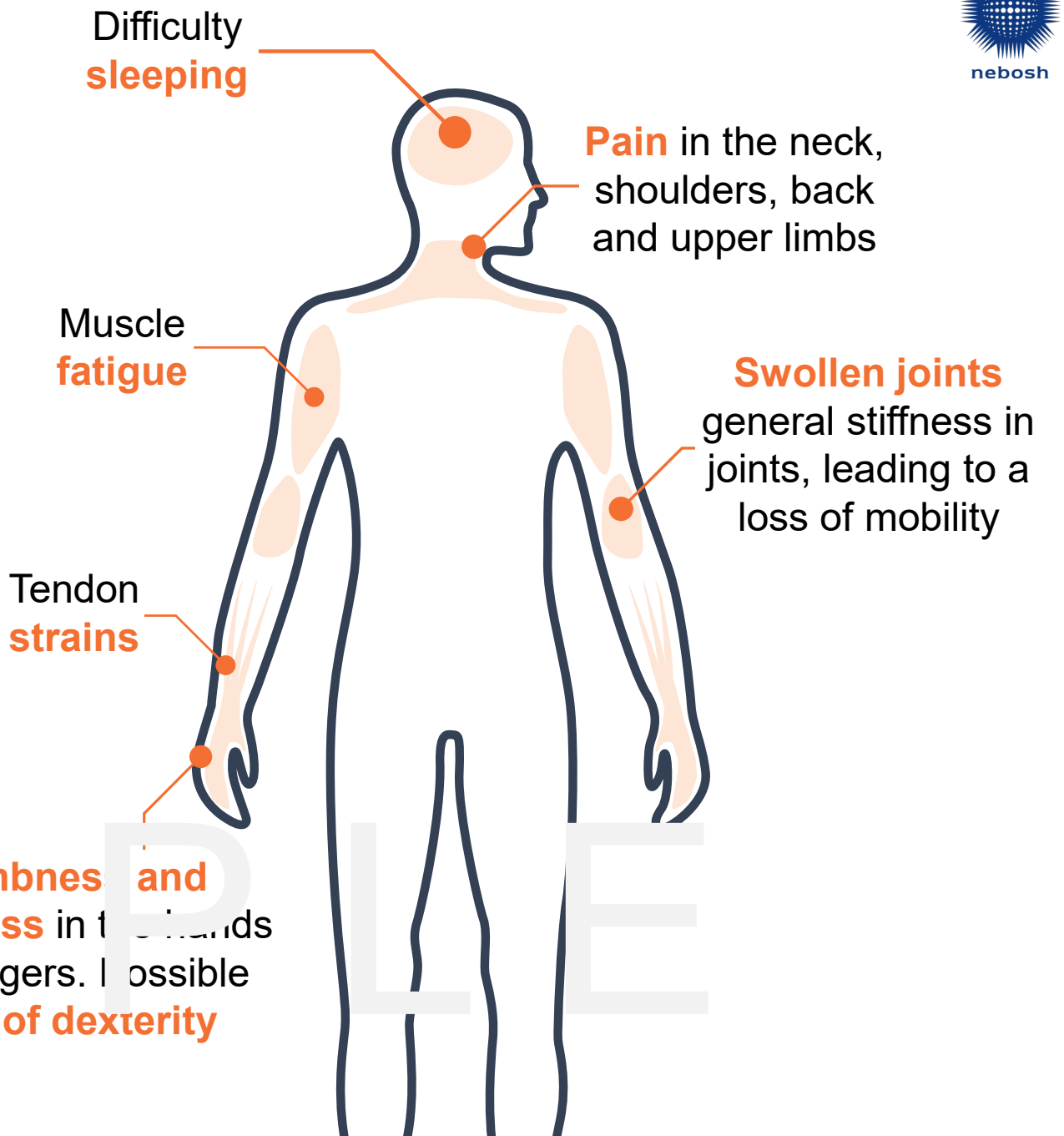
Can lead to:

Aches and pains in the neck, shoulders and upper limbs	Stiffness in the hands and reduced mobility	Swollen joints	Numbness in the hands and fingers
Weakness and loss of dexterity in the hands	Tenderness in limbs	Poor-quality sleep and disturbed sleep patterns	

WRULDs

Work-Related Upper Limb Disorders

A medical condition that affects muscles, tendons, ligaments, nerves, joints and other soft tissues in the upper part of the body from the neck down to the hands and fingers. It can be caused by work or made worse by work.



Avoiding and minimising risks from poorly designed tasks and workstations

Repetitive work

- Automation / redesign task
- Employ more workers
- Job rotation

Uncomfortable working positions

- Alter the layout of the workstation
- Adjustable seating

Avoiding and minimising risks from poorly designed tasks and workstations

Space

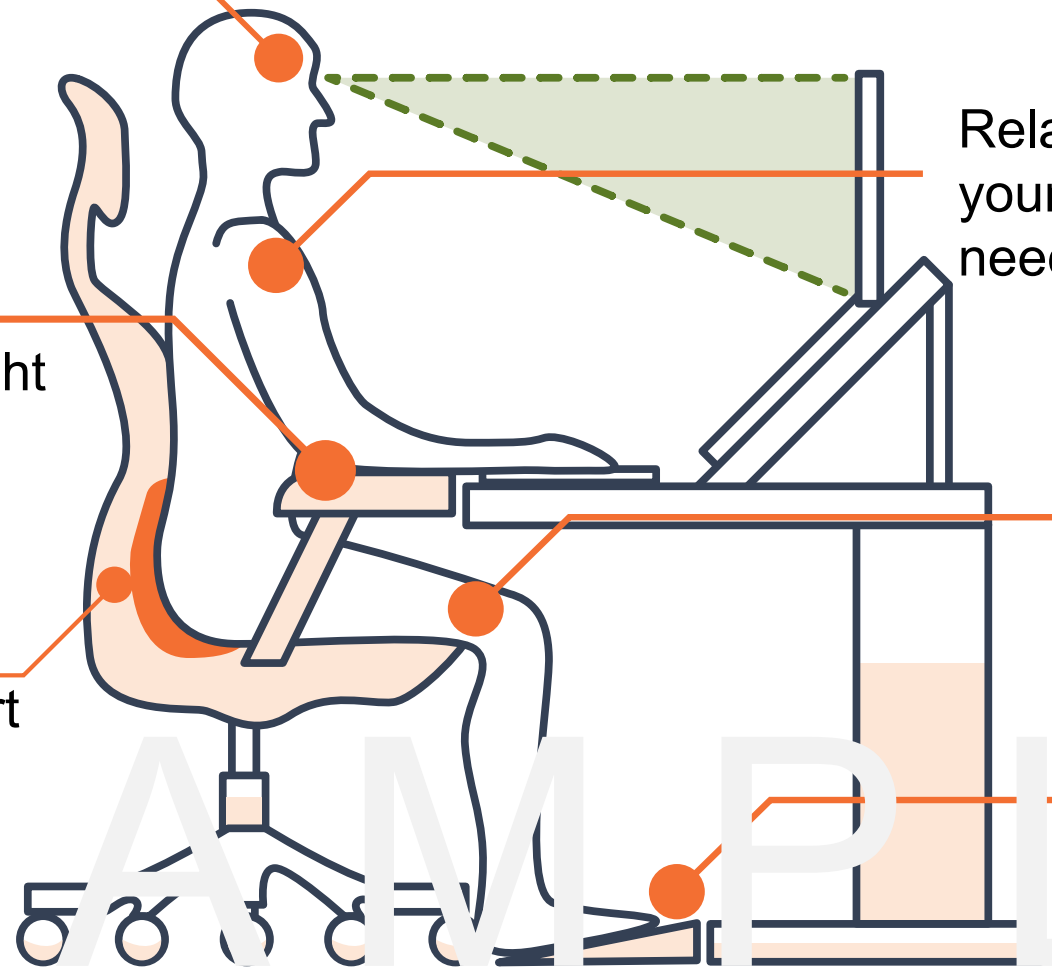
- Clear the work area
- Change the work layout
- Carry out work in a different area

Lighting/glare

- Not too low or too high
- Matt surfaces where possible
- No glare from the sun
- Suitable type of lighting

Suitable **temperature** with sufficient ventilation

Good DSE setup



Eyes in line with top of screen, which is about an arm's length away

Relax shoulders – try to position yourself high enough so you don't need to shrug your shoulders

Keyboard just below elbow height

Gap of 2-3cm between front of seat bottom and back of knee

Back of seat provides good lower back support

Both feet comfortably on floor or footrest

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Anatomical consequences

Back injuries are the most common consequence of bad manual handling.

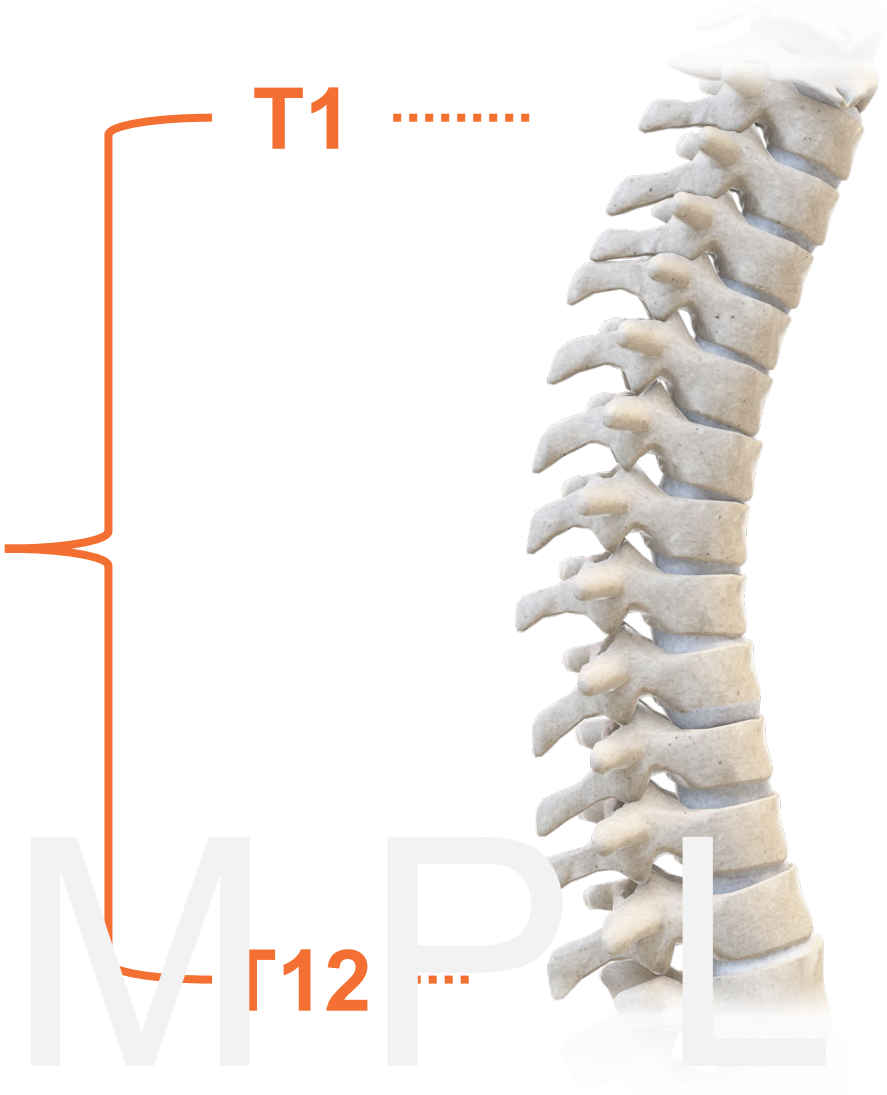
The spine is a series of bones called vertebrae...

7 cervical vertebrae

C1

C7

12 thoracic vertebrae



5 lumbar vertebrae

The lower part of the abdomen is supported by two more bones…

Sacrum and coccyx

Each vertebra is separated by a fibrous intervertebral disc.

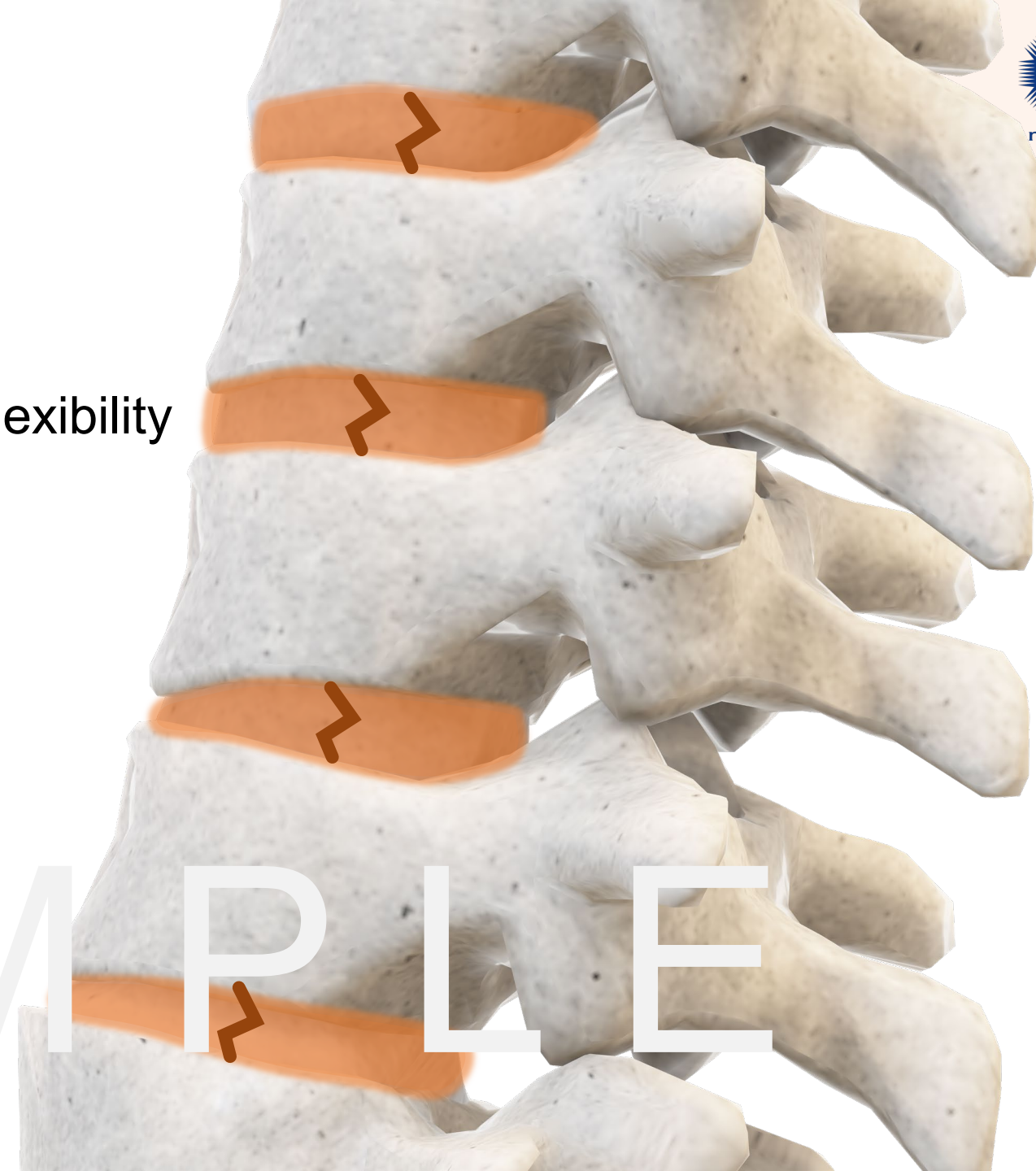
When force is applied to the spine, the discs act as shock absorbers to prevent damage.

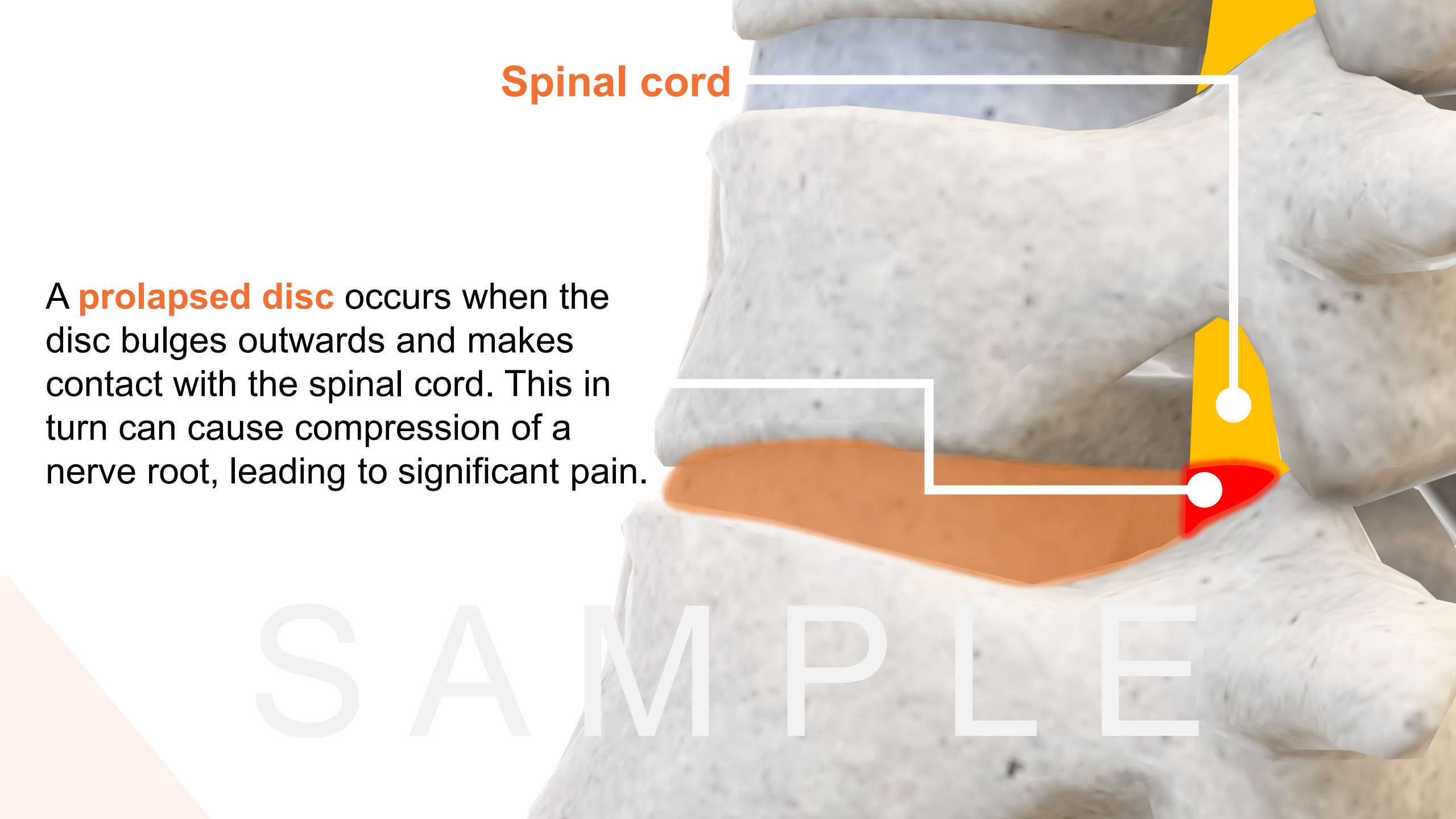
The disc consists of **two parts:**

A **jelly-like nucleus** (containing about 80% water) and **an outer shell** containing several layers of fibres.

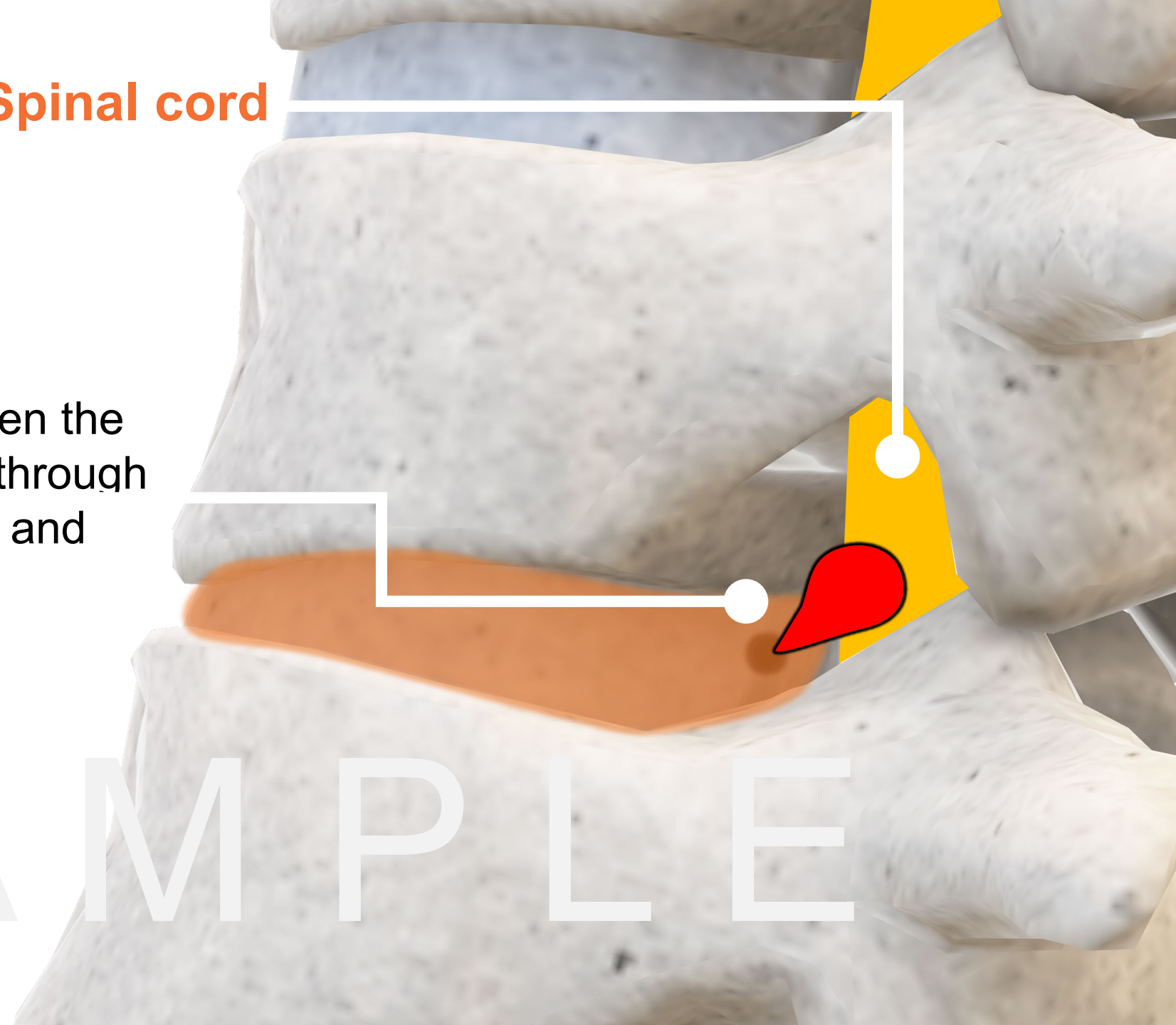
As people get older, discs lose their flexibility and are more prone to damage.

Improper manual handling can cause **prolapsed** or **herniated** discs.





A **prolapsed disc** occurs when the disc bulges outwards and makes contact with the spinal cord. This in turn can cause compression of a nerve root, leading to significant pain.

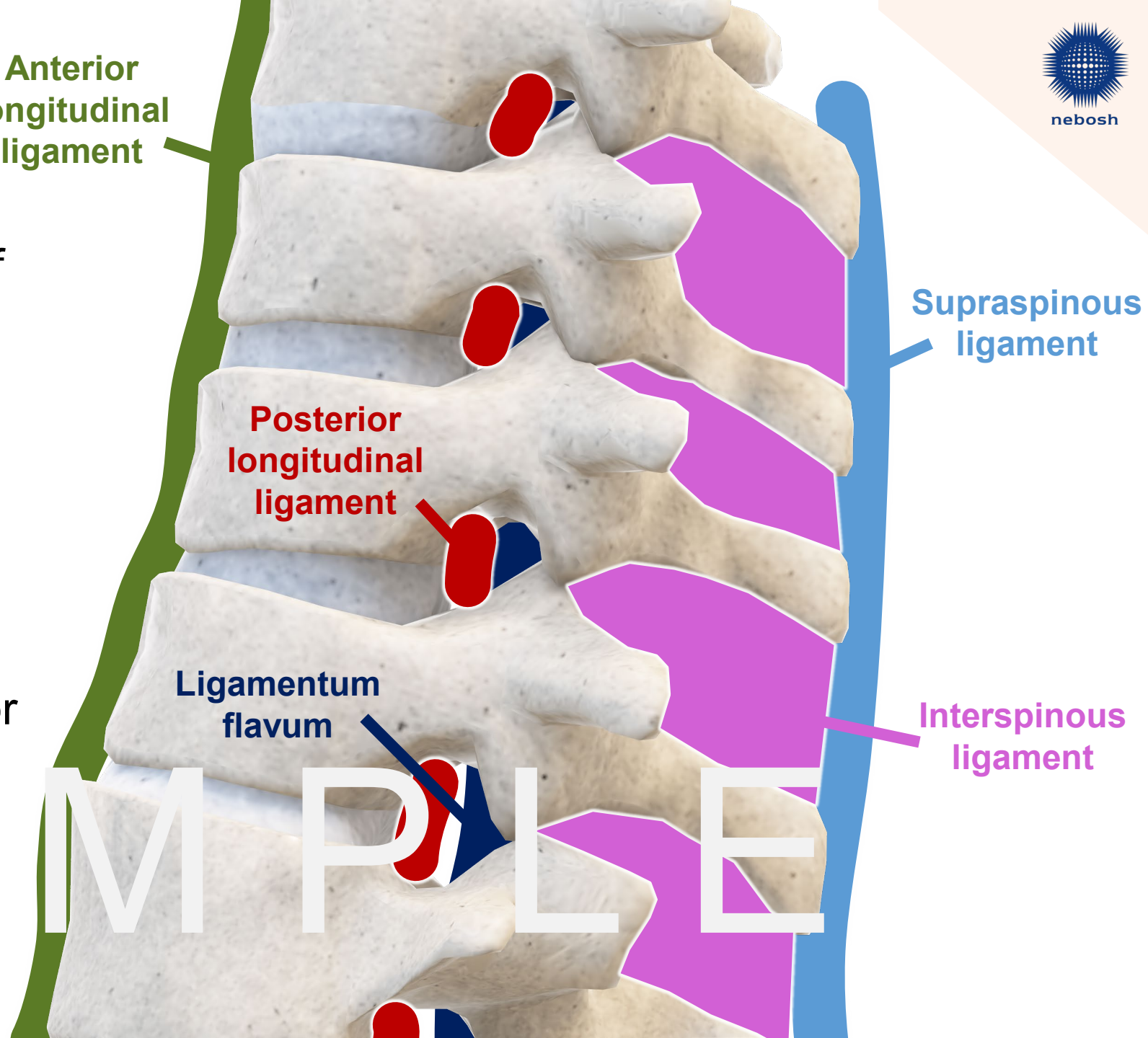


A **herniated disc** occurs when the liquid in the nucleus breaks through the fibrous layers of the disc and spurts onto the spinal cord.

Ligaments also need to be considered. These are bands of fibrous tissue that connect two or more bones.

They lengthen during tension, then normally return to their original state.

If ligaments are overstretched or twisted, they become torn or strained, causing pain.



Ligaments bind **bone to bone**…

…and **tendons** bind **muscle to bone**.

Tendonitis results from tendons becoming swollen. This can lead to joint pain.