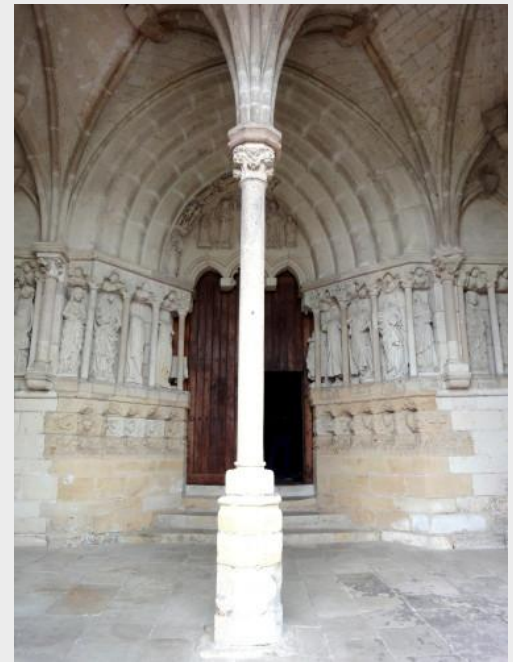
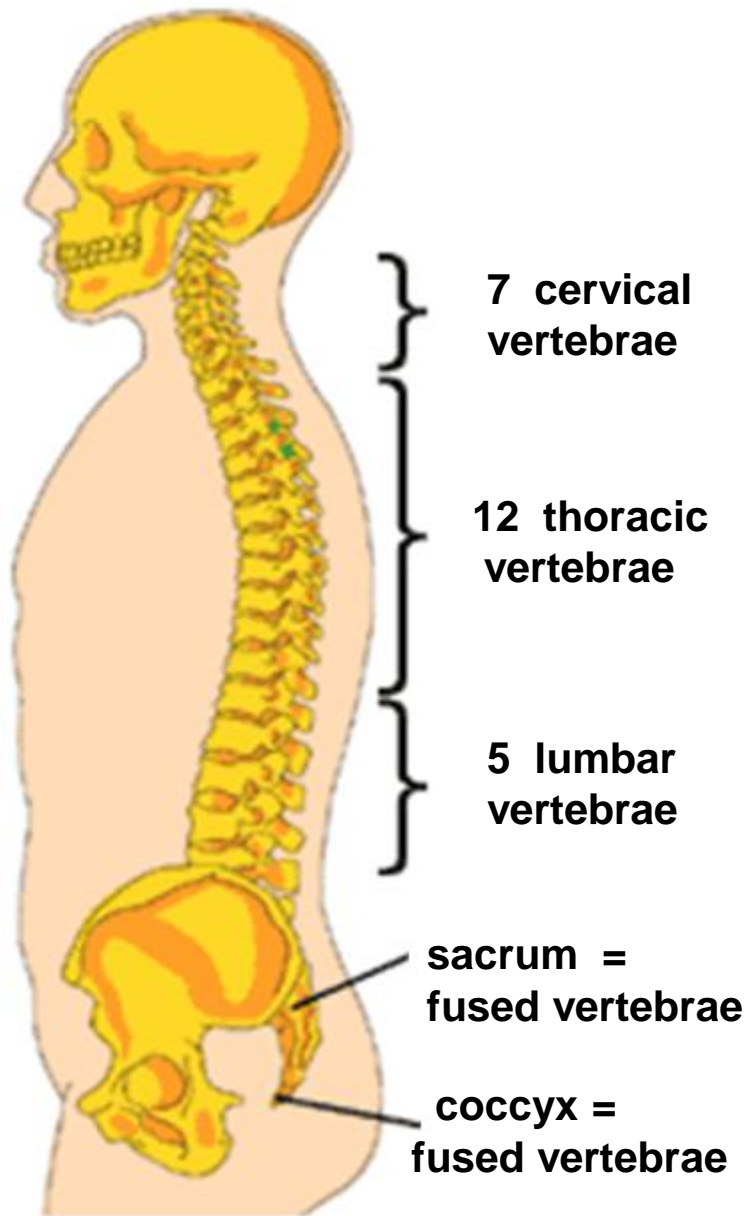


**Why is resting
in lying down position,
necessary for the spine?**



**The spinal column
is the pillar
that support
the body weight**

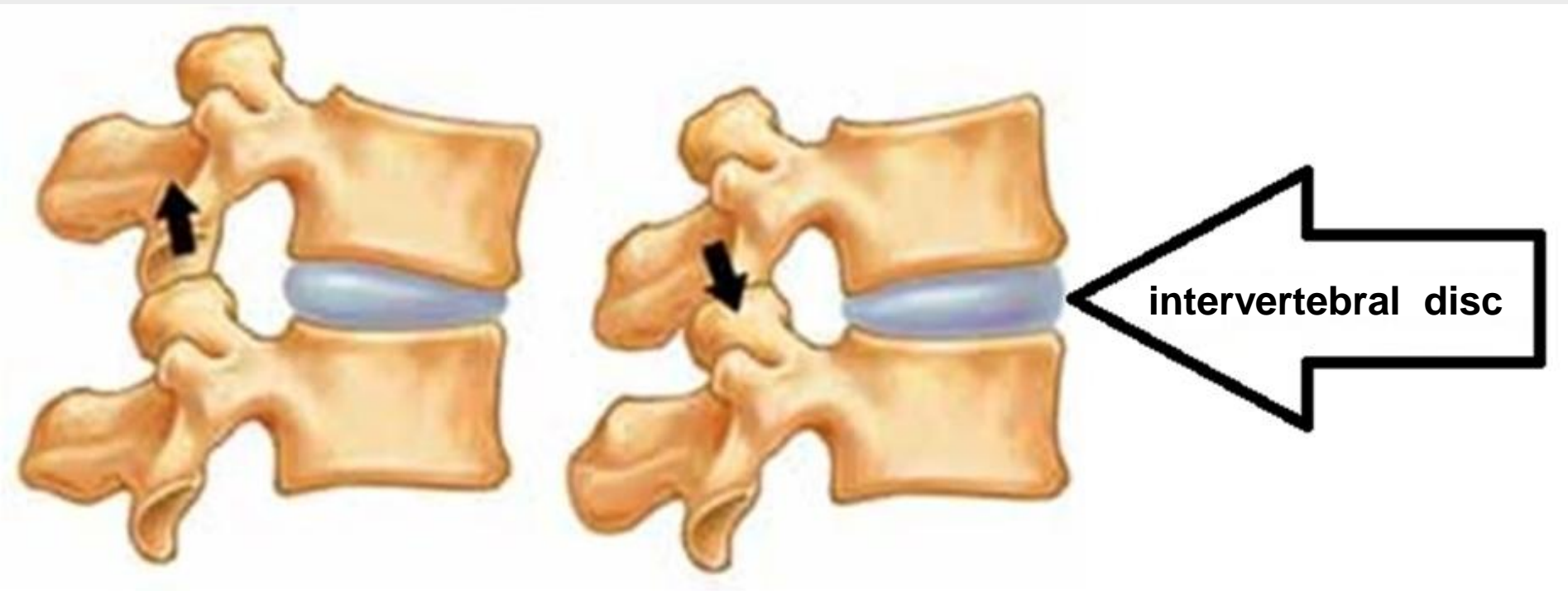




Spine seen from the side

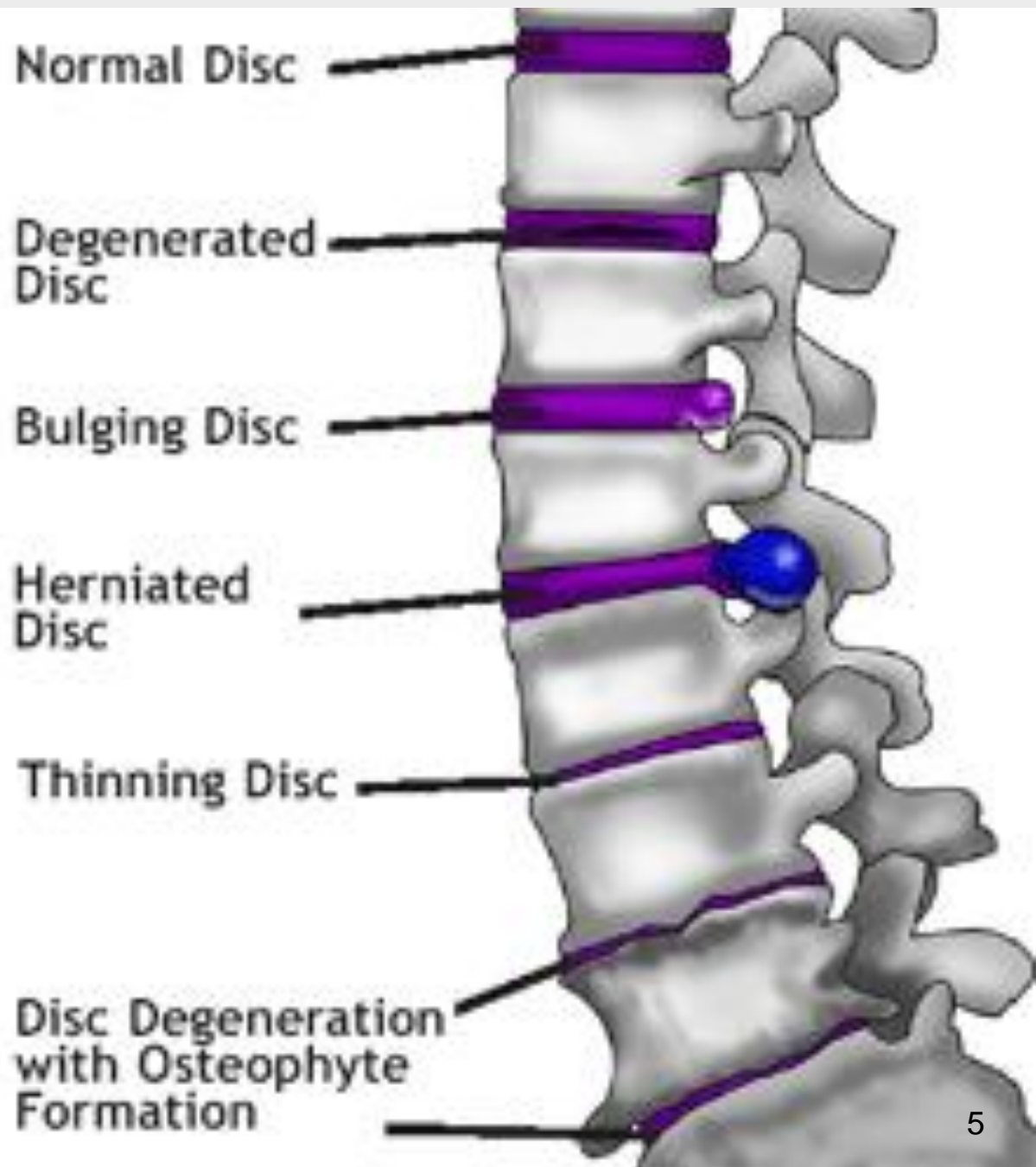
The spinal column is formed of a stack of vertebrae

**Between two vertebrae, there is an
intervertebral disc**



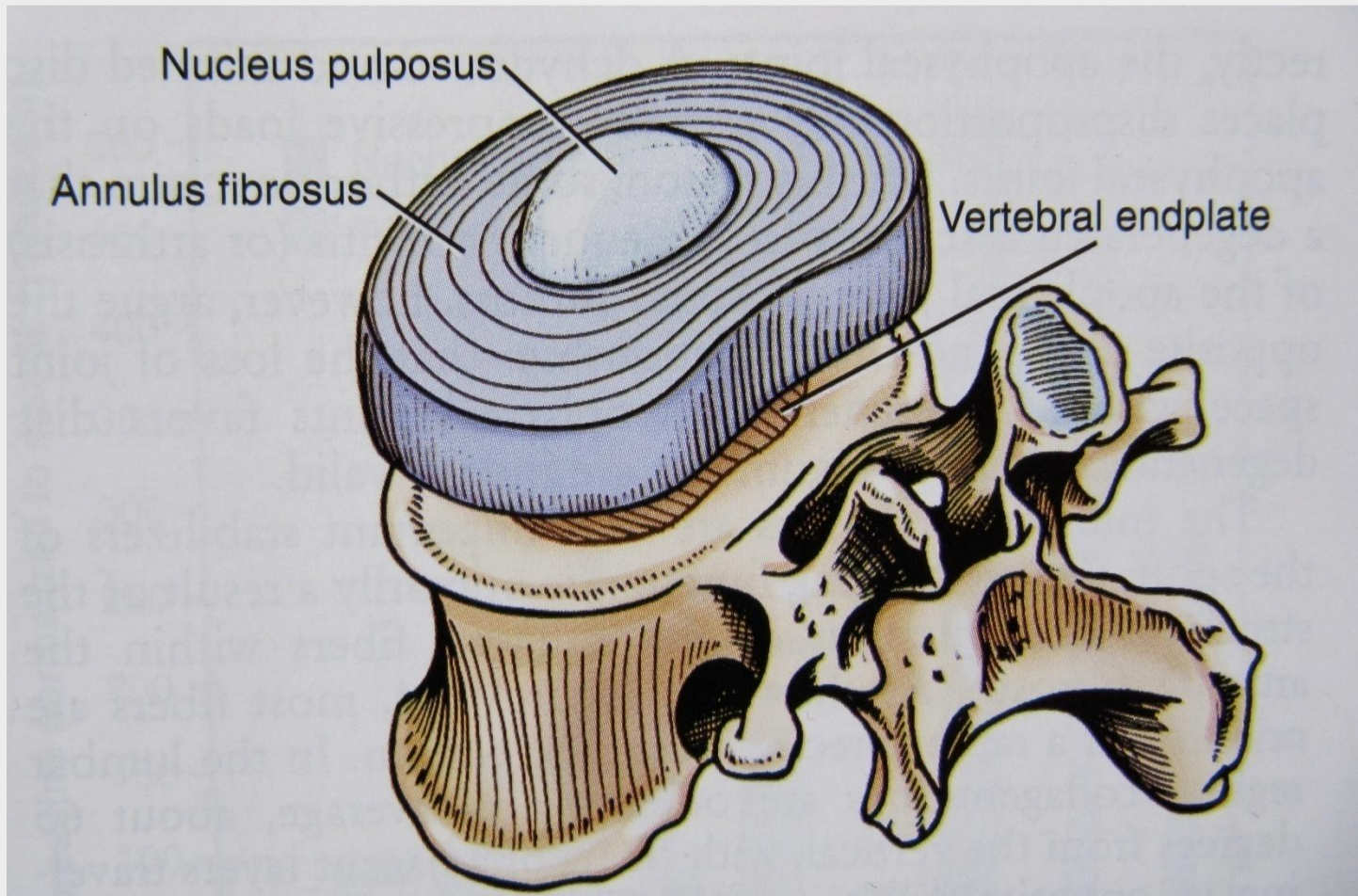
Several disks
are damaged
in this patient

This is
frequently the
case



Each disc looks like a balloon filled with a gelatinous substance called the **nucleus pulposus**

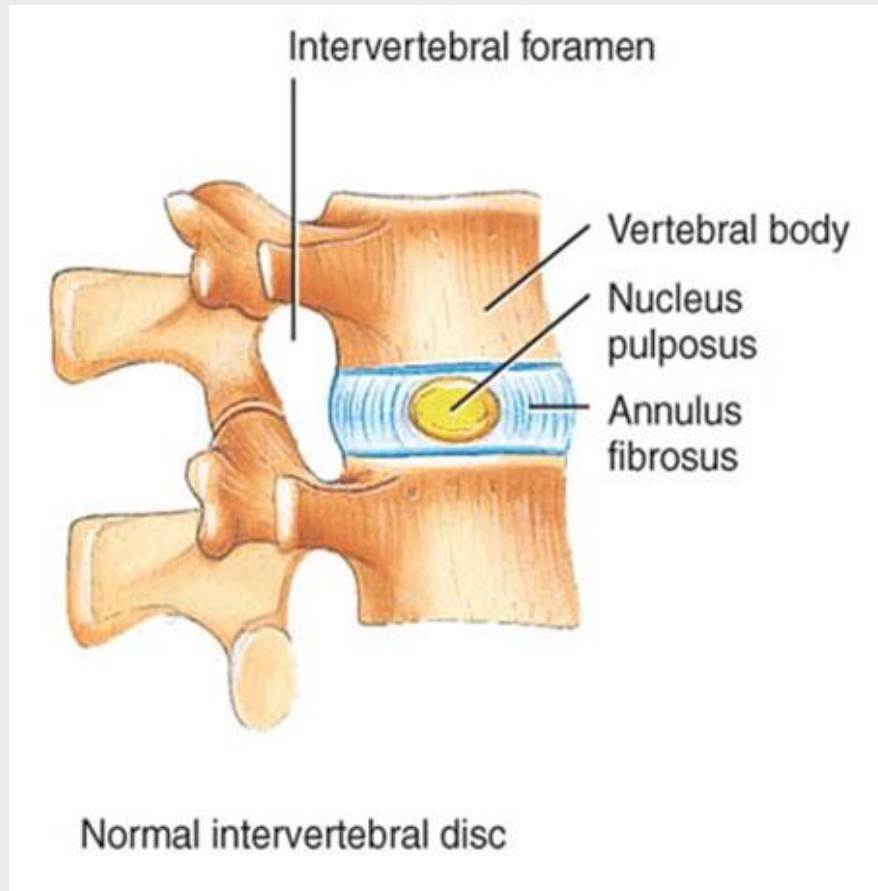
The nucleus pulposus is surrounded by elastic fibers called **annulus fibrosus**



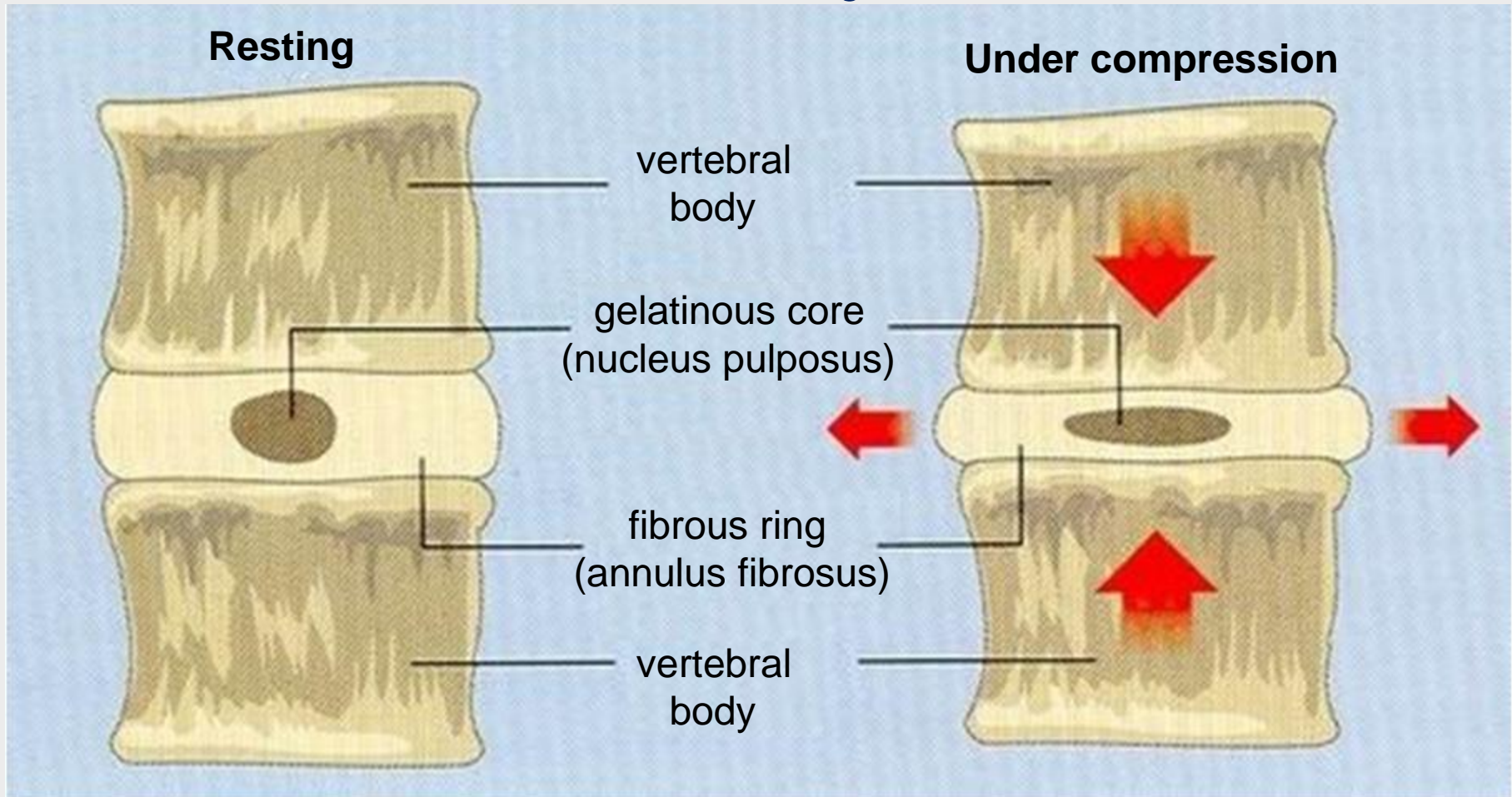
On this side view, you can see the **nucleus pulposus** surrounded by the **annulus**

We also see the **foramen**.

it is a hole through which a nerve exits with his blood vessels

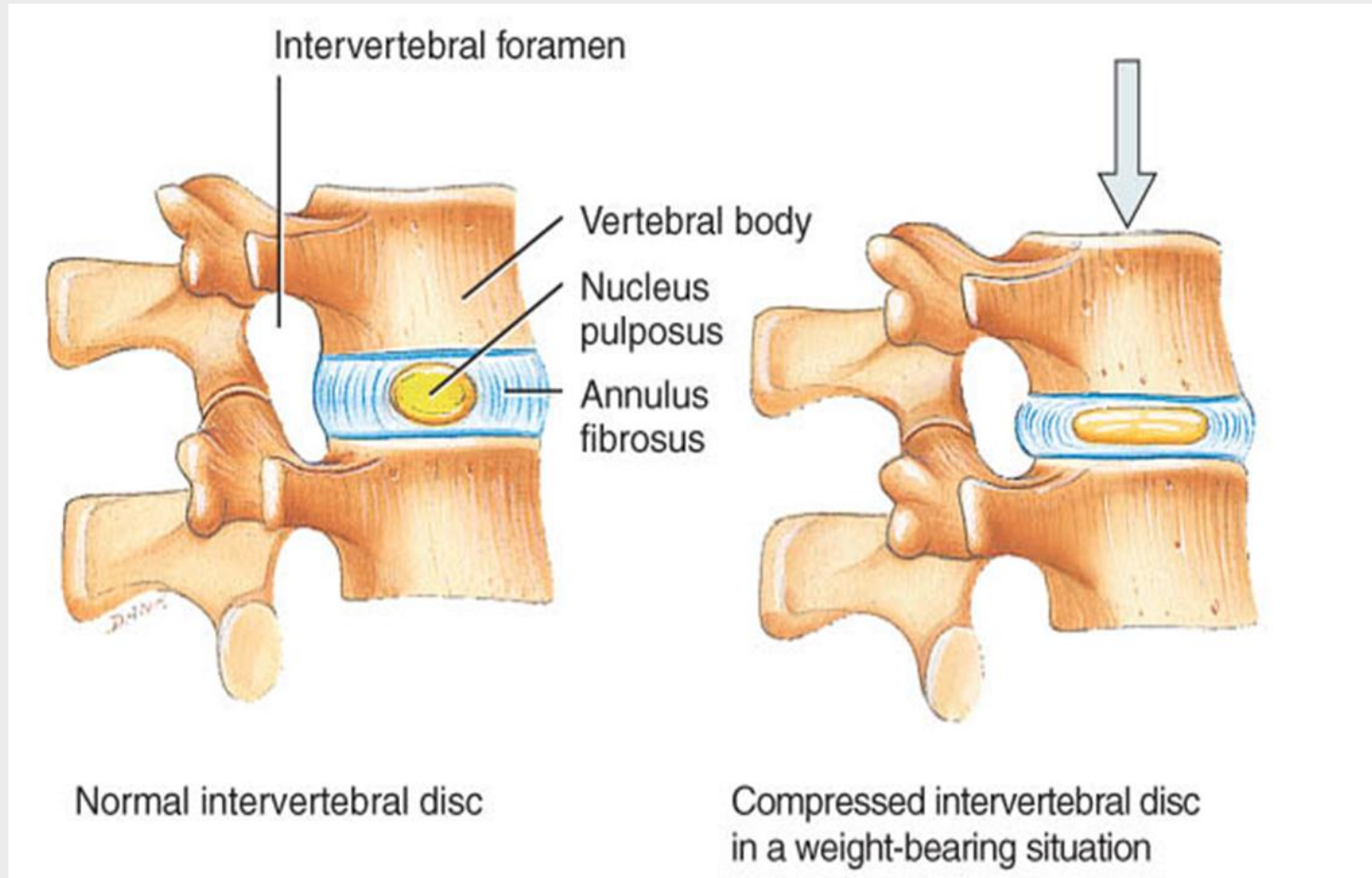


When the disk is compressed by the body weight
in standing and sitting,
and when wearing loads,



When the pressure on the discs increases:

- The water contained in the nucleus pulposus is expelled (the disc dehydrate) which further reduces their height
- It becomes more fragile, more brittle (decreased resistance)
- They lose their flexibility

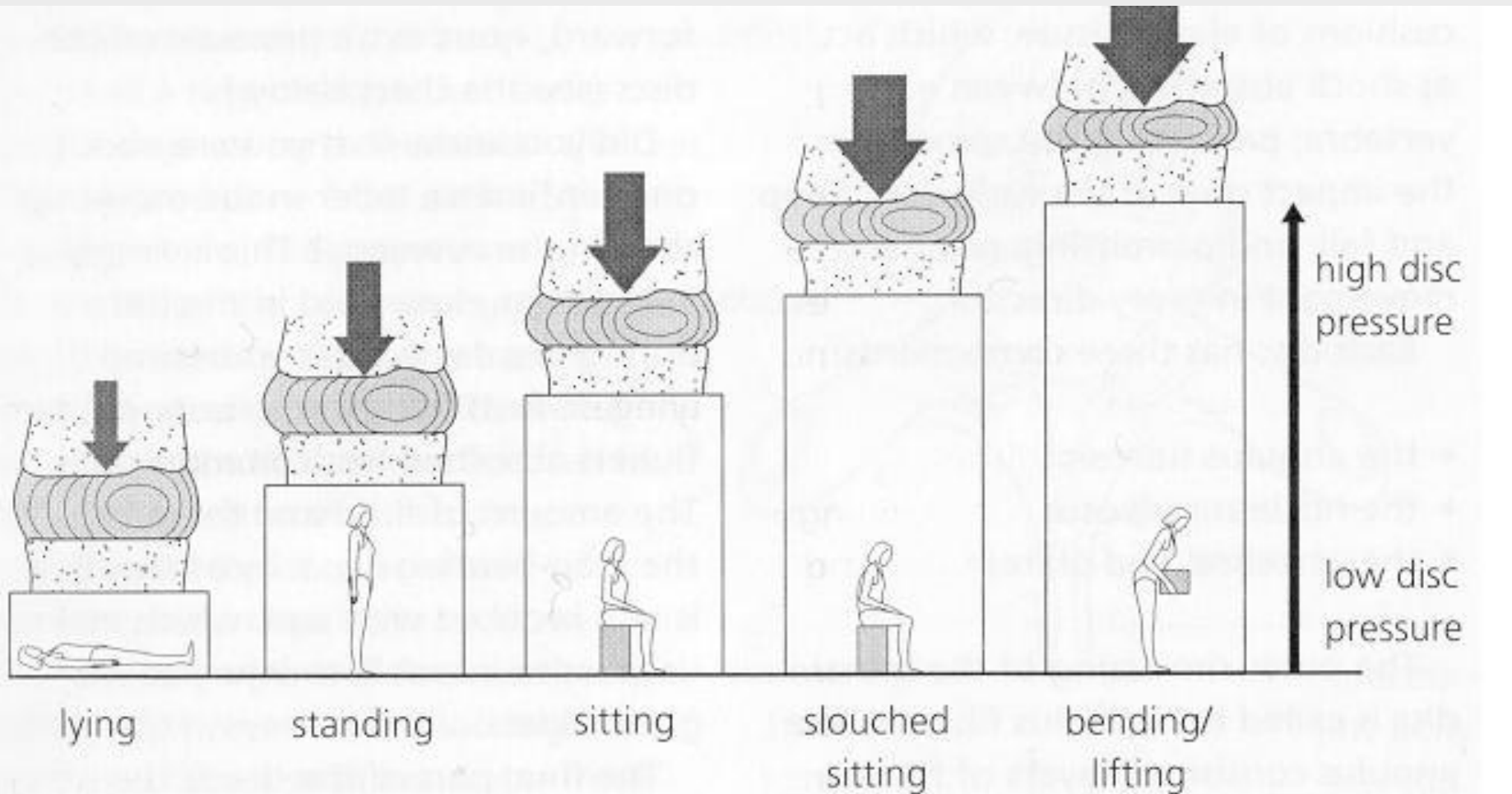


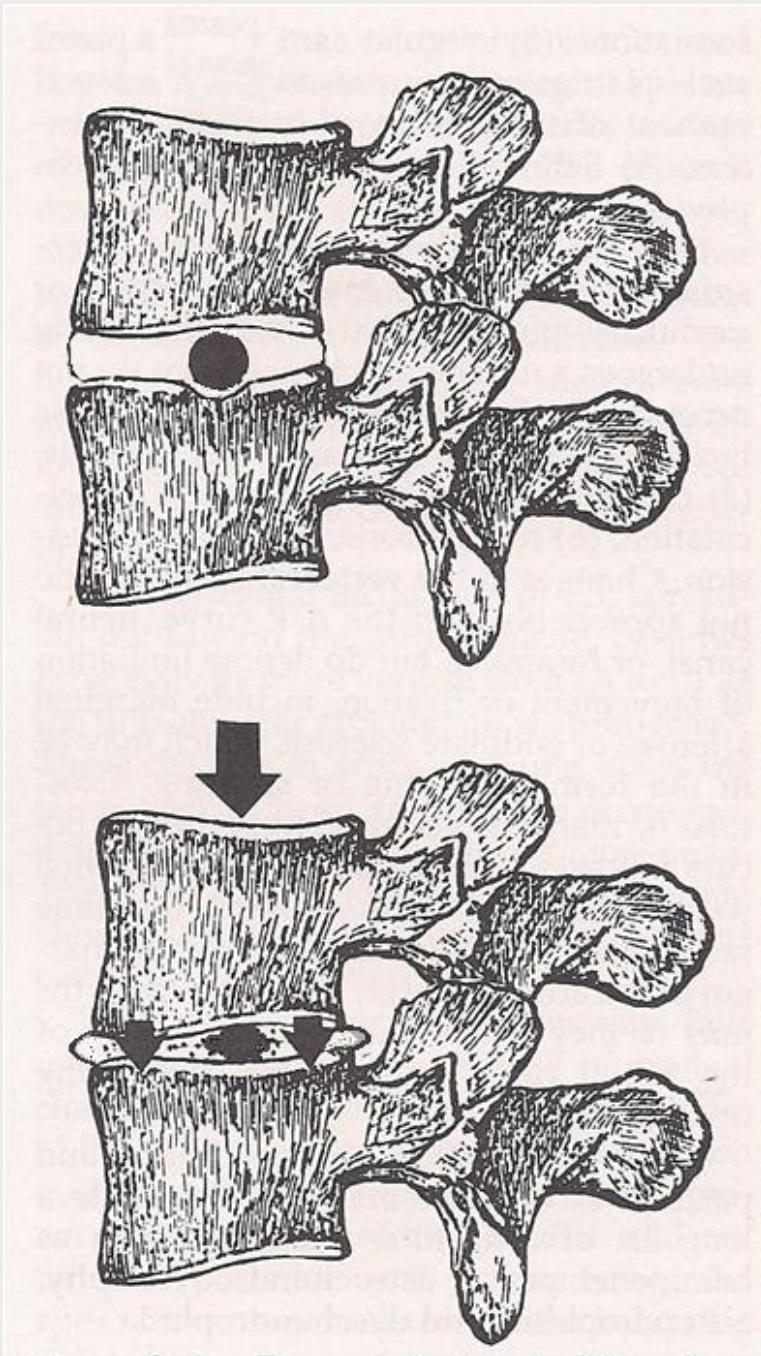
The projections on the edges of the disc
compress the sciatic nerve roots
that pass close



Varying pressure depending on the position of the body

When lying down, the pressure is minimal, the disc can rehydrate
In other positions, the disc is compressed to varying degrees

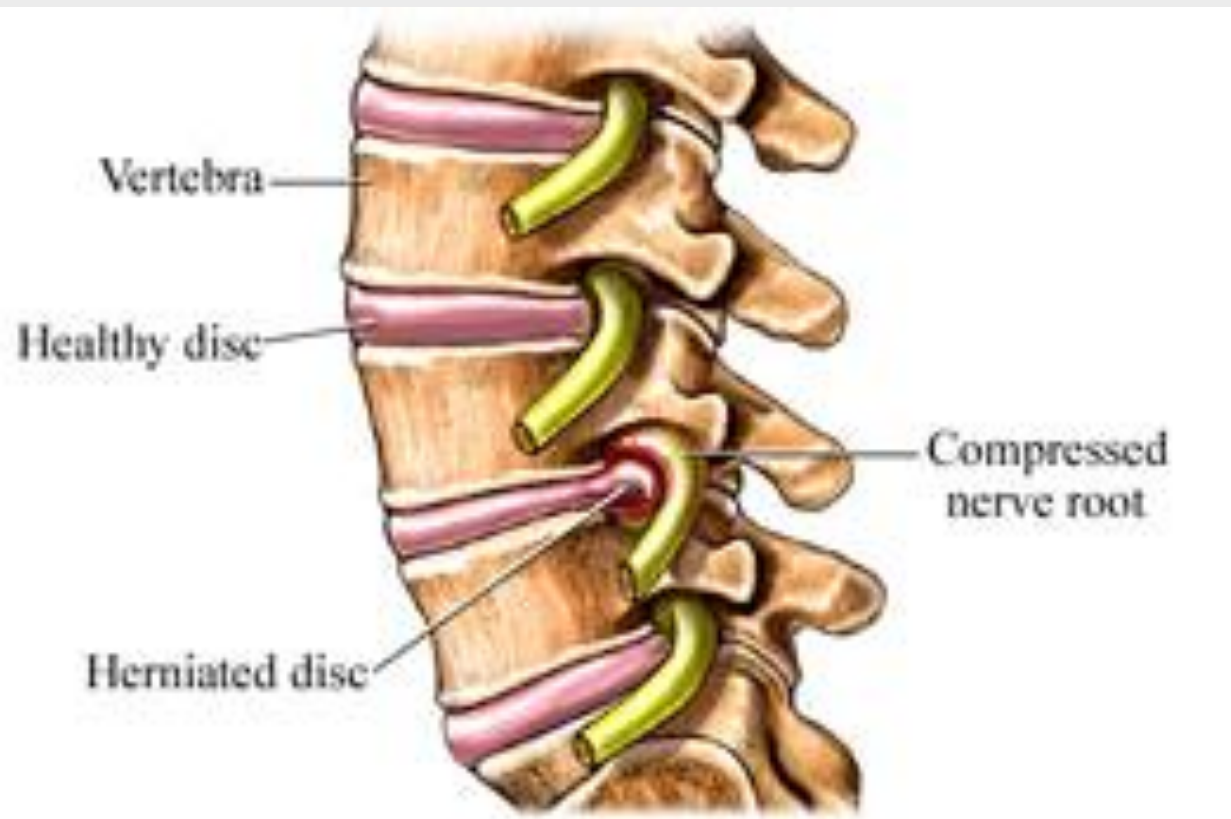




in short

When the pressure on the discs
is too high or lasts too long,
this results **in each**
intervertebral disc:

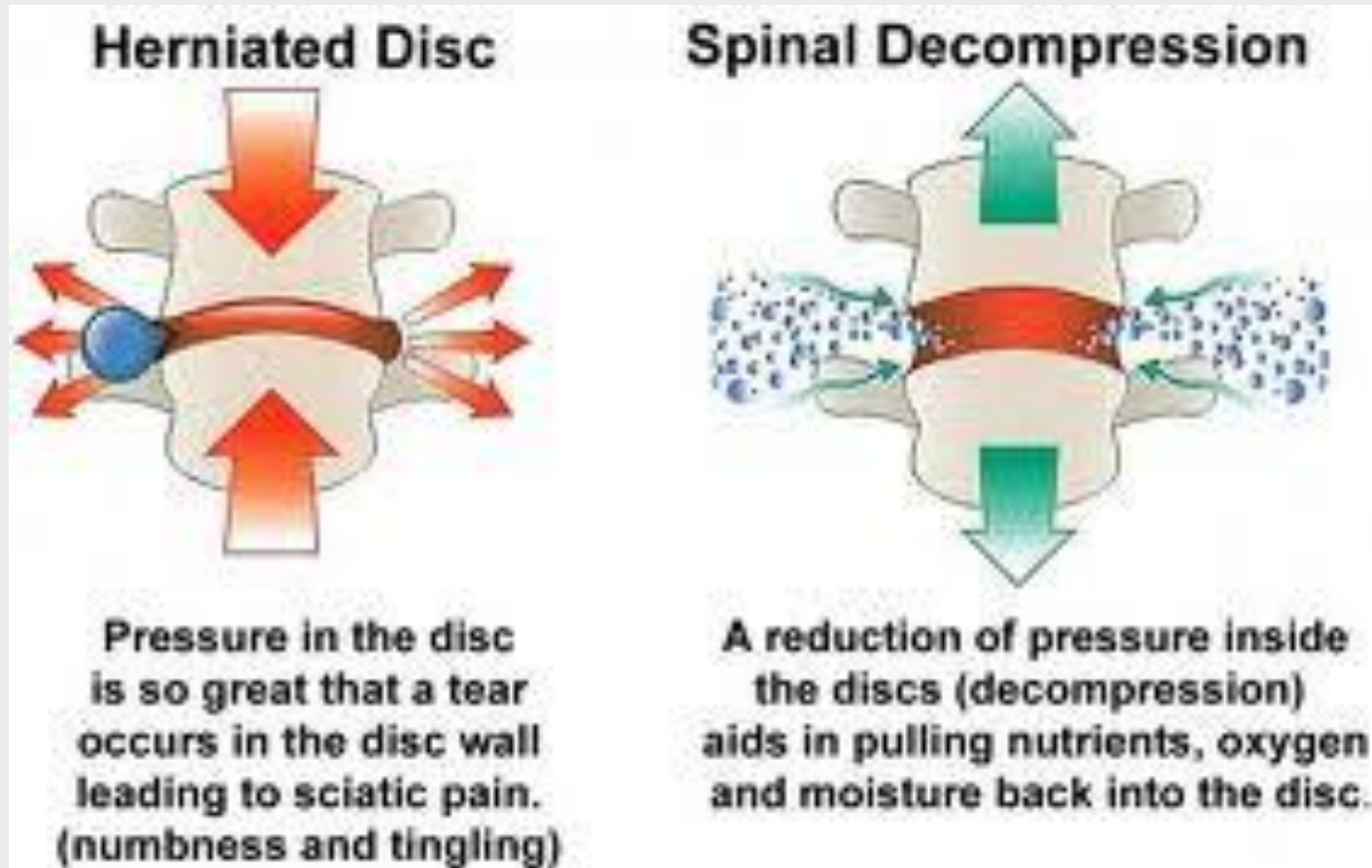
- The water in the nucleus pulposus is driven out (we say that the disc dehydrates)
- The disc height decreases and it protrudes on the edges
- The roots of the sciatic nerve that pass nearby are compressed



In this patient
the compressed inter
vertebral disc
protrudes
and sends a hernia
on the root of the sciatic
nerve
that passes nearby

In a lying position, the disc:

- Rehydrates and regenerates
- Inflates,
- Found its flexibility and resistance
- Its height increases,
- The roots of the sciatic nerve are less compressed.



Advice to regenerate the intervertebral discs of people with low back pain or chronic sciatica

- At least 8 hours of rest lying down for the night. It is best to sleep, but this is not indispensable.
- Even people who sleep less than 8 hours must regenerate their spinal discs by resting lying during 8 hours
- During the day, **as long as the pain is acute**, there must be:
 - 1 hour lying position every two hours.
 - and fit one's life accordingly.

The amount of rest in the lying position should be adjusted:

If pain persists, increase rest periods. Example:

- **1 hour resting lying in alternation with one hour of activity.**

If the pain decreases, increases the activity periods, but usually the patient who has had painful episodes has an interest in maintaining a lifetime rule of intermittent rest. For example, the patient maintains the following rule for lifetime: - **1 hour lying position every four hours.**

be careful!

- **The seating position is not rest for the spine as it continues to support the weight of the head and trunk**
- **The seating position rests only the lower limbs**
- **The rest in supine position, prone or side (left or right) really helps rest the spine and intervertebral discs which are regenerated in these positions**

Annex

and additional informations

Walking: yes

Trampling: No

- **The trampling in standing position (cooking, dishes, cleaning, queuing) is not good for the spine**
- **On the other hand, a brisk walk of 30 minutes per day is recommended**
- It also helps to fight against the aerobic deconditioning generated by modern life
- It has been demonstrated that the practice of regular aerobic physical activity such as brisk walking, reduces the risk of low back pain

Advice to regenerate intervertebral disc of people with low back pain or sciatica

40 minutes in the pool

can replace one hour of rest in lying position, provided swim or do the exercises that you can see in the following videos:

- Exercices pour lombalgies en petite piscine
<http://youtu.be/ZyY5tt1r9tg>
- Nage dissociée une nouvelle arme contre la lombalgie
<http://youtu.be/ZbwZRFPqwCA>
- Nages pour lombalgies, dorsalgiques, cervicalgiques
http://youtu.be/LRR_3xFdDvk



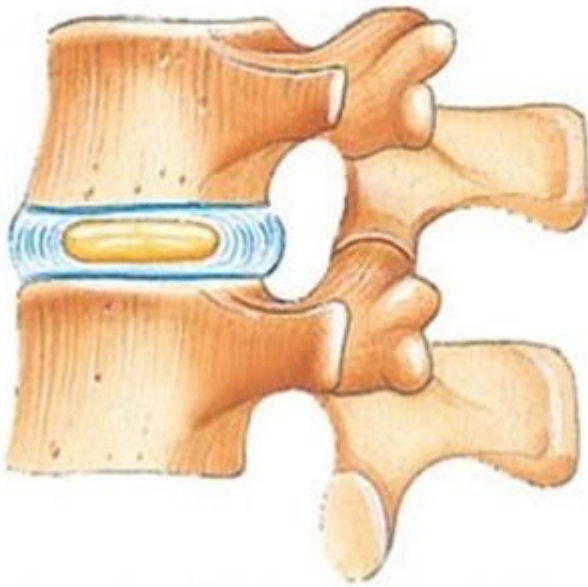
Overweight



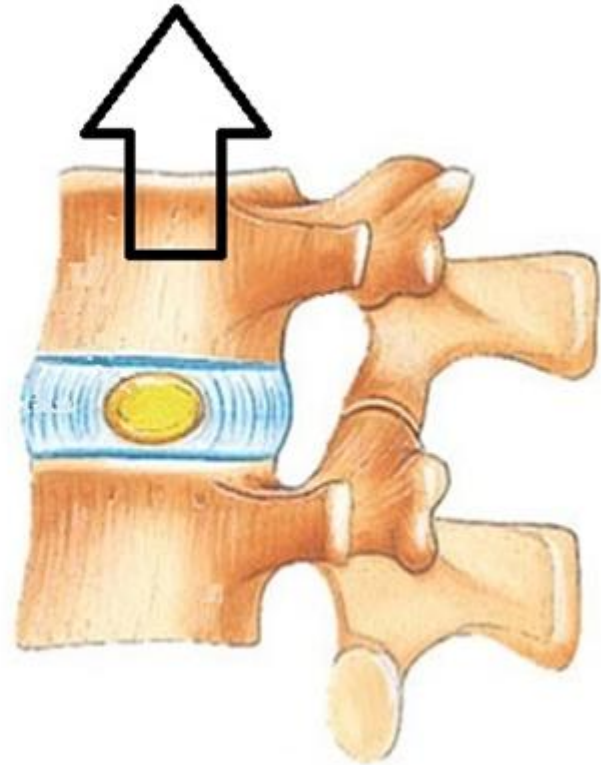
- The body weight is detrimental to the intervertebral discs
- Each extra kilo increases greatly the pressure in the disc

The abdominal breathing for making efforts

- decreases the pressure on the discs in all positions,
- should be used during each exercise or activity dangerous to the spinal column



Natural breathing
and others type of breathing



Lifting piston effect of the
abdominal breathing for making efforts

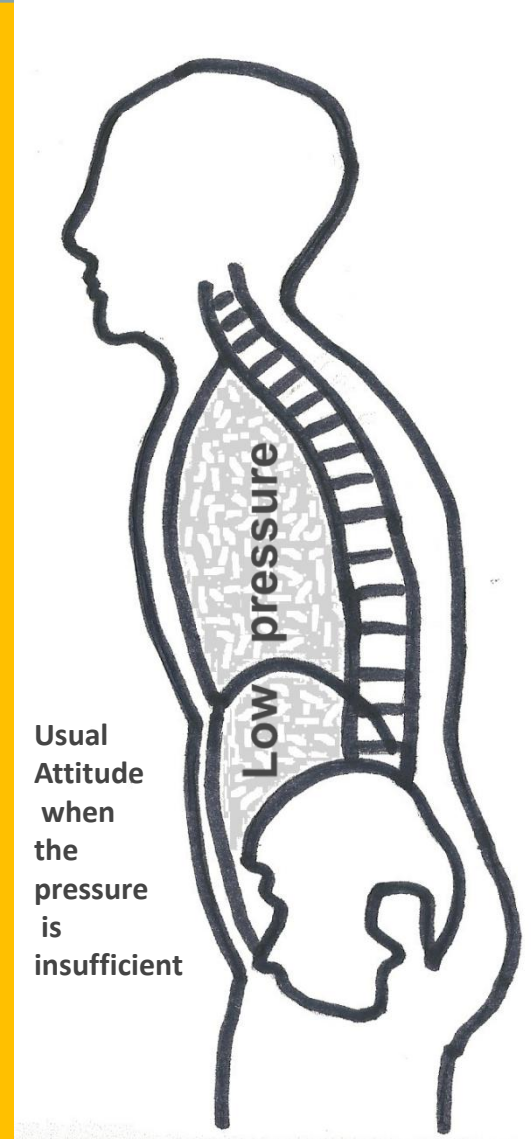
Abdominal breathing for making efforts can be learned in 2 minutes, because it is very easy

- Simply inspiring, block your breathing and pull your belly.
- It is also recommended to contract the perineum.

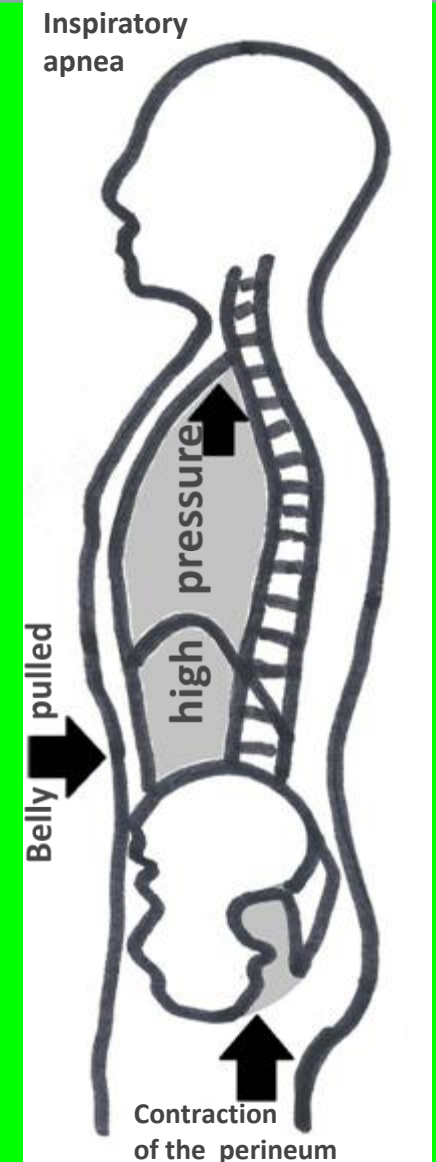
Aim: increase the intra-abdominal pressure and intrathoracic.

Part of the pressure caused by the effort is absorbed by the abdomen and thorax which behave as a piston pneumatic lift

- The dangerous physical activity for spinal column is performed in apnea

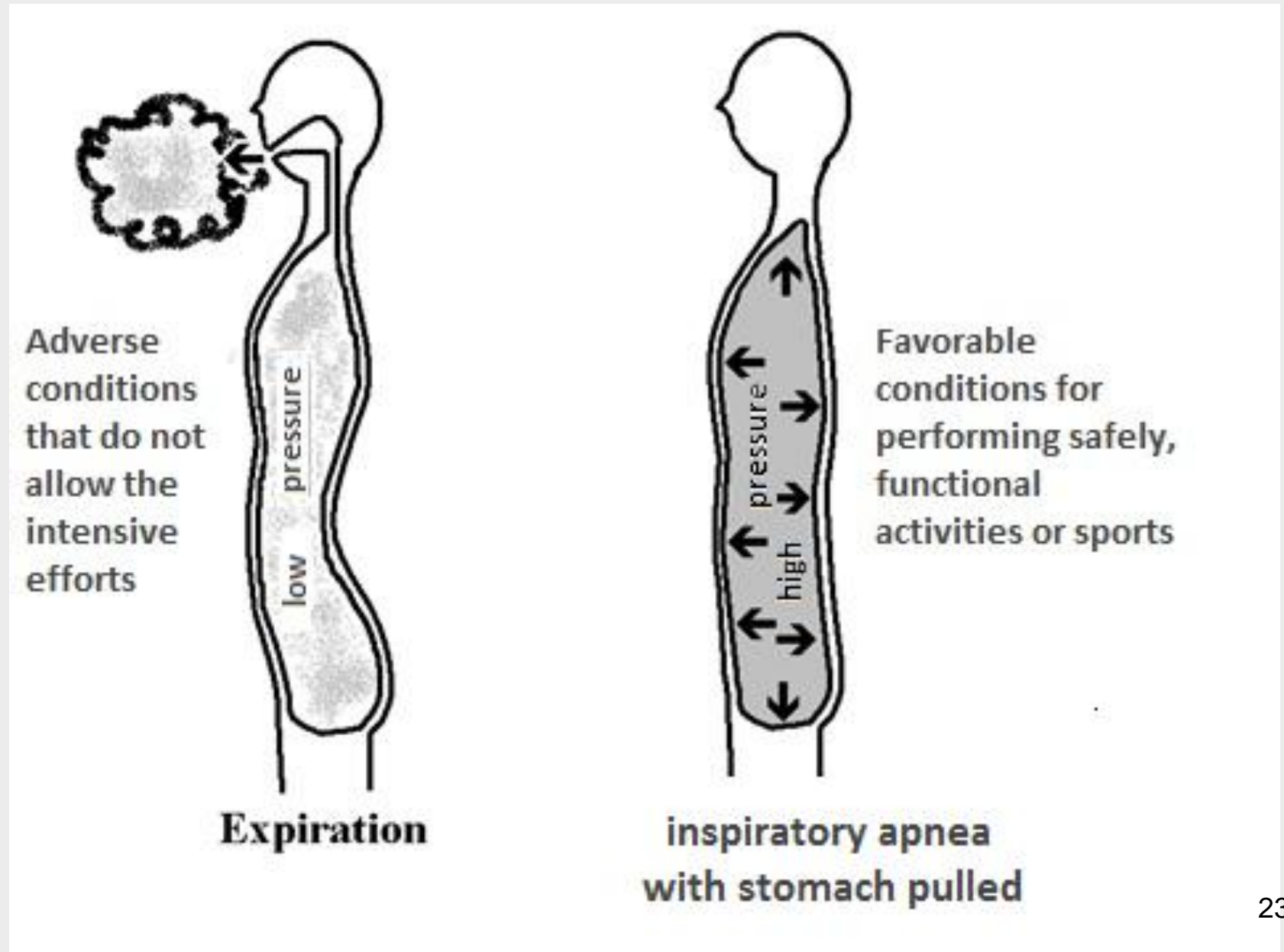


The body weight is carried only on the vertebrae and discs



The effect of "lifting piston" when practicing abdominal breathing for making efforts decreases the pressure in the disc

Another representation of the " abdominal breathing for making efforts "



For more information about the school of the back

Check the blog titled: **Ecole du dos en cas de lombalgies**

<http://reeducationtransmissiondessavoirs.hautetfort.com/archive/2013/03/19/ecole-du-dos-en-cas-de-lombalgies.html>

For more information about “abdominal breathing in order to make efforts”:

<http://reeducationtransmissiondessavoirs.hautetfort.com/archive/2012/02/20/respiration-abdominale-d-effort.html>