

The 4 S Method for treating low back pain

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Learning outcomes

- Lumbar disc prolapse a case presentation
- Why do disc prolapses resolve naturally
- Exercises for low back pain
- Doctor, I cannot exercise any movement hurts my back
- Motivate / Inspire / Be kind







Disclosures

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8 results

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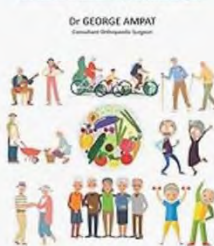
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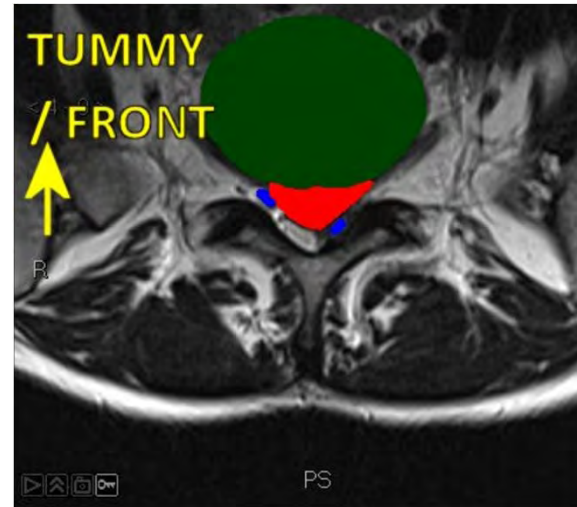
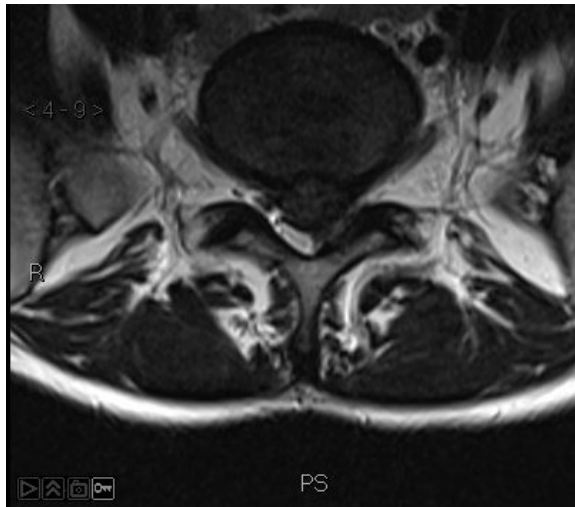
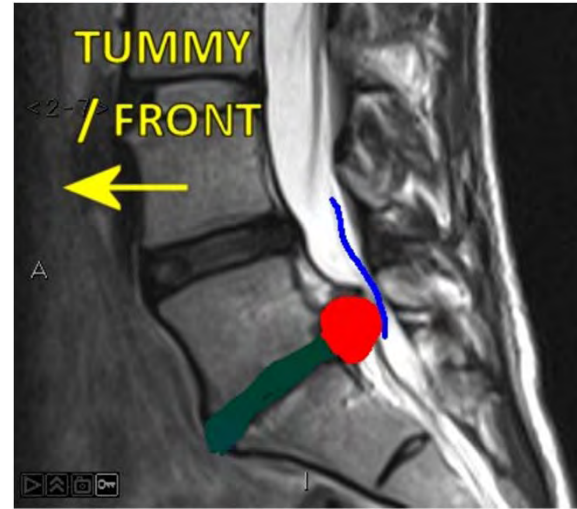
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Case Presentation



SPORT Trial

- **Study Design** — Concurrent prospective randomized and observational cohort studies.
- **Objective** — To assess the 8-year outcomes of surgery vs. non-operative care.
- **Methods** — Surgical candidates with imaging-confirmed lumbar intervertebral disc herniation meeting SPORT eligibility criteria enrolled into prospective randomized (501 participants) and observational cohorts (743 participants) at 13 spine clinics in 11 US states.



SPORT Trial Results / Benefits

	Surgery		
	Baseline	Change	Final at 8 yrs
SF-36 bodily pain	23.4	45.3	68.7
SF-36 physical function	32.6	42.2	74.8
Oswestry disability index	54.7	36.2	18.5

SPORT Trial Complications / Risks

- The average blood loss was 70 cc in.
- Only 6 patients in total required intra-operative transfusions.
- There were no perioperative mortalities.
- The most common surgical complication was dural tear 3% of cases
- One death occurred within 90 days post-surgery related to heart surgery at another institution; the death was judged to be unrelated and was reported to the Institutional Review Board and the Data and Safety Monitoring Board.

SPORT Trial - Conclusion

- **Conclusion** — Carefully selected patients who underwent surgery for a lumbar disc herniation achieved greater improvement than non-operatively treated patients; there was little to no degradation of outcomes in either group (operative and non-operative) from 4 to 8 years.



Part of the story

	Surgery		
	Baseline	Change	Final at 8 yrs
SF-36 bodily pain	23.4	45.3	68.7
SF-36 physical function	32.6	42.2	74.8
Oswestry disability index	54.7	36.2	18.5

	Non-operative		
	Baseline	Change	Final at 8 yrs
SF-36 bodily pain	34.8	34.4	69.2
SF-36 physical function	48.4	31.5	79.9
Oswestry disability index	38.6	24.8	13.8

SPINE

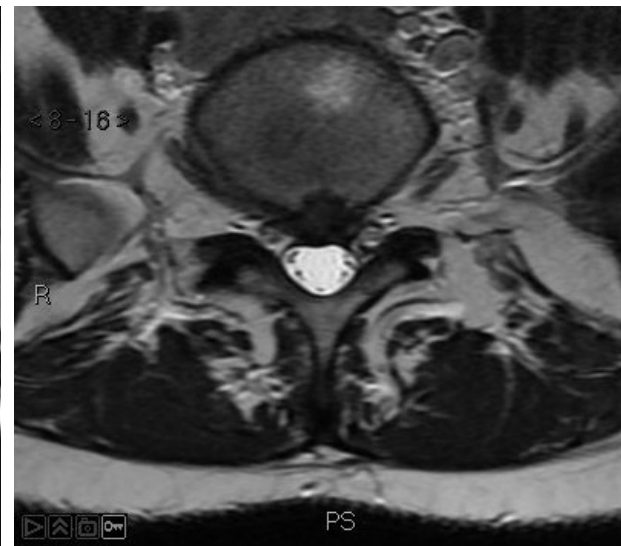
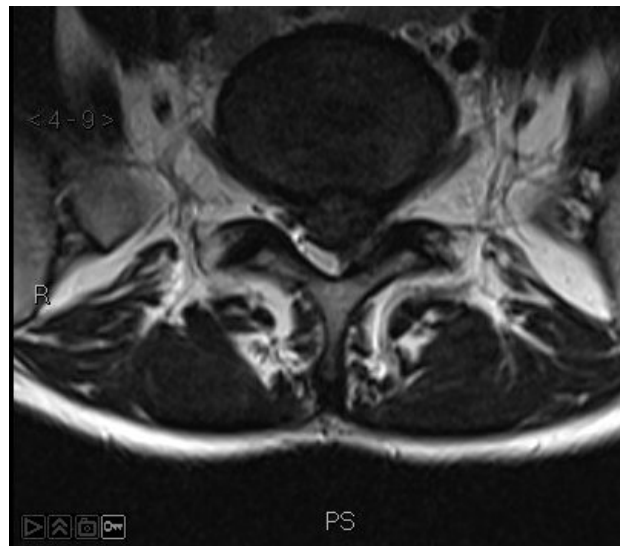


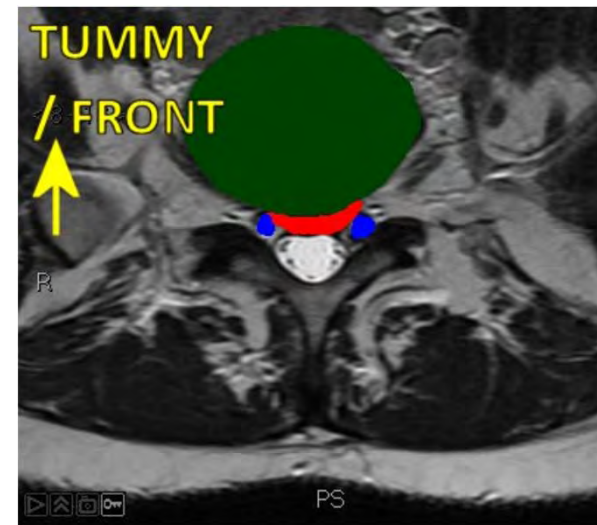
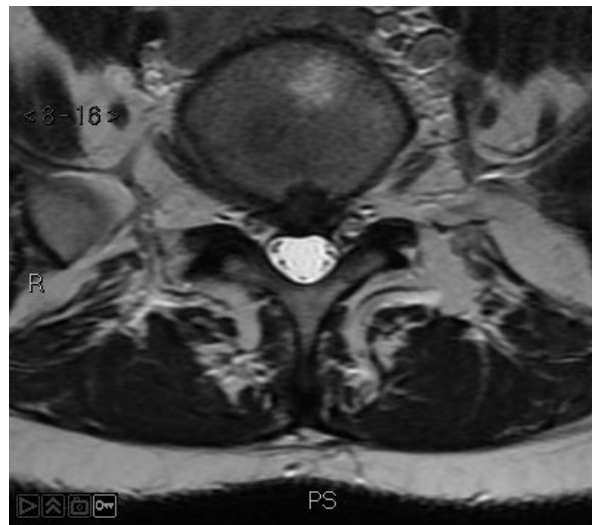
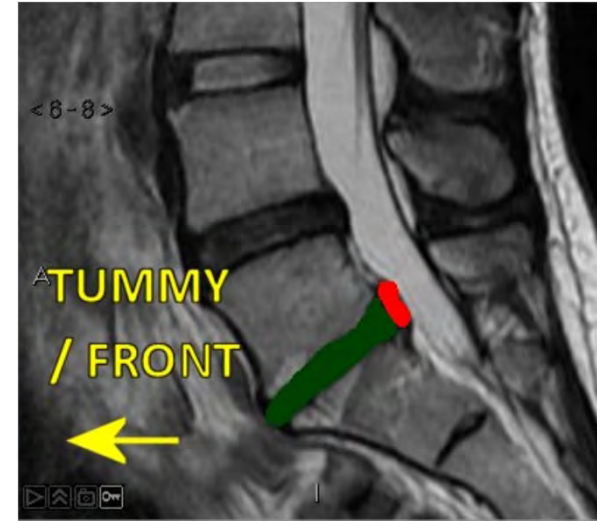
The full story

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Why do disc prolapses resolve naturally?

Review

The Immune Privilege of the Intervertebral Disc: Implications for Intervertebral Disc Degeneration Treatment

Zhen Sun^{1#}, Bing Liu^{2#}, Zhuo-Jing Luo^{1,2,✉}

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2. Department of Radiology, Xijing Hospital, Fourth Military Medical University, Western Changde Road, Xi'an, 710032, Shaanxi Province, P. R. China.

#These authors contributed equally to this work.

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Abstract

The intervertebral disc (IVD) is the largest avascular organ of the body. It is composed of three parts: the nucleus pulposus (NP), the annulus fibrosus (AF) and the cartilaginous endplate (CEP). The central NP is surrounded by the AF and sandwiched by the two CEPs ever since its formation. This unique structure isolates the NP from the immune system of the host. Additionally, molecular factors expressed in IVD have been shown inhibitive effect on immune cells and cytokines infiltration. Therefore, the IVD has been identified as an immune privilege organ. The steady state of immune privilege is fundamental to the homeostasis of the IVD. The AF and the CEP, along with the immunosuppressive molecular factors are defined as the blood-NP barrier (BNB), which establishes a strong barrier to isolate the NP from the host immune system. When the BNB is damaged, the auto-immune response of the NP occurs with various downstream cascade reactions. This effect plays an important role in the whole process of IVD degeneration and related complications, such as herniation, sciatica and spontaneous herniated NP regression. Taken together, an enhanced understanding of the immune privilege of the IVD could provide new targets for the treatment of symptomatic IVD disease. However, the underlying mechanism above is still not fully clarified. Accordingly, the current study will extensively review and discuss studies regarding the immune privilege of the IVD.

Key words: intervertebral disc, nucleus pulposus, annulus fibrosus, immune privilege, auto-immune response

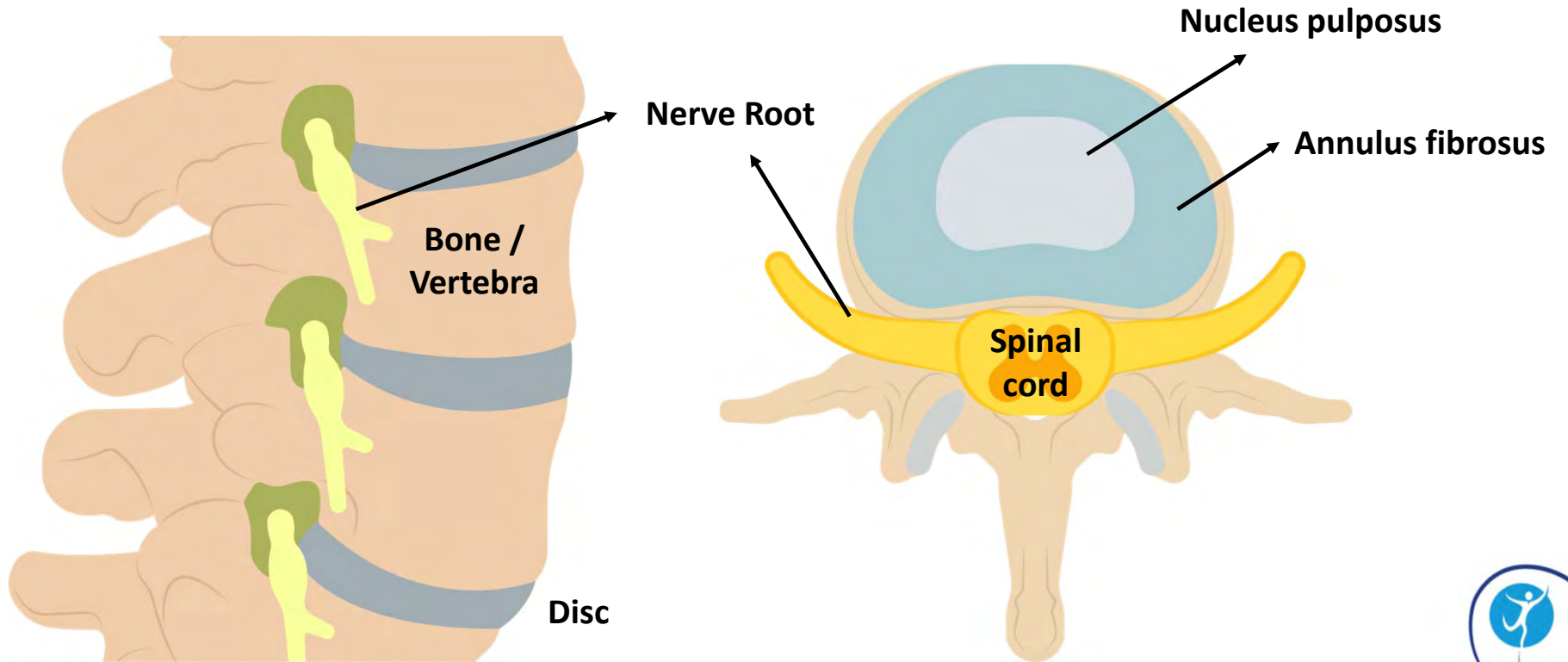
Introduction

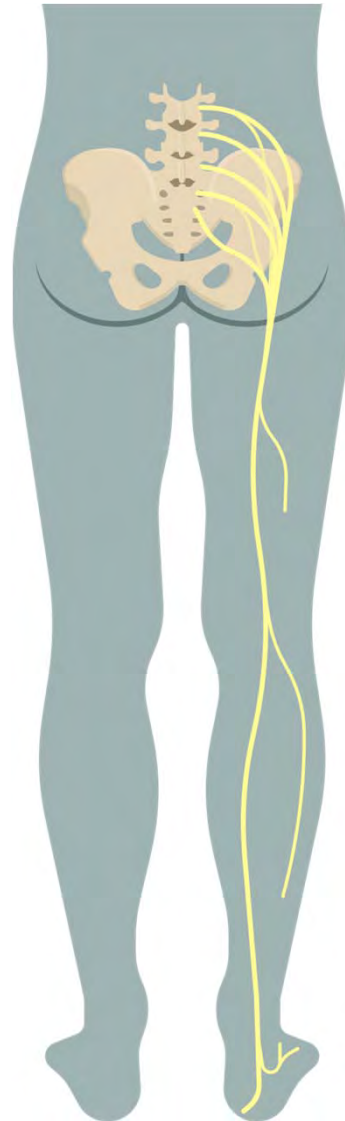
Intervertebral disc (IVD) degeneration is one of the most common contributors to spinal degenerative disease, which leads to individual sufferings such as acute/chronic pain, disability and psychological problems, causing enormous social and economic burden [1, 2]. Current strategies for IVD degeneration management include conservative and surgical treatment [3]. Recently, biological options, such as bio-materials application, cell translation and genetic modification, have shown promising beneficial effects on IVD regeneration [4-7]. However, the pathologi-

cal process of IVD degeneration is still not fully understood.

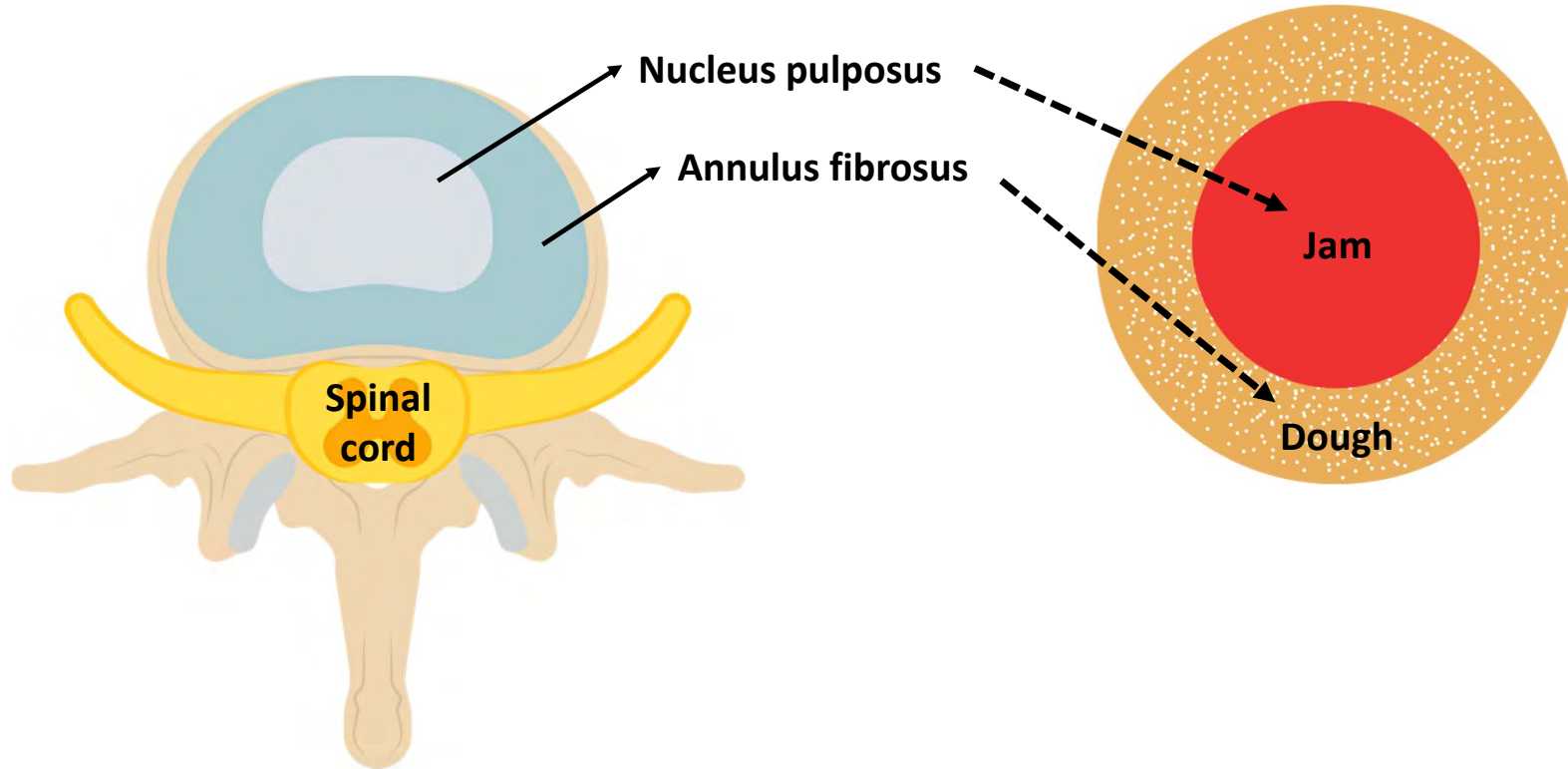
As the largest avascular organ of the body, the IVD sits between the vertebrae and is responsible for the support, durability and flexibility of the spine [8]. Anatomically, the IVD is a complex tissue comprising of three parts: a central proteoglycan-rich core, the nucleus pulposus (NP), an outer circumferential ring of fibrocartilage, the annulus fibrosus (AF), and the two cartilaginous endplates (CEP) adjoining the vertebra bodies [9]. The gelatinous NP is composed of cell clusters embedded in a proteoglycan-collagen-

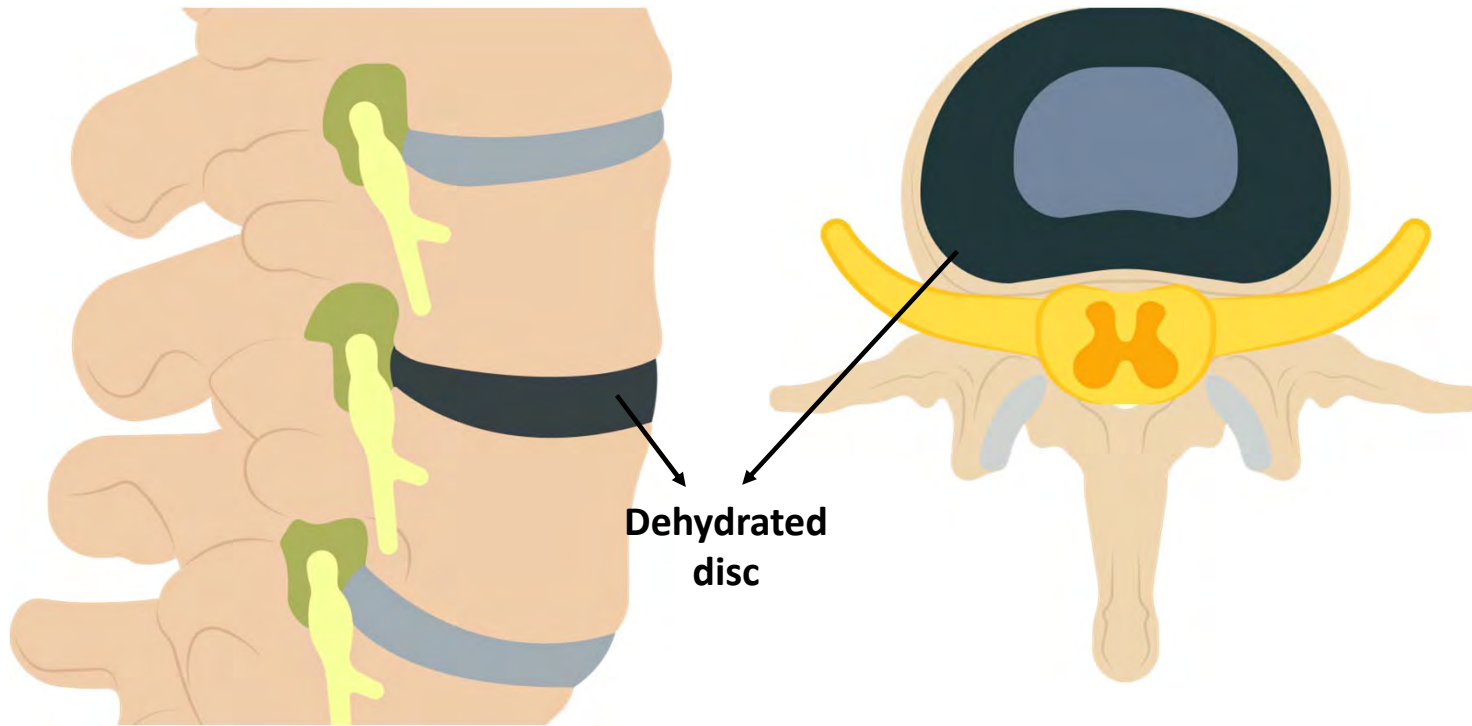


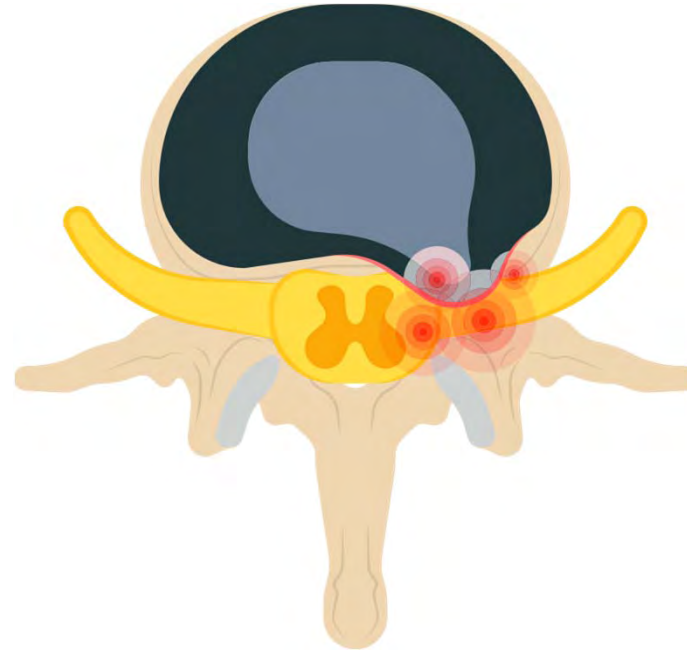
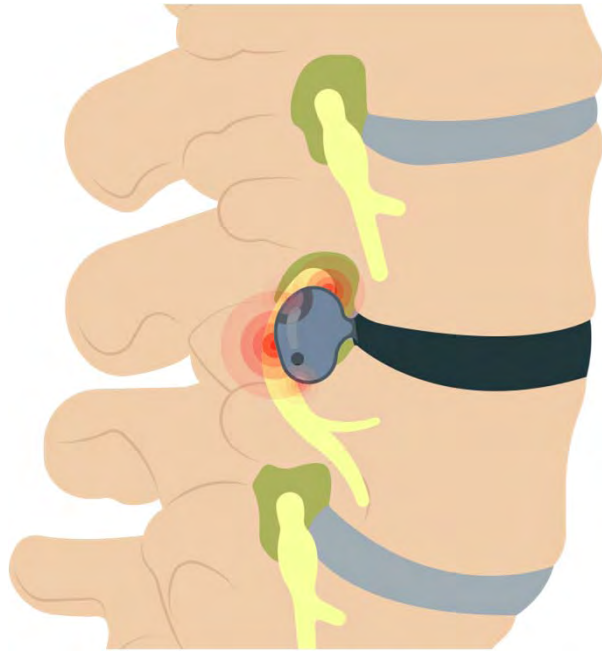




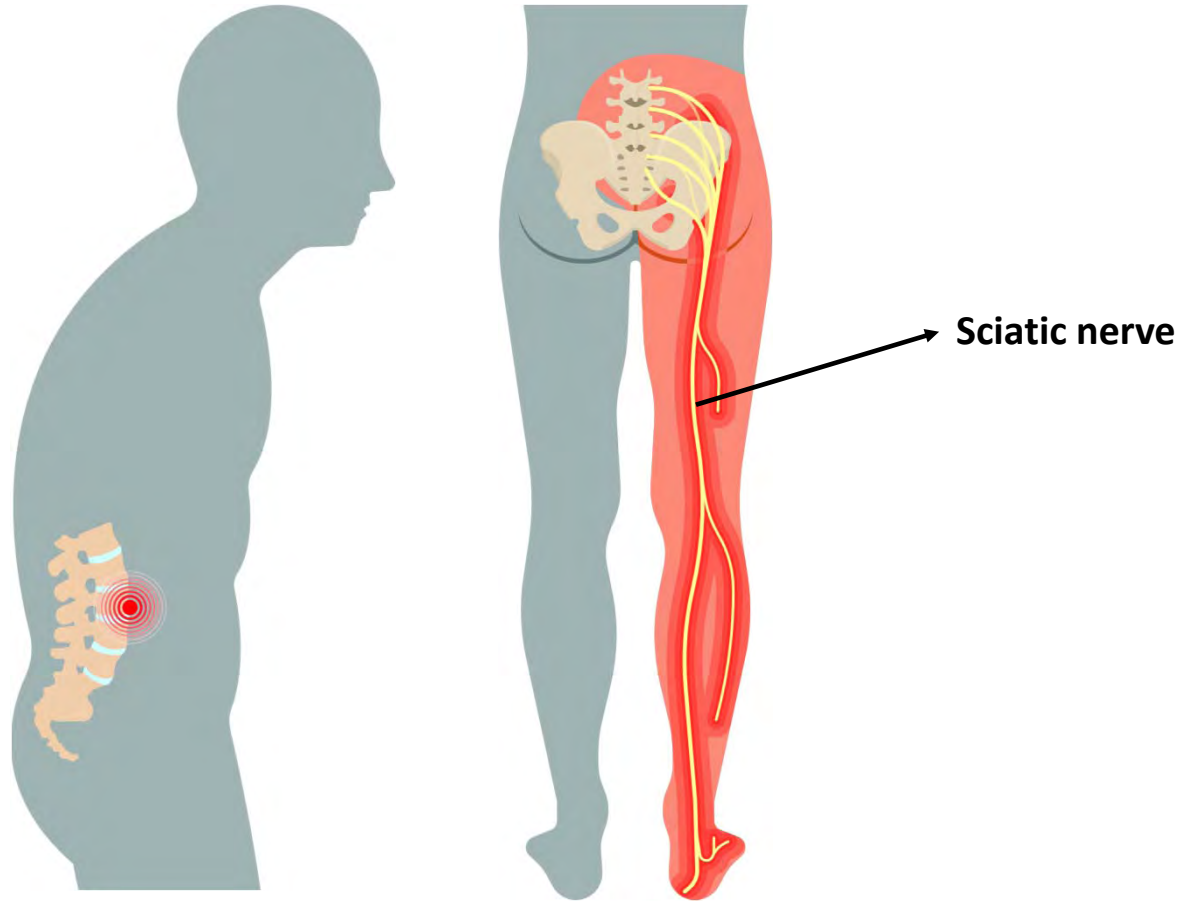
The nerves from the
lower back join together
to form the Sciatic nerve





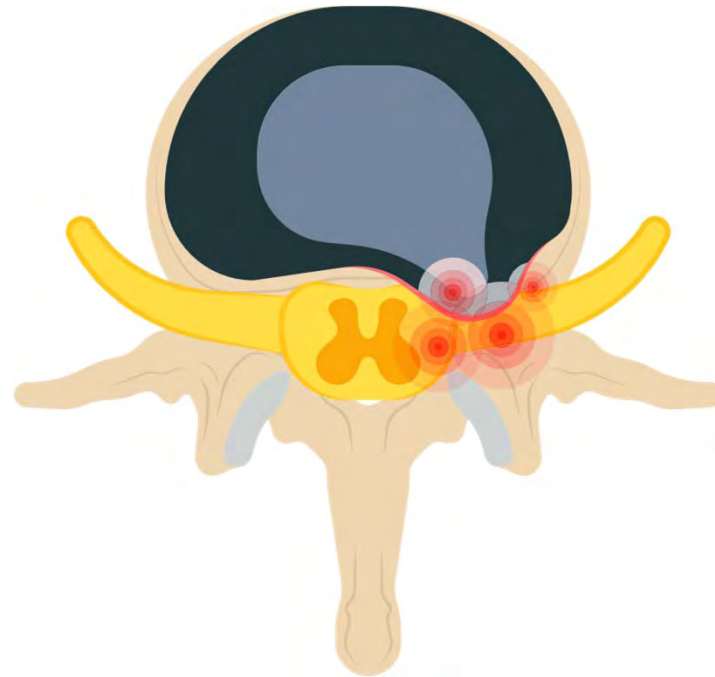


The body assumes a bent over posture or tilted to the side posture when in severe pain

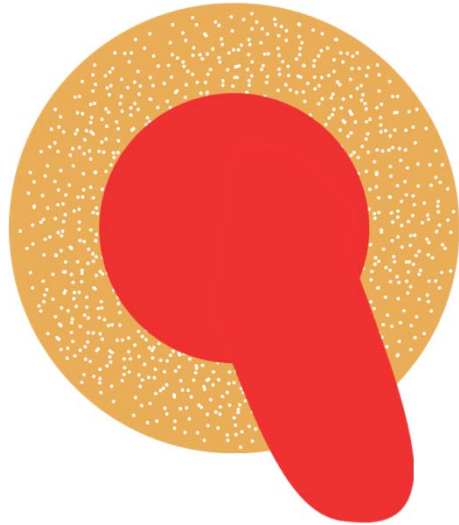


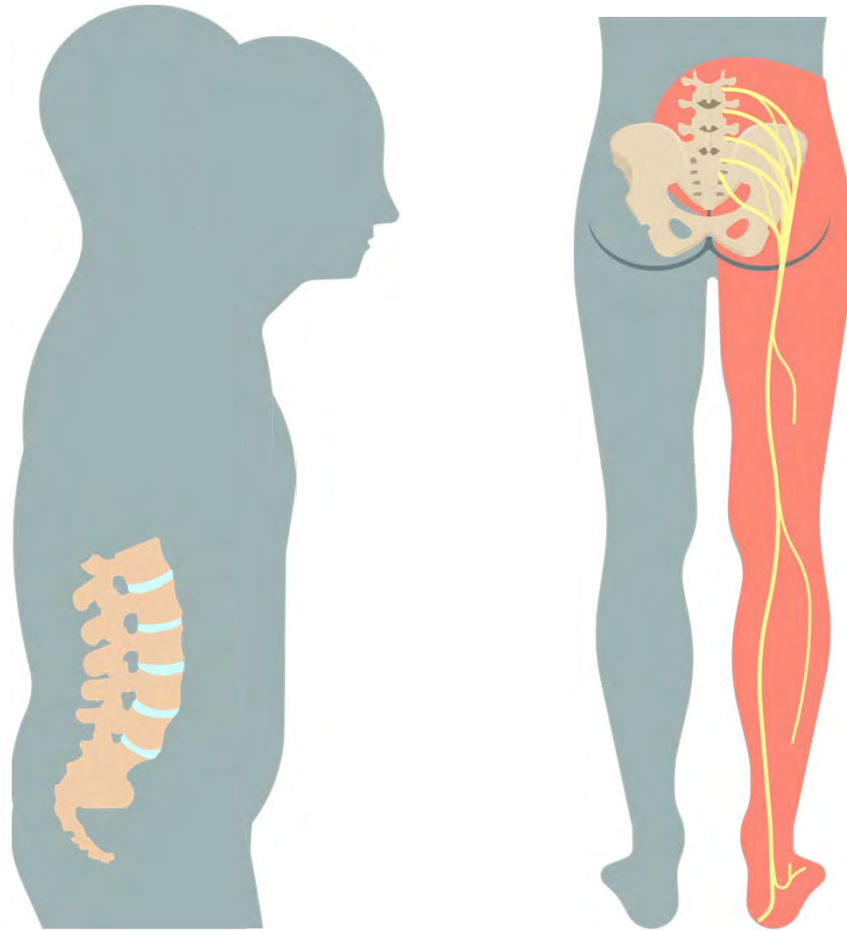


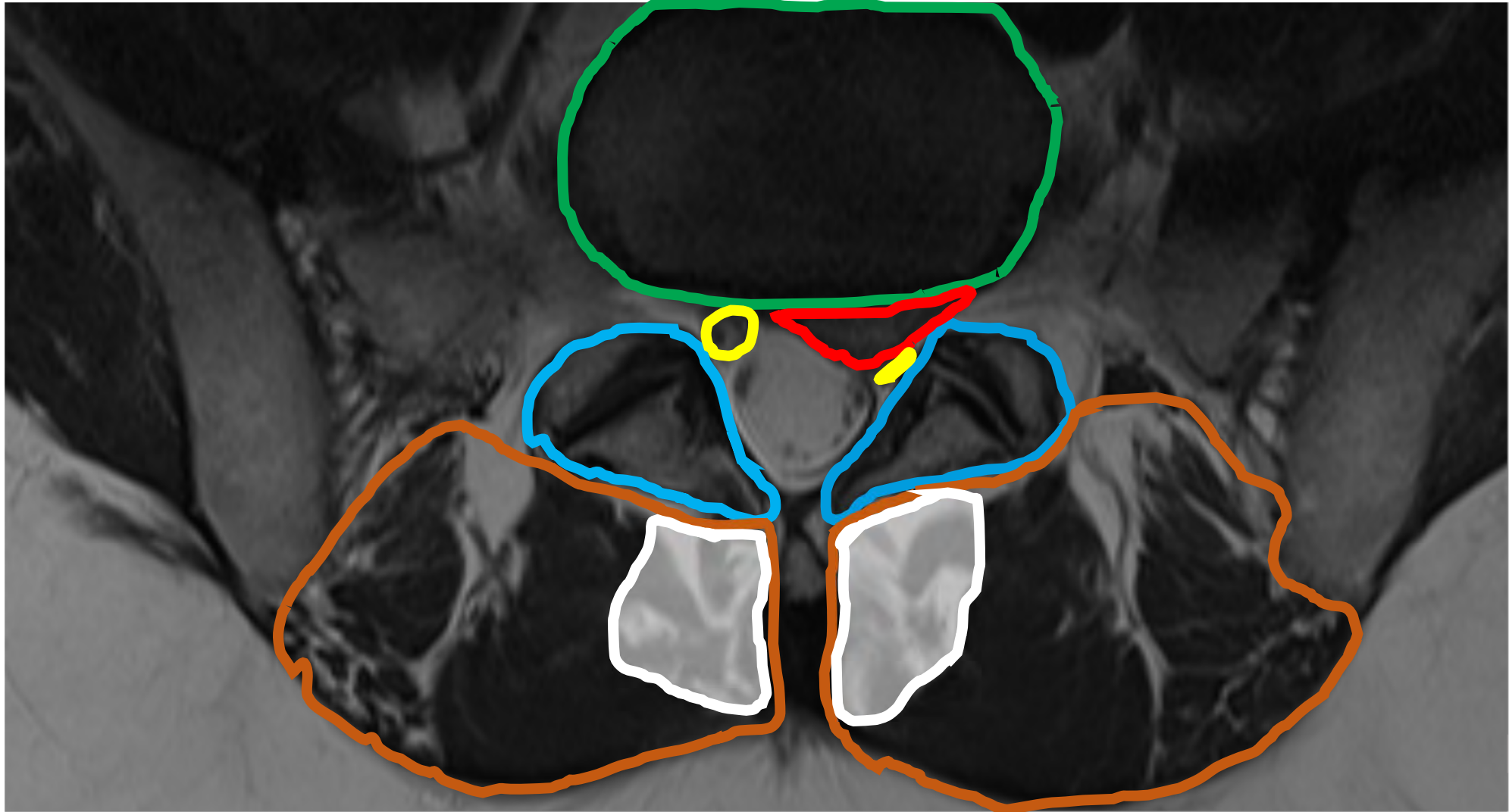
Inflammation causes the macrophages or the body's immune cells to reach the area.



The macrophages eat / phagocytose the disc that has prolapsed





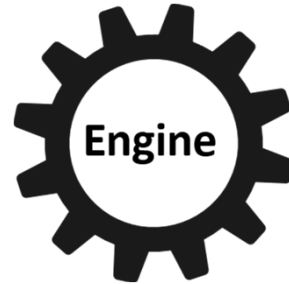


Exercises for low back pain

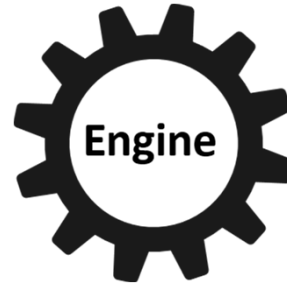


But there is a problem with the gear box....

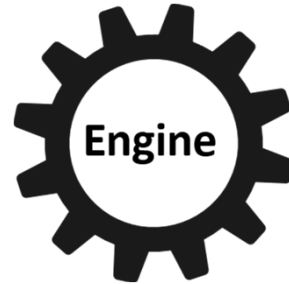


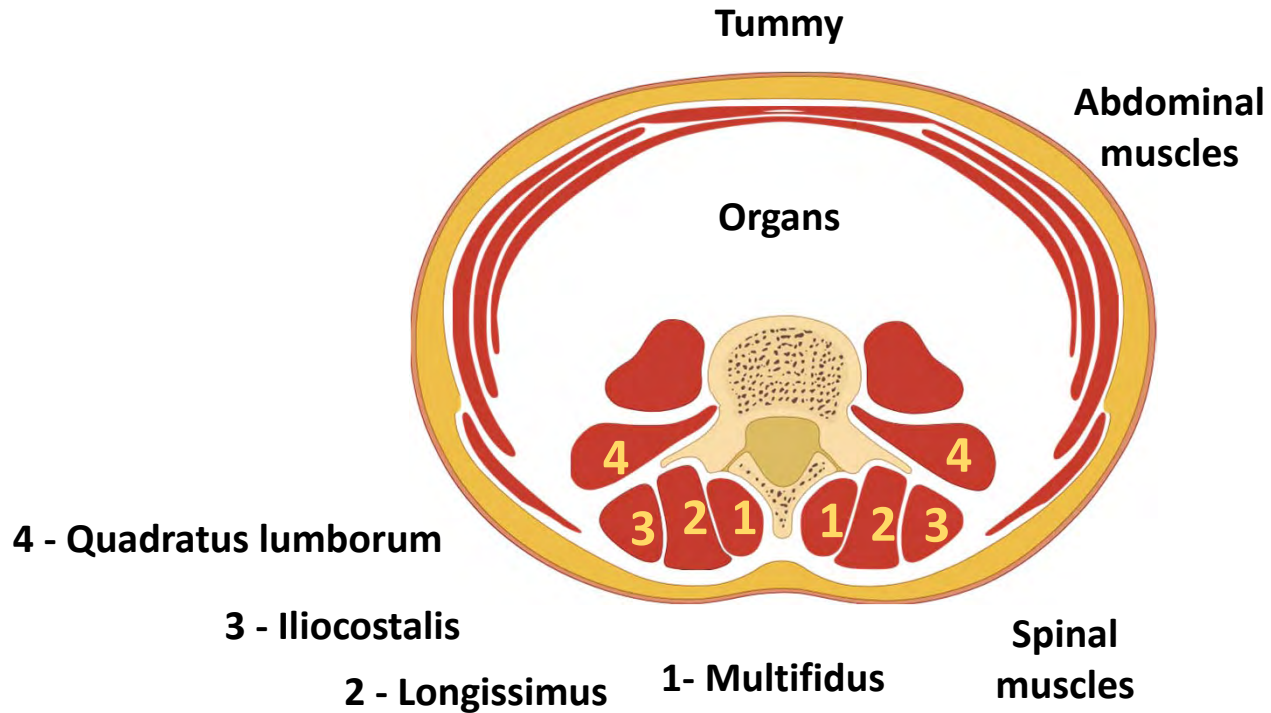


What should happen normally?

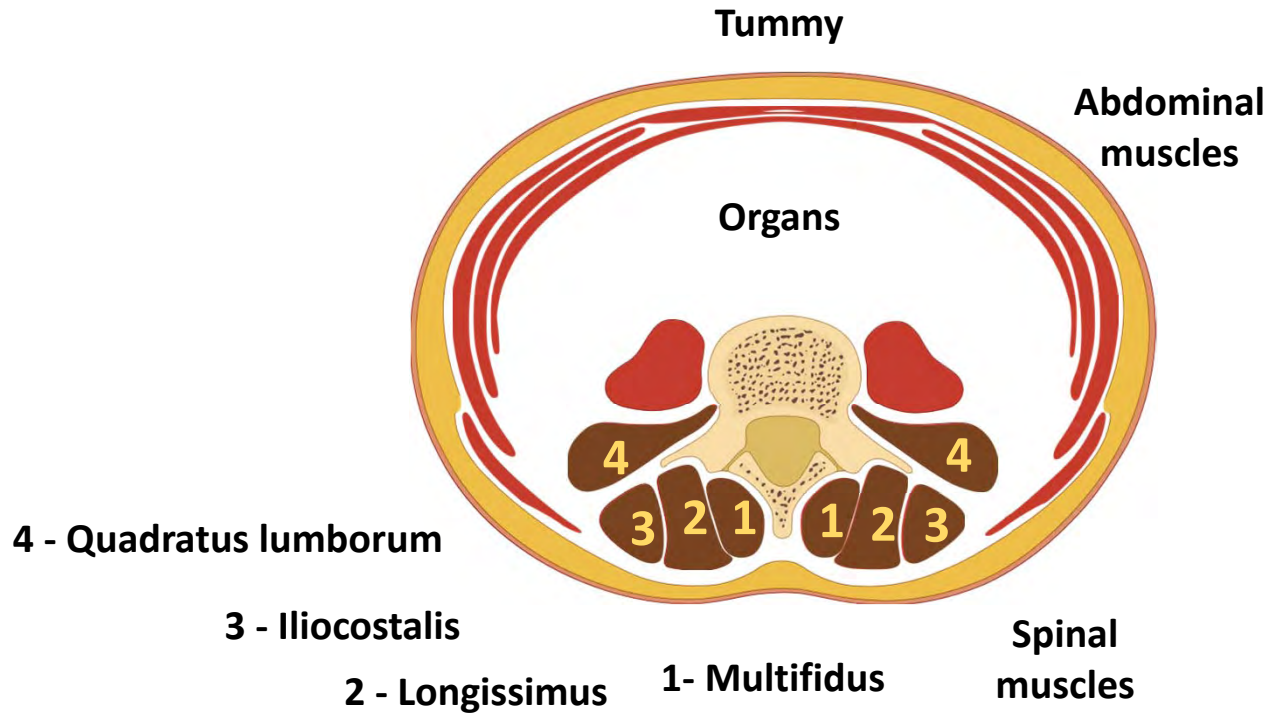




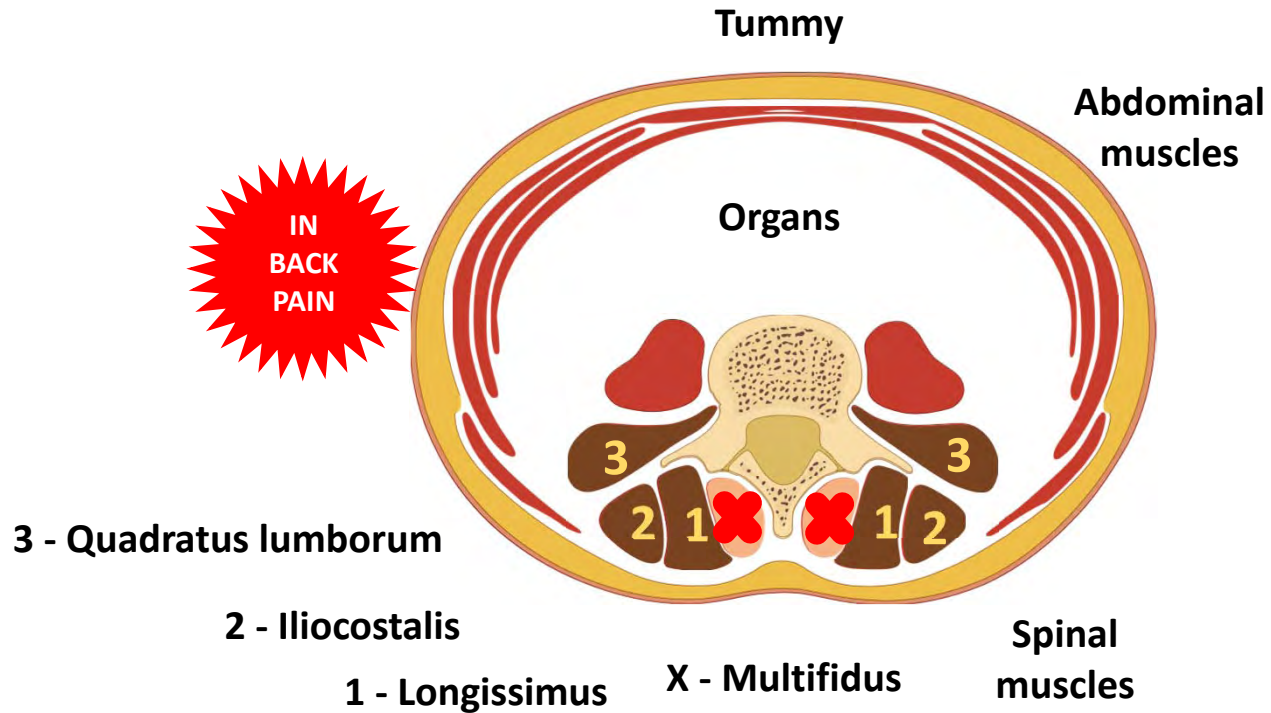




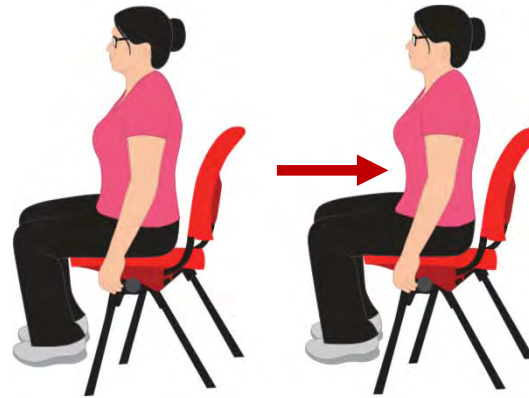
This is what happens normally?

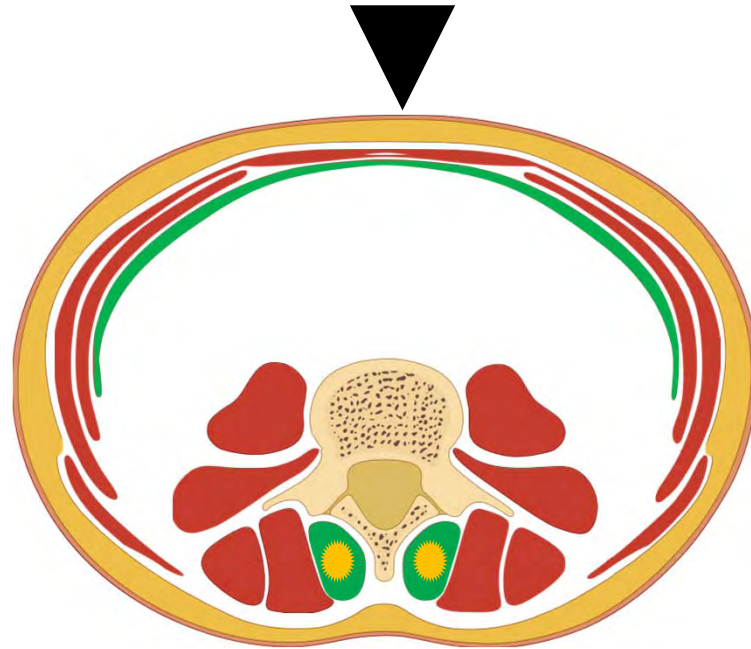


This is what happens in back pain!!!



What can now be done?





Transverse
abdominis

Multifidus



Sitting - 10 repetitions is 1 set. Perform x 3 sets in a day



Standing - 10 repetitions is 1 set. Perform x 3 sets in a day



Lying down - 10 repetitions is 1 set. Perform x 3 sets in a day




Quadruped - 10 repetitions is 1 set. Perform x 3 sets in a day

**Total - 120 repetitions
in a day**





- 1 - Synchrony 6 weeks
- 2- Stability 6 weeks
- 3 – Strength 6 months
- 4 – Sustain Lifelong





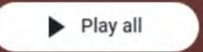
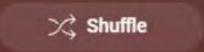
Exercises for Lower Back pain


George Ampat


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Exercise one. Engaging your core, sitting.
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Exercise three. Engaging your core lying down.
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Exercise four. Engaging your core on all fours.
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Exercise five. Level One. Dead bug arm
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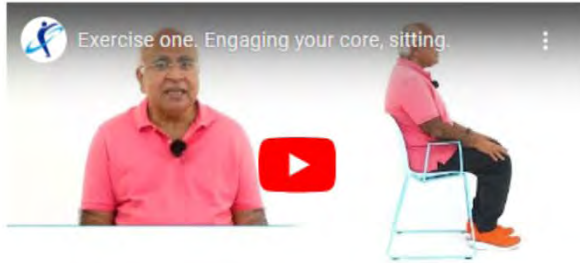
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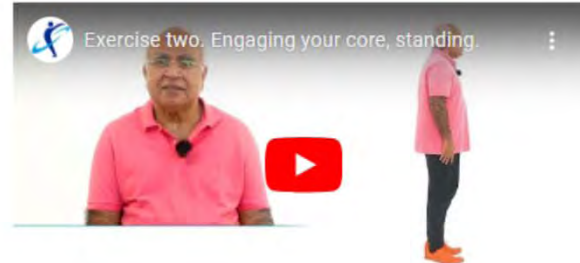


Back

Exercise 1. Engaging your core, sitting.



Exercise 2. Engaging your core, standing.



Exercise 3. Engaging your core lying down.

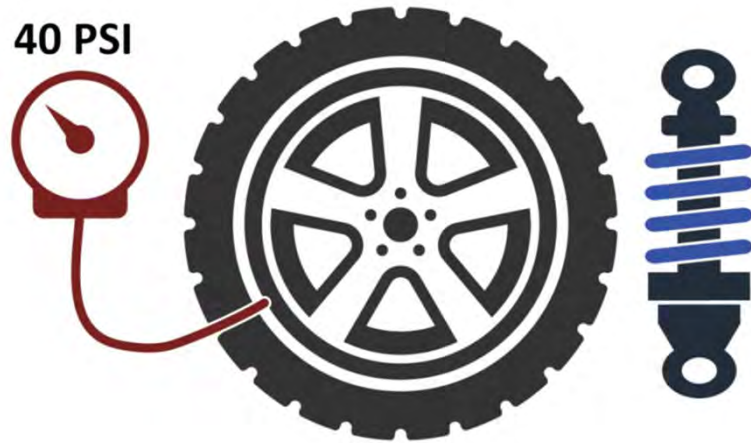


Exercise 3
Engaging your Core, lying down

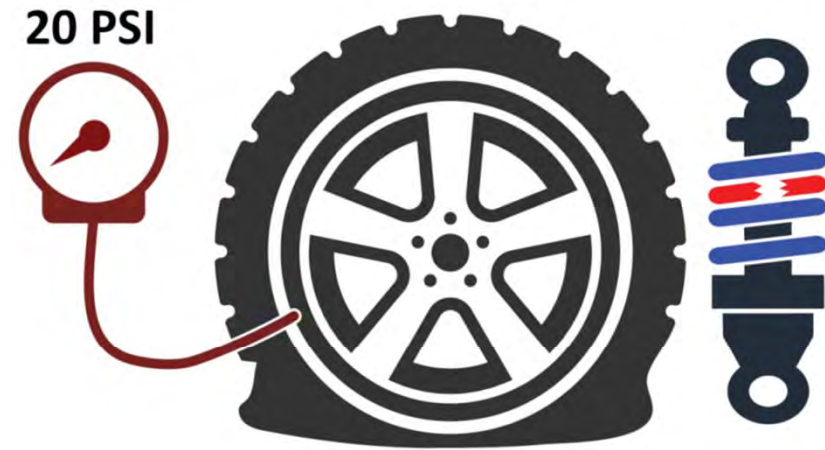
Exercise 4. Engaging your core on all fours.



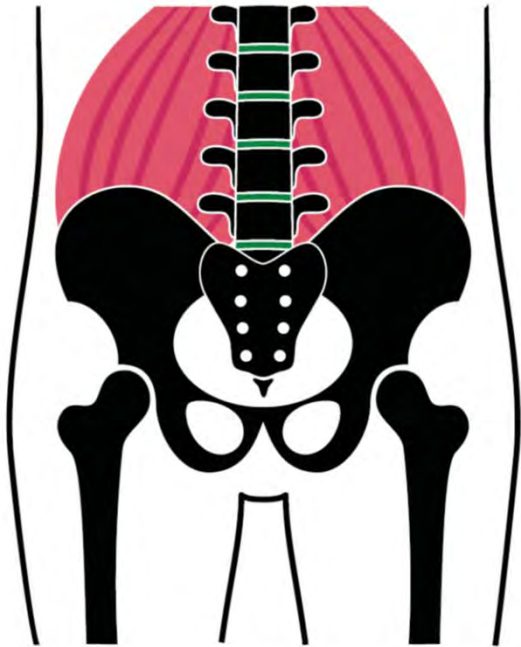
Scenario 1



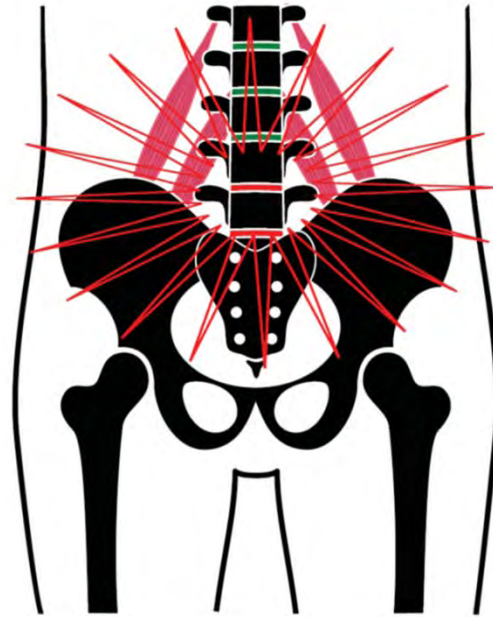
Scenario 2



Scenario 1

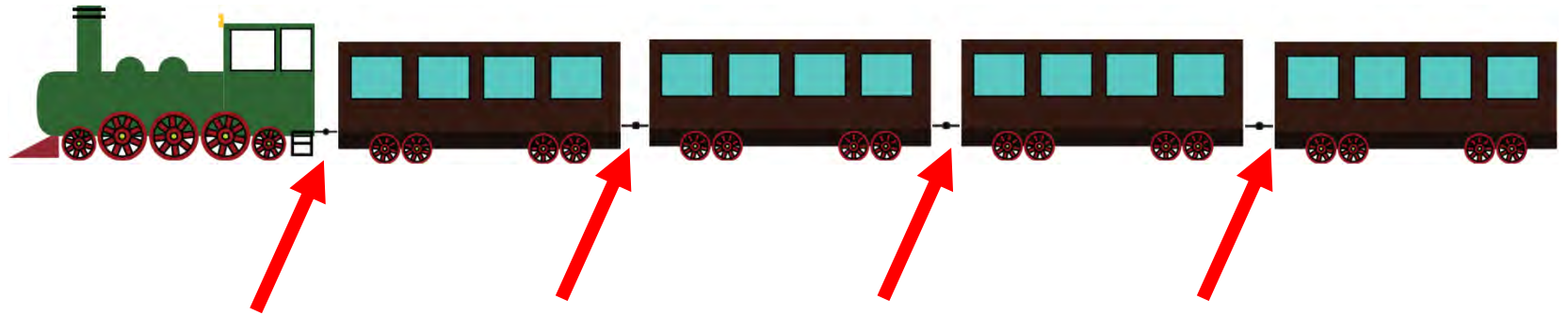


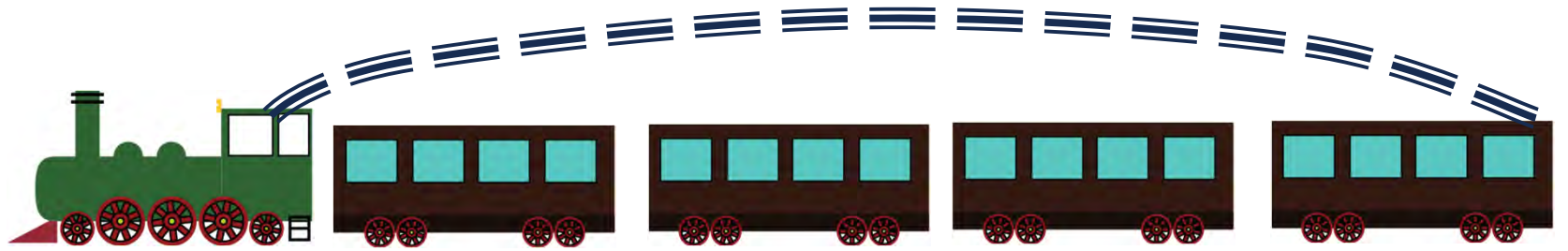
Scenario 2

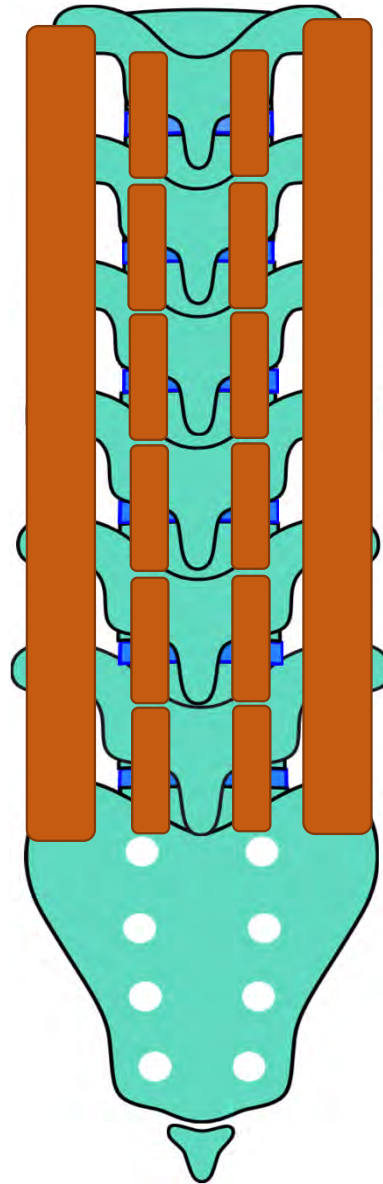


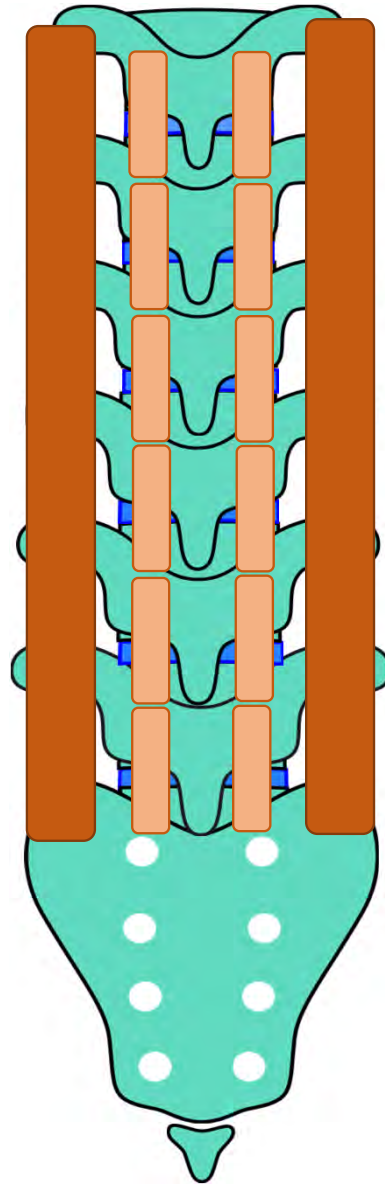
Doctor, I cannot exercise
any movement hurts my
back

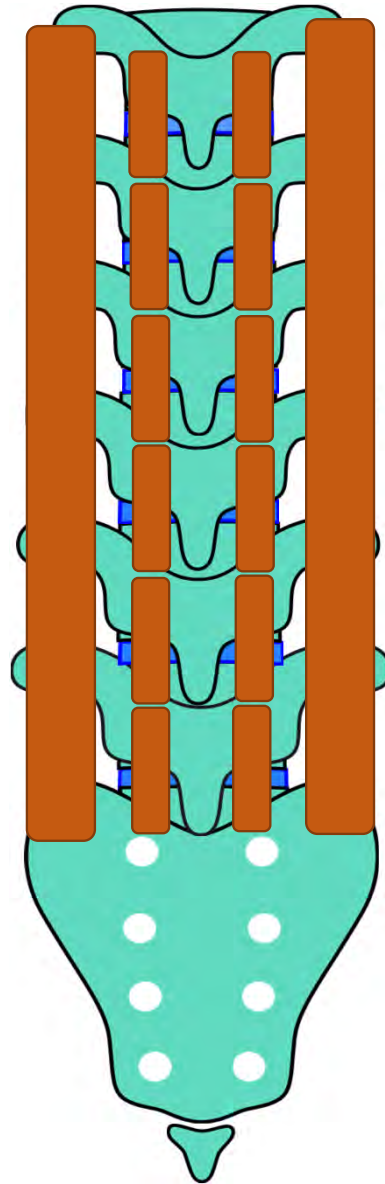


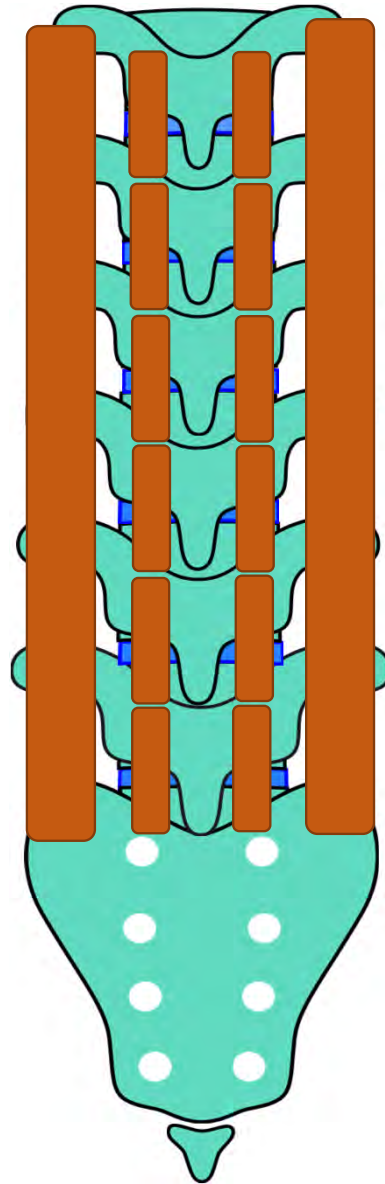


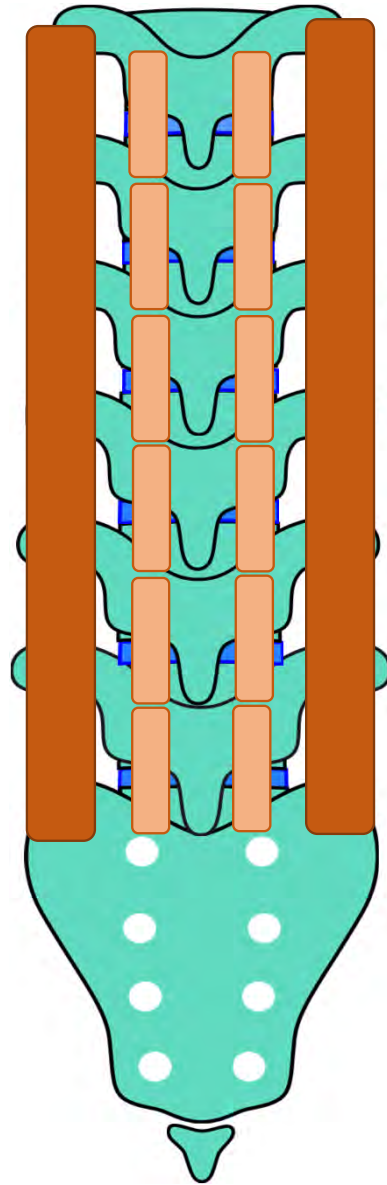




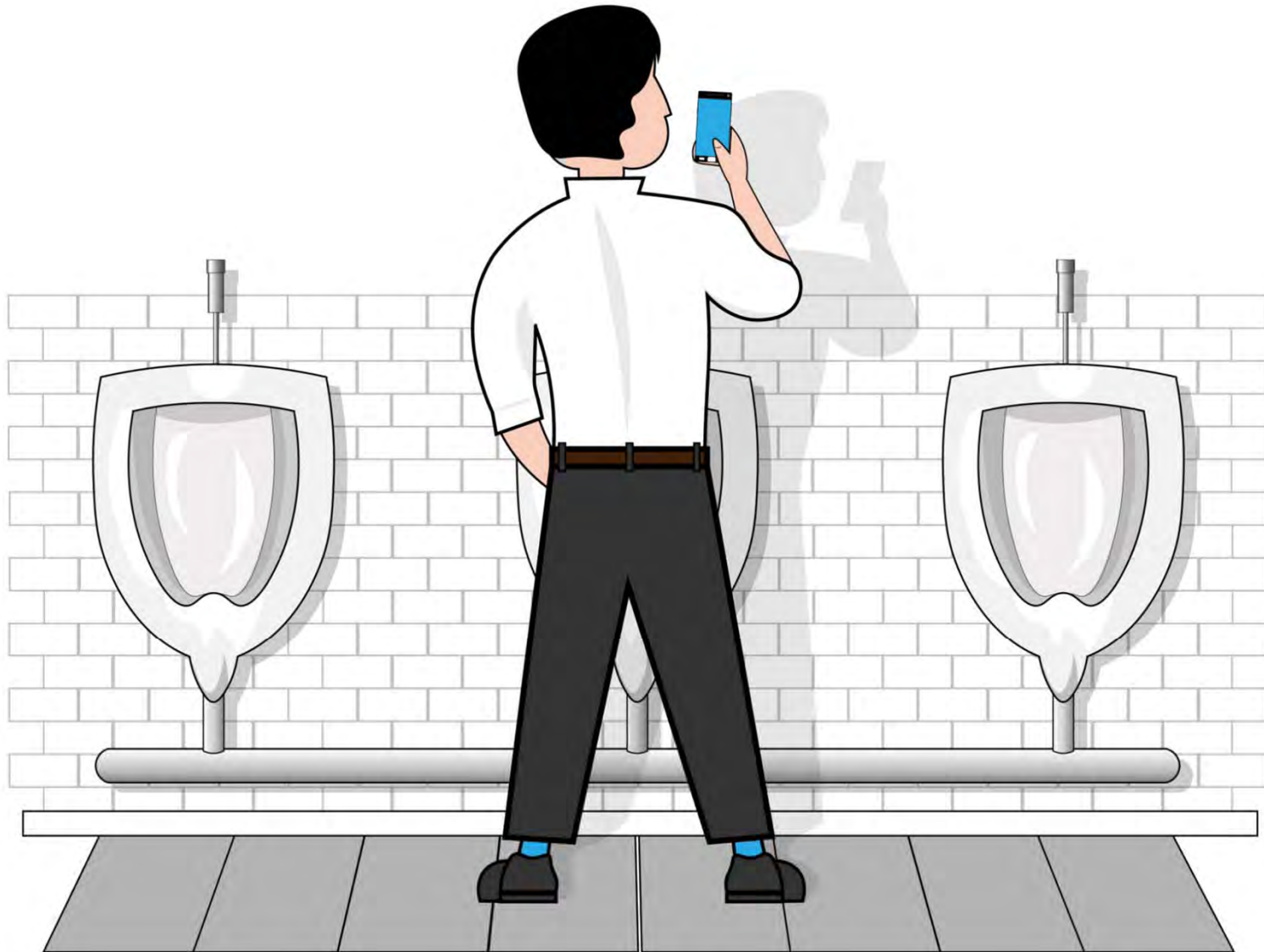






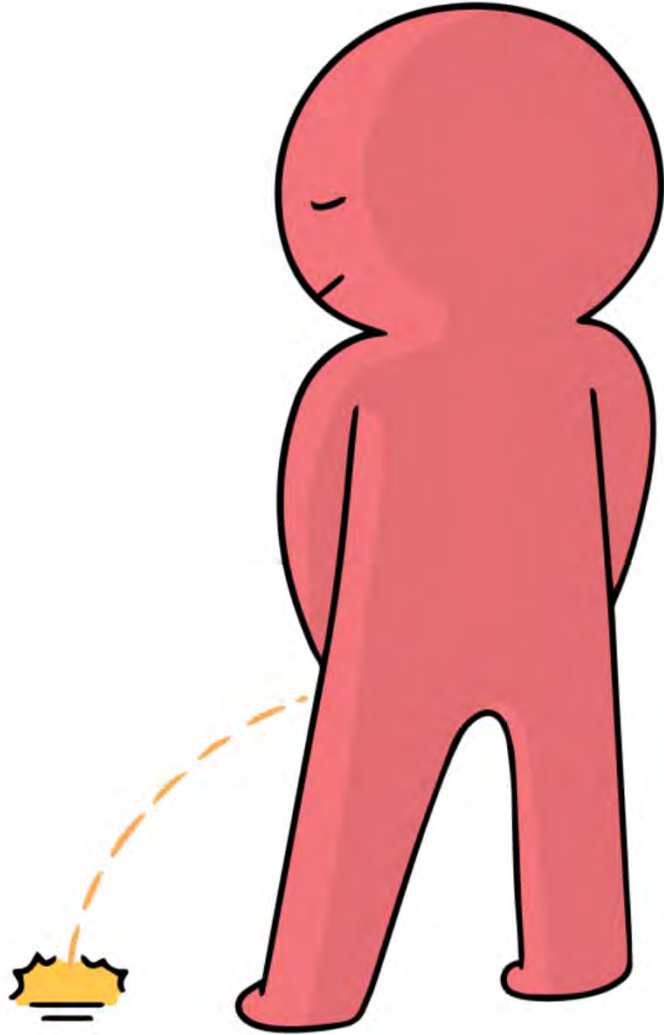


Motivate / Inspire / Be Kind





freefr



ELF HELP
1 relief from pain

my-seri-help.org.uk





Hip

Exercise 1. Backward Lunge. Level 1.



Exercise 2. Backward Lunge. Level 2.



Exercise 2. Side Lunge. Level 1.



Exercise 2. Side Lunge. Level 2.



Learning outcomes

- Lumbar disc prolapse a case presentation
- Why do disc prolapses resolve naturally
- Exercises for low back pain
- Doctor, I cannot exercise any movement hurts my back
- Motivate / Inspire / Be kind



FREE FROM PAIN
681 Liverpool Road
Ainsdale , Southport

Thank you
Any questions?





<https://tinyurl.com/gaortho>

Thank you
Any questions?