

What is Pain?

Pain 101

Statistics

Anatomy

Case Scenario #1

Case Scenario #2

Summary

Lower Back Pain

Presented by: Dr. Paul Su, MD

Sharp

Numbing

Like I got hit by a bus

Radiating

Tingling

Pins and needles

How do you define pain?

Dull

Zapping

Throbbing

Achy

Presented by: Dr. Paul Su, MD

“An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.”



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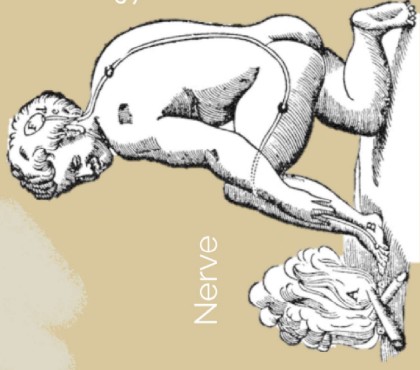
Summary

Lower Back Pain

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Sensory System

Brain



Spinal Cord

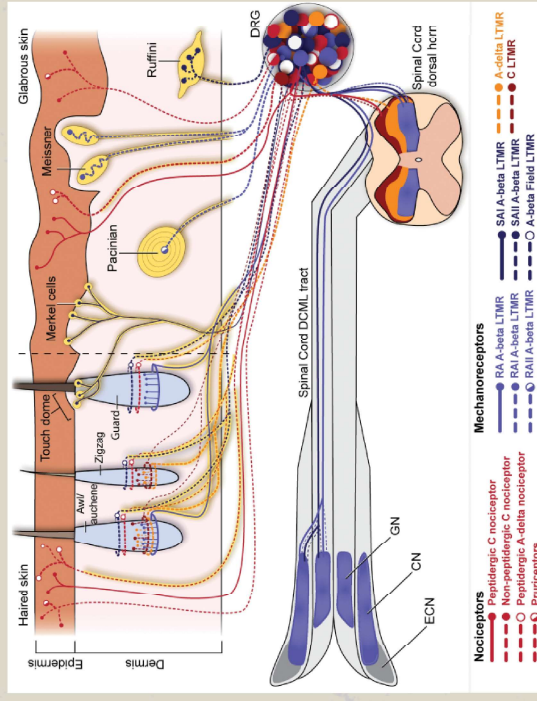
Nerve

Noxious Stimulus

Decartes, 1644

Presented by: **Dr. Paul Su, MD**

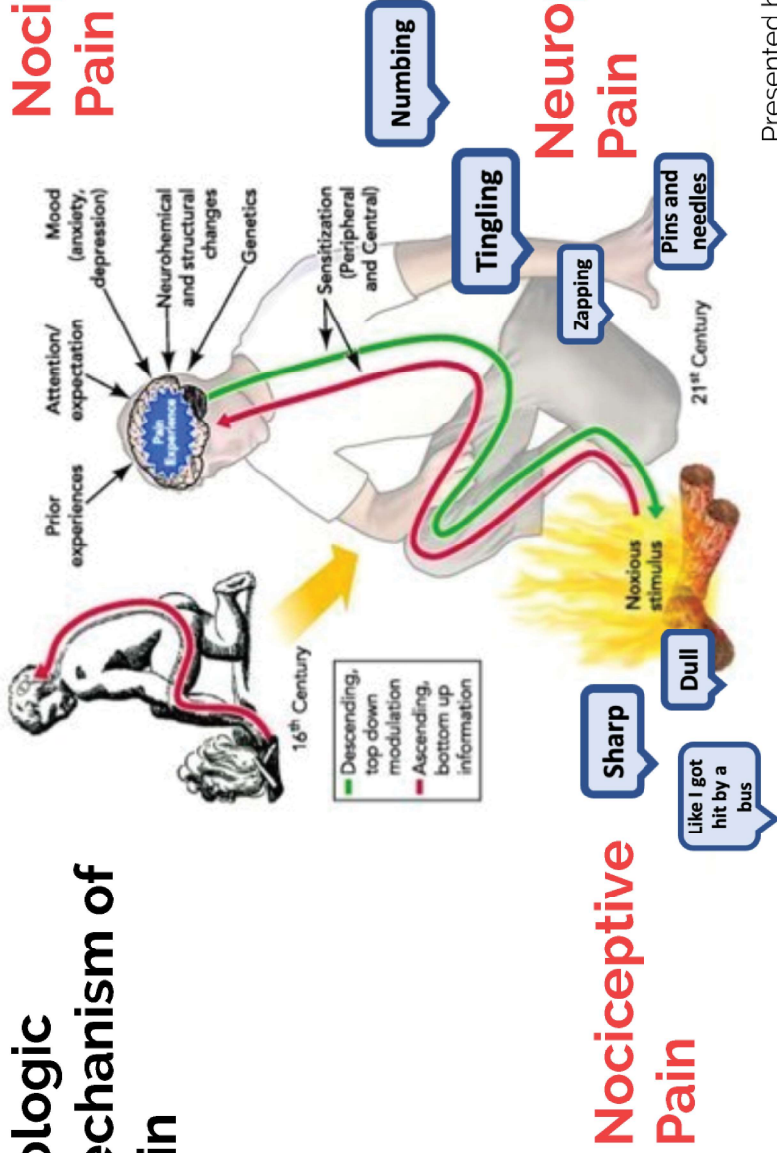
Nociceptive Sensory System



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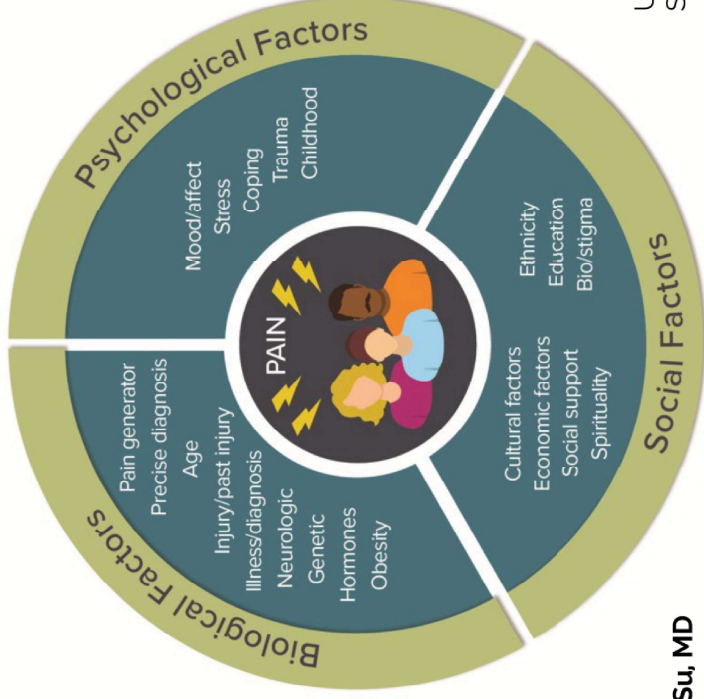
Biologic Mechanism of Pain

Nociplastic Pain



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Biopsychosocial Model of Pain



Presented by: Dr. Paul Su, MD

US Dept Health and Human Services, Pain Task Force

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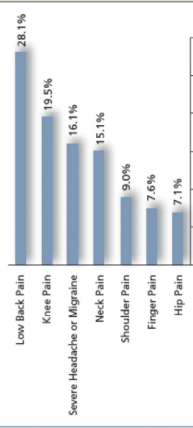
Lower back pain is the most commonly reported pain condition



Lower back pain is the leading cause of disability in Americans under 45
31 million Americans experience low-back pain at any given time.

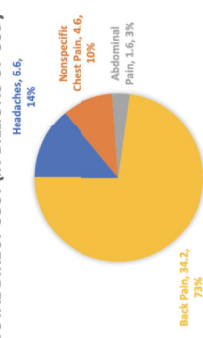
Back pain is the major contributor to pain related treatment costs

Figure. Age-Adjusted Prevalence Rates of Select Causes of Chronic Pain in US Adults



Source: Institute of Medicine. *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*. Washington, DC: The National Academies Press; 2011.

TOTAL DIRECT COST (IN BILLIONS OF USD)



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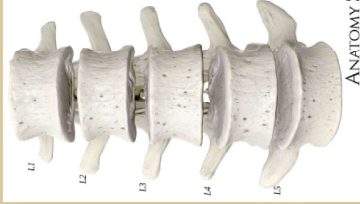
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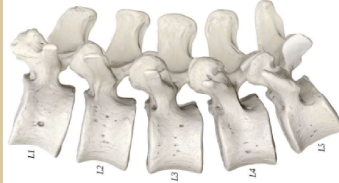
Summary

Structure

Vertebrate

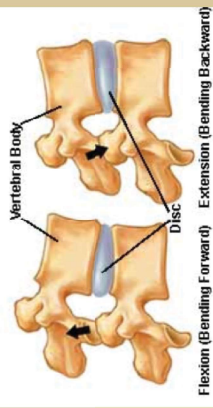


ANATOMY STANDARD



Joints and Discs

Facet Joints in Motion



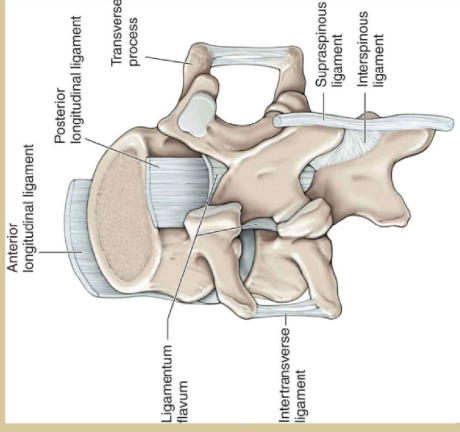
Flexion (Bending Forward) Extension (Bending Backward)



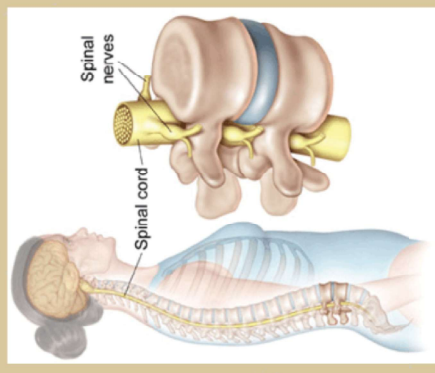
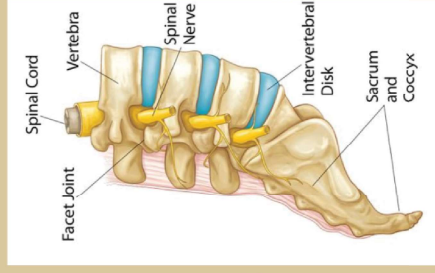
Glue & Tape



Ligaments

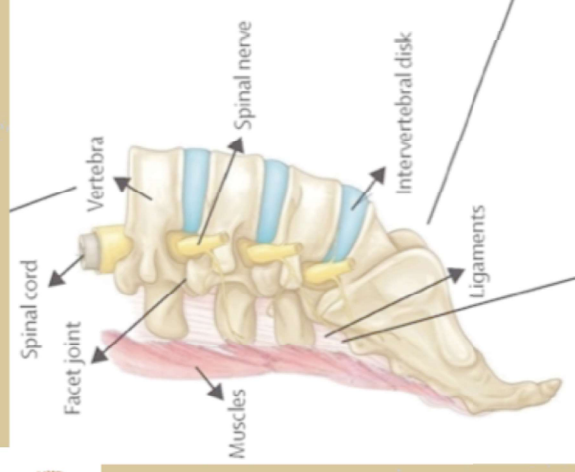
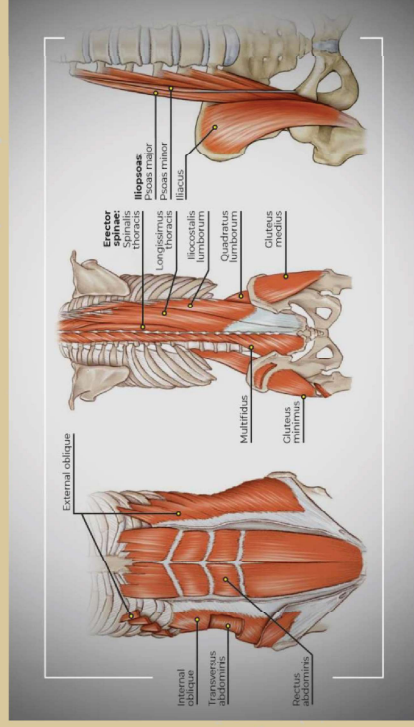


Electrical Nervous System



Motors

Muscles



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Lower Back Pain

Presented by: **Dr. Paul Su, MD**

Patient: Kelly

Kelly is 50 year old individual, otherwise healthy. While lifting boxes in the garage, Kelly felt a sudden "POP" followed by severe, sharp pain in the right lower back.

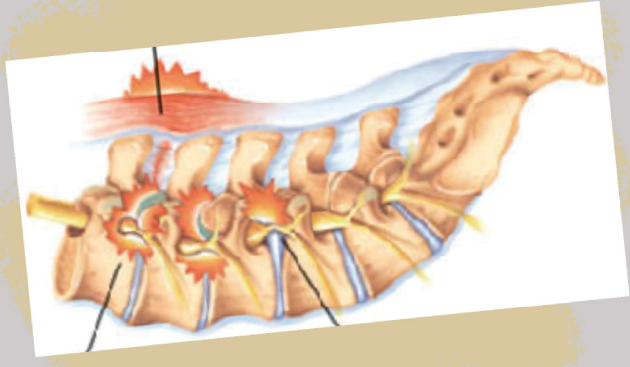
Kelly shows up to the urgent care clinic to be evaluated.



Evaluation & Management

ACUTE Lower Back Pain

Presented by: **Dr. Paul Su, MD**



Management of Acute Back Pain

MYTHS FACTS

Prognosis of acute lower back pain is excellent. Only 1/3 seek medical attention of those 70 - 90% improve in weeks

Continue activities of daily living and work as much and soon as possible. Gradually increase activities as tolerated.

Start with non-pharmacologic approaches: heat, massage, acupuncture, spinal manipulation

If some medications are needed to help with symptoms, NSAIDs and/or muscle relaxants can be helpful. Consult with your physician.

Bed Rest. Bed rest may lead to worsening pain and slower recovery.

One form of treatment is better than others. Since most will improve with time regardless of intervention, Choice depends on patient preference, cost, and accessibility.

Does ____ work? Here's some evidence:
• Cold
• Traction
• Brace/Lumbar support
• Mattress
• Yoga

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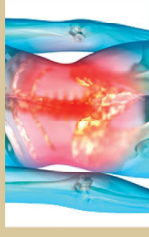
Summary

Lower Back Pain

Presented by: **Dr. Paul Su, MD**

Patient: Alex

Alex is 50 year old patient, who comes to the pain management clinic complaining of lower back pain since 2019. The pain was insidious in onset, and has worsened during the COVID-19 pandemic.



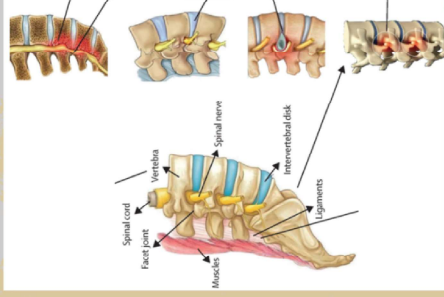
CHRONIC Lower Back Pain

Management

Causes

Presented by: **Dr. Paul Su, MD**

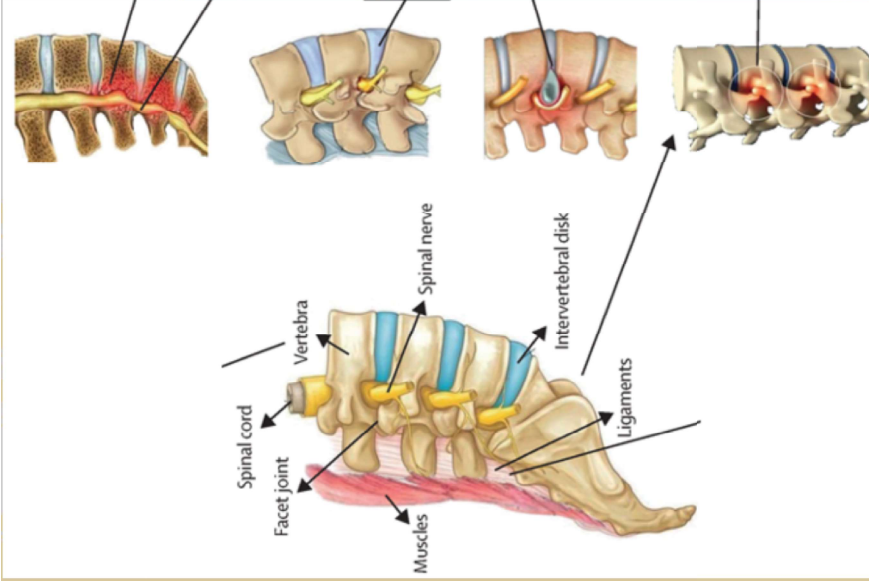
What can cause CHRONIC lower back pain



Biological pain generators *can* contribute to chronic lower back pain

AND, often much more complex and also include psychosocial factors...

Presented by: **Dr. Paul Su, MD**



More about Alex...

! .
Alex has a history of anxiety and depression

Pre-Existing Psychologic Condition

! .
Alex tries to avoid activities that may cause pain and worries about experiencing pain

Fear-Avoidance

! .
"This pain will never get better and nothing I can do to make it better"

Pain Catastrophizing

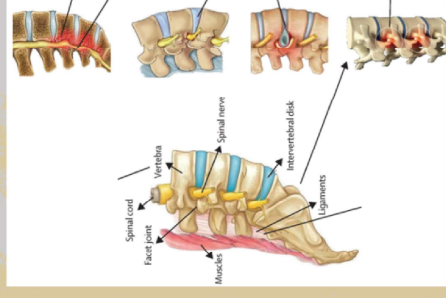
! .
Alex spends most of the time in bed or lying on the couch

High Functional Impairment

Presented by: **Dr. Paul Su, MD**



What can cause CHRONIC lower back pain



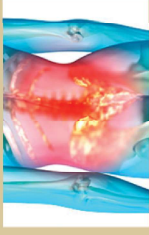
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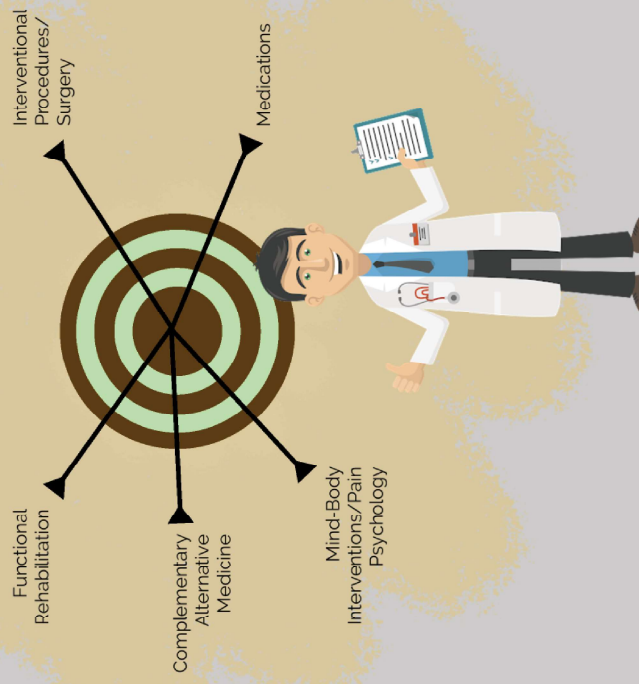
CHRONIC Lower Back Pain

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Presented by: **Dr. Paul Su, MD**

Multidimensional Approach



Presented by: **Dr. Paul Su, MD**

To image or not to image

That is the question



X-Ray

Can evaluate for instabilities, bones (degenerations, scoliosis)

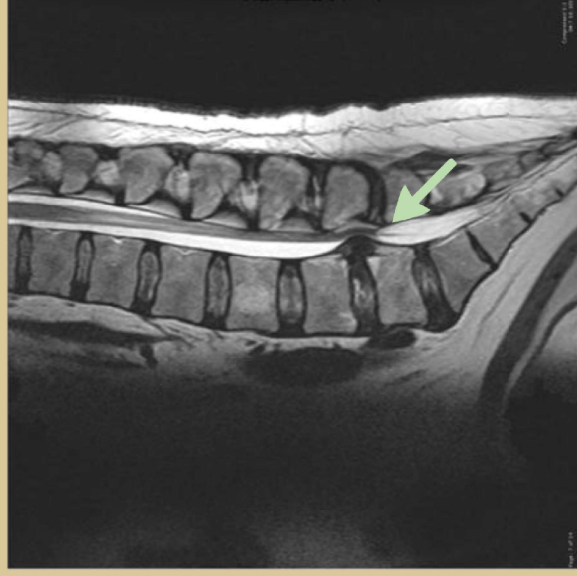
MRI

Can evaluate soft tissues (discs, muscles, ligaments, nerves, spinal cord), and bones

CT Scans

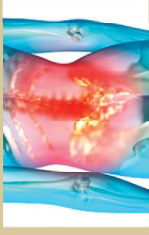
Can evaluate soft tissues (discs, muscles, ligaments, nerves, spinal cord), and bones

Is the patient on the right having pain?



Patient: Alex

Alex is 50 year old patient, who comes to the pain management clinic complaining of lower back pain since 2019. The pain was insidious in onset, and has worsened during the COVID-19 pandemic.



CHRONIC Lower Back Pain

Management

Causes

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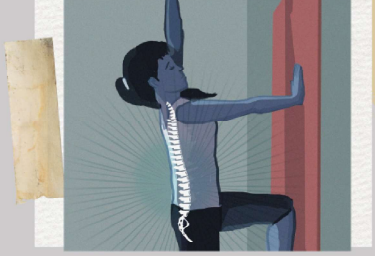
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Lower Back Pain

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Summary

Anatomy and physiology of the nociceptive system and the lower back

Pain is a complex experience influenced by biological, psychological, and social factors

The majority of acute lower back pain will improve with time

Transition/development of chronic lower back pain can be much more complex than simply biological causes of pain. It often involves psychosocial components

In the coming sessions, we will discuss how pain specialists tackle lower back pain from a multimodal approach

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Lower Back Pain

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