Low Back Pain: Causes, Prevention, and Treatment

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• Who am I and why am I here?
  • Treat a variety of conditions with a variety of treatments
  • Back pain, neck pain, pain from cancer and arthritis, sciatica, & many others
  • Injections, nerve modulation, medications, and other therapies
Low Back Pain

• Probably 60-70% of what I see every day
• 80% of people will have low back pain at some point in their lives that is severe enough to seek medical attention
• 15-30% of people will suffer from chronic back pain at some point in their lives
• Billions of dollars in healthcare costs each year
What is Low Back Pain?

• Pain located between the rib cage and the lower portion of the buttocks
• It can be **Acute Back Pain** → pain that lasts days to weeks
• Or it can be **Chronic Back Pain** → pain that lasts for more than 3 months
Objectives for Today:

• What causes low back pain?
• How can we prevent low back pain?
• How do we treat low back pain?
  • Acute
  • Chronic
What Causes Low Back Pain?

- Lots of things that occur daily
  - Overuse/strain
  - Poor posture
  - Progressive degeneration
    - Arthritis
    - Stenosis
  - Mental stressors
What Causes Low Back Pain?

• Trigger Events
  • Disc herniation
  • Fracture of bones in spine
  • Other illness like cancer and infections
What Causes Low Back Pain?

• Although people will often focus on a single event
• But back pain is usually the result of prolonged physical and mental stress and overuse
• Focusing on single event or injury can impair recovery and treatment
Preventing Low Back Pain
Preventing Low Back Pain

• There are some risk factors you cannot change:
  • Being middle aged or older
  • Family history of low back pain
  • Previous back injury
  • Being pregnant
  • Having a job that requires long periods of sitting, heavy lifting, bending or twisting
Preventing Low Back Pain

• But... there are some risk factors you CAN change:
  • Not getting regular exercise
  • Smoking
  • Being overweight
  • Having poor posture
  • Having emotional stress
Preventing Low Back Pain

• It is better to PREVENT low back pain than to TREAT low back pain
  • Get regular exercise – low impact with lots of stretching
  • Lift objects properly – slowly, using the legs
  • Focus on improving posture
  • Take regular breaks from prolonged sitting
  • Quit smoking, quit smoking, quit smoking!!
  • Maintain healthy weight
Preventing Low Back Pain

• Sleeping
  • Sleeping on your side with knees slightly bent
  • Place small pillow between your legs
  • If you prefer sleeping on your back, use 2-3 firm pillows to elevate your legs
  • Medium-firm mattresses tend to be best
Preventing Low Back Pain

- Shoes and Orthotics
  - Deficiencies or misalignments in the feet cause force to be transmitted up the muscle chain to the back
  - Properly fitted running and walking shoes are best whenever possible
  - Good heel and arch support with rigid or semi-rigid sole
  - Orthotic shoe inserts can help, but I recommend getting fitted by a podiatrist
Preventing Low Back Pain

• Back braces
  • Should be used with caution
  • Can cause core muscles to weaken and exacerbate problems if used for prolonged periods of time
Preventing Low Back Pain

• Desk and Computer Set Up
  • Posture
    • Top of head, ears, shoulders, and hips aligned in same plane
    • Remind yourself that your shoulders are connected to your back
  • Chair Position
    • Elbows should rest easily on desk with forearms parallel to the floor
    • Try a foot rest to take pressure off your low back
  • Height
    • Screen should be just below eye level
Preventing Low Back Pain

• Airline Travel
  • Take 2-3 Advil before flight
  • Drink plenty of water
  • Try to stand a walk every 20-30 minutes
Treating Low Back Pain
Acute Back Pain (>3 months)
Causes of Acute Back Pain

- Muscle strain – 85%!!
- Disc herniation
- Fracture
- Other serious issues
  - Cancer
  - Infection
  - Vascular Disease
When To Be Concerned?

• Fever
• Weight Loss
• History of Cancer
• Trauma
• Bladder/Bowel Dysfunction
• Leg Weakness
Treating Acute Back Pain

- Good news!
- Most back pain will improve in 4-6 weeks
- Most acute back pain responds to conservative treatment
Treating Acute Back Pain

• STEP 1:
  • Keep Moving!!
    • Bed rest is not recommended
    • Be as active as you can be, doing exercises that don’t increase symptoms
    • Walk 10-20 minutes every 2-3 hours
    • Stretching
    • Physical therapy may be helpful
Treating Acute Low Back Pain

• STEP 2:
  • Heat or ice
  • Either one can work, so try them both and see what works best for you
Treating Acute Low Back Pain

• STEP 3:
  • Over the counter medications
    • Acetaminophen (Tylenol)
    • Ibuprofen (Motrin, Advil)
    • Naproxen (Alleve)

  • Take medications regularly at first, then take as needed as pain begins to subside
  • Don’t take more than maximum recommended dose
  • Talk to your doctor first if you have GI problems, liver problems, or kidney problems
Treating Acute Low Back Pain

• STEP 4:
  • If over the counter medications are not working, your doctor may prescribe something stronger
    • Opiates
    • Muscle relaxants
    • Steroids
Treating Acute Low Back Pain

• **STEP 5:**

• If pain continues to be severe despite the treatments mentioned earlier, we might try corticosteroid injections.
Treating Acute Low Back Pain

- Epidural steroid injection
  - Most common injection for acute low back pain
  - Outpatient
  - Safe
  - Effective in speeding the recovery of acute low back pain from disc bulging or rupture
Treating Acute Low Back Pain

- Epidural Steroid Injection
  - Skin is numbed
  - X-ray is used to guide needle into epidural space
  - Steroid injected to reduce inflammation and pain
  - Can be repeated
Treating Acute Low Back Pain

• Good news!!
• In general, 90% of patients will recover from an episode of acute low back pain
• Only 10% progress to chronic back pain
Do I Need an MRI?

• Frequent Question
• Yes if you have acute back pain and...
  • Are experiencing fevers, chills, weight loss
  • Have a history of cancer
  • Take medications that suppress your immune system
  • Have leg weakness with pain
  • Have intolerable pain even after taking medications
Do I Need an MRI

• If none of those signs or symptoms apply to you, and your pain has lasted less than 4-6 weeks, then an MRI is probably not indicated
Chronic Low Back Pain (>3 months)
Common Causes of Low Back Pain

• Spinal Stenosis
  • Narrowing of the area around the spinal cord
  • Associated with aging
  • Presents as back and leg pain worse with walking or standing
  • Improves with leaning forward
  • Improves quickly with sitting or lying down
Common Causes of Chronic Back Pain

- Nerve Root Impingement
  - Chronic disc bulging leads to pressure on spine and nerves
  - Often presents as pain that shoots from the back down the leg
  - Sometimes with leg weakness or numbness
Common Causes of Chronic Back Pain

- Arthritis
  - Can occur in the joints of the spine
  - More common with aging
  - Usually presents as back pain without leg involvement
  - Worse with bending and twisting
Other Common Causes of Chronic Back Pain

• There are many other causes, and this is why a thorough evaluation is necessary
  • Muscle Dysfunction
  • Sacroiliac Joint Pain
  • Fibromyalgia
  • Depression/Stress
Treating Chronic Back Pain
Treating Chronic Back Pain

• Many of the same treatments used for acute back pain
  • Medications
  • Stretching/Strengthening
  • Heat/Ice
  • Epidural steroid injections

• Some treatments more specific for chronic back pain
  • Certain types of injections and medications
  • More emphasis on physical and mental therapies
Treating Chronic Back Pain

- Injections
  - Several different types
    - Epidural injections for spinal stenosis and disc disease
    - Joint injection for spinal arthritis
    - Injections into inflamed muscle groups
Treating Chronic Back Pain

• Injections
  • All injections can be done as outpatient procedures
  • Can be done with or without IV sedation
  • Very safe, although there are always some risks with any procedure
  • X-ray guidance
  • Patients need to stop blood thinners for a period of time (although aspirin is okay)
• If injections are successful:
  • Patients often need fewer medications
  • The injections can be repeated
Treating Chronic Back Pain

• Other Interventions
  • Nerve destruction
  • Spinal Cord Stimulators
  • Surgery
Treating Chronic Back Pain

• Medication Management
  • Multiple types and classes of medications for multiple different types of pain
  • More than just narcotics
Non-Opiate Medications

• Tylenol
  • Safe when taken as directed
  • Not for patients with liver disease
• Anti-Inflammatories
  • Ibuprofen, Naproxen, Celebrex
  • Also important to take as directed
  • Can worsen stomach bleeding or kidney disease
  • Can increase risk for heart attack
Non-Opiate Medications

• Nerve Modulators
  • Gabapentin (Neurontin) and Lyrica
    • Reduce nerve sensitivity
    • Excellent for many causes of chronic pain
    • Don’t work immediately
    • Must be taken regularly
    • May cause sedation
Non-Opiate Medication

• Antidepressants
  • Amitriptyline, Nortriptyline, Cymbalta, Savella, Prestiq
    • Cannot be taken with other antidepressants (like Paxil or Zoloft)
    • Decrease nerve sensitivity
Opiate Medications

- Oxycodone, Hydrocodone, Dilaudid, Fentanyl, Methadone, etc.
- Controversial
- Good for short term pain control, but more complicated for long term pain control
- Different doctors have different opinions
Opiate Medications

• When Do I Consider Opiates For Chronic Pain Patients
  • People who have tried many other options
  • People who have specific location of pain (low back, left knee, right shoulder, etc.)
  • People who have clear physical reasons to have pain
  • People who are trying to maintain functioning
  • People without significant psychiatric disease
  • People without a history of substance abuse
Opiate Medications

• Bottom Line:
  • Can sometimes be used as a last option for some patients with certain conditions
  • Best to be avoided if possible
Treating Chronic Back Pain

- Physical therapy
  - Improving body mechanics can greatly improve pain in motivated individuals
- Acupuncture
- Chiropractor
- Mental Health Treatment
  - Stress and depression cause pain
  - Pain causes stress and depression
  - We must try and treat both to break the cycle
Treating Chronic Back Pain

• Back pain is a part of life, but...
  • There are things we can do to help prevent it
  • There are things we can do to help treat it
  • And my colleagues and I are available to help