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A Rational Approach to the Diagnosis and Treatment of Low Back Pain.

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*How many doctors does it take to cure a common ailment?
Lisa Gubernick took her aching back to eight different specialists—and got eight different diagnoses. Which one was right? Her tale of 'specialist syndrome.'*

The Dow Jones 'Whine' Index

I went to eight different medical specialists to deal with my backache. Here's what they said I had—and how much it would cost to fix it. (Each doctor was given a chance to comment on his diagnosis or treatment before the story went to press.)

Specialist	Diagnosis	Treatment	Cost of Visit	Comments
Osteopath Gary Inwald	Sacroiliac/transverse inflammation of the joint that links the spine and pelvis.	Naproxen, ultrasound heat treatment and physical therapy (\$100 per session).	\$200 for visit, plus \$75 for "osteopathic manipulation."	"In place of those massage: \$75 to pull my right knee to my chest seemed like a lot, but it actually made my back feel better. Of course, so did the massage! Oh! I sat in a few weeks later while getting a pedicure."
Chiropractor Douglas Beckendorf	Possible facet impingement (translation: I have had posture, which ends up pinching the nerve in my lower spine).	Physical therapy (\$120 per session).	\$195, plus \$75 for X-rays.	He rejected the osteopath's diagnosis: "Thatting that will have the same effect as eating ice cream."
Acupuncturist Soon-joon Laung	Pinched left sciatic nerve.	Eight acupuncture sessions (\$70 a session).	\$70	"I lasted just one session. When I left, my back felt fine. Not so for my foot, which itched after he inserted the last of six needles."
Psychiatrist Hugene Hines	No formal diagnosis, though he noted that back pain is often stress-related.	Valium.	\$250	Just the blankness you'd hope for in a psychiatrist: He said he didn't think psychotherapy would help my back. Offered Valium, a muscle relaxant, to help me sleep.
Homeopath William Diegman	No formal diagnosis, but said stress could be contributing to my pain.	Chucky-Spasing pills (owned from an herb (\$25), "Franken" stress-management capsules (\$125).	\$250	Gave me an herbal substitute for naproxen. Also suggested an appointment with his partner, a naturopathic doctor, to discuss my diet. "The idea," he achieved deeper benefits to address the body's systems as an integrated whole."
Physiatrist Vjay Vtd	Nerve radiculitis (an inflammation of the nerve in the spine caused by material that spills from a damaged disk).	Heat back brace, exercises and Cortisone/Lidocaine injections directly into the spine (\$1,108 for the MRI).	\$375	High medical drama. Initially, he said I was "too past" conservative therapy and suggested Cortisone injections, pending the results of an MRI. When "nothing horrible" showed up on the MRI, he downgraded me to acupuncture and a (very uncomfortable) ice wrap on my back.
Neurologist Gerald Channing	Mild disk bulging (pressure on the disk causes it to bulge, pinching a nerve).	Physical therapy (also suggested an MRI).	\$400	Low medical drama. He said the problem isn't serious and doesn't need to be dealt with urgently: "In your ... age, it's impossible not to have something," he offered.
Celebrity Doctor John Sarno	Tension myofascial syndrome (very common, according to Dr. Sarno, a psychosomatic condition in which a mild reduction of anger to muscles, nerves or tendons triggers pain).	Two lectures, six weeks of daily 45-minute homework sessions listed to Dr. Sarno's book, "The Mindbody Prescription."	\$800 (includes initial consult, lectures, follow-up teaching sessions)	Howard Stern swears by him. After two lectures and a consultation, I'm somewhat agnostic. "I want people who are receptive to my diagnosis," Dr. Sarno says (me and his secretary both asked, prior to my appointment, if I had read his book.)

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Low Back Pain

- Seventy-five percent of all people will experience back pain at some time in their lives.
 - After 52 weeks of back injury disability and absenteeism, only 25% of injured workers return to work.
- The total cost in lost productivity is enormous. Back pain is the second leading cause of absenteeism from work, after the common cold and accounts for 15% of sick leaves.
 - After two years of disability, the return rate is zero.
 - For 85% of back pain sufferers, the primary site of injury is the lower lumbar spine.
- Back injuries cause 100 million lost days of work annually, and are the most costly injury for employers.
 - The average total cost per claim in 1989, was \$18,365.00.

Prevalence

- Up-to-date evidence about levels and trends in disease and injury incidence, prevalence, and years lived with disability (YLDs) is an essential input into global, regional, and national health policies. In the Global Burden of Disease Study 2013 (GBD 2013) estimated these quantities for acute and chronic diseases and injuries for 188 countries between 1990 and 2013.
- Leading causes of YLDs included low back pain and major depressive disorder among the top ten causes of YLDs in every country.

Reports by the Institute of Medicine, National Institutes of Health, and the World Health Organization

- Institute of Medicine of the National Academy of Science. Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research; Institute of Medicine: Washington, DC, USA, 2011; p. 5.
- National Pain Strategy: A Comprehensive Population Health Level Strategy for Pain.
 - http://prcc.nih.gov/National_Pain_Strategy/NPS_Main.htm
- Global Burden of Disease Study 2013 Collaborators. Global, Regional, and National Incidence, Prevalence, and Years Lived with Disability for 301 Acute and Chronic Diseases and Injuries in 188 Countries, 1990–2013: A Systematic Analysis for the Global Burden of Disease Study 2013. The Lancet 2015, 386, 743–800.

Prevalence and Cost

- Total direct and indirect costs of chronic pain to the U.S. economy ranges between \$ 560 to \$ 630 billion annually.
- Moreover, 100 million American adults have some form of chronic pain, and it is also common among children and adolescents.
 - Overall, this makes chronic pain more common than the total number of individuals in the U.S. with diabetes, heart disease, and cancer combined!!!
 - Musculoskeletal pain is the most common single type of chronic pain; chronic low back pain is the most prevalent in this category.

Incidence

- in 2008, there were more than 7.3 million emergency hospital room visits, and more than 2.3 million hospital inpatient stays, that were related to back problems
- low back pain is one of the major health problems in the U.S., and is associated with the largest number of years lived with disability

Comparative Effectiveness Review Number 169: *Noninvasive Treatments for Low Back Pain, 2016.* www.ahrq.gov

- 2,545 citations, 156 publications
- For acute low back pain, evidence suggested that NSAIDs, skeletal muscle relaxants, and superficial heat are more effective than placebo, no intervention, or usual care (SOE low to moderate).
- Acetaminophen and systemic corticosteroids are no more effective than placebo.

Comparative Effectiveness Review Number 169: *Noninvasive Treatments for Low Back Pain, 2016.* www.ahrq.gov

- 2,545 citations, 156 publications
- For chronic low back pain, effective therapies versus placebo, sham, no treatment, usual care, or wait list: NSAIDs, opioids, tramadol, duloxetine, multidisciplinary rehabilitation, acupuncture, and exercise (SOE: moderate)
- Benzodiazepines, psychological therapies, massage, yoga, tai chi, and low-level laser therapy (SOE: low)
- Spinal manipulation was as effective as other active interventions (SOE: moderate).

Comparative Effectiveness Review Number 169: *Noninvasive Treatments for Low Back Pain, 2016.* www.ahrq.gov

- 2,545 citations, 156 publications
- Few trials evaluated the effectiveness of treatments for radicular low back pain, but the available evidence found that benzodiazepines, corticosteroids, traction, and spinal manipulation were not effective or were associated with small effects (SOE: low).

Etiology of Low Back Pain Syndromes

- Not all low back pain is due to a herniated disc...



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Not all leg pain is radiculopathy

- Referral patterns

Gluteus minimus

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Posterior facet syndrome

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Sacroiliac Joint Syndrome

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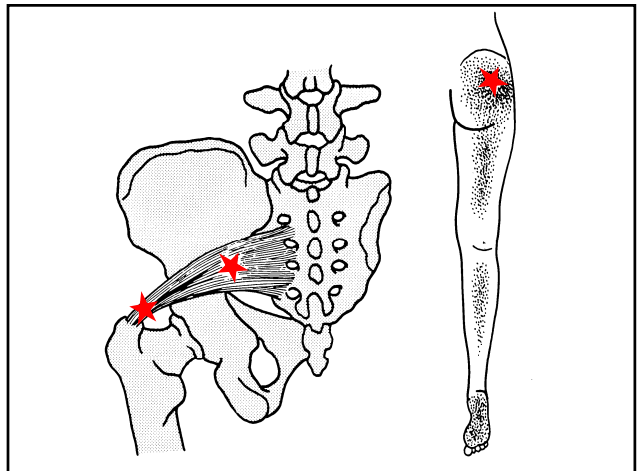
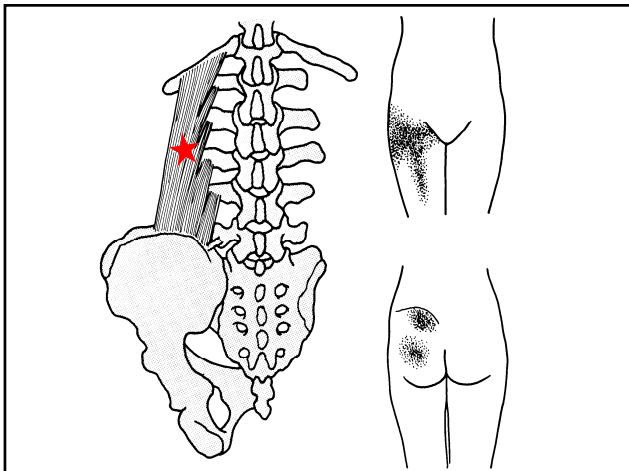
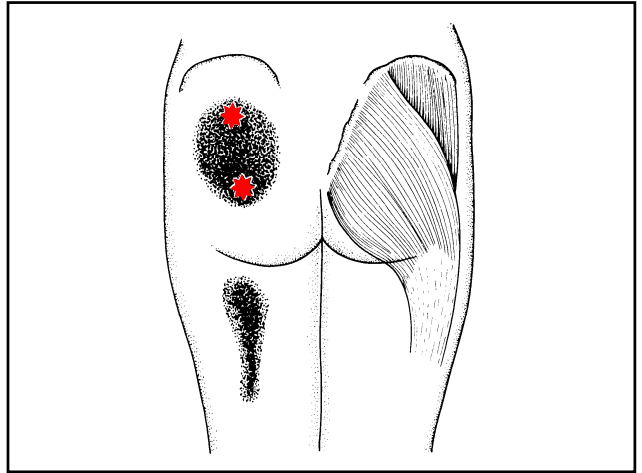
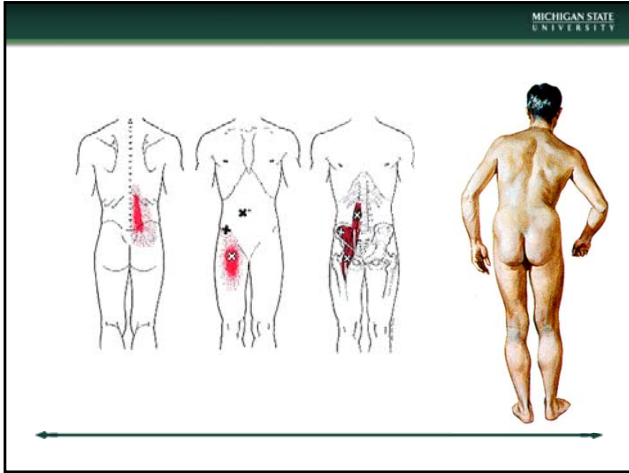
Overuse Syndromes

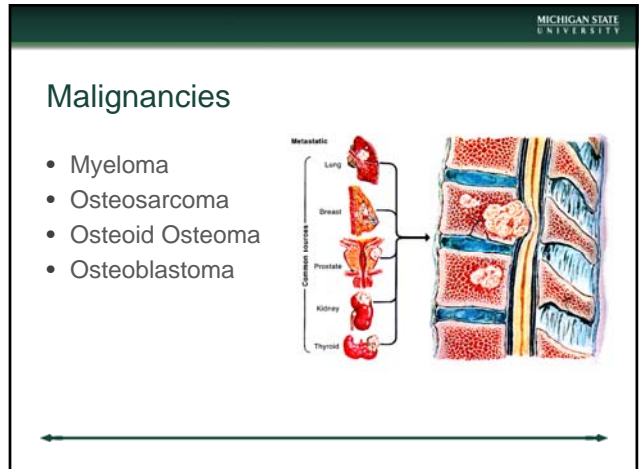
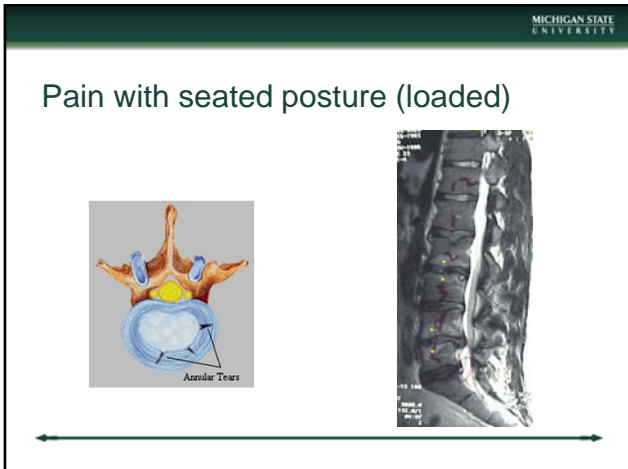
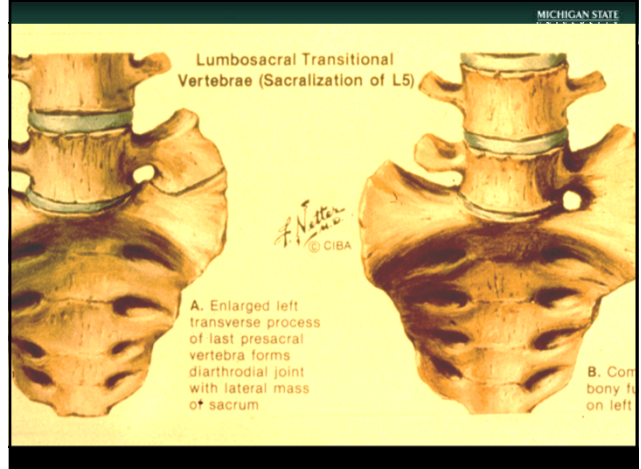
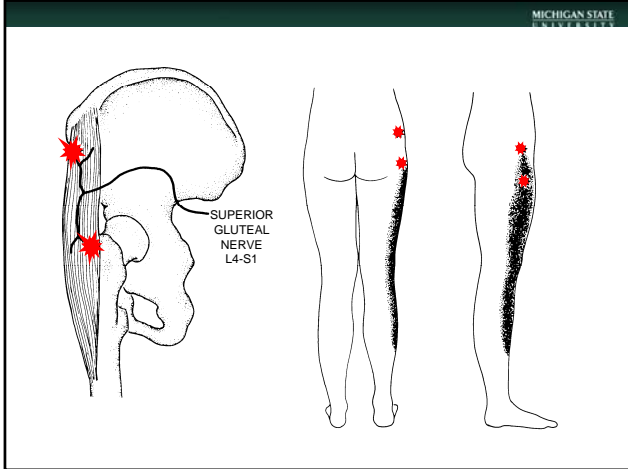
- Repetitive loads can lead to ligamentous and muscle pain.

Superior Gluteal Nerve

Trigger Area and Referred Pain

L4-S1






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Current Treatment Strategies


- Biopsychosocial Model
 - viewing pain as the result of a dynamic interaction among biological, psychological and social factors that can perpetuate and even worsen the clinical presentation



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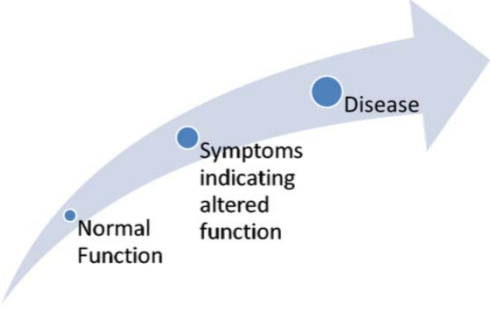
Rational Approach to Reduction of Chronic LBP

- Prevention of Acute LBP
- Decrease Chronification of LBP



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Altered Function as an Etiology of Disease



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Deconstructing Low Back Pain

- Anatomy and functional biomechanics of the hip, pelvis, and lumbar spine.
- Knowledge of their relationship to each other.



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Pelvis serves as a stable base through which forces are transmitted both directly and indirectly.

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Sacroiliac Joint is a “Self-Locking Mechanism”

- Form Closure
 - Joint surfaces that closely fit together and require no extra forces to maintain stability.
- Force Closure
 - Joint requiring outside force provided by muscles and ligaments to withstand a load.

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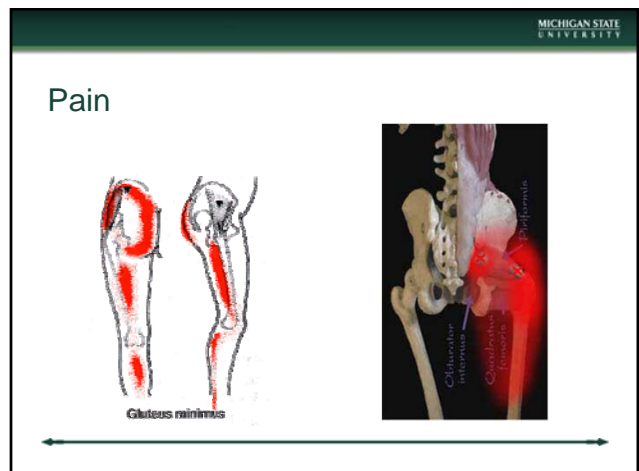
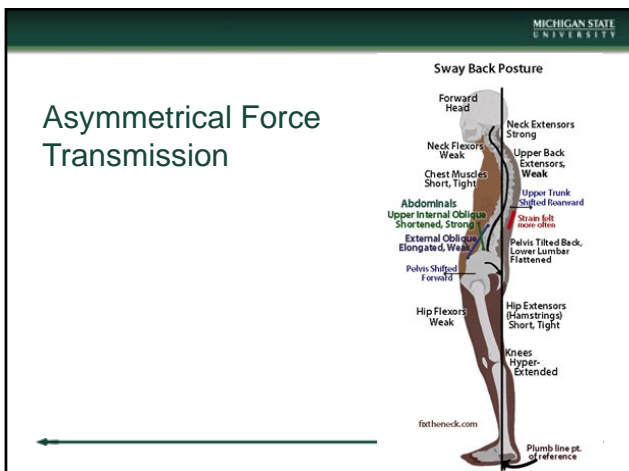
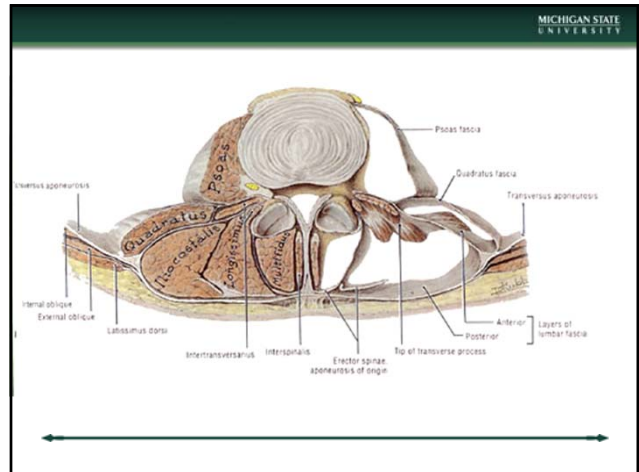
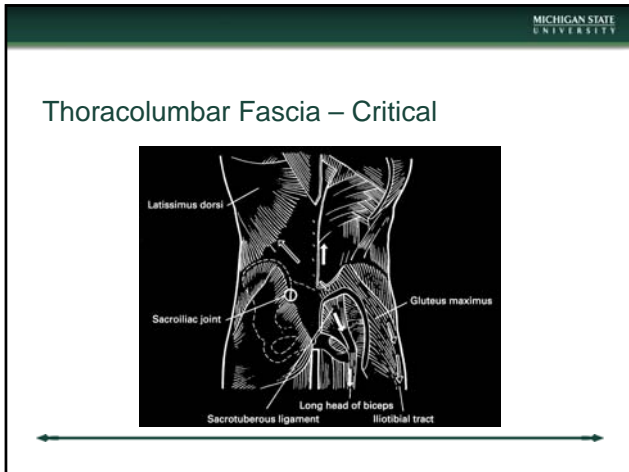
Self-bracing Mechanism

- Forces are absorbed through the sacroiliac joint and pelvis which allow changes weight transmission while providing stability.

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Motor Control with Awareness

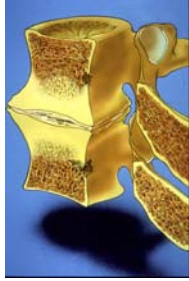
- Timing and sequencing of muscle activation and release to facilitate ease of load transfer.
- Prerequisite tone or tension of the muscles.



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Osteoarthritis

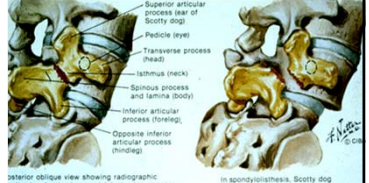
- Spondylosis
- DDD
- Facet syndrome



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Spondylolisthesis/spondylolysis

- Muscle imbalance
- New vs chronic
- Instability



lateral oblique view showing radiographic Scotty dog. In simple spondylolysis, dog appears like scottie a scottie.
 In spondylolisthesis, Scotty dog appears decapitated.

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Please stop this practice!

For Lower Back Tension
 Approximately 4 Minutes
 These stretches are designed for the relief of moderate low back pain and are also good for relaxing tension in the upper back, shoulders and neck. For best results do these every night just before going to sleep. (Do not stretch beyond that level you feel in pain, do not overstretch.)



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