Low back pain: Treatment and Challenges

Christine Keating, MD
Physical Medicine and Rehabilitation
The Baptist Back and Spine Clinic
Healthy Back clinic

Ochsner™ Health System

- I have nothing to disclose

Ochsner™ Health System

JAMA 2016

December 27, 2016

US Spending on Personal Health Care and Public Health, 1996-2013

Joseph L. Dieleman, PhD[1]; Ranju Baral, PhD[2]; Maxwell Birger, BS[1]; et al

Results From 1996 through 2013, $30.1 trillion of personal health care spending was disaggregated by 155 conditions, age and sex group, and type of care. Among these 155 conditions, diabetes had the highest health care spending in 2013, with an estimated $101.4 billion (uncertainty interval [UI], $96.7 billion-$106.5 billion) in spending, including 57.6% (UI, 53.8%-62.1%) spent on pharmaceuticals and 23.5% (UI, 21.7%-25.7%) spent on ambulatory care. Ischemic heart disease accounted for the second-highest amount of health care spending in 2013, with estimated spending of $88.1 billion (UI, $82.7 billion-$92.9 billion), and low back and neck pain accounted for the third-highest amount, with estimated health care spending of $87.6 billion (UI, $67.5

Ochsner™ Health System

Jama 2020

JAMA | Original Investigation

US Health Care Spending by Payer and Health Condition, 1996-2016

RESULTS Total health care spending increased from an estimated $1.4 trillion in 1996 (13.3% of gross domestic product [GDP]; $5259 per person) to an estimated $3.1 trillion in 2016 (17.9% of GDP; $9655 per person); 85.2% of that spending was included in this study. In 2016, an estimated 48.0% (95% CI, 48.0%-48.0%) of health care spending was paid by private insurance, 42.6% (95% CI, 42.5%-42.6%) by public insurance, and 9.4% (95% CI, 9.4%-9.4%) by out-of-pocket payments. In 2016, among the 154 conditions, low back and neck pain had the highest amount of health care spending with an estimated $134.5 billion (95% CI, $122.4-$146.9 billion) in spending, of which 57.2% (95% CI, 52.2%-61.2%) was paid by private insurance, 33.7% (95% CI, 30.0%-38.4%) by public insurance, and 9.2% (95% CI, 8.3%-10.4%) by out-of-pocket payments. Other musculoskeletal disorders accounted for the second highest amount of health care spending (estimated at $129.8 billion [95% CI, $116.3-$149.7 billion]) and most had private insurance (56.4% [95% CI, 52.6%-59.3%]). Diabetes accounted for

by out-of-pocket payments. In 2016, among the 154 conditions, low back and neck pain had the highest amount of health care spending with an estimated $134.5 billion (95% CI, $122.4-$146.9 billion) in spending, of which 57.2% (95% CI, 52.2%-61.2%) was paid by private insurance, 33.7% (95% CI, 30.0%-38.4%) by public insurance, and 9.2% (95% CI, 8.3%-10.4%) by out-of-pocket payments. Other musculoskeletal disorders accounted for the second highest

Ochsner™ Health System

WHY????

Why is treating back and neck pain so expensive?

Ochsner™ Health System

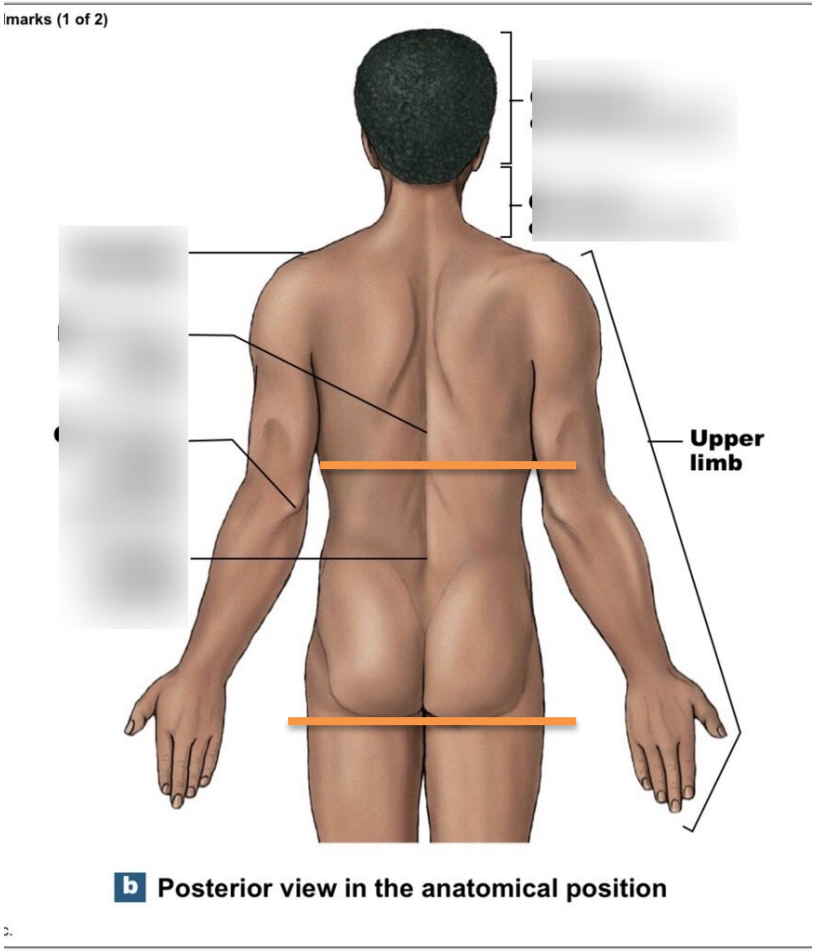
How many different diagnoses are available for low back pain?

- Low back pain acute or chronic with or without sciatica, left, right, bilateral
- Dorsalgia
- Lumbago
- DDD
- Spondylosis

Ochsner™ Health System

What is low back pain?

- It is a symptom not a disease
- It is between lower rib margins and buttock creases and can have leg pain and sometimes neurologic deficits of legs

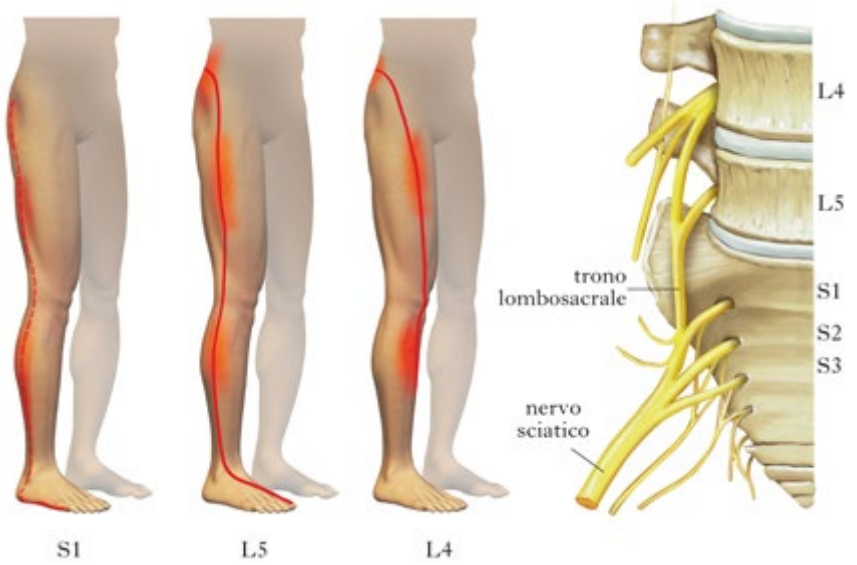


Ochsner Health System

Hartvigsen, jan, mark hancock. What low back pain is and why we need to pay attention. Lancet 2018; 391:2356-67

What is radicular pain?

- Dermatomal leg pain
- Leg pain worse than back pain
- Constant
- Positive SLR, or other neurologic findings
- Not all leg pain is radiculopathy



Ochsner™ Health System

LOW BACK PAIN

- Low back pain is a COMMON human condition
- The most common cause of activity limitation in people less than 45 and leading cause of disability
- 70-85% of people will have back pain at some point in their life
- LBP is a common problem, but a specific nociceptive cause can not be found reliably

Ochsner™ Health System

Hartvigsen, jan, mark hancock. What low back pain is and why we need to pay attention. Lancet 2018; 391:2356-67

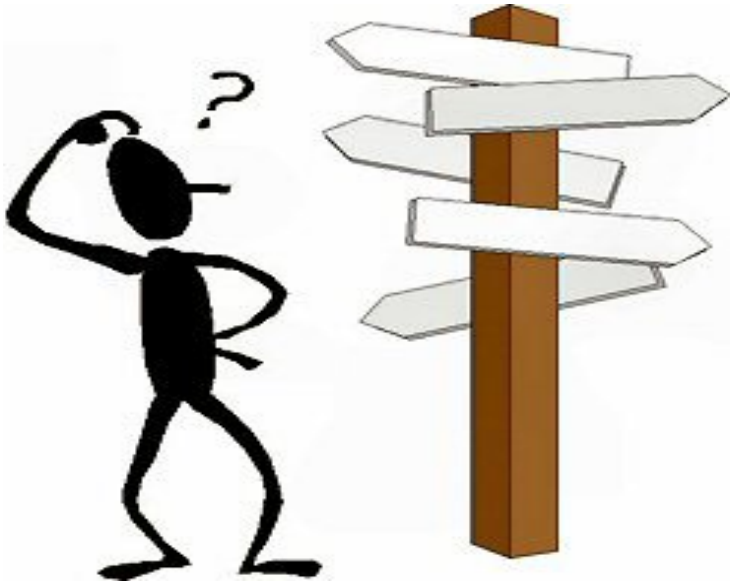
BACK PAIN

- At any one time, 80 million Americans are experiencing back pain
- Years living with disability from low back pain increased 54% from 1990 to 2015
- Lifetime recurrence rate 85%
- 90% of back pain is mechanical
- Early return to daily activities and exercise leads to less chronic disability

Ochsner™ Health System

Who treats Back pain???

- Over 10 different specialties
- Over 30 different treatment approaches
- Each with a slightly different vocabulary and point of view and diagnosis



Ochsner™ Health System

Current treatment

Ochsner™ Health System

There is no consistency and no common language

Ochsner™ Health System

Management: Current State

- Often expense is related to determining an exact diagnosis through advanced imaging, testing, etc
- ~85% of the time a precise diagnosis for chronic low back pain cannot be determined, especially at the initial visit
- Obtaining an MRI for mechanical back pain does not improve your diagnosis, treatment or outcome
- Different treatments and recommendations often lead to *confusion, fear, and anxiety* along with escalating costs

Ochsner™ Health System

Management: current state

- MRI utilization has increased in recent years
- Correlation between Lumbar spine MRI and clinical symptoms and signs is poor
- The majority of people will have minor degenerative changes and age-related findings on imaging
- Imaging does not improve a patient's outcomes and often has an iatrogenic effect (increasing expense, anxiety, and fear avoidance behaviors)

Ochsner™ Health System

MRI: when should we use this tool

- MRI is expensive
- Several studies have shown that patients without red flags that get early imaging do not have improved outcomes
- MRI has a high prevalence of abnormal findings in individuals without pain, so difficult to attribute patients' symptoms to certain imaging findings
- MRI can cause unnecessary stress
- Deyo et al showed higher rate of spine surgeries in states with higher utilization of MRI for LBP but no association with better outcomes

Ochsner™ Health System

Roudsari, Bahman. Jarvik, Jeffrey. Lumbar spine MRI for Low back pain: indications and yield. AJR: 195: 550-559. 2010

Words are, of course, the most powerful drug used by mankind”

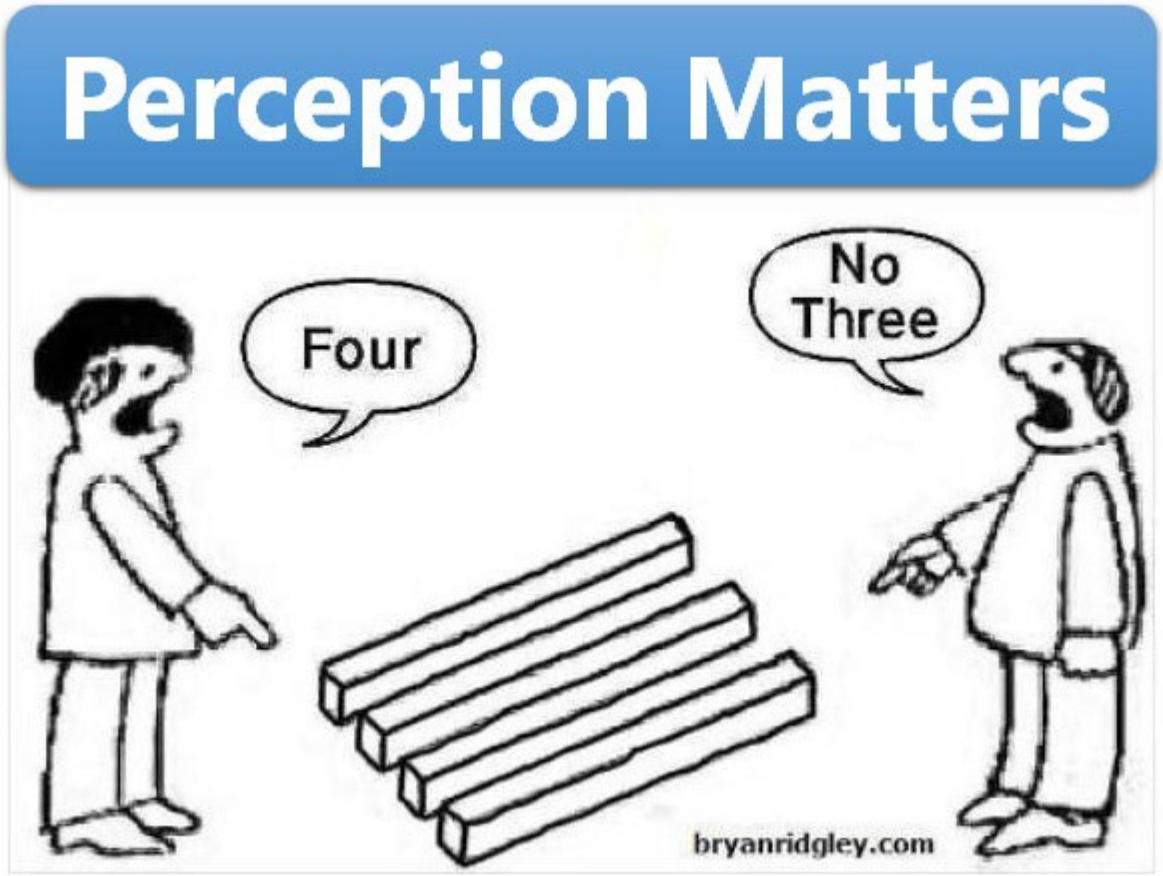
Rudyard Kipling

Words can inspire. And words can destroy. Choose yours well.

Robin Sharma

Ochsner™ Health System

It is your point of view



Ochsner™
Health System

A patient comes into the clinic with acute back pain. What are the primary concerns/emotions?

- FEAR
- ANXIETY
- DISABILITY

Ochsner™ Health System

Words matter

- We need to communicate better to help people recover.
- Psychological factors influence pain
- We need to promote wellness not disease
- Imaging often leads to diagnoses like disc bulge DD”DISEASE” and arthritis
- Do these promote healing or inhibit healing

Ochsner™ Health System

stewart, michael, loftus, stephen.Sticks and stones: the impact of language in musculoskeletal rehabilitation. J orthop sports phys ther 2018;48(7) 519-522.

Perception

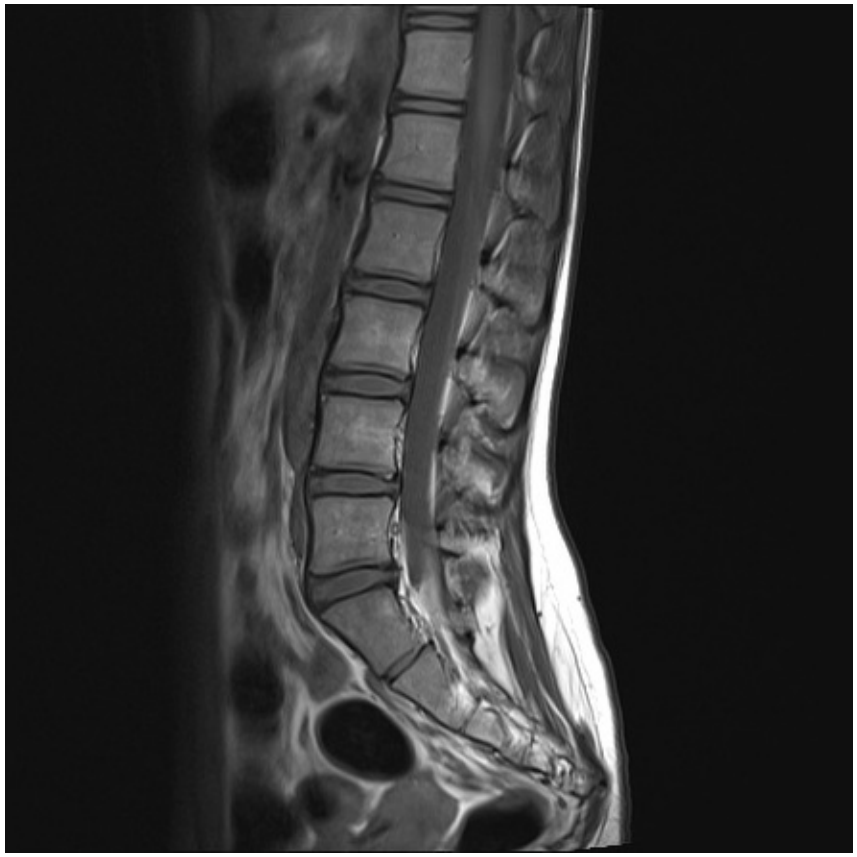
Words to Avoid	Alternatives
Chronic degenerative changes	Normal age changes
Wear and tear	Normal age changes
Don’t worry	Everything will be ok
Bone on bone	Narrowing tightness
Disease	condition
neurological	Nervous system
effusion	swelling

Ochsner Health System

stewart, michael, loftus, stephen.Sticks and stones: the impact of language in musculoskeletal rehabilitation. J orthop sports phys ther 2018:48(7) 519-522.

MRI

- Should not be delayed when red flags are present
- Are useful for surgical planning and injections



Ochsner™ Health System

Red Flags

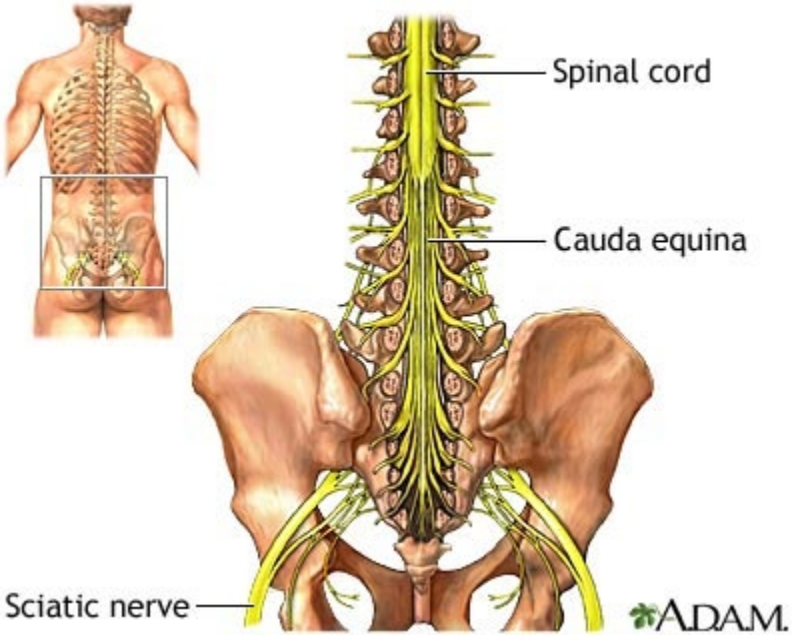
Less than 1% of cases (Henschke et al. 2009)

Signs and symptoms found in patient history or clinical examination which may tie a disorder to serious pathology

Ochsner Health System

RED Flags

- Bowel or bladder dysfunction
- Saddle anesthesia
- Bilateral paresthesias
- Lower extremity weakness
- History of cancer with unexplained weight loss
- Infection concerns
- trauma



Ochsner Health System

Non-Mechanical Back Pain (10 %)

- Fractures
- Rheumatic/metabolic disorders
- Infections
- Tumors
- Referred pain

Characteristics:

Unrelated to time or activity
Gradually worsening
Unrelieved by exercise/rest
No position of comfort
Loss of bowel or bladder control

REQUIRE IMMEDIATE ATTENTION

Ochsner™ Health System

Mechanical Back Pain (90%)

- Back strain
- Herniated disc
- Osteoarthritis
- Spinal stenosis
- Spondylolysis
- Spondylolisthesis

Ochsner™ Health System

The spine Journal in 2017

- One patient went to 10 MRI centers over a 3-week period
- 2 reference MRIs were done initially and proceeding other 10 at same facility
- There were 49 distinct findings
- Zero findings were reported in all 10 studies
- One finding spondylolisthesis was in 9 of 10
- 32.7% of findings appeared once
- Indicating high rate of false positives
- Where you have MRI and who reads it does matter

Ochsner™ Health System

Herzog R, Elgort DR, Flanders AE, Moley PJ. Variability in diagnostic error rates of 10 MRI centers performing lumbar spine MRI examinations on the same patient within a 3-week period. Spine J. 2016 Nov.

Pathoanatomical Findings

Ochsner™
Health System

Guidelines:

Evidence-Based Clinical Guidelines for Multidisciplinary Spine Care:
Diagnosis & Treatment of Low Back Pain

Diagnosis and Treatment of Low Back Pain: A Joint Clinical Practice Guideline from the American College of Physicians and the American Pa

Roge
Paul
Physi

Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians

Surgery for low back pain: a review of the evidence for an American Pain Society Clinical Practice Guideline

Roger Chou [1], Jamie Baisden, Eugene J Carragee, Daniel K Resnick, William O Shaffer, John D Loeser

Affiliations + expand

Ochsner Health System

2018 Lancet Low Back Pain Series

- Awareness of the global burden of low back pain
- Outlined current guidelines for treatment
- Highlighted gaps between evidence and practice with inappropriately high use of opiates, rest, imaging, injections and surgery
- Doing more of same will not improve back pain disability
- We need to align practice with evidence, reduce the focus on spinal abnormalities, and insure promotion of activity and function

Ochsner™ Health System

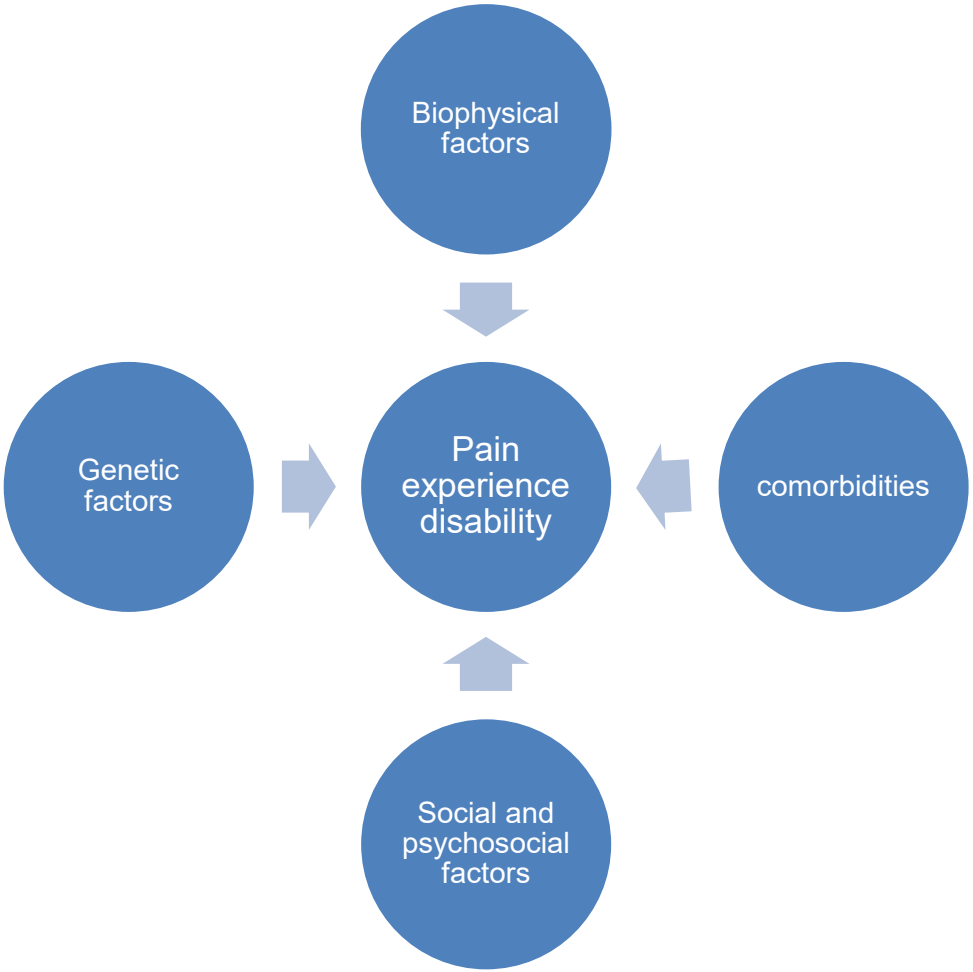
Foster, Nadine, Johannes R Anema, Dan Cherkin, Roger Chou et al. Prevention and treatment of low back pain: evidence, challenges and promising directions. Lancet 2018;391 2368-83

2018 Lancet Low Back Pain Series

- Acute low back pain generally gets better quickly, but recurrence is common
- Back pain can become persistent and disabling in some people
- Initial high pain, psychological distress, and multiple other areas of pain increase risk of disabling pain
- Patients are more likely to have disabling back pain if Low socioeconomic status
- LBP increases cost in both health care and social support systems

Ochsner™ Health System

Hartvigsen, jan, mark hancock. What low back pain is and why we need to pay attention. Lancet 2018; 391:2356-67



Ochsner Health System

Hartvigsen, jan, mark hancock. What low back pain is and why we need to pay attention. Lancet 2018; 391:2356-67

Guideline recommendations

- Labs and imaging should not be part of early management
- Greater emphasis is placed on self management, physical and psychological therapies and complimentary medicine
- Less emphasis on medication and surgery for non-specific low back pain

Foster, Nadine, Johannes R Anema, Dan Cherkin, Roger Chou et al. Prevention and treatment of low back pain: evidence, challenges and promising directions. Lancet 2018;391 2368-83

Ochsner™ Health System

Early management

- Advice and education
- Reassurance that they do not have serious disease
- Encouragement to avoid bed rest
- Supervised exercise, PT often not needed in acute pain but is recommended in pain greater than 12 weeks

Ochsner™ Health System

Foster, Nadine, Johannes R Anema, Dan Cherkin, Roger Chou et al. Prevention and treatment of low back pain: evidence, challenges and promising directions. Lancet 2018;391 2368-83

Problem and Solution

- Often problem in clinic is patient expectation
- They want to know what is there? MRI
- They are hurting and don't want to be told it will get better and do not need meds
- There have been public health outreach initiaves

Ochsner Health System

Huber M, M van vilet M Giezenberg. Towards a patient centered operationalization of the new dynamic concept of health: a mixed methods study. BMJ Open 2016:6:e010091

Most back pain can be managed through conservative measures

Ochsner™ Health System

Prevention

Ochsner™ Health System

Conclusion

- We all need to own back pain
- We need to limit advanced imaging despite patient expectations
- Reassure patients
- We need to better prevent back pain with education and exercise

Ochsner™ Health System

Conclusion

Ochsner™ Health System

References

- Andersson GB. *Epidemiological* features of Chronic Low Back Pain. Lancet 1999; 354:581-585
- Bogduk N, McGuik B. *Medical Management of Acute & Chronic Low Back Pain*. vol 13 Amsterdam; Elservier: 2002
- Borenstein, David G, O'Mara, James W.. Boden, scott. *The value of Magnetic Resonance imaging of the lumbar spine to predict low back pain in asymptomatic patients.* JBJS 2001. 83A: 9: 1306-1311
- Chou, roger. Amir Qaseem vinza snow, Donald casey. *Diagnosis and treatment of Low back pain: a joint clinical practive guideline from the American college of physicians and the American pain society**. Ann internal med***. 2007;147:478-491
- Cyron BM, Hutton WC. *Variations in the amount and Distribution of Cortical Bone Across the Pars Interarticulares of L5. A predisposing Factor in Spondylolysis?* Spine 1979; 4: 163-167
- Deyo RA, Mirza SK, turner JA, et al. Overtreating chronic low back pan: time to back off? J Am Board fam med 2009; 22:62-68
- Deyo RA, Weinstein JN. *Low Back Pain*. N Engl J Med 2001; 344: 363-370
- Dunn, IAN; Proctor, Mark; Day, Arthur. *Lumbar Spine injuries in athletes* Neurosurgery Focus. 2006; 21(4)
- Foster, Nadine, Johannes R Anema, Dan Cherkin, Roger Chou et al. *Prevention and treatment of low back pain: evidence, challenges and promising directions**.*** **Lancet** 2018;391 2368-83Hall, Hamilton, MD. *A consultation with the back Doctor.* 2003
- Hall H, McIntosh G, Melles T. *A different Approach to Back Pain Diagnosis: Identifying a pattern of Pain*. Canadian Journal of CME 1994: 31-42.

Ochsner™ Health System

References

- Hall, H: effective spine triage: *Patterns of Pain*. The Ochsner Journal 2014; 14(1): 88-95
- Hartvigsen, jan, mark hancock. *What low back pain is and why we need to pay attention*. *Lancet* 218; 391:2356-67
- Hayden, Jill A, Rachel Ogilvie. Samual a. Stewart. *Development of a clinical decision support tool for diagnostic imaging use in patients with low back pain: a study protocol*. BMC 2019: 3:1-8
- Herzog R, Elgort DR, Flanders AE, Moley *PJ.* *Variability in diagnostic error rates of 10 MRI centers performing lumbar spine MRI examinations on the same patient within a 3-week period.*. . *Spine J*. 2016 Nov 554-561
- Huber M, M van vilet M Giezenberg. Towards a patient centered operationalization of the new dynamic concept of health: a mixed methods study. *BMJ Open* 2016:6:e010091
- . Kindrachuk D.R., Fournay D.R. *Spine surgery referrals redirected through a multidisciplinary care pathway: effects of non-surgeon triage including MRI utilization*. Journal of Neurosurgery spine 2014; 20: 87-92
- Lively, Matthew W.,DO. *Sports medicine Approach to Low Back Pain*. South Med J. 2002; 95(6)
- Quaseem, Amir. Timothy Wilt, Robert McLean and Mary Ann Forciea. "Noninvasive treatments for acute, subacute, and chronic low back pain: a clinical practice guideline from the American college of physicians." *Ann Intern Med*. 2017:166: 514-530.
- Roudsari, Bahman. Jarvik, Jeffrey. *Lumbar spine MRI for Low back pain: indications and yield*. AJR 2010: 195: 550-559.
- stewart, michael, loftus, stephen.*Sticks and stones: the impact of language in musculoskeletal rehabilitation*. J orthop sports phys ther 2018:48(7) 519-522 Theiss, Steven. *Isthmic Spondylolithesis and spondylosis* J of South orthop assoc 2001;10(3)
- Waddell G. *The Back Pain Revolution.* Kent, United Kingdom, Churchill-Livingstone, 1998, pp 103-117

Ochsner™ Health System

Towards a 'patient-centred' operationalisation of the new dynamic concept of health: a mixed methods study

M Huber,[1] M van Vliet,[1,2] M Giezenberg,[3] B Winkens,[4] Y Heerkens,[5] P C Dagnelie,[6] J A Knottnerus[7]

Ochsner Health System

Huber M, M van vilet M Giezenberg. Towards a patient centered operationalization of the new dynamic concept of health: a mixed methods study. BMJ Open 2016:6:e010091