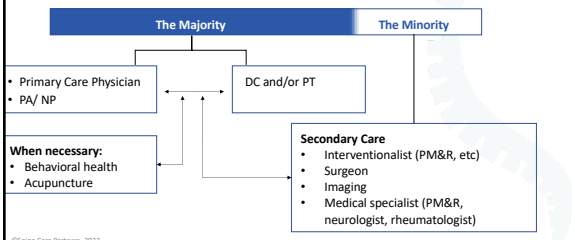
Streamlined Diagnosis and Management for the PCP*

*Applies to virtually every LBP patient you'll ever see

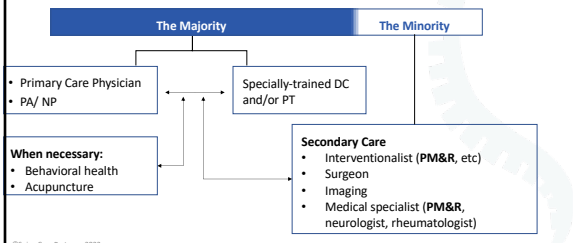
1

Primary Spine Care = ~85-90%



2

Primary Spine Care = ~85-90%



3

Bob — The Story Of Twins — Gary


- Things didn't go well

- PCP reproduces pain on exam
- "That's it, you found it! What is it?"
- Told he has "mechanical LBP"
- No sign of anything serious
- PCP acknowledges that mechanical LBP intense at time
- But a lot can be done to hasten recovery

4

Bob — The Story Of Twins — Gary


- Things didn't go well

- Receives self-care strategies and exercises
- Offered referral to specially-trained PT or DC
- Gary takes that option

5

Bob — The Story Of Twins — Gary


- Things didn't go well

- F/U with PCP 3 weeks later
- Occasional pain but confident in self-management when it arises
- Back to work and normal activities

6

Bob | The Story Of Twins | Gary

- Chronically disabled
- Living life

7

How can we ensure more Garys and fewer Bobs*?

And help those who are already Bob?

8

How can we ensure more Garys and fewer Bobs*?

Streamlined, evidence-based Dx and Rx

Explore the Primary Care Toolbox

9

Three Step Approach

1. Is it a zebra or a horse?
   - Zebra = "red flags"
   - Horse = mechanical or radicular
2. Is it in the back or the leg?
3. History and physical

10

"Rule Out Red Flags"

It could be:*

Medical:
- Spondyloarthropathy
- GI
- GU
- Cardiac
- Etc.

Pathological:
- Cancer
- Infection
- Fracture
- Benign tumor
- Aortic dissection
- Cauda equina

*But that is extremely unlikely! So…

11

Think horses, not zebras (for now)

12

Step 1: Ask These Three Questions

These tell you whether it's a zebra or a horse:

1. Are there certain movements, positions or activities that increase your pain?
2. Are there certain movements, positions or activities that decrease your pain?
3. Can you find a position of relief?

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What does a horse sound like?

- "When I do X, the pain increases"
- "When I do Y, the pain decreases"
- "I can find a position of relief"

14

What's a Horse?

- Mechanical
- Radicular

15

"No matter what activity I do, the pain doesn't change"

¿¿  ??

Probably a horse but not certain – explore red flags

"I can't find any position of relief…"*

*Exceptions: Fracture
Spondyloarthropathy (AS)
More on these later

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"No matter what activity I do, the pain doesn't change"

"I feel ill"
"I'm running a fever"

"I can't find any position of relief…"*

"I'm wetting myself"

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If it's a horse, two things to consider

Classification:

- Mechanical
- Radicular
  - Disc herniation
  - Stenosis

Perpetuating factors:

- Distress
- Low self-efficacy
- Nociplasticity (chronic)

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Amplification of nociception leading to heightened pain experience (central sensitization)

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Step 1: Horse or Zebra?

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Step 2 Back vs Leg: Classify

Is the Pain More Intense in Your Back or Your Leg?

Back > Leg

Mechanical

Leg > Back

Radicular

20

Step 3 History and Physical: Confirm or question classification

Mechanical Classification

- **Back** > Leg
- Often Hx of repeated episodes
- No neurologic symptoms or signs

Key test

"Does that feel like your back pain?"

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Step 3 History and Physical: Confirm or question classification

Mechanical Classification

- **Back** > Leg
- Often Hx of repeated episodes
- No neurologic symptoms or signs

Key test can be done standing

"Does that feel like your back pain?"

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Step 3 History and Physical:

Mechanical Classification

- **Back** > Leg
- Often Hx of repeated episodes
- No neurologic symptoms or signs

Why is this so important?

"Does that feel like your back pain?"

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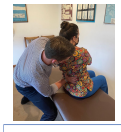
Step 3 History and Physical:

Mechanical Classification

- **Back** > Leg
- Often Hx of repeated episodes
- No neurologic symptoms or signs



Helps reduce possible demand for imaging!

"Does that feel like your back pain?"

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Step 3 History and Physical:

Mechanical Classification

- **Back** > Leg
- Often Hx of repeated episodes
- No neurologic symptoms or signs

Be aware of AS

Ankylosing spondylitis:
1. AM stiffness > 30 min
2. Impr w/ exercise but not rest
3. Awaken during 2nd half of night
4. Alternating butt pain

At least 2 of 4 are present: Se 70%; Sp 81%; +LR 3.7

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Step 3 History and Physical:

Mechanical Classification

- **Back** > Leg
- Often Hx of repeated episodes
- No neurologic symptoms or signs

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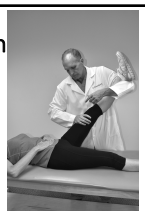
Fracture:
1. age > 52 years
2. no presence of leg pain;
3. body mass index ⩽ 22;
4. does not exercise regularly;
5. female gender

Also consider:
Major trauma
Minor trauma in at-risk patient
Extreme pain behavior
Trouble getting on and off table
And fracture

26

Radicular Classification - disc herniation



History:

- **Leg** > Back
- Incr pain w/ flexion
- Decr pain at rest
- No neurogenic claudication (stenosis)

Key test:
Straight Leg Raise w/ **specifier**

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Radicular Classification - disc herniation



History:

- **Leg** > Back
- Incr pain w/ flexion
- Decr pain at rest
- No neurogenic claudication (stenosis)

"Does that feel like your leg pain?"

Key test:
Straight Leg Raise w/ **specifier**

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Modified Straight Leg Raise w/ specifier

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Radicular Classification - stenosis

History:

- **Leg** > Back
- Older
- Incr pain w/ walking
- Decr pain w/ flexion or sitting
- Shopping cart sign

Neurogenic claudication

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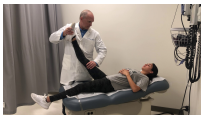
Radicular Classification - stenosis

History:

- **Leg** > Back
- Older
- Incr pain w/ walking
- Decr pain w/ flexion or sitting
- Shopping cart sign



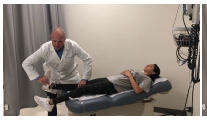


Key test??
Straight Leg Raise w/ **specifier but…**

31

Radicular Classification - stenosis

…SLR is usually negative




But that's OK because Hx is classic:

Leg > back
Incr pain w/ walking
Decr pain w/ sitting or flexion
Shopping cart sign

Neurogenic claudication

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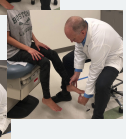
Neuro exam

- Motor
  - Heel and toe
  - EHL (great toe)
  - Tibialis
- Reflex
- Plantar
- Sensory?





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How do we identify distress and low self-efficacy?

It's mostly in the relationship
Relationship-Centered Care

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Beach MC, Inui T, Relationship-Centered Care Research N. Relationship-centered care. A constructive reframing. Journal of general internal medicine. 2006 Jan;21 Suppl 1:S3-8.

Suchman AL. A new theoretical foundation for relationship-centered care. Complex responsive processes of relating. Journal of general internal medicine. 2006 Jan;21 Suppl 1:S40-4.

34

How do we identify distress and low self-efficacy?

- Afraid of activity
- Language appears catastrophizing
- Little confident in ability to get better
- Language reflects "it's someone else's fault"

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How do we identify nociplastic pain?

This applies to the ***chronic*** patient:

- Pain intensity and behavior disproportionate to injury or pathology
- Close association to distress and low self-efficacy
- Atypical incr/ decr factors on Hx; "everything hurts"
- Pain on palpation virtually everywhere

McPhee ME, Vaegter HB, Graven-Nielsen T. Alterations in pronociceptive and antinociceptive mechanisms in patients with low back pain: a systematic review with meta-analysis. Pain. 2020 Mar;161(3):464-75

36

Management

- First: Context!
- Informed by the principles of:
  - Cognitive-Behavioral Therapy
  - Acceptance and Commitment Therapy
  - Motivational Interviewing

Testa M, Rossettini G: Enhance placebo, avoid nocebo: How contextual factors affect physiotherapy outcomes. Man Ther 2016, 24:65-74

Fordham B et al. Explaining How Cognitive Behavioral Approaches Work for Low Back Pain: Mediation Analysis of the Back Skills Training Trial. Spine. 2017 Sep 01;42(17):E1031-E9.

McCracken LM, Vowles KE. Acceptance and commitment therapy and mindfulness for chronic pain: model, process, and progress. The American psychologist. 2014 Feb-Mar;69(2):178-87.

O'Halloran PD et al. Motivational interviewing to increase physical activity in people with chronic health conditions: a systematic review and meta-analysis. Clinical rehabil 2014 Dec;28(12):1159-71.

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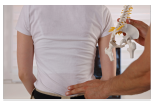
Management – Language:
What you say and do – and how!



First and foremost:
- **Validate!**

1. Reproduce pain on exam
2. Acknowledge **their** experience!

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Management – Language:

- Severe pain does NOT indicate a catastrophic event
  - Though it sure feels like one! (validate)
- Spine pain rarely needs emergent care
  - Though it sure seems like it does (validate)

Unless there's a zebra
- Lose ability to go to the bathroom
- Legs suddenly go weak
- Spike a fever

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Management – Language:

- Manage, not cure
  - "This can hurt like heck, but it is very common and manageable"
- Keep it simple whenever possible
  - If we get complex, it seems like a complex problem
  - If we keep it simple, it seems like a simple problem

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Management – Language:

- Use positive language re: expectation for recovery
  - Be careful: "90% of LBP resolves within 3 months" doesn't work!*
  - "As much as it might hurt, there is a lot that we can do to help it resolve quickly" (notice the "**we**")
- Help them challenge their own assumptions, but validate first
  - First: "It is understandable that you would be distressed about this"
  - Then: "Good news! It's not as bad as it appears. Here's why…"

*In fact, it can make things worse!

Hasenbring MI, Pincus T. Effective reassurance in primary care of low back pain: what messages from clinicians are most beneficial at early stages? Clin J Pain. 2015 Feb;31(2):133-6

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Management – Language:

- Make clear no evidence of underlying serious pathology
- Encourage staying active and that their pain does NOT mean they are doing more damage – but validate first!

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Management - Language

Pathoanatomically-Based Communication

What You Say	What the Patient Hears
Your MRI shows degenerative changes/disc herniations/arthritis	I will never get better
Stop when you feel pain	Activity will harm my back
Take it easy and rest	I should stay in bed
Pain is normal for someone your age	I'm going to get worse

Psychologically-Informed Communication

What You Say	What the Patient Hears
Your MRI doesn't show anything to worry about	There is nothing seriously wrong with my back
The cause of your pain may not show up on an MRI	My pain is real
You should increase activity as tolerated	Activity / work is good for me
There are many things you can do on your own to control your pain	I can learn to handle my pain

With permission from: Sherri Weiser NYU School of Medicine

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Management – Language:

- Being "present"
  - For the practitioner
  - For the patient
- Wording: Increase / decrease pain rather than worse / better – Why?

Objective Observation

Judgement

Verghese A. The Importance Of Being. Health Affairs. 2016 Oct 1;35(10):1924-7.

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Management - Medications

ACP American College of Physicians — Clinical Guideline

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

Amir Qaseem, MD, PhD, MHA; Timothy J. Wilt, MD, MPH; Robert M. McLean, MD; and Mary Ann Forciea, MD; for the Clinical Guidelines Committee of the American College of Physicians*

Recommendation #1:

"…clinicians and patients should select nonpharmacologic treatment…"

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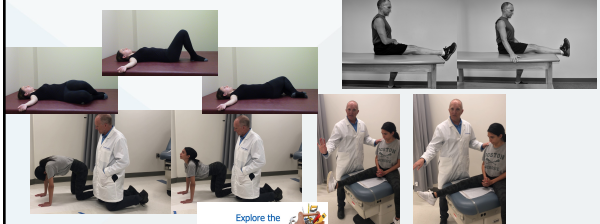
Management – Self Care

Mechanical

Radicular



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Prescriptions – Simple Rules

- Try to minimize medications:
  - Don't speed recovery
  - Can give comfort
  - Common side effects
- A means to an end
  - Means: reduce pain intensity
  - End: increase activity
- OTC whenever possible (¿acetaminophen?, NSAID)
- Muscle relaxant if can't sleep d/t pain

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Prescriptions – Simple Rules

- Topical (capsaicin); patches have little impact
- Heat wrap
- ¿¿Central analgesic or low dose opioid only if: look horrible, no sleep despite muscle relaxer, failed max dose of OTCs??
  - Never Rx for >3 days….
  - and let them know why!

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Common pain conditions for which opioids are almost never indicated

- Fibromyalgia
- Headache
- Self-limited illness, i.e., sore throat
- Uncomplicated back and neck pain
- Uncomplicated musculoskeletal pain

Institute for Clinical Systems Improvement.
Acute Pain Assessment and Opioid Prescribing Protocol. Jan 2014

49

Management – Medications; Acute

Mechanical → Consider NSAIDs, acetaminophen, muscle relaxant (if no sleep)

Radicular → Consider NSAIDs, acetaminophen, oral steroid, muscle relaxant (if no sleep)

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Management – Medications; Acute

Mechanical → Consider NSAIDs, acetaminophen, muscle relaxant (if no sleep)

Radicular → Consider NSAIDs, acetaminophen, **oral steroid**, muscle relaxant (if no sleep)

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Management – Medications; Chronic

Mechanical — Important to promote sleep!

Radicular — Acetaminophen, NSAID if necessary

Radicular

Gabapentin/ pregabalin?

Mathieson S, et al. Trial of Pregabalin for Acute and Chronic Sciatica. The New England journal of medicine. 2017 Mar 23;376(12):1111-20.

Shanthanna H, et al. Benefits and safety of gabapentinoids in chronic low back pain: A systematic review and meta-analysis of randomized controlled trials. PLoS medicine. 2017 Aug;14(8):e1002369.

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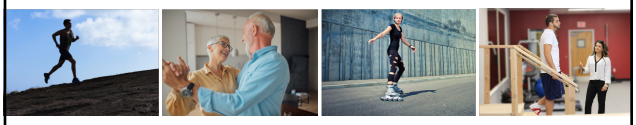
Management – Nociplastic pain



Patient education

Acupuncture

Graded exposure

PCP and/or trained PT/ DC

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Management – Distress and Low Self-Efficacy

- AND no improvement!*
- Consider Behavioral Health Referral
- Ideally trained in Cognitive-Behavioral Therapy and/or Acceptance and Commitment Therapy for pain

*Majority improve with primary spine care

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What if the Patient is Already Chronic?

It is largely the same…

- Horse or zebra
- Mechanical or radicular
- Primary spine care
  - PCP ⟷ PT/DC
- But…

…Distress, low self-efficacy, nociplasticity are a much bigger deal.

So more likely to utilize:
- Behavioral health
- Acupuncture
- Pain education
- Graded exposure

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Mildly concerned (none of these should by themselves trigger diagnostic testing)	Moderately Concerned	Very Concerned	Suspect
History of osteoporosis	History of osteoporosis **w/** minor fall	Recent significant trauma **w/** or **w/o** osteoporosis and/or prolonged use of corticosteroids	Fracture
Prolonged use of corticosteroids	**Prolonged** use of corticosteroids w/ minor fall	Recent significant trauma **w/** or **w/o** osteoporosis **and/or** prolonged use of corticosteroids	Fracture
New or recent bowel incontinence or bladder retention	New or recent bowel incontinence **and** bladder retention	New or recent bowel incontinence **and/or** bladder retention **w/** widespread (>1 nerve root) or progressive motor loss	Cauda Equina Syndrome*
History of cancer	History of cancer **w/** fever, chills, sweating and new pain	History of cancer **w/** new pain and unexplained weight loss	Cancer
Constitutional symptoms	Constitutional symptoms **w/** unrelenting pain	Constitutional symptoms **w/** unexplained weight loss	Cancer
Fever, chills, rigors, sweating	Fever, chills, rigors, sweating **w/** sudden UE or LE pain **or** neurologic deficit and new or progressively worsening pain	Fever, chills, rigors, sweating **w/** sudden UE or LE pain or neurologic deficit and new or progressively worsening pain	Infection * (e.g.) spinal epidural abscess
Sudden onset severe back pain unprovoked	Sudden onset severe back pain unprovoked **w/** no reproduction on exam	Sudden onset severe back pain unprovoked **w/** no reproduction on exam **and** no position of relief on history	Aortic dissection *
Sudden onset severe back pain w/ use of anticoagulant and/or bleeding diathesis	Sudden onset severe back pain **w/** use of anticoagulant **and/or** bleeding diathesis and localized pain on percussion	Sudden onset severe back pain **w/** use of anticoagulant **and/or** bleeding diathesis and localized pain on percussion **and/or** neuro findings **and** history of trauma, neuraxial anesthesia or lumbar puncture	Spinal sub/epidural hematoma
No improvement after 1 month of quality care (first consider perpetuating factors)	No improvement after 1 month of quality care **w/** any of the above	No improvement after 1 month of quality care **w/** any of the above	Cancer
Age >50 or <20	Age >50 or <20 **w/** any of the	any of the	Cancer or infection

RED FLAGS

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Imaging Decision

Oliveira CB et al. Clinical practice guidelines for the management of non-specific low back pain in primary care: an updated overview. Eur Spine J. 2018 Nov;27(11):2791-803.

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- Do not *routinely* obtain imaging or other Dx tests
- MRI when:
  - Severe or progressive motor loss (*3/5)
  - Red flag condition suspected
  - Potential candidate for surgery or ESI
- X-ray when:
  - Suspect bone pathology or fracture

Best to get MRI prior to surgeon

***If motor loss progresses to 3/5, strongly consider MRI and surgical consult**

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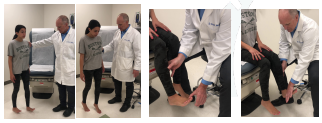
Motor Loss

Petr O et al. Immediate Versus Delayed Surgical Treatment of Lumbar Disc Herniation for Acute Motor Deficits: The Impact of Surgical Timing on Functional Outcome. Spine. 2019 Apr 1;44(7):454-63



Grading motor strength:

5/5: Normal. The patient is able to provide full resistance when you apply pressure

4/5: Movement against gravity and the patient is able to provide some resistance when you apply pressure

3/5: Movement against gravity but the patient is not able to resist when you apply pressure

2/5: Movement is possible when gravity is eliminated, but the patient cannot move against gravity

1/5: Muscle flicker, but the patient is not able to move the body part

0/5: No contraction

Source: Blumenfeld, Neuroanatomy through Clinical Cases, 2nd ed. Sinauer Assoc, Sunderland, MA

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Age-specific prevalence estimates of degenerative spine imaging finding in asymptomatic patients

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	Age (yr)						
Imaging Finding	20	30	40	50	60	70	80
Disk degeneration	37%	52%	68%	80%	88%	93%	96%
Disk bulge	30%	40%	50%	60%	69%	77%	84%
Disk protrusion	29%	31%	33%	36%	38%	40%	43%
Facet degeneration	4%	9%	18%	32%	50%	69%	83%
Spondylolisthesis	3%	5%	8%	14%	23%	35%	50%

Brinjikji, Deyo, et al AJNR 2014

Your MRI shows degenerative disc disease = I will never get better

Your MRI shows normal age-related changes = There is nothing seriously wrong

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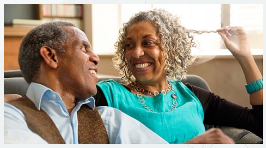
"Gray hair of the spine"

- "Spondylosis"
- "Disc bulge"
- "Degenerative disc disease"



DEGENERATIVE HAIR DISEASE??

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When to Consider Injection

If **radicular**

Stenosis?

CONSIDER Epidural steroid injection (ESI) if:

- Disc herniation **and**;
- Cannot do active therapy (PCP/PT/DC) **or**;
- No improvement ~4 weeks of appropriate care **and;**
- Inadequate response to oral medication

Usu. PM&R (physiatrist) or anesthesiologist, occ. surgeon

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When to Consider Injection

If **mechanical**

*Little evidence, but occasionally can be helpful

CONSIDER* Joint injection if:

- Mechanical **and**;
- Cannot do active therapy (PCP/PT/ DC) **or**;
- No improvement ~4 weeks of appropriate care **and;**
- Inadequate response to oral medication

Usu. PM&R (physiatrist) or anesthesiologist, occ. surgeon

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When to Consider Surgical Consult

The most common clear indications:

- Progressive motor loss
- Severe motor loss, even of recent onset
- Signs of cauda equina syndrome (usually ED)

Sharma H, Lee SW, Cole AA. The management of weakness caused by lumbar and lumbosacral nerve root compression. The Journal of bone and joint surgery British volume. 2012 Nov;94(11):1442-7.

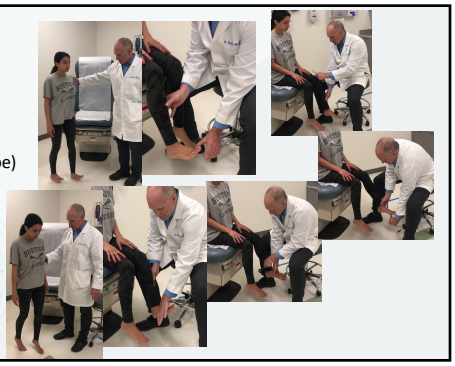
Overdevest GM et al. Recovery of motor deficit accompanying sciatica--subgroup analysis of a randomized controlled trial. Spine J. 2014 Sep 1;14(9):1817-24.

Petr O et al. Immediate Versus Delayed Surgical Treatment of Lumbar Disc Herniation for Acute Motor Deficits: The Impact of Surgical Timing on

63

Neuro exam

- Motor
  - Heel and toe
  - EHL (great toe)
  - Tibialis
- Reflex
- Plantar
- Sensory?



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Surgery referral decision

The other indication:

- Progressive motor loss
- Severe motor loss, even of recent onset
- Signs of cauda equina syndrome (ED)
- Intractable nerve root pain that does not improve with an *adequate* trial of primary spine care/ injection for at least 6 weeks

Not sure if surgical consult is the best option? – PM&R (physiatrist)

Here you have some flexibility

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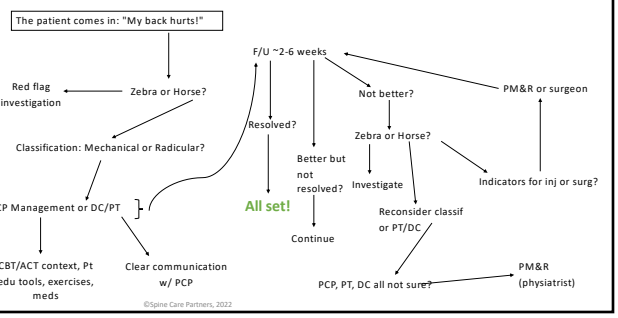
So…



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Primary Spine Care = ~85-90%

The Majority | The Minority

- Primary Care Physician
- PA/ NP

Specially-trained DC and/or PT

When necessary:
- Behavioral health
- Acupuncture

Secondary Care
- Interventionalist (**PM&R**, etc)
- Surgeon
- Imaging
- Medical specialist (**PM&R**, neurologist, rheumatologist)

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The Most Important Thing??...

Make the patient the hero of the story!

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THANK YOU

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