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Understanding & Treating Low Back Pain

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Oh so many ways to make it...

Hurt!!

Physiatry/Spine Medicine: Scope of Practice


- To examine patients and do testing to find a specific cause of pain which can then ideally be resolved Non-Operatively.
- The goal of any physiatrist is to improve function and quality of life.
- Use of physical therapy, physical modalities, medications, and injections.

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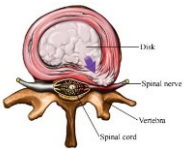
Risk Factors for Spine Pain


- Smoking
- Weight
- Sedentary lifestyle
- Posture (hunched over, forward neck)
- Arthritis
- Twisting sports (golf, tennis, pro wrestling)
- Your Parents

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Causes of Back Pain

- Most of the time: muscle strains
- Rarer causes:
 - Disc Hernia
 - Facet Syndrome
 - Infection
 - Osteoporosis related compression fx's
 - Abdominal pathology (referred pain from kidneys, aorta, pancreas, psoas, etc.)
 - Tumor/cancer



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History Red Flags


Cauda Equina
 loss of control of bowel and/or bladder
 Saddle anesthesia
This is a surgical emergency: failure to diagnose/treat can lead permanent dysfunction

Myelopathy – hyper-reflexia, balance issues

Trauma – may need early imaging




Night pain - cancer? Infection?

Claudication lingering upon sitting/lying down – consider vascular cause

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Physical Exam Pearls

- Gait/posture: dip in the hip, trunk shift
- Heel/Toe walking: tests balance & strength
- Sit-to-stand: how fast? Use of arm rest?
- Palpation: both light and firm
- SLR test: read up on proper way to do this
https://www.physio-pedia.com/Straight_Leg_Raise_Test
- Reflexes: very easy with a plastic queen's square
- SI joint:
 PSIS movement: asymmetrical or not?
 Specific spot of "Back" pain below iliac crest: likely NOT a back issue

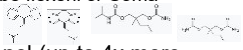




<https://mycerebellarstrokecovery.com/2014/10/11/lateral-shift-2/>
<https://www.researchgate.net/figure/Standing-flexion-test-both-examiners-thumbs-pressed-to-the-upper-midline-of-the-spine-fig1-205439293>

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Treatment for Back Pain

- SHORT rest (no more than a day or two)
- Muscle relaxants (Baclofen or Tizanidine)
 - Friends don't let friends prescribe flexeril or Soma
- Anti-inflammatories WITH tylenol (up to 4x more effective than opioid pain meds!):
<http://sdcms.org/Portals/18/Assets/Lev%20Docs/Evidence-Efficacy-Pain-Medications.pdf>
<https://jamanetwork.com/journals/jama/article-abstract/2661581>
- Physical therapy
- Injections
- Surgery



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Treatment for Back Pain: Physical Therapy

- THE MOST IMPORTANT MODALITY
- Focus needs to be on ACTIVE therapy
 - Cardiovascular oriented
- Core stabilization
- McKenzie protocol
- Flexion/Extension based
- Useful adjuncts: heat/ice, E-stim, deep tissue massage, ultrasound, joint mobilization, medX

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Other Alternatives

Pilates https://www.cochrane.org/CD010265/BACK_pilates-for-low-back-pain

Tai Chi <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4850460/>

Alexander Technique <https://amsatonline.org/awsl/AMSA/pt/sp/research>


Feldenkrais <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4408630/>

Egoscue Technique

Acupuncture
<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD001351.pub2/full>

Chiropractic https://www.cochrane.org/CD005427/BACK_combined-chiropractic-interventions-for-low-back-pain

Water aerobics



Imaging

Lawyer Maxim: "Don't ask questions you don't already know the answer to."


Imaging is best used for the following:

- 1: Back and radiating pain related to trauma
- 2: Procedural Planning (injection or surgery)

Avoid Imaging for:


- 1: Diagnosis
- 2: Because the patient really, really wants it


https://journals.lww.com/spinejournal/fulltext/2012/08150/Early_Imaging_for_Acute_Low_Back_Pain__One_Year.13.aspx
<https://www.ncbi.nlm.nih.gov/pubmed/20798647>



Disc Hernias


- Can cause axial pain alone
- Can also cause "sciatica"
 - Radiating pain and/or weakness into leg
- Need MRI to identify exact location
- CT scan with contrast in patients who can't do an MRI (pacemakers, deep brain stimulators etc)






Treatment for Back Pain: Injections for Disc pathology

- Epidural Steroid Injections
- Transforaminal: specific
- Interlaminar: more medicine spread, best for axial or discogenic pain, as well as stenosis (if there's space)
- Treatment, not a fix
- Several studies over the years have shown short term benefits.

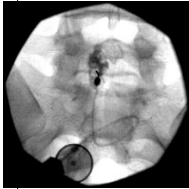
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Epidural Steroid injections

- Transforaminal



- Interlaminar




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Epidural Steroid Injections: My Philosophy

- Helps to remove the "roadblock" on the way to recovery
- Designed to reduce inflammation, not necessarily pain
- Makes it easier for patients to participate in PT
- Improves tolerance for activities
- Many patients need up to 2 injections, Rarely need more than 3 (stenosis).
- Stenosis: mounting evidence that injections are diagnostic only (LESS trial 2015*). Surgery can help if PT doesn't

* <https://www.nejm.org/doi/full/10.1056/NEJMoa1313265>

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Injection “Medical Guidelines”, AKA: THE RULES!!

Therapeutic Epidural Steroid Injection (ESI) of the cervical or lumbar spine may be indicated when all of the following criteria are met:

- 1: Radicular pain (cervical or lumbar) or neurogenic claudication (lumbar) with associated functional impairment
- 2: Evidence of nerve root compression or spinal stenosis (central or foraminal) is seen on an advanced imaging study (MRI or CT) and correlates with the clinical findings*
- 3: The pain has not responded to at least four (4) weeks of appropriate conservative management, unless there is evidence of radiculopathy, in which case ESI may be performed following two (2) weeks of conservative management.

http://www.aimspecialtyhealth.com/PDF/Guidelines/2019/Jan01/AIM_Guidelines_MSK_Interventional-Pain-Management.pdf

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More “Guidelines”

Indications other than those addressed in this guideline are considered not medically necessary, including but not limited to the following:

- 1) Thoracic level ESI performed for thoracic pathology
- 2) Moderate to severe myelopathy on clinical exam
- 3) Myelopathy associated with intramedullary cord signal change on T1 or T2 weighted MRI
- 4) Isolated axial neck pain or low back pain

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Other Non-surgical Techniques

- Facet Injections: +/- efficacy in ACUTE low back pain. No good evidence of efficacy in chronic LBP
- Rhizotomy: cauterizing medial recurrent branch into facet joints. Potential longer term tx than facet injection.
- SI joint injections: can help with SI joint pain when other pathologies ruled out.
- Nucleoplasty: new/old idea “poor man’s microdiscectomy.” Currently controversial.
- LASER microdiscectomy: significant risks due to technique & expensive equipment. No long term studies. Not usually covered by insurance.

More information: <https://aimspecialtyhealth.com/resources/clinical-guidelines/musculoskeletal/>

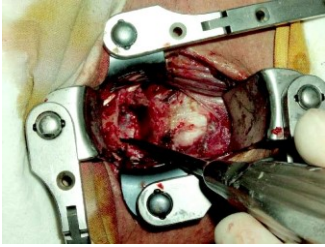
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Surgery:

- Obviously the last option....

Except for:

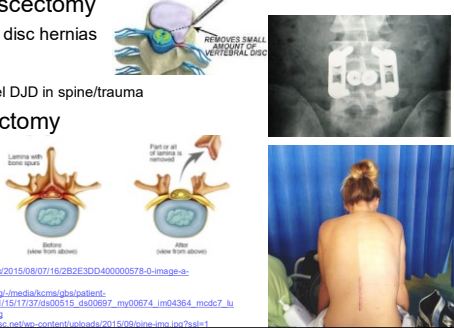
- cauda equina syndrome
- progressive loss of motor strength
- Severe, intractable pain.
- Unstable spine



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Common Back Surgeries

- **Microdiscectomy**
 - Simple disc hernias
- **Fusion**
 - Multilevel DJD in spine/trauma
- **Laminectomy**
 - stenosis



REMOVES SMALL AMOUNT OF INTERVERTEBRAL DISC

Part of all of vertebrae is removed

Lamina with some space

Before (view from above)

After (view from above)

Before (view from above)

After (view from above)

http://i.dailymail.co.uk/pix/2015/08/07/16/2B2E3DD400000578-0-image-a-4_143695911100.jpg

https://www.mspclinic.org/-media/kcms/gbs/patient-consumer/images/2013/11/15/17/37/d90515_d900897_my00674_img04364_mode7_bu

00674_laminectomy.jpg.jpg

https://www.compass.com.net/web-content/uploads/2015/09/line-imo-10479-s1-1

Summary

- PM&R, AKA Physiatry, is a specialty incorporating multiple disciplines
- Team-oriented approach
- Use of PT and diagnostics to assess cause of patients' complaints
- Occasional use of injections for both diagnostic and therapeutic purposes
- Provide guidance on improving function and quality of life


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More Resources


A compendium of articles:
<https://back.cochrane.org/our-reviews>

Want a really long read? Try this:
<https://back.cochrane.org/sites/back.cochrane.org/files/public/uploads/PDF/4106.PDF>

Resources for patients:
<https://www.painscience.com/articles/when-to-worry-about-low-back-pain-and-when-not-to.php>
<https://www.tamethebeast.org/>


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Questions?
 Spine Line: 800-827-8313



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The pilot suffered three cracked vertebra but he will make a full recovery

http://i.dailymail.co.uk/i/pix/2010/09/14/article-1311828-0b2d77c600005dc-701_964x666.jpg 

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Role of a Medical Spine Specialist: PMR and PSP

Mark Rotty, MD

Essential message for all of our patients

- Minimize the fragmented care approach.

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Essential message for all of our patients

- We know that how the patient is managed in the **early weeks** of symptoms will set the stage for recovery and decrease the risk for chronicity.
- We have to have a **similar message** – early intervention.
- Focus on **functional improvement**.
- Thorough history- review **Red Flags**.
- Standard exam** with unique additions from each specialty.

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Essential skills of a primary spine provider

- Differential diagnosis of spine related disorders.
- Efficient management of low back pain promoting **early intervention**.
- Effective education, communication and motivation of patients.
- Identify and manage the **psychosocial aspects** of spine related disorders. (fear/avoidance behaviors, family member living with chronic pain, job satisfaction, history of depression or anxiety.)
- Developing a positive therapeutic relationship with your patient.
- Become a local site resource for treating spine pain.

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On being a primary spine provider

- **Location:** Evaluate spine patients in the setting of your usual practice- primary care / internal medicine / chiropractic. Recognized as a site resource or local specialist for patients with spine complaints.
- Another option may be to see patients in a spine center- as I do as part of Courage Kenny Spine Center. I spend a certain number of days each week at the spine center evaluating patients who have been referred to our program.

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On being a primary spine provider

- **Your Role:** Become a local specialist for your clinic which includes both evaluating patients with spine complaints, but also being a resource for your partners helping them managing their own spine patients. **Scheduling** could include 1 hour blocks on certain days or half day blocks depending on the demand.
- In the spine center we provide the same service- evaluating patients referred to our program, but also acting as a resource for providers who contact us with questions about how to manage their patients.
- Health Partners- Medical Spine Center (MSC) evaluations

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Health Partners- Medical Spine Center (MSC) evaluation

- In January, 2012 HP instituted a Medical Spine Center approach that required that patients receive an evaluation from a HP designated MSC provider prior to the first office visit with a spine surgeon for specified lumbar conditions unless there was an emergent condition.
- **Goal:** Focus on the non-surgical, comprehensive management of spine problems using a biopsychosocial active re-conditioning model.
- The MSC evaluation helps support prospective surgical patients and their physicians so they may understand the full range of options when choosing the treatment plan that is right for them.

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HP Medical Spine Center (MSC) evaluation

- **MSC providers:** Courage Kenny Spine Centers (as well as other local spine centers) were involved from onset. In addition, other providers have been performing the MSC evaluations: sports medicine, occupational medicine, PMR and others with advanced training (PSP). Surgeons have not been eligible to do the MSC evaluations.
- The MSC evaluation applies only to those patients with **lower back pain**, not neck pain.

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HP Medical Spine Center (MSC) evaluation

- **Focus on non-surgical comprehensive management of lower back pain.**
 - Provide comprehensive evaluations prior to surgical consult.
 - Facilitate appropriate patient decision making.
 - Offer non-surgical alternatives, if appropriate.
 - Education

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HP Medical Spine Center (MSC) evaluation

- Patients were being referred to a surgeon not because they needed surgery, but rather because their symptoms persisted and there wasn't a good understanding of the next step in the treatment plan.
- We are not acting as a gatekeeper, but rather a resource to offer suggestions on other treatment options.
- **Documentation:** HP has documentation criteria for the MSC evaluations: Standards for the history and exam as well as the need to document pain rating/ disability rating/ mental health assessment (PHQ-9 or other).

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HP Medical Spine Center (MSC) evaluation

- **Outcome:** Cost savings noted.
- Improve quality of care.
- Not uncommonly, patients have decided not to see the surgeon after all, but rather begin a different plan of care.
- Surgeons have found this beneficial – they end up seeing more patients that truly need a surgical evaluation.
- Patients have typically found this helpful, although on occasion there has been frustration that they have to go through this step.

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On being a primary spine provider


- **Training:** Although there are formal fellowships available (Sports medicine- CAQ and others), there really isn't a need for a formal fellowship unless you were considering more advanced treatments such as spinal injections.
- Allina provides a training program for those that are interested.
- **Spent time mentoring with other non-surgical spine providers,** somewhat like a mini residency. Spend a day with a spine surgeon.
- Conferences are available that offer excellent training. American Academy of PMR (AAPMR) (Nov). North American Spine Society (NASS)(Oct). Mayo Clinic conference on Surgical/Medical treatment of spine disorders, plus many others.

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On being a primary spine provider

- **Training:** I recommend spending time with a spine radiologist to learn more about reading X-rays, MRI and CT scans. Try to look at the images for each study you order and review those images with the patients. (Paste images into the after visit summary.)
- Learn the anatomy and terminology.
- Desire to read articles / journals.

• You will find that it really isn't that difficult to gain sufficient knowledge to feel comfortable evaluating patients with spine complaints.

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Know your resources- Plan ahead

- If you are seeing spine patients intermixed through the day it will help significantly if you plan ahead and know what resources you have available. This also has to do with documentation- have a template you can use for spine patients.
- **Imaging:** Which x-rays to order. How to order an MRI scan. Where to order MRI imaging. How to log into the imaging sites to get the reports or images (CDI, St Paul Radiology, Suburban Imaging and others) How to look at the images (EMI desktop icon).

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Know your resources- Plan ahead

- **Physical therapy:** Know different types of therapy: Traditional PT, Spine rehab, Pool therapy. Know what therapy locations you will refer to. You may even have a specific therapist at different locations you prefer to refer to. (Who are the therapists- It may help to get to know them.) Have a smart phrase in Excellian to help with ordering.
- **Spinal Injections:** Know how to order the injections and where to have them done. There are multiple locations / providers who can do the injections. Have this addressed ahead of time.

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Know your resources- Plan ahead

- **Spine Surgery:** Have an idea who you will refer to for a spine surgery consultation, both orthopedic spine surgery and neurosurgery. Get to know 1-2 of the surgeons if possible as they may a resource for your difficult patients.
- All of this information you have gathered will be helpful for your own practice but also for your partners as you function as a site leader for spine care.

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Know your resources- Plan ahead

- **Mentors:** Probably the most important item to plan for. No doubt you will have a number of questions as you get into this and having a person to call / text / email can be very reassuring.
- This can include other spine providers (multiple), possibly spine surgeons.
- Know how to reach them when needed.
- Expect that you will have multiple questions as you begin.

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