

# “Early management of back pain: When to refer to a specialist?”

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# Conflicts of Interests - Disclosures

- Spinal Stabilization Technologies
  - Advisory Board member and medical director
  - Medical device company
    - My COI is not related to today's topic
- Canadian Spine Institute
  - Dedicated spine rehab and treatment clinic
  - Shareholder
    - Despite my COI, this presentation will be strictly scientific and will not be influenced by any commercial interests

# Goals of Presentation

- Review general concepts
- I hope to stimulate discussion and raise awareness
- Not meant to be a didactic lecture

# Objectives

- Distinguish various types of back pains
- Determine when physical therapy may be helpful
- Recognize signs and symptoms requiring surgical referral

# “Ideal versus Reality” of managing patients with back pain in Quebec

## “Ideal World”

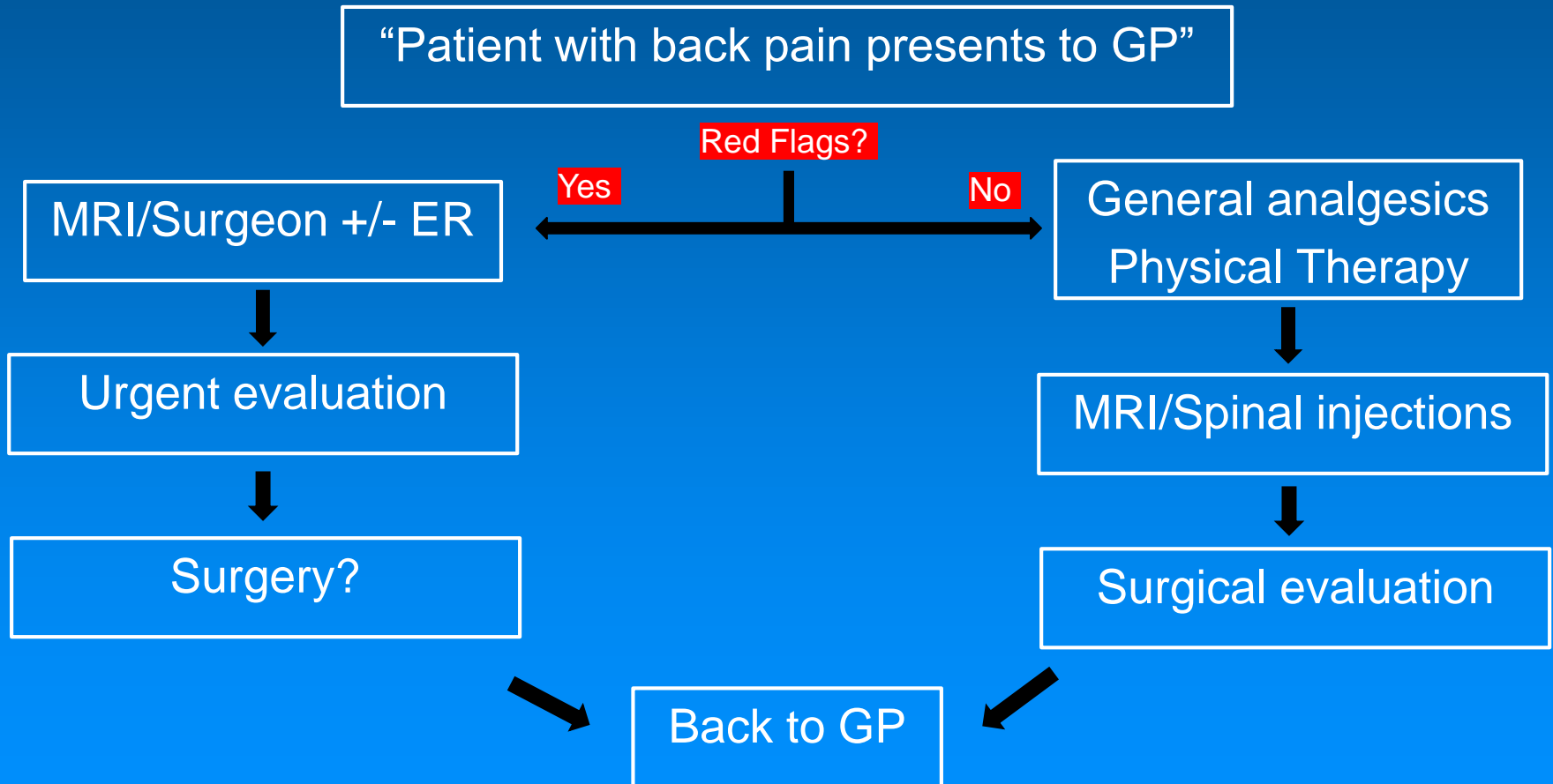
- Generalists would refer patients promptly to specialists
- Specialists would assume care
  - Diagnose and treat
  - Manage and supervise clinical evolution
  - Identify and solve barriers to recovery
    - Generalists would be regularly updated on progress
    - Patients would resume normal life ASAP

# “Ideal versus Reality”

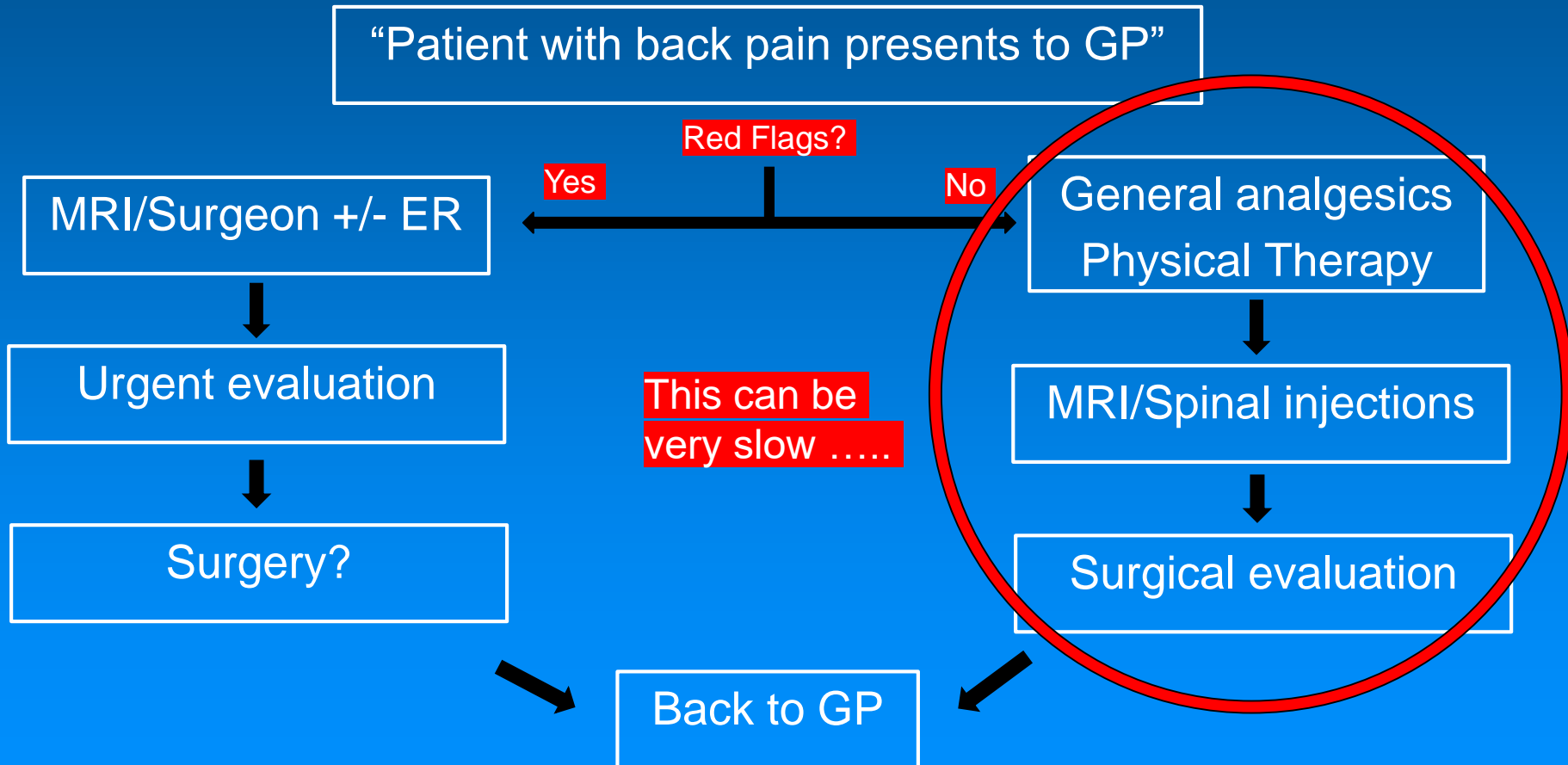
## “Reality”

- Specialists are tough to “define”, hard to reach, and the common pathway can take lots of time.....
- General Practitioners ultimately assume the care of their patients regardless of the outcome with a specialist
- *GPs are the de facto quarterbacks*

# Common Pathway



# Current Common Pathways





# Improving Awareness

GPs can be better equipped to:

- Diagnose back pain
- Decide on Physical Therapy
- Order and interpret MRIs
- Select which patients need:
  - Referral for injection
  - Referral for surgery



# General Management Overview

- History is crucial...
  - Understand symptoms
  - Define pain patterns
- Confirm diagnosis
  - Physical examination
  - Use additional/supporting tests
- Initiate treatment
- Reevaluate to gauge response to therapy

# Important Elements on History

- Location of pain
  - Midline, paraspinal – unilateral/bilateral?
  - Diffuse or focal?
- Static versus dynamic pain
- Radiating versus localized
  - Occasional, regular, constant
- Related to position?
  - Worse standing, sitting, getting-up, etc
- Related to certain activity?
  - Immediate versus late onset

# Static versus Dynamic

Pain patterns can be :

– Static

- Constant pain, even at rest
  - Generally due to inflammation
    - » i.e. acute sciatica (i.e. root impingement), tissue injury

– Dynamic

- Pain occurs with movement or certain positions
  - Generally chronic, mechanical vulnerability
    - » i.e. neurogenic claudication, spondylolisthesis

# Acute versus Chronic

## – Acute pain

- Days to weeks
- Generally due to new-onset inflammation
  - Tissue injury – nerve, muscle, bone

## – Chronic pain

- Months to years
  - Poor mechanics/posture/ergonomics
  - Incompetent tissues
    - » Muscle – scarring, strains, hypersensitive
    - » Nerve – neurogenic claudication/stenosis
    - » Joints – arthritic instability

# Back and Neck Pain

## Location

- Midline ache, pain or stiffness

# Back and Neck Pain

## Symptoms

- Midline ache, pain or stiffness



### ***Acute***

- Muscle strain
- Disc annular “tear”  
(without root compression)
- Joint injury
- Fracture
  - Osteoporotic?

# Back and Neck Pain

## Common Symptoms

- Midline ache, pain or stiffness



### **Acute**

- *Muscle strain*
- *Disc annular “tear”*
- *Joint injury*
- *Fracture*
  - *Osteoporotic?*

### **Chronic**

- Arthritic - inflammatory
  - Facet joints
  - Discogenic
- Related to posture?
- Muscle deconditioning



# Back and Neck Pain

## *Symptoms*

- Shooting or radiating pain (i.e. sciatica)

# Back and Neck Pain

## Common Symptoms

- Shooting or radiating pain (i.e. sciatica)



### ***Acute***

- Muscle strain
  - Referred pain

# Back and Neck Pain

## Common Symptoms

- Shooting or radiating pain (i.e. sciatica)



### ***Acute***

- Muscle strain
- Referred pain



### ***Presentation***

- Mainly back/neck pain
- **Non-dermatological** pain pattern in limb

# Back and Neck Pain

## Common Symptoms

- Shooting or radiating pain (i.e. sciatica)



### **Acute**

- *Muscle strain*
  - *Referred pain*
- Disc annular “tear”
  - Root irritation

# Back and Neck Pain

## Common Symptoms

- Shooting or radiating pain (i.e. sciatica)



### **Acute**

- *Muscle strain*
  - *Referred pain*
- Disc annular “tear”
  - Root irritation



### **Presentation**

- Mainly back/neck pain
- **Dermatological** pain pattern in limb
- **Numbness/tingling**

# Back and Neck Pain

## Common Symptoms

- Shooting or radiating pain (i.e. sciatica)



### **Acute**

- *Muscle strain*
  - *Referred pain*
- *Disc annular "tear"*
  - *Root irritation*
- Disc herniation
  - Root entrapment

# Back and Neck Pain

## Common Symptoms

- Shooting or radiating pain (i.e. sciatica)



### **Acute**

- *Muscle strain*
  - *Referred pain*
- *Disc annular “tear”*
  - *Root irritation*
- Disc herniation
  - Root entrapment



### **Presentation**

- Transient back/neck pain
- Severe **dermatological** pain pattern
- **Numbness/tingling**
- **Weakness - myotomal**

# Back and Neck Pain

## Common Symptoms

- Shooting or radiating pain (i.e. sciatica)



### **Acute**

- *Muscle strain*
  - *Referred pain*
- *Disc annular “tear”*
  - *Root irritation*
- *Disc herniation*
  - *Root compression*

### **Chronic**

- **Compressive “stenosis”**
  - Central, lateral, or foraminal
- **Inflammatory – “referred pain”**
  - Facet joint or disc-related
  - Sacro-iliac joint dysfunction
  - Greater trochanter bursitis



# Back and Neck Pain

## Common Symptoms

- ***Compressive “stenosis”***
  - Symptoms are generally position related
    - Rarely “constant”
    - Relief when sitting down
    - Worse standing up, walking, activity
  - Symptoms build-up in vulnerable position
    - Not immediate, as soon as they stand up
    - Come on over several minutes
    - Get more intense the longer they stand
  - Respond poorly to treatment

# Back and Neck Pain

## Common Symptoms

- ***Inflammatory***
  - Facet joints:
    - Extension reproduces typical pain pattern
  - Trochanteric bursitis - tenderness on palpation
  - SI joint:
    - Diffuse hip, groin, iliac pains
    - Pain on provocative maneuvers
  - Discogenic – weight-bearing causes pain
- Respond well to NSAIDs, +/- injections

# Back and Neck Pain

## *Other Conditions*

- Osteoporotic fractures
  - Acute or subacute, +/- trauma
- Oncological
  - History of cancer
  - Biological pain if lesion inside bone
    - Responds well to NSAIDs
- \*Near-by pains
  - Shoulder, hip dysfunction

# Back and Neck Pain

## *Examination*

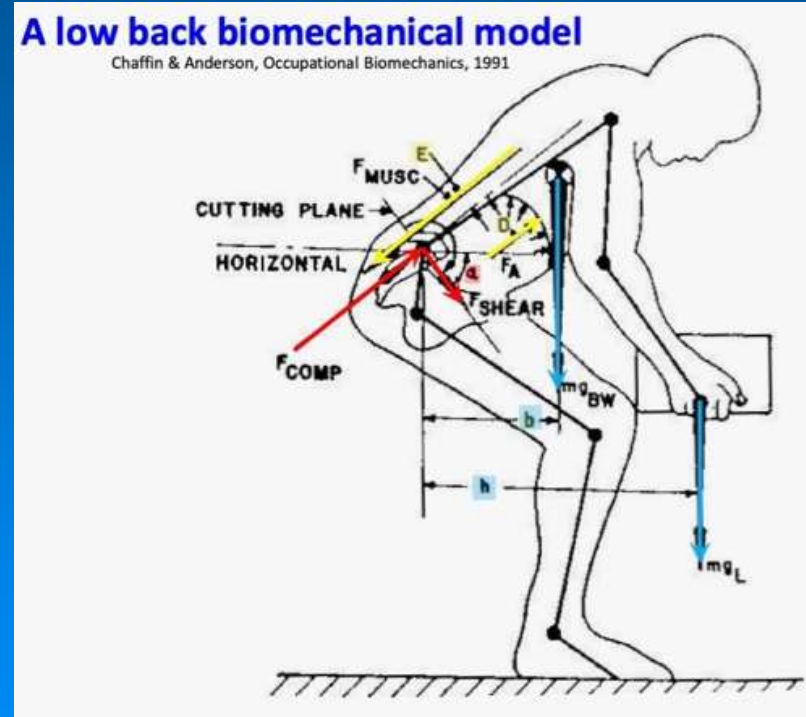
- Mobility
  - Spine ROM
    - Facet loading? Flexion? Gait? Posture?
  - Spine-adjacent ROM
    - i.e. Shoulders, hips, knees, ankles, SI joint
      - » Reproduction of typical pain?
- Neurological assessment
  - Motor, sensory, reflexes, myelopathic signs
  - Gait, balance, etc.

# Supporting Investigations

- Xrays and CT – of limited value, r/o fracture
- MRI – gold standard for evaluating neural structures
- EMG – helpful if unclear neurological manifestation
  - Rule out neuropathy or myopathy
- Biomechanical evaluation
  - Senior therapist with expertise in spine
  - Improves accuracy of diagnosis

# Biomechanics

- Incorporates knowledge from:
  - Sports medicine
  - Physical therapy
  - Kinesiology
  - Biomechanical engineering
- Helps to understand forces contributing to or relieving pain



The study of forces and motions produced by their action to the structure and function of the human body

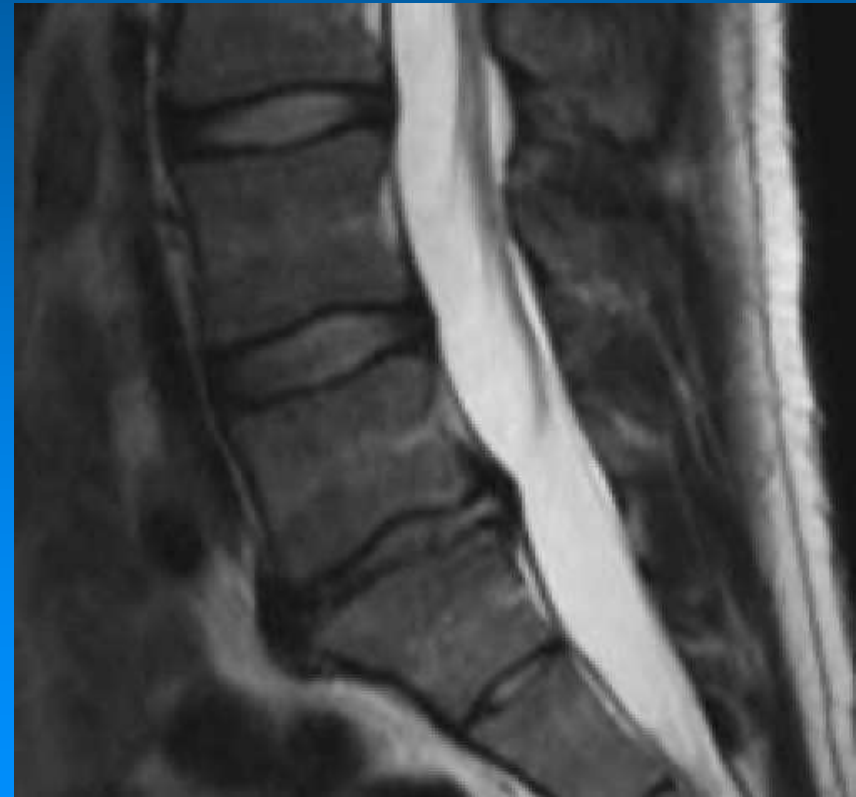
# Example of “Biomechanics”

- 23 yo man > 5 y of LBP
  - No clinical radiculopathy
- Failed extensive and various types of physical therapy
- Saw 3 surgeons
- Multiple MRIs



# Example of Biomechanics

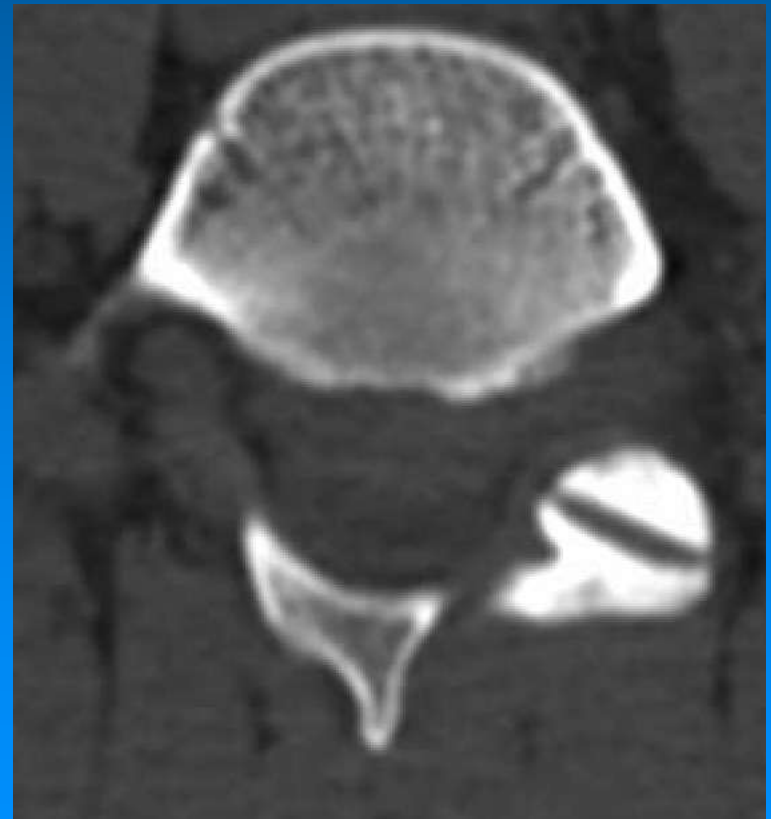
- Sent for biomechanical evaluation
- Therapist convinced there was L5,S1 shear instability
  - ie spondylolisthesis, even though none described on MRI
- MRI images reviewed again





# Example of Biomechanics

- MRI found to suggest abnormal right L5,S1 facet joint
- CT demonstrated obvious congenital anomaly
- Patient has mechanical weakness and will likely need fusion



# Treatment

- General recommendations
- Pharmaceutical
- Physical therapy
- Physiatry and Spinal Injections
- Surgery

# Treatment Options

- Heating pad vs Ice bag?
- Bracing – rarely used, in case of spasms
- Sports, yoga, pilates?
  - All activity needs to be done correctly
  - If it hurts, don't do it!
- Work?
  - Workplace ergonomics are important
  - Are current job duties or environment deleterious?

# Treatment Options

## Pharmaceutical

- First line
  - NSAIDs, Acetaminophen, muscle relaxants
- Second line
  - Neuropathic medications (Lyrica, Neurontin)
- Others
  - Benzos, anti-depressants, baclofen, etc.
- Opioids, CBD oil (cannabis)
  - Rarely needed –use for severe pain

# Treatment Options

## Physical Therapy

- Physiotherapy
- Osteopathy
- Chiropractor
- Kinesiology, Posturology
- Strength training
- Acupuncture
- Athletic therapy
- Massotherapy
- Occupational therapy

All disciplines have subtle nuances, pros/cons

Do they have specific expertise in managing “spine”?

Ask for evaluation and treatment plan prior to “enrolment”

What is their treatment goal or plan?

How do they measure effectiveness?

# Treatment Options

## Physical Therapy

- Physiotherapy
- Osteopathy
- Chiropractor
- Kinesiology, Posturology
- Strength training
- Acupuncture
- Athletic therapy
- Massotherapy
- Occupational therapy

Therapy should be individualized for patient's own set of biomechanical limitations, fitness level, and ability

**Goals of therapy** may include:

- Treating injured tissue
- Teaching correct spine hygiene
- Improving daily ergonomics
- Recognizing poor postures/loads that aggravate condition
- Adopt correct movement patterns
- Improving coping mechanisms

# Physiatry

- Pain specialists
- Requesting a clinical evaluation by a physiatrist, either in the context of a “pain clinic” or independently *is not the same* as a referral for injection
- Injections can be very helpful in the correct context
  - Should be used when there is a reasonable chance to help
  - Not as a last resort or desperation for relief

# Spinal Injections

Literature reviews and personal experience:

- Injections have been helpful for:
  - Inflammatory conditions:
    - Acute radiculopathy (i.e. disc herniation, annular tear)
  - Specific chronic conditions:
    - Facet joint pain
    - SI joint dysfunction
    - Greater trochanter bursitis
- Not helpful for:
  - Stenosis, dynamic pains, mechanical pain



# Spine Surgeon

- Neurological or orthopedic surgeon
- Not all have expertise in “spine”
- Requesting a clinical evaluation by a surgeon *is not the same* as a referral for surgery...

# When to refer to a Surgeon?

Surgery is generally considered when:

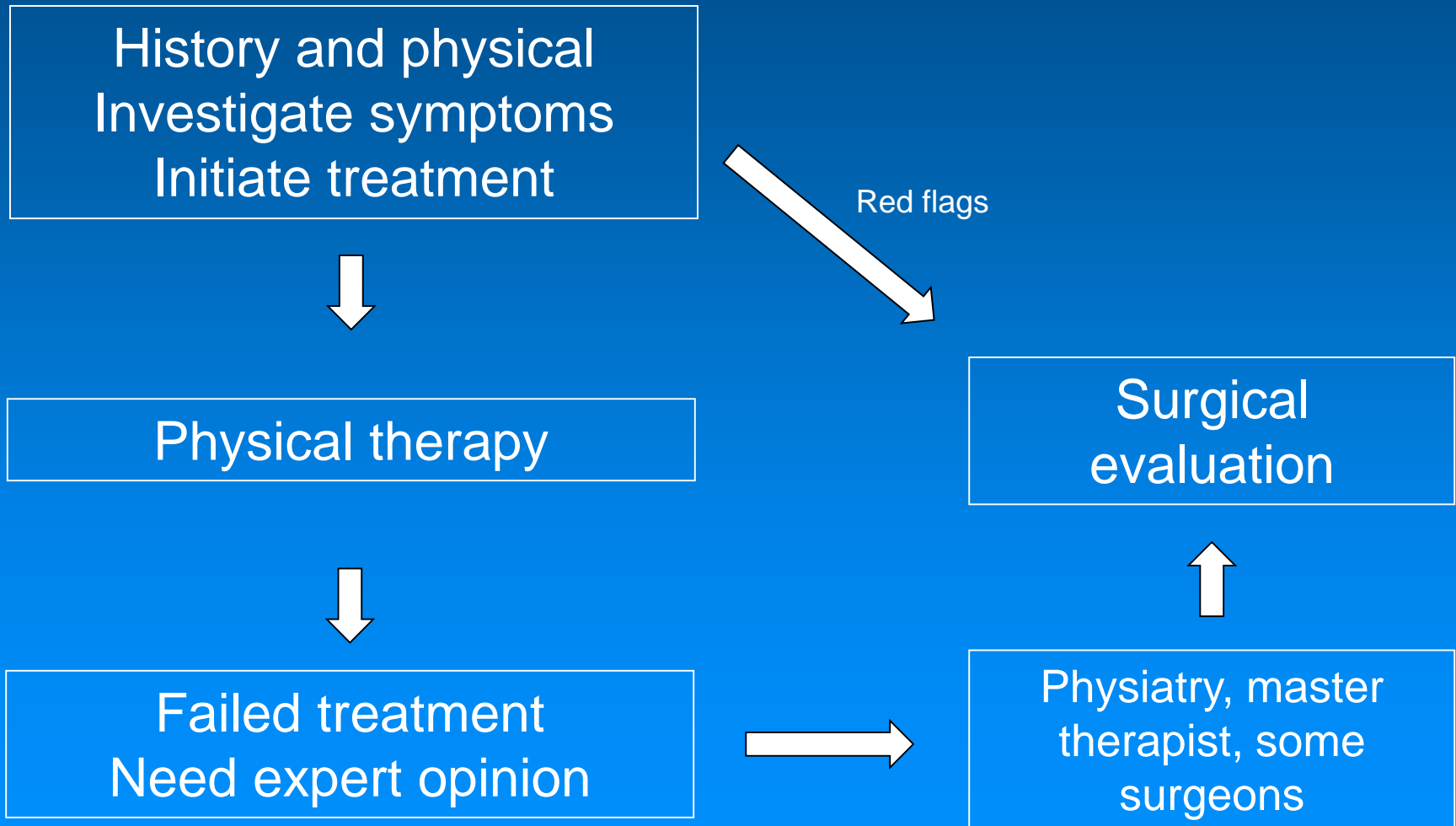
- Surgically amenable pathology in patient with reasonable chance of improvement
- Failed non-op therapy (meds, PT, injections, etc)

In addition, refer to surgeon if:

- Intolerable pain
- Worrisome clinical signs
  - Progressive or significant deficit

*Don't hesitate to call if unsure*

# GPs are the *de facto quarterbacks* for their patients



Thank you !!!