Mastering fibromyalgia in the medical home: what we know in 2025

Lori Montgomery MD CCFP FCFP CHE
Clinical Associate Professor, Cumming School of Medicine
Department of Family Medicine,
Department of Anesthesiology, Perioperative and Pain Medicine

Disclosures: Montgomery

- no industry affiliations
- teaching honoraria from ACFP, UCalgary, UBC, U of A, CBT Canada
- grant from Hotchkiss Brain Institute (U of C) and Alberta Innovates for a pilot clinical trial of a medication for opioid withdrawal; CIHR Transforming Health with Integrated Care (THINC) grant to study ECHO Pain
- medical leadership roles, PCA and AMA
- some slides from Dr Jessica Kirkwood

Criteria for Success

- build confidence diagnosing fibromyalgia
- explain the implications of a diagnosis to a patient
- outline an evidence-based treatment approach for fibromyalgia
- access a clinical pathway for FM and a toolkit of useful resources

Primary Care Alberta

UNIVERSITY OF CALGARY

POLLING QUESTIONS

Primary Care Alberta

UNIVERSITY OF CALGARY

Your patient, Robin, has been presenting with frequent but variable pain complaints over the last six months. You suspect fibromyalgia — how do you confirm that?

Another patient, Alex:

diagnosed with fibromyalgia 4 years ago, and was coping very well with it. After a recent COVID infection, pain and fatigue are significantly worse, so now Alex is visiting you to talk about medications. What are your options?

Why are we here?

- prevalence ranges from 3-8% around the world
- 40% of patients referred to a tertiary pain clinic in one study
- increasingly, specialty services are declining referrals

Bhargava J, Hurley JA. Fibromyalgia. [Updated 2023 Jun 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2

Myths

- women to men 7:1
- a relentlessly progressive disease
- a rheumatologic disease

Creed, Francis. A review of the incidence and risk factors for fibromyalgia and chronic widespread pain in population-based studi

Myths

- women to men 7:1
- a relentlessly progressive disease
- a rheumatologic disease

Truth

- likely closer to 3:1
- remitting/relapsing course, possibly with gradual improvement
- a nociplastic pain condition

Creed, Francis. A review of the incidence and risk factors for fibromyalgia and chronic widespread pain in population-based studi

NOCIPLASTIC PAIN:

"pain that arises from **altered nociception** despite no clear evidence of actual or threatened tissue damage causing the activation of peripheral nociceptors or evidence for disease or lesion of the somatosensory system causing the pain."

Raja SN, Carr DB, Cohen M, Finnerup NB, Flor H, Gibson S, Keefe FJ, Mogil JS, Ringkamp M, Sluka KA, Song XJ, Stevens B, Sullivan M

NOCIPLASTIC PAIN:

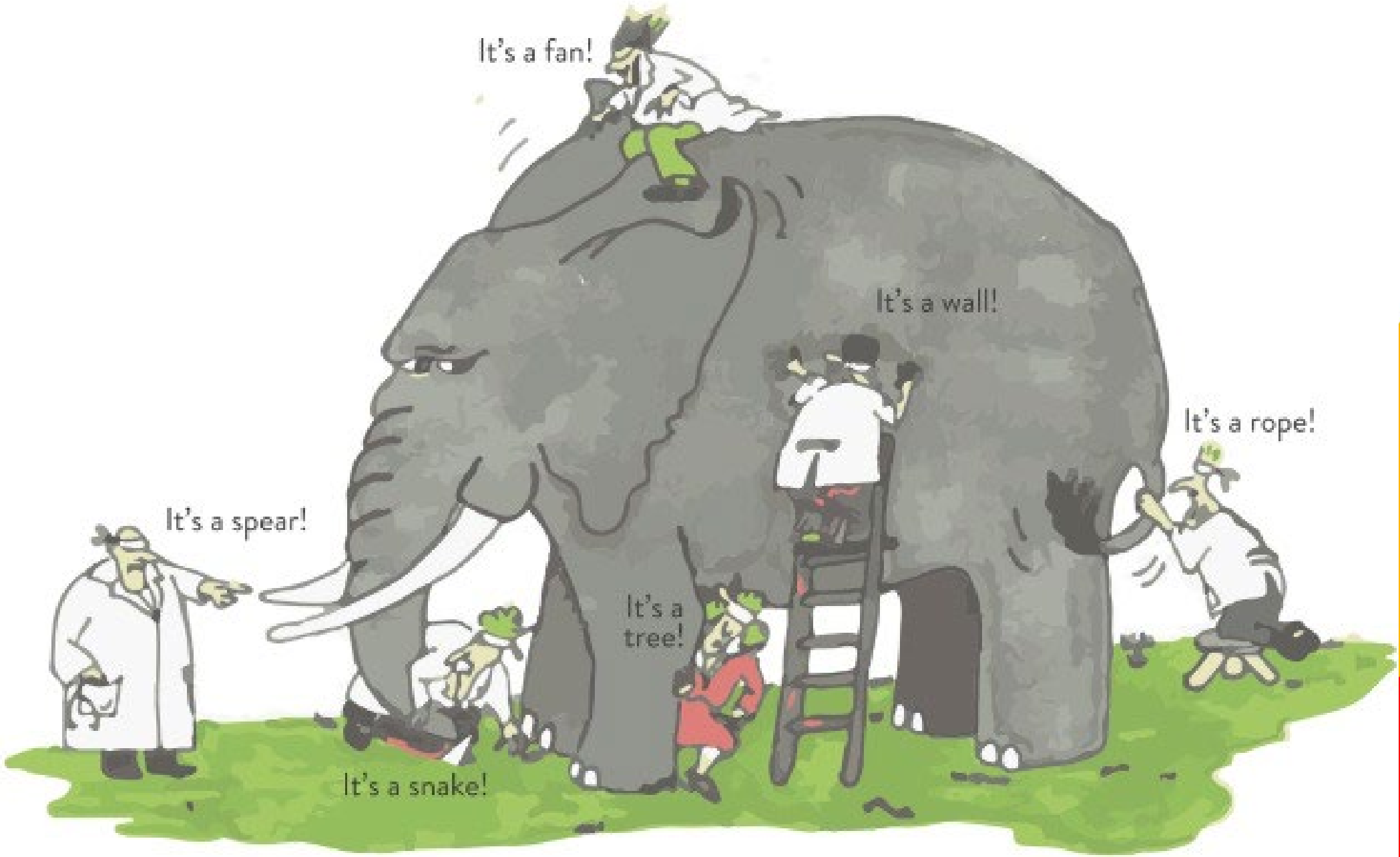
"pain that arises from **altered nociception** despite no clear evidence of actual or threatened tissue damage causing the activation of peripheral nociceptors or evidence for disease or lesion of the somatosensory system causing the pain."

i.e. this is a disorder of the central nervous system

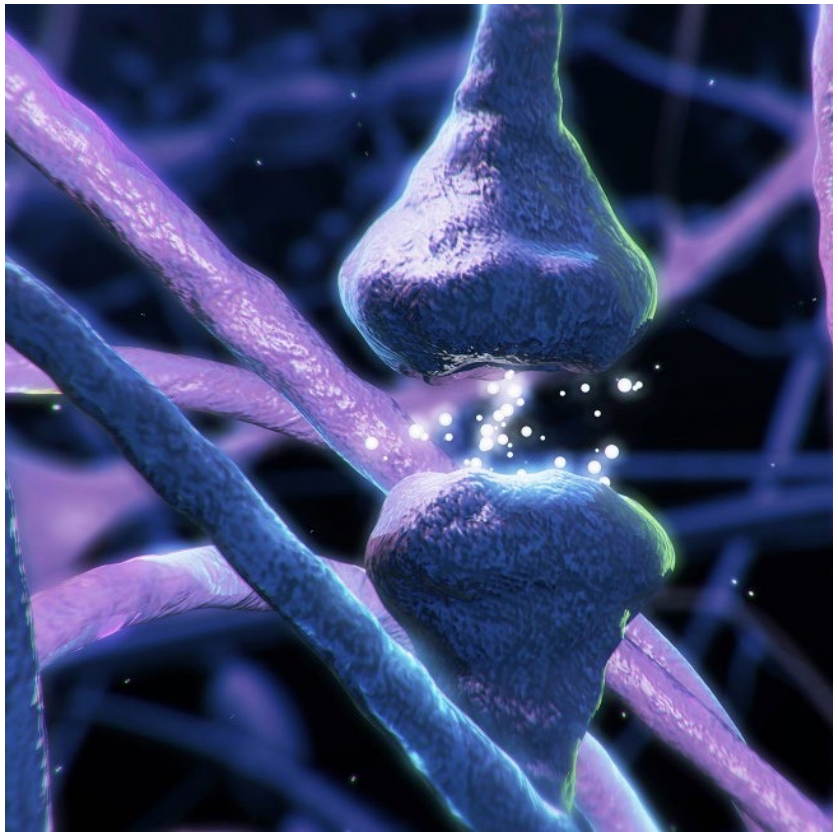
Raja SN, Carr DB, Cohen M, Finnerup NB, Flor H, Gibson S, Keefe FJ, Mogil JS, Ringkamp M, Sluka KA, Song XJ, Stevens B, Sullivan M

Fibromyalgia is NOT

- a musculoskeletal disorder
- a psychiatric disorder
- a maladaptive coping mechanism
- a result of physical deconditioning


It's a fan!
It's a wall!
It's a rope!
It's a spear!
It's a tree!
It's a snake!

Small fibre pathology



- about half of women with FM have reduced skin sensitivity
- small fibre quantity and function appear to be affected - the greater degree of pathology, the higher the symptom load
- this is also associated with CNS changes
- unclear which comes first

Sommer, Claudia and Nurcan Üçeylar, Small fibre pathology in fibromyalgia syndrome, Pain Reports 10:e1220, 2025

Genetic Factors

- strong familial associations noted for many years
- COMT gene
- serotonin transporter gene
- dopamine receptor gene

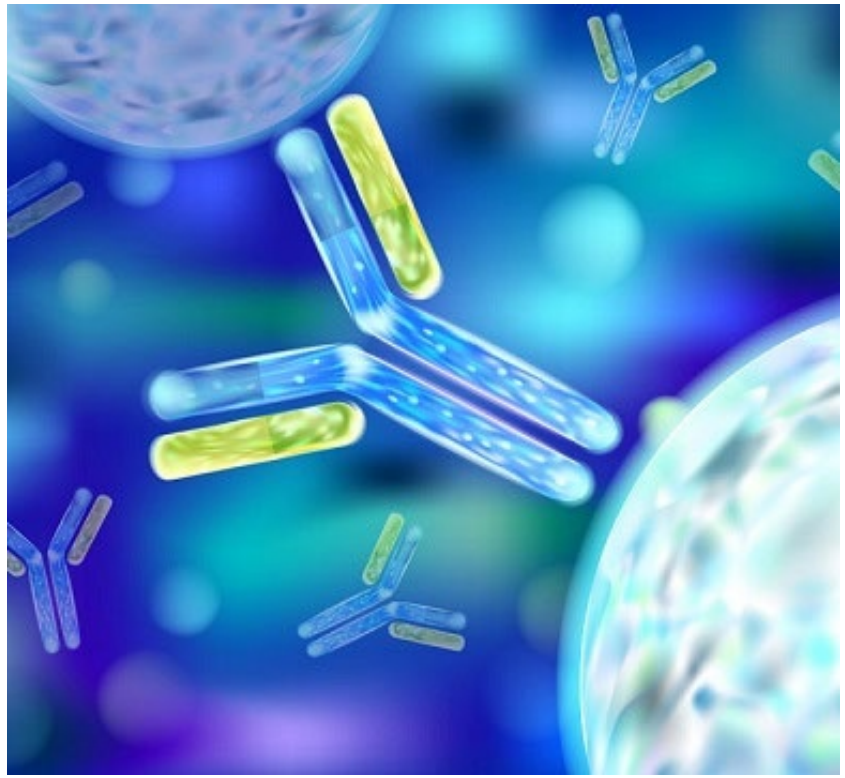
Jacob N. Ablin, Fibromyalgia: are you a genetic /environmental disease? Pain Reports 10:e1220, 2025

Environmental Factors

- strong association with trauma noted for many years
- stress, diet, social determinants of health are all noted to be associated with onset and progression of symptoms
- epigenetic factors are being investigated with promising results

Jacob N. Ablin, Fibromyalgia: are you a genetic /environmental disease? Pain Reports 10:e1220, 2025

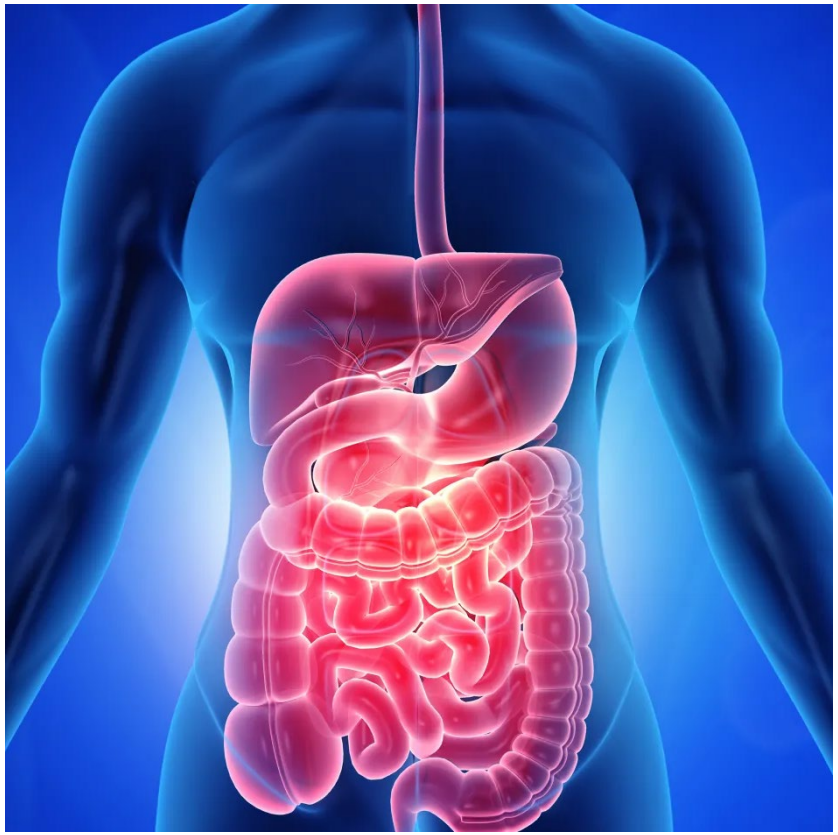
Auto-immune Factors



- autoimmune factors have been postulated since the 1980s, often based on response to steroid therapy
- people with existing autoimmune conditions are at substantially increased risk of developing FM
- recently, there is evidence that FM presentation can be transferred to rodents through IgG infusion

Goebel, Andreas. Fibromyalgia syndrome—am I an autoimmune condition?. PAIN Reports 10(4):p e1270, August 2025

Microbiome



- the gut microbiome is different in people with FM (and it isn't just IBS)
- transferring fecal microbiota from people with FM into mice induces pain hypersensitivity
- hypersensitivity in mice is eliminated by transferring fecal microbiota from healthy individuals
- via cross-talk between the gut microbiome and the immune system?

Minerbi, Amir; Khoutorsky, Arkady; Shir, Yoram; Decoding the connection: unraveling the role of gut microbiome in fibromyalgia. PAIN Reports 10(1):p e1224, February 2025. | DOI: 10.1097/PR9.0000000000001224

Not a diagnosis of exclusion

- many things on the differential can be ruled out by history and physical exam
- it has a typical clinical picture

Body map

Use the figures to record where pain occurs in detail. Shade the areas of your body where you have felt persistent or recurrent pain for the past 3 months or longer (chronic pain).

Calculating the WPI score

Use this checklist to calculate the widespread pain index (WPI) score. Tick the areas where you have had chronic pain for 3 months or longer.

Region 1: left upper

- ☐ L jaw
- ☐ L shoulder girdle
- ☐ L upper arm
- ☐ L lower arm and/or L wrist/hand, L elbow

Region 2: right upper

- ☐ R jaw
- ☐ R shoulder girdle
- ☐ R upper arm
- ☐ R lower arm and/or R wrist/hand, R elbow

Region 3: left lower

- ☐ L hip and/or L buttock
- ☐ L upper leg and/or L groin
- ☐ L lower leg and/or L ankle/foot, L knee

Region 4: right lower

- ☐ R hip and/or R buttock
- ☐ R upper leg and/or R groin
- ☐ R lower leg and/or R ankle/foot, R knee

Region 5: axial

- ☐ Neck
- ☐ Upper back
- ☐ Lower back
- ☐ Chest (L and/or R)
- ☐ Abdomen

Symptom severity scale (SSS)

Have your problems with the symptoms below been present for 3 months or more? ☐ Yes ☐ No

If yes, using the following scale, indicate the severity of each symptom over the past week by circling the appropriate number.

	No problem	Mild	Moderate	Severe
Fatigue	0	1	2	3
Trouble thinking or remembering	0	1	2	3
Waking up tired (unrefreshed)	0	1	2	3

During the past 6 months, have you had any of the following symptoms?

Pain or cramps in lower abdomen	☐ Yes	☐ No
Depression	☐ Yes	☐ No
Headache	☐ Yes	☐ No

Total score* for the SSS _____

- Also associated: TMJ dysfunction, painful bladder syndrome, IBS, sensitivity to light, sound, temperature, and medication side effects
- add 0 (none), 1 (a few), 2 (moderate amount), or 3 (lots)

WPI > 6 and SSS > 4

OR

WPI 3-6 and SSS >8

- *the higher the score, the more likely that FM is the sole explanation for symptoms*

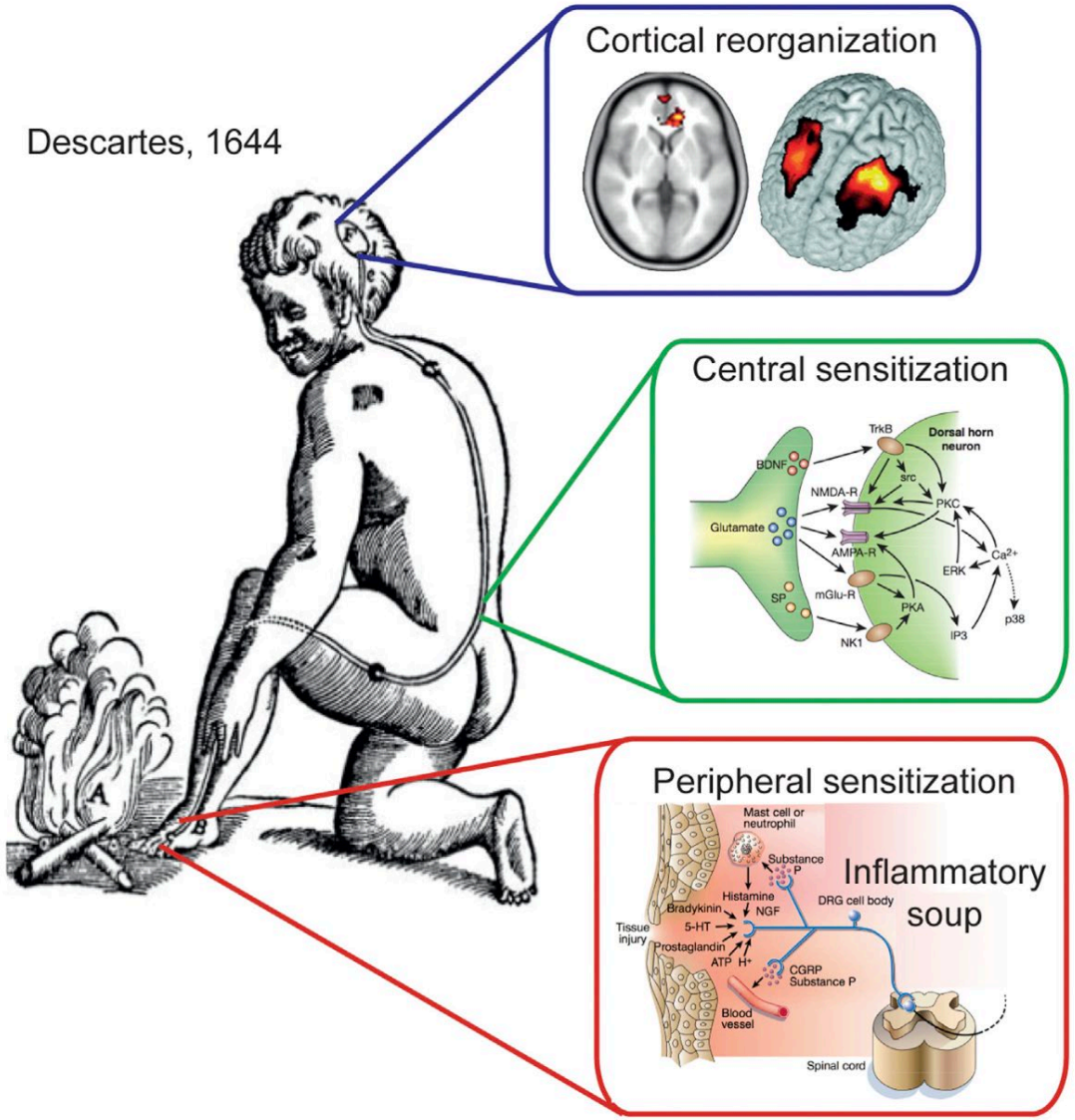
Differential Diagnosis (or comorbid…)

- Inflammatory/rheumatologic conditions (eg SLE, Rheumatoid Arthritis, Polymyalgia Rheumatica)
- **Hypermobility spectrum disorders**
- Multiple Sclerosis
- Neuropathies/myopathies
- Obstructive sleep apnea
- Hypothyroidism
- Depression
- Post-viral syndromes
- Chronic fatigue syndrome/myalgic encephalitis
- Drug side effects (aromatase inhibitors, lipid lowering agents, high dose opioids)

Treatment

- education about the disorder is the first priority
- evidence is clear that pain science education (PSE) is a treatment that should be started early

Marris, D., Theophanous, K., Cabezon, P., Dunlap, Z., & Donaldson, M. (2019). The impact of combining pain education strategies with physical therapy interventions for patients with chronic pain: A systematic review and meta-analysis of randomized controlled trials. Physiotherapy Theory and Practice, 37(4), 461–472.



Primary Care Alberta

UNIVERSITY OF CALGARY

Marwan N. Baliki, A. Vania Apkarian,
Nociception, Pain, Negative Moods, and Behavior Selection, Neuron, Volume 87(3): 474-491, 2015

1. Pain is protective

Credible evidence of safety

Credible evidence of danger

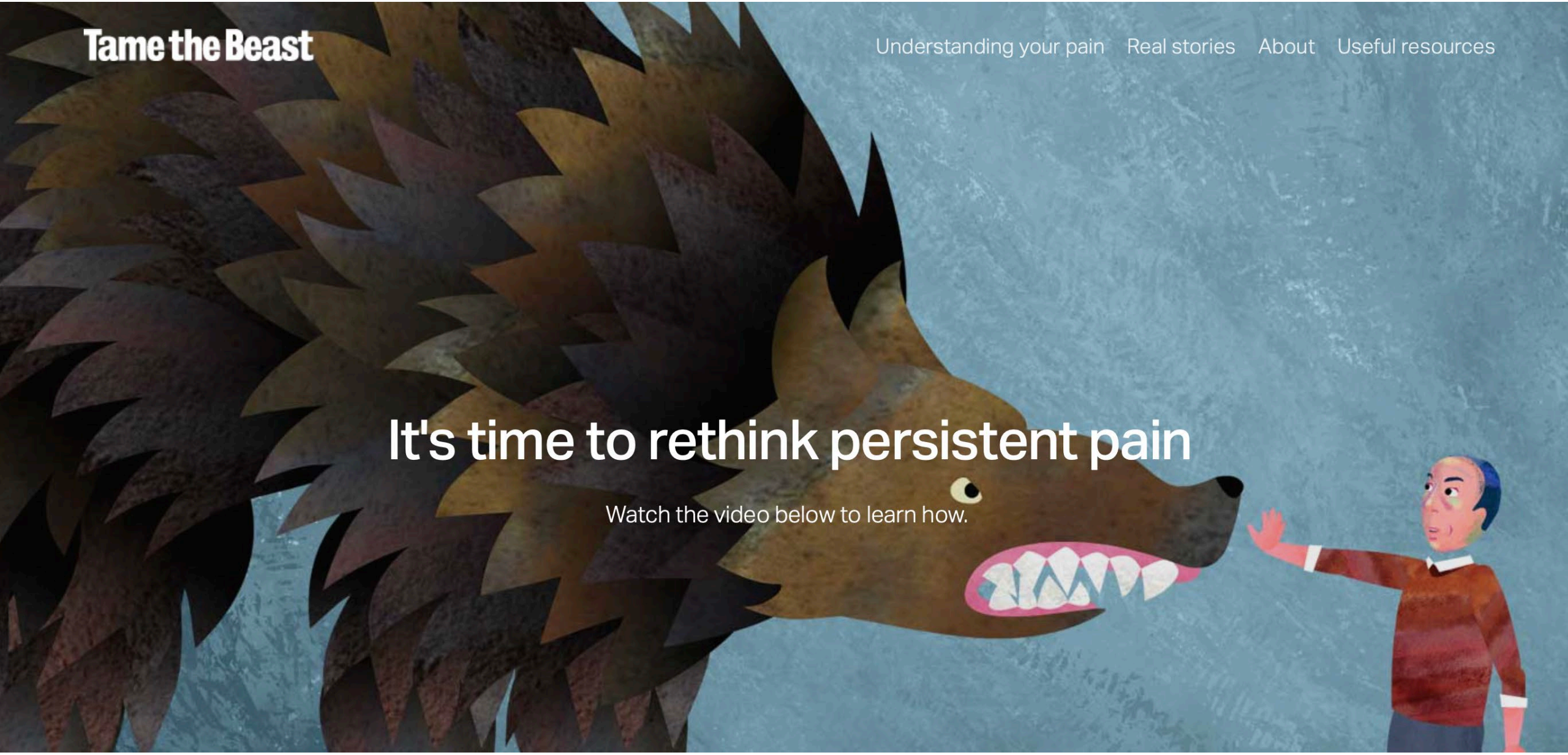
1. Pain is protective
2. Persistent pain is overprotective

THE PAIN EXPERIENCE IS
DRIVEN BY
THE BRAIN'S
PERCEIVED NEED
TO PROTECT

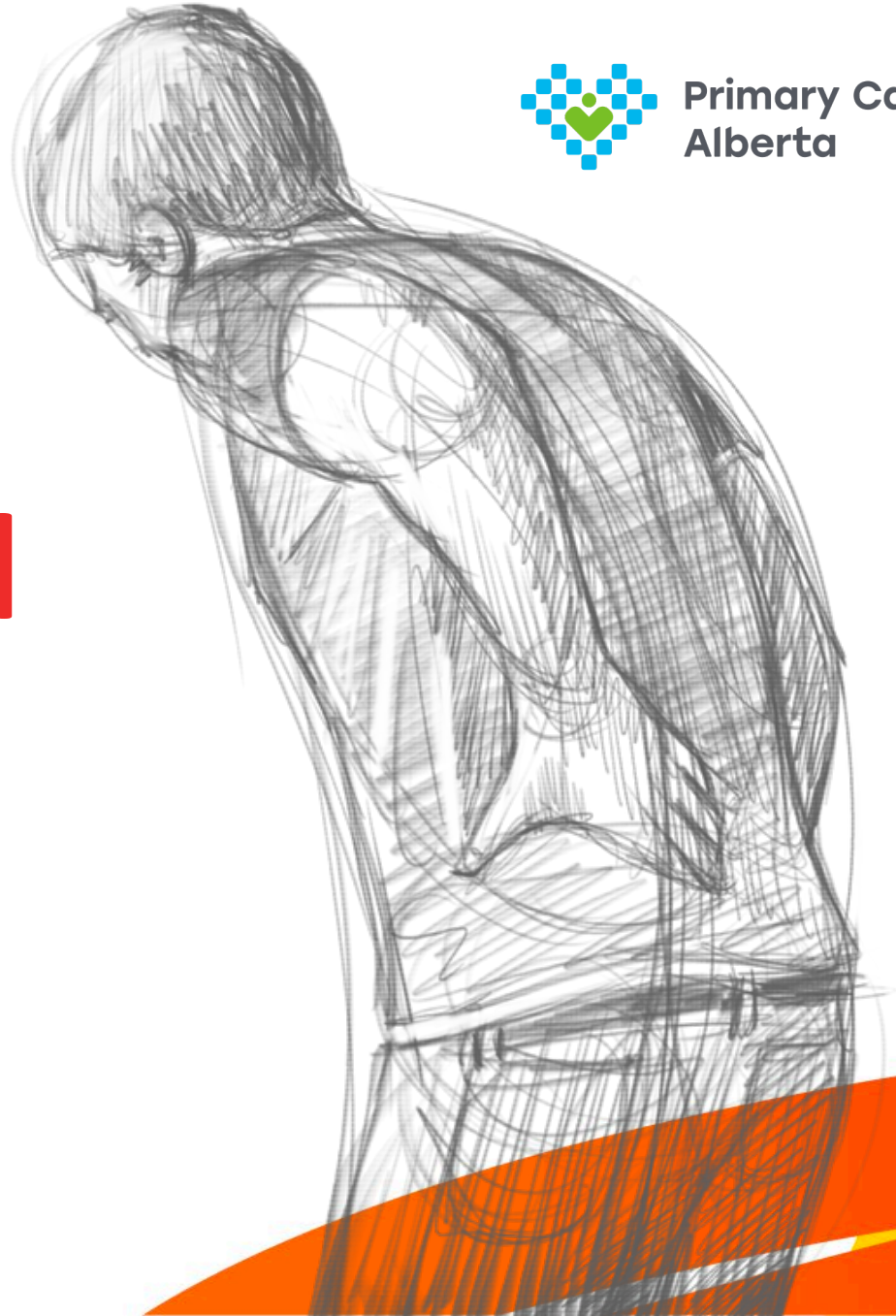
image courtesy Dr Tina Hoang

1. Pain is protective
2. Persistent pain is overprotective
3. Many things impact pain, so many things can help

- current environment
- beliefs
- behaviours
- past experiences
- general health



tamethebeast.org



Primary Care Alberta

UNIVERSITY OF CALGARY

evidence based medical management plan

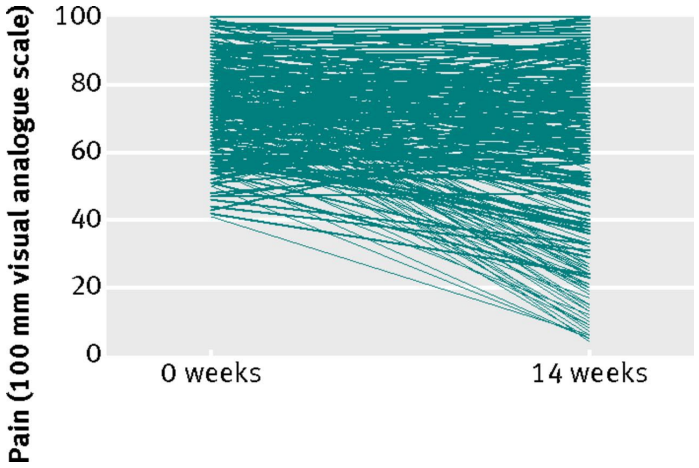
Tools for Practice

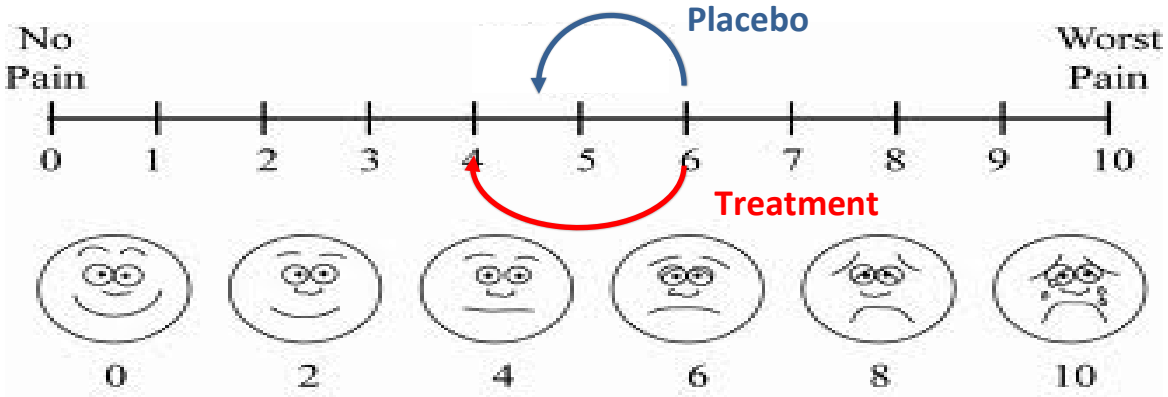
Tools for Practice articles have been produced by the PEER team in collaboration with the ACFP since 2009.
Click here for the entire collection

https://peerevidence.ca/tools-for-practice/

Pain Outcomes: Change in Scale

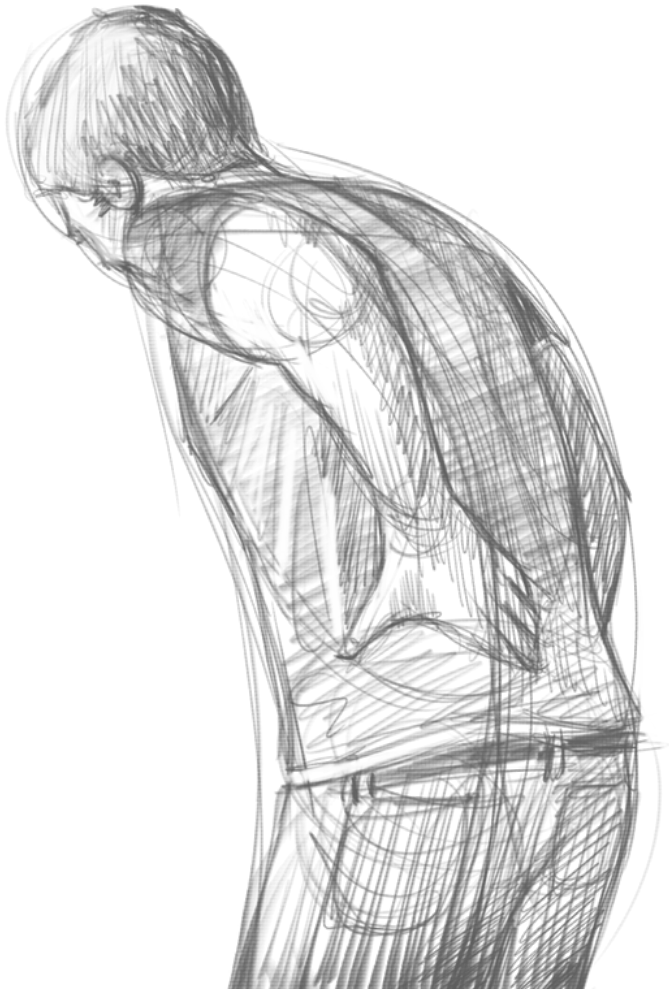
- On a 0-10 point scale: Baseline ~6/10.
  - **Placebo** reduces Pain: ~1.4
    - **Treatment:** ~2.0





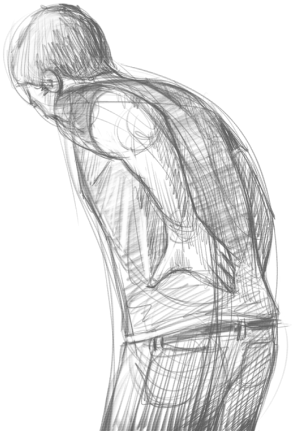
BMJ. 2013 May 3;346:f2690

Antidepressants



TFP 375. October 2024.

Duloxetine

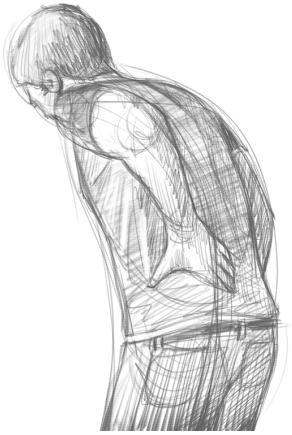


- 4 systematic reviews
  - 6-7 RCTs, 2249-2642 patients, 8-27 weeks

- Proportion of patients with ≥30% reduction in pain:
  - 48% vs 36%, NNT=9
  - 30mg versus placebo: no difference
  - 60-120mg: ~50% versus 35% (placebo)

- Withdrawal due to adverse events: no difference
    - Exception: 120mg; 21% versus 11% (placebo), NNH=10.
    - Nausea (26%), constipation (15%), headache (14%) versus 4-8% placebo; hyperhidrosis 8% versus 1% placebo.

Mirtazepine



Systematic review

- 3 RCTs, 591 patients, average 30mg daily 7-14 weeks

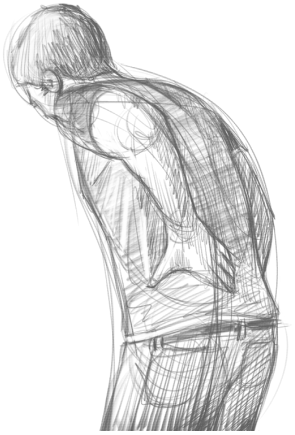
Pain reduction:

- >30% pain reduction: 47% versus 34% (placebo), NNT=8
- ≥ 50% pain reduction: no difference

Adverse events:

- Adverse event withdrawals: no difference
- Somnolence 41% versus 14% (placebo); reporting any weight gain 19% versus 1% (placebo)

other antidepressants



SSRIs (fluoxetine, citalopram, paroxetine):

- Systematic Review (7 RCTs, 383 patients, 6-16 weeks).
- ≥30% reduction in pain: 33% versus 23% (placebo), NNT=10.
- Adverse event withdrawals: no difference

Amitriptyline:

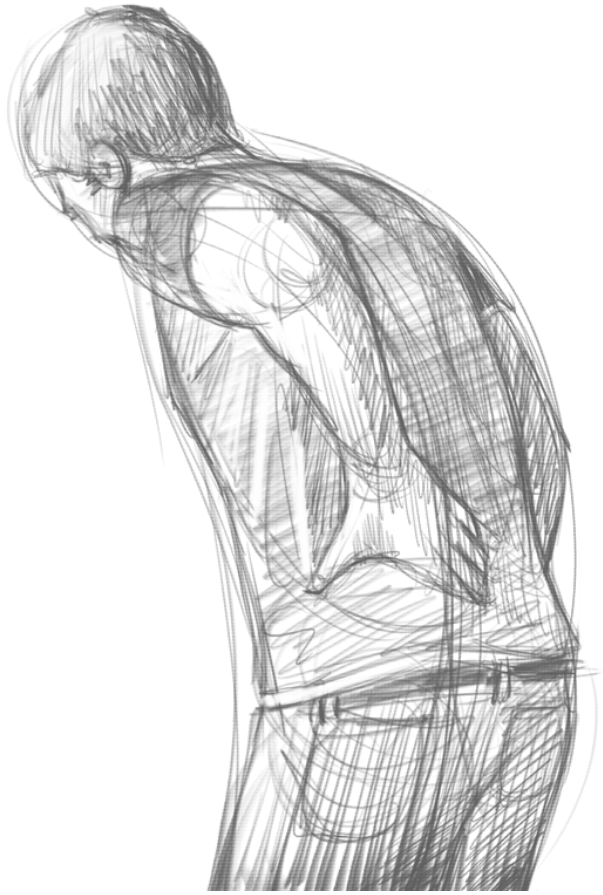
- Systematic Review (4 RCTs, 275 patients, 25-50mg daily, 8-24 weeks).
- >50% pain reduction: 36% versus 11%, NNT=5.
- Adverse event withdrawals and adverse events: no difference.

Antidepressants - Bottom line:

1. In patients with fibromyalgia, meaningful pain reduction (~30% reduction) occurs in ~50% of patients on duloxetine or mirtazapine versus 35% on placebo over 7-14 weeks.

2. SSRIs and amitriptyline are likely effective over 6-24 weeks, based on limited evidence.

3. Versus placebo, antidepressants do not increase the risk of withdrawing treatment due to adverse effects, with the exception of high-dose duloxetine (120mg).



Pregabalin

- 150-600mg daily
- systematic review (5 RCTs, 3283 patients, versus placebo, 8-14 weeks).
- ≥30% reduction in pain:
  - 150mg (1 RCT, 263 patients): no difference.
  - 300mg (39%); 450mg (43%); 600mg (39%) versus ~29% placebo. NNT=8-10.

Pregabalin

Adverse events increase with higher daily doses:

Adverse Event	placebo	150mg dose	600mg dose	Number Needed to Harm (NNH)
Somnolence	~5%	16%	23%	6-9
Dizziness	~10%	23%	46%	3-8
Peripheral Edema	~2%	5%	11%	9-33
Withdrawal due to Adverse Events	~10%	10%	28%	6

Gabapentin

- 1 Systematic Review[3]
- 1 publicly funded RCT[4], 150 patients, titrated to average daily dose 1800mg); 12 weeks

- ≥30% reduction in pain :
  - 51% versus 31%, NNT=5
- Global improvement “better”:
  - 68% versus 35%, NNT=3

Adverse events:

- Sedation 24% versus 4%, dizziness 25% versus 9%, NNH=5-7
- Withdrawal due to adverse events: no difference.

Bottom line:

1. In patients with fibromyalgia, a meaningful pain reduction (30%) occurs in ~40% with **pregabalin** (300-600mg) compared to 30% with placebo. Somnolence (16-23%) dizziness (23-46%) and peripheral edema (5-11%) are increased compared to placebo.

2. **Gabapentin** (~1800mg) may improve pain in 50% compared with 30% placebo based on one small RCT with more dizziness and sedation (16-20%) than placebo.

90-day costs: pregabalin 300mg ~$95; gabapentin 1800mg ~$90.

Less evidence…

- low dose naltrexone 4.5mg daily
  - rationale: elevated levels of circulating endorphins in FM
  - positive effects on spontaneous pain, hyperalgesia
  - very well-tolerated (most common side effect=vivid dreams)
  - small, short studies, often no control
  - no measurement of function
- magnesium supplementation
  - rationale: Mg is typically tissue bound and not measured in serum, so deficiency can be masked
  - studies are small, short, no controls
  - most studies examine Mg in combination with other interventions

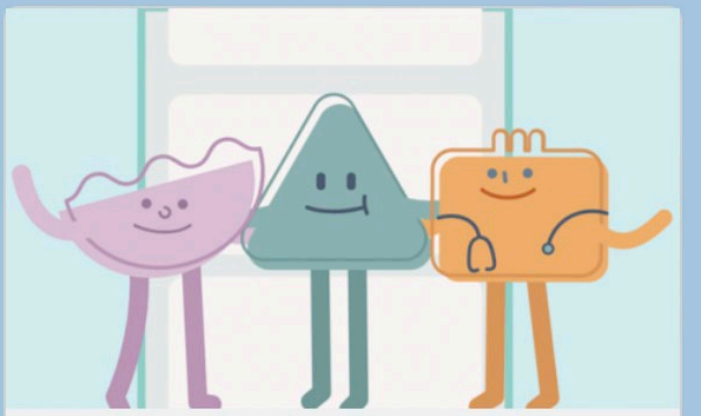
Yang, J., Shin, K. M., Do, A., Bierle, D. M., Abu Dabrh, A. M., Yin, Z., … Mohabbat, A. B. (2023). The Safety and Efficacy of Low-Dose Naltrexone in Patients with Fibromya

Boulis M, Boulis M, Clauw D. Magnesium and Fibromyalgia: A Literature Review. Journal of Primary Care & Community Health. 2021;12

Exercise

- almost any kind of exercise demonstrates improvement over baseline

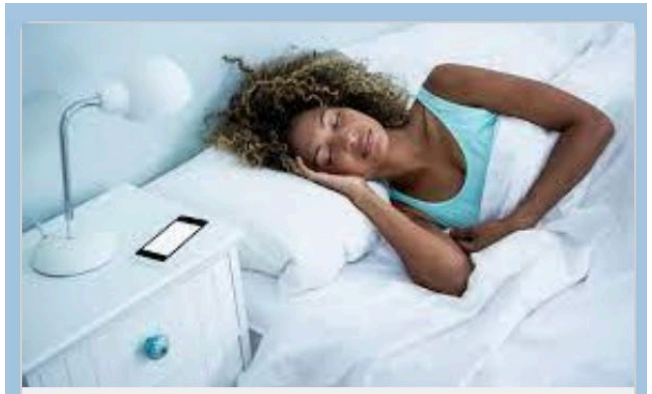
- clinically meaningful changes compared to control are rare
- interventions and controls vary widely
- generally no responder analysis
- difficult to blind these studies
- usually small (not industry funded) studies



LivePlanBe+

We know how pain can affect your life. LivePlanBe+ is a program that helps us learn to make small changes that add up to big improvements in our well-being.

Go to Resource | Learn more



My SleepWell

Sleepwell has two main goals: 1) to help people with insomnia get their sleep back without medications; and 2) to help people stop taking sleeping pills safely and effectively.

Go to Resource | Learn more

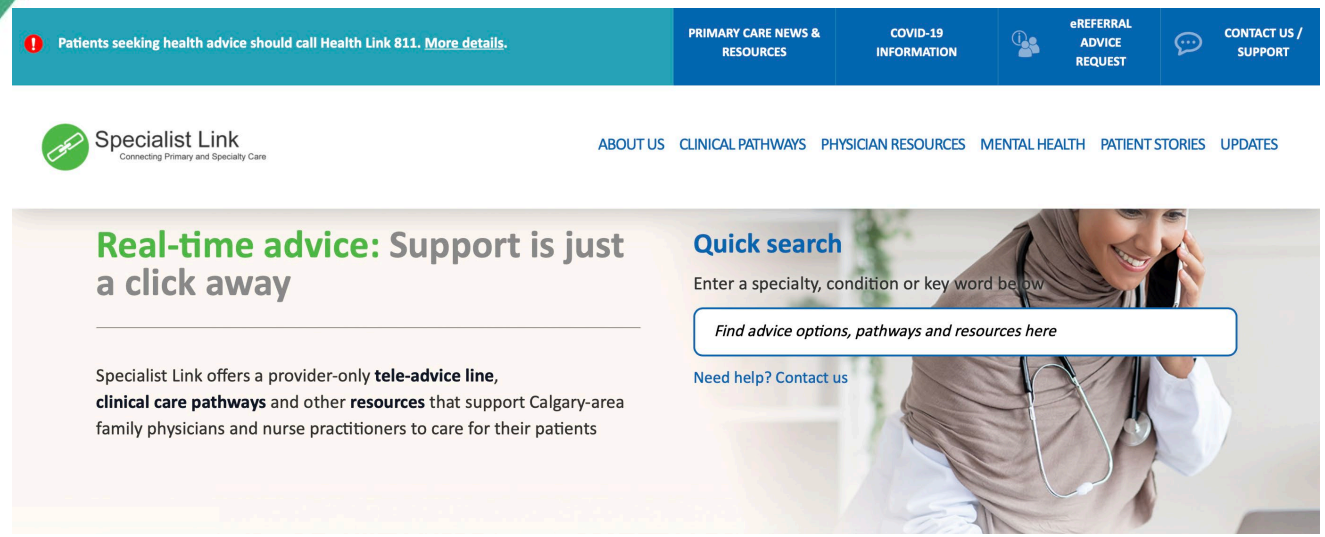
Gentle Movement @ Home

Guided movement and relaxation videos for pain

Go to Resource | Learn more

UNIVERSITY OF CALGARY

https://poweroverpain.ca



specialistlink.ca

Primary care pathway: Fibromyalgia

Quick links: Pathway primer | Expanded details | Provider resources | Patient resources

1. Diagnosing Fibromyalgia (FM)
■ Diagnosis is based on clinical judgement; It is not a diagnosis of exclusion; There is no diagnostic 'gold standard' ■ Diagnosis is best made and managed in the Medical Home with the support of a multi-disciplinary team. ■ Earlier diagnosis and disclosure are likely associated with lower symptom severity, reduced healthcare costs and improved quality of life.

2. Confirmatory history
Must be present for FM diagnosis. Core symptoms present for >3 months: ■ Widespread musculoskeletal pain (in four body quadrants plus axial region) ■ Fatigue – intrusive – physical, cognitive, emotional ■ Sleep disturbance/non-restorative sleep ■ Symptoms cannot be explained by any other condition

3. Differential/Co-existing diagnosis
More than one may be present, and diagnosis of FM may still be made: ■ **Endocrinology**: Hypothyroidism, hyperparathyroidism/hypercalcemia, abnormalities in cortisol ■ **Rheumatology**: Hypermobility spectrum disorders, osteoarthritis, polymyalgia rheumatica, certain myopathic syndromes ■ **Neurology**: Myalgic encephalomyelitis/chronic fatigue syndrome, multiple sclerosis ■ **Respiratory**: Obstructive sleep apnea, post-COVID/long-COVID ■ **Psychiatry**: Depression ■ **Gastroenterology**: Celiac disease, irritable bowel syndrome ■ **Hematology**: Iron deficiency anemia, hemochromatosis

4. Commonly associated symptoms and diagnosis
The more of these symptoms present, the more likely the diagnosis of FM is accurate. ■ Difficulty concentrating/cognitive disturbance ■ Depression +/- anxiety may commonly present at time of diagnosis ■ Sensitivity to temperature, weather change, light, sound, +/- significant sensitivity to medication ■ Migraine and muscular type headache ■ Sleep disorder ■ TMJ disorder ■ Painful bladder syndrome/pelvic pain syndrome ■ Irritable Bowel Syndrome

5. Review lifestyle and medications
■ Medications – Rx and OTC ■ Sleep history ■ Movement/exercise history ■ Social history

6. Physical exam
■ Should be entirely normal unless co-morbidities ■ Rule out differential diagnosis +/- associated symptoms

7. Investigations
Consider existing co-morbid conditions and the potential for other co-morbidities to occur
■ Basic screening lab work is a CBC, CRP, TSH, electrolytes and calcium, celiac screen, liver function tests and glucose. ■ Other testing done based on clinical suspicion to exclude differential diagnosis and/or associated illness

8. Disclosing the diagnosis
FM is a diagnosis of nervous system processing (known as nociplastic pain). Although it may exist with any of these conditions, FM is not:
■ a musculoskeletal condition; ■ a psychiatric disorder;
■ a maladaptive coping; mechanism; ■ or physical deconditioning

RCP – FM information for patients

9. Management
■ Movement/exercise (strongest evidence) ■ Sleep hygiene/management ■ Cognitive Behavioural Therapy for pain ■ Medication (limited evidence) ■ Follow up/Chronic disease management plan (in medical home w/team where available). ■ When/where to refer: Community resources: AHS Alberta Healthy Living Program (online patient education resources) Clinical resources: PCN Multidisciplinary Team/resources, Specialty Care (e.g. FibroFOCUSTM treatment program through the Calgary Chronic Pain Centre, Alberta Virtual Chronic Pain Program)

Community resources

Clinical resources

At any point along pathway, consider the following to support clinical decision making:

1. Non-urgent clinical advice:
■ Call Specialist Link (specialty specific), incl. chronic pain advice

Specialist Link

■ Submit eReferral Advice Request (chronic pain, endocrinology, gastroenterology, neurology, or long COVID-19)

2. Relevant Specialist Link pathways

3. PCN/Multidisciplinary Team collaboration

Primary Care Alberta

UNIVERSITY OF CALGARY

Your patient, Robin, has been presenting with frequent but variable pain complaints over the last six months. You suspect fibromyalgia — how do you confirm that?

Primary Care Alberta

UNIVERSITY OF CALGARY

Another patient, Alex:

diagnosed with fibromyalgia 4 years ago, and was coping very well with it. After a recent COVID infection, pain and fatigue are significantly worse, so now Alex is visiting you to talk about medications. What are your options?

Primary Care Alberta

UNIVERSITY OF CALGARY

Lori Montgomery lori.montgomery@ahs.ca