

Figure 1

PEER Simplified Chronic Pain Guideline: Summary

Treatment Interventions for Discussion with Patients

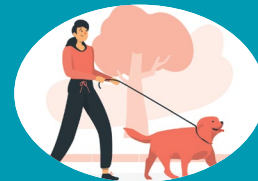
Physical Activity

The foundation of a treatment plan for chronic low back pain and osteoarthritis is physical activity.

About 2 in every 3 people who increase their activity will have improved pain independent of weight loss.

✓ Patients can choose the activity they enjoy: one type of exercise is not better than another!

✓ A wearable activity tracker and an exercise prescription can help to increase physical activity.



Psychological Therapy

About 30-60% of patients with chronic pain will get pain improvement with cognitive behavioral therapy (CBT) or mindfulness-based stress reduction compared to 10-30% with control (e.g. wait list or no intervention).

Treatment Options

Percentage of patients who will have pain meaningfully reduced ($\geq 30\%$):

	OSTEOARTHRITIS	CHRONIC LOW BACK PAIN	NEUROPATHIC PAIN
Foundation of treatment	Physical activity is the foundation of a treatment plan for osteoarthritis and chronic low back pain.		
Add-on option	Psychological therapy is an option for patients with any of these conditions.		
	Placebo or control: 40% 	Placebo or control: 40% 	Placebo or control: 29%
Additional treatments with clear evidence of benefit	Intra-articular corticosteroids: 70% SNRIs: 61% Oral NSAIDs: 58% Topical NSAIDs: 51% 	Oral NSAIDs: 58% Spinal manipulation: 55% TCAs: 53% SNRIs: 50% 	Gabapentinoids: 44% SNRIs: 42% Rubefacients (e.g. capsaicin): 40%
Treatments with unclear benefit	Glucosamine Chondroitin Viscosupplementation	Acupuncture Rubefacients (e.g. capsaicin)	TCAs Cannabinoids Topical nitrates
Treatments with evidence of no benefit	Acetaminophen	Corticosteroids (epidural)	Acupuncture Topical ketamine, amitriptyline, doxepin or combinations
Treatments with harms that exceed benefit	Opioids Cannabinoids	Opioids Cannabinoids	Opioids Topiramate Oxcarbazepine

For more information, see <https://pain-calculator.com>.

No responder analyses identified for: osteoarthritis (rubefacients, platelet-rich plasma injections, TCAs), low back pain (acetaminophen, muscle relaxants, SSRIs, anticonvulsants, topical NSAIDs), neuropathic pain (exercise and lidocaine).

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Key Adverse Effects

TREATMENTS	PERCENTAGE STOPPING DUE TO ADVERSE EFFECTS	KEY ADVERSE EFFECTS TO DISCUSS WITH PATIENT	COST ¹ (3-MONTH)
Placebo	~5% (2-9%)	--	--
Acetaminophen	Not statistically worse than placebo or control	Liver damage in overdose	\$25-50
Acupuncture		Not reported	\$150-300+
Chondroitin or glucosamine		None reported as greater than placebo	<\$50
Corticosteroids (intra-articular or other injections)		Infection (one in ~50,000) ² ; post-dural puncture headache with spinal injection	\$25-50
Physical activity		Mild muscle soreness	\$0-500+
NSAIDs (topical)	6%	Application site reactions	\$50-75
Rubefacients (e.g., capsaicin)	6%	Local burning, skin redness	\$50-75
Cannabinoids	10%	Dizziness, nausea, drowsiness, confusion	\$150-300+
Gabapentinoids	12%	Dizziness, peripheral edema, weight gain	<\$50-150
SNRIs	12%	Dizziness, sedation, stomach upset, weight loss	<\$50-300
TCA's	16%	Dry mouth, dizziness, drowsiness	\$25-150
Opioids	27%	Sedation, dizziness, constipation, pruritis, vomiting, nausea, dependency, overdose	\$75-300
NSAIDs (oral)	Not reported	Stomach upset, gastrointestinal bleeds, increased blood pressure, worsening kidney problems, new or worsening heart failure; increased risk of myocardial infarction with some NSAIDs	\$50-100
Psychological Therapy		Not reported	Variable
Spinal manipulation		Case reports have associated neck manipulation with stroke. ³	\$150-300+
Topical agents (nitrates, amitriptyline, ketamine, doxepin)		Local reactions; Nitrates: headache, palpitations possible	Nitrates: <\$25; Others: \$175-300+
Viscosupplementation		Injection site reactions	\$150-300+

References: 1) Prescription drug costs taken from <https://pricingdoc.acfp.ca> and <https://www.mckesson.ca>. 2) Jones T, Kelsberg G, Safranek S. Am Fam Physician. 2014; 90: 115-6. 3) Nielsen SM, Tarp S, Christensen R, Bliddal H, Klokke L, Henriksen M. Syst Rev 2017; 6(1): 64. Illustrations by Storyset: <https://storyset.com/>

Practice Points



- Physical Activity Prescriptions available from RxFiles (<https://bit.ly/ExerciseRxFiles>)
- Adding a second drug is reasonable when the initial agent provides a partial benefit
- Goals of treatment should be patient-identified, realistic and focused on functional outcomes
- Start/titrate/taper/stop one medication at a time to allow for accurate monitoring of response or adverse effects

NSAIDs = non-steroid anti-inflammatory drugs; SNRIs = serotonin norepinephrine reuptake inhibitors; TCAs = tricyclic antidepressants