



# ACUTE MUSCULOSKELETAL PAIN

(NON-LOW BACK)

## TOPICAL Pharmacological Therapy



- Topical NSAIDs improve pain and physical function in individuals with acute musculoskeletal injuries (primarily sprains and strains) (moderate certainty evidence).
  - $\geq 50\%$  reduction in pain over 1 week with Diclofenac Emulgel vs. placebo (NNT 2).
- Topical NSAIDs are slightly more effective than oral therapies in pain reduction and functional improvement in acute musculoskeletal pain (primarily sprains, strains and whiplash) (moderate certainty evidence).
- Topical NSAIDs are well tolerated. Adverse event rates are similar to placebo in trials.
- The amount of topical NSAID application and the extent of systemic absorption varies with different products and the size of the pain area.
- Several trials have included diclofenac gel which, in Canada, is available without a prescription in two concentrations/strengths: 1.16% and 2.32%.

## ORAL Pharmacological Therapy

- Among oral therapies, NSAIDs and acetaminophen have the best benefit to harm ratio (moderate certainty evidence).
- Oral NSAIDs and acetaminophen improve pain in acute musculoskeletal injuries (primarily sprains, strains and whiplash) (moderate certainty evidence):
  - There are *no differences* between oral NSAIDs and acetaminophen for *pain reduction*.
  - Oral NSAIDs *improve physical function* in individuals with acute musculoskeletal injuries.
- There is little evidence for skeletal muscle relaxants in the treatment of acute non-low back musculoskeletal pain.
- *Opioids* (including tramadol) are *not* more effective than acetaminophen or NSAIDs and cause *more harm* (low certainty evidence).

## NON-Pharmacological Therapy



### Musculoskeletal pain from sprains, strains or whiplash

- Specific acupressure and transcutaneous electrical nerve stimulation provide pain relief at 7 days without increasing the risk of GI, neurologic, or dermatologic adverse events (low certainty evidence).

### Musculoskeletal pain specific to ankle sprains

- There are no differences in the effectiveness of specific exercise interventions when compared with each other or compared to usual care (components of PRICE)\*.
- There is insufficient evidence to support the use of a particular type or external/functional support in the treatment of ankle sprains.
- Evidence based guidelines (2018) recommend:
  - Early mobilization with functional support (ankle braces preferred) for 4-6 weeks over prolonged immobilization (> 10 days).
  - Exercise (through therapy programs)  $\pm$  RICE therapy. Do not recommend RICE\*\* alone (or its components) due to no evidence for effect on pain, swelling, or function.

\*PRICE = protection, rest, ice, compression, elevation

\*\*RICE = rest, ice, compression, elevation

Laminate references are available in the [Academic Detailing handout](#):

<https://medicine.dal.ca/departments/core-units/cpd/programs/academic-detailing-service/AC-Service-Resources.html>



## ACUTE LOW BACK PAIN



### Assess and Communicate

- Assess red and yellow flags. Resource: CEP Core back tool: <https://cep.health/clinical-products/low-back-pain/>
- Most patients will improve over time regardless of treatment.
- Tell patients there is a low risk of serious underlying disease (in the absence of red flags).
- Provide advice on evidence-based self-management. Many on-line resources; e.g., Evans M. Low back pain. 2014: <https://www.youtube.com/watch?v=BOJTegn9RuY>
- Establish expectations from pharmacotherapy and clear goals for stopping medications.
  - Goals of therapy are to decrease pain (not necessarily eliminate pain), improve function, and increase activity.
  - Evidence has shown no large effects of treatments for acute low back pain.

### Non-Pharmacological Therapy

- Non-pharmacological options are considered first line therapy.
- The majority of evidence for non-pharmacological interventions is for chronic low back pain.
- Evidence of benefit exists for superficial heat (moderate certainty) as well as massage, acupuncture and spinal manipulation (low certainty).
- Physical activity is recommended. Bed rest is NOT recommended.

### Pharmacological Therapy

#### Oral NSAIDs

- COX-2 inhibitors and non-selective NSAIDs improve pain and function vs. placebo with no differences in efficacy between various NSAIDs.
- Global Improvement: NNT 7 (95% CI 5-10) vs. placebo.

#### Topical NSAIDs

- Evidence is primarily in non-low back pain musculoskeletal conditions.
- Expert opinion suggests topical NSAIDs represent an option for the relief of low back pain associated with muscle spasm or tightness.

#### Acetaminophen

- Evidence suggests acetaminophen has limited benefit in acute low back pain.
- Acetaminophen is still recommended in some guidelines based on its relative safety compared with alternative pain management options.

#### Skeletal Muscle Relaxants (SMRs)

- SMRs reduce pain; NNT 4 to 7 (assessed at either 2 or 10 days).
- Consider a starting dose of cyclobenzaprine 5 mg which has been shown to have similar efficacy as a 10 mg dose, with fewer adverse events.
- SMRs are not universally considered an appropriate option due to the potential for adverse events, particularly in the elderly.

#### Combinations of NSAIDs with SMRs or opioids ± acetaminophen

- There is inconsistent evidence whether combination therapy offers any benefit compared with NSAIDs alone and combination therapy may increase the risk of adverse effects.

#### Opioids

- Evidence for the use of opioids in acute low back pain is lacking. Routine use is NOT recommended; use only if alternative therapies such as NSAIDs are contraindicated or ineffective.
- Follow opioid prescribing principles:
  - Prescribe the lowest effective dose of immediate-release opioids, for short duration (e.g., no more than 3 days),
  - Prescribe only the quantity needed for the expected duration of pain, severe enough to require opioids use.
  - Counsel patients on safe use/storage, potential adverse effects and the risk for overdose, dependency or addiction.



Laminare references are available in the [Academic Detailing handout](#):

<https://medicine.dal.ca/departments/core-units/cpd/programs/academic-detailing-service/AC-Service-Resources.html>



# ACUTE POST-SURGICAL PAIN

In opioid naïve patients

*The goals of post-surgical pain management are to facilitate recovery and improve function (the ability to eat, move, breathe deeply and sleep).*

## Pharmacological Therapy



- Patients should be treated with a *regularly dosed NSAID and/or acetaminophen* (administered around the clock) provided there are no contraindications.
  - NSAID + acetaminophen reduces opioid consumption and improves pain scores in post-surgical patients with severe pain.
  - 1 of every 2 patients with severe post-surgical pain treated with a single dose of NSAID + acetaminophen achieves ≥ 50% reduction in pain scores.



- It may be appropriate to discharge patients on acetaminophen and/or NSAIDs only. **If opioids are prescribed:**
  - The amount and duration should be based on the level of pain severity and the expected rate of recovery.
  - Prescribe immediate release opioids at the lowest effective dose administered as needed.
  - Prescriptions should have a 30-day expiry from date of discharge. The expiry date will need to be written on the prescription, otherwise it will expire in one year.
  - Instruct patients to fill the opioid prescription only if their pain is not well managed with other therapies or they are having difficulty completing activities of daily living due to pain.

- ✓ **SET EXPECTATIONS:** Some pain is normal; the goal is to make pain manageable for daily activities while recovering.
- ✓ **REMEMBER:** Pain will improve day by day. Educate patients on tapering of opioids as pain resolves.
- ✓ **ALL PATIENTS** should receive counseling on safe use/storage, potential adverse effects, overdose risks, and developing dependence or addiction.

*The framework below from guidelines/consensus statements presents prescribing recommendations following discharge that provide a quantity of opioids adequate to treat postoperative pain in a majority of patients, while minimizing leftover pills.*

Washington State AMDG (2018 Supplement) – severe pain	2020 Canadian Consensus Statement
<ul style="list-style-type: none"> <li>➤ Rapid rate of recovery expected, prescribe ≤ 3 days ( 8-12 pills).</li> <li>➤ Medium rate of recovery expected, prescribe ≤ 7 days (≤ 42 pills).</li> <li>➤ Delayed rate of recovery expected, prescribe ≤14 days.                             <ul style="list-style-type: none"> <li>• In exceptional cases that warrant &gt; 14 days, the surgeon should re-evaluate before refilling opioids and taper off opioids within 6 weeks after surgery.</li> </ul> </li> <li>➤ Avoid routine prescribing of the number of pills that equals the total allowable maximum dosing. Patients will need fewer pills (as little as half) for a specified timeline.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Rapid recovery expected (resume regular activities within 2 weeks from discharge), prescribe 0–3 days (12 pills max).</li> <li>➤ Moderate recovery expected (resume regular activities within 4 weeks from discharge), prescribe 7 days max (30 pills max).</li> <li>➤ Long-term recovery expected (resume regular activities &gt; 4 weeks from discharge), prescribe 14 days max (60 pills max).</li> <li>➤ A part-fill should be given to patients with an expected moderate or long term recovery to reduce the number of opioid containing pills distributed at one time.</li> </ul>

**Re-evaluate patients who are unable to taper opioids to coincide with expected healing or who report pain severe enough to warrant ongoing opioid use after the procedure-specific usual number of days**

**Prescribing considerations at discharge**

- ✓ Prescriptions should be based on in hospital consumption during the previous 24 h and expected functional recovery. Do not prescribe an opioid to patients who have not received any in the last 24 hours of hospital stay. Day surgery patients should be prescribed medications based on an expected rapid recovery.
- ✓ Prescribe the same opioid used in hospital to ensure tolerability.
- ✓ Prescriptions should be written at discharge, not before.



## OPIOID PRESCRIBING for ACUTE PAIN

**Acute pain** typically lasts for < 3 months and is caused by trauma, surgery, or tissue damage.

### Acute Pain Goals of Therapy

- Improved patient functioning is the primary goal.
- Focus on reducing pain to promote function and recovery. Pain will improve day by day.
- Post-surgical goal is mild enough pain to allow daily activities to be manageable as the patient heals.

### General Acute Pain Recommendations

- Usually does not warrant treatment with an opioid.
- Cautious opioid use may be considered ONLY if other treatments fail or are inappropriate or contraindicated.
- **If opioids are used, the following prescribing principles should be followed:**
  - ✓ **Immediate release opioid formulation** (long acting increases risk of overdose and opioid use disorder long-term).
  - ✓ **Lowest effective dose\*\***
    - Most acute pain conditions can be managed with doses significantly lower than 50 mg morphine equivalents/day.
    - Doses  $\geq$  50 mg morphine equivalents/day have been studied in chronic pain and shown to be associated with an increased risk of unintentional non-fatal and fatal overdose.
  - ✓  **$\leq$  3 days duration**

### Acute Low Back Pain Recommendations

- Opioids should not be routinely offered.
- Patients should be informed that acute low back pain often improves overtime *regardless* of treatment.

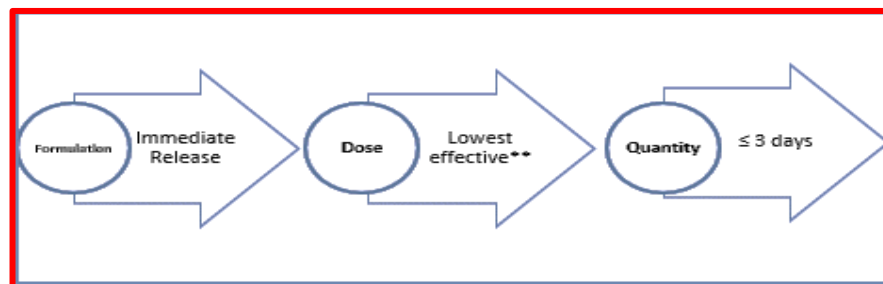
### Acute Musculoskeletal Pain Recommendations

- Evidence shows that opioids are no better than acetaminophen or NSAIDs for pain reduction and cause more harm.

### Opioid Use Disorder (OUD) Risk Assessment

- There are no specific symptoms, signs, or screening tools with sufficient evidence to identify increased risk of OUD.
- Risk of aberrant use *MAY* be greater in patients with:
  - Personal history of substance and/or alcohol use disorder (SUD/AUD)
  - Family history of SUD
  - Concomitant psychiatric problems/diagnoses
  - Trauma (physical, sexual, emotional); especially at a young age
  - Duration of initial opioid prescription (longer duration increases risk of continued use)
- Check the NSPMP and NSDIS before each prescription (see *Helpful Links* below).
- Counsel patients on safe use/storage, potential adverse effects and risk of overdose, dependency or addiction. Offer/discuss naloxone kits to reduce risk of overdose (available at any community pharmacy).

### Opioid Prescribing Principles for Acute Pain



#### Helpful Links:

- ✓ CPSNS Opioid Prescribing Standard of Practice: <https://cpsns.ns.ca/resource/initiation-of-opioid-therapy-for-acute-pain/>
- ✓ Opioid Wisely by Choosing Wisely Canada: <https://choosingwiselycanada.org/campaign/opioid-wisely/>
- ✓ NSPMP (Prescription Monitoring Program): <http://www.nspmp.ca/index.php>
- ✓ NSDIS (Drug Information System): <https://novascotia.ca/dhw/ehealth/dis/>
- ✓ NS Take Home Naloxone Program: <http://www.nsnaloxone.com/>
- ✓ NS Opioid Use and Overdose Strategy: <https://novascotia.ca/opioid/>
- ✓ CEP Opioid Tapering Tool: <https://cep.health/media/uploaded/20180305-Opioid-Tapering-Tool-Fillable.pdf>
- ✓ Canadian Deprescribing Network Opioid Tapering Protocol: <https://www.deprescribingnetwork.ca/tapering>