Managing Acute Pain in the Community Setting

A Case-Based Approach to Caring for Patients Presenting with Acute Dental Pain or Acute Low Back Pain

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Presenter Personal Disclosure

Presenter's Name: **Denise Kreutzwiser**

I am the Pain Management Program Pharmacist at St. Joseph's Hospital in London, Ontario

I have **no** current or past relationships with commercial entities

I have received a speaker's fee from **CPhA** for this learning activity (CPhA is hosting this webinar with support from Haleon)

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while on her final co-op placement at the Canadian Pharmacists Association.

Learning Objectives

By the end of this webinar, participants should be able to:

1. Describe the role of acetaminophen, NSAIDs, fixed dose combination acetaminophen-NSAID therapy, and opioids in the management of acute dental extraction pain and acute low back pain.

2. Describe helpful resources to assist with acute pain management pharmacotherapy decision making.

PART 1: BACKGROUND INFORMATION

IASP 2020 Revised Definition of Pain

"An **unpleasant** sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage."

Raja et al. The revised International Association for the Study of Pain definition of pain: concepts, challenges, and compromises. Pain. 2020 Sep 1;161(9):1976-1982.

Types of Pain

ACUTE

Temporary

Minutes to several weeks

Potential causes:
blunt trauma, broken bones, surgery, dental work, childbirth, burns, sprain or strain, etc.

VS.

CHRONIC

Persists or Recurs

>3 months

Potential causes:
arthritic, neurogenic (caused by nerve damage), fibromyalgia, etc.

IASP. Acute Pain. https://www.iasp-pain.org/resources/topics/acute-pain/ Accessed August 12, 2023.

Treede et al. Chronic pain as a symptom or a disease: the IASP Classification of Chronic Pain for the International Classification of Diseases (ICD-11). Pain. 2019 Jan;160(1):19-27.

Pain: A Common Reason for Canadian ED Visits

Abdominal and pelvic pain, pain in the throat and chest, and back pain are among the most common causes of emergency department (ED) visits in Canada, jointly accounting for **one-tenth of all visits**.

Canadian Institute for Health Information. NACRS Emergency Department Visits and Lengths of Stay by Province/Territory, 2022–2023 (Q1 to Q2) — Provisional Data. Ottawa, ON: CIHI; February 2023.

Acute Pain: Why Should We Treat It?

It is critical to treat acute pain not only to decrease suffering but also to maximize healing and minimize the chances of progression to a persistent (chronic) pain condition.

Lynch. The need for a Canadian pain strategy. Pain Res Manag. 2011 Mar-Apr; 16(2): 77–80

Knowledge of risk factors that drive acute pain to become chronic are emerging, presenting an opportunity to both mitigate risk and enhance protective factors. Timely access to evidence-informed strategies to prevent the transition from acute to chronic pain will help substantially reduce the prevalence of chronic pain in Canada.

March 2021 Canadian Pain Task Force Report

COMMUNITY PHARMACISTS

Tips for ACUTE Pain Consultations

Embracing the Pharmacist Role in Acute Pain Management

- Stay current and familiar with reputable resources
- Know what constitutes a ‘red flag’
- Communicate and collaborate

Now for Part 2:
Learning via Vignettes…

Meet Lila

ID: 66 y.o. retired teacher

Context: Cracked her tooth eating peanuts; just underwent dental extraction as unable to save the tooth

Situation: Presents to the pharmacy with Rx for acetaminophen 325mg/codeine 30mg/caffeine 15mg x 30 tablets; take 1-2 tablets Q4-6H PRN for dental pain

Medical history: Osteoporosis

Medications: Alendronate 70mg q weekly

So, what do you do as the pharmacist on duty?

Dental Extraction – Context for Decision Making

Simple Extraction

- Performed on a tooth that is above the gumline and can be seen in the mouth
- Tooth usually removed easily by loosening it with a lifter/elevator and pulling it out with forceps
- Quick process; fast healing time
- Considered to cause **MILD** post-procedural pain

Surgical Extraction

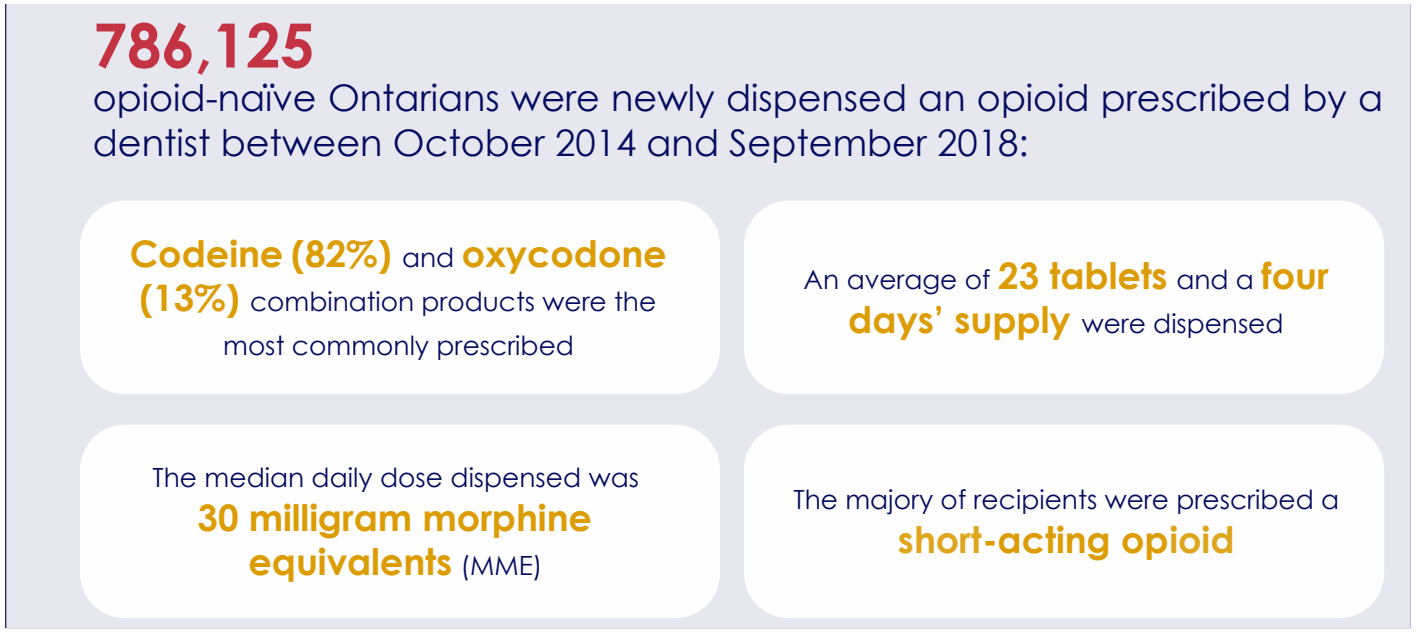
- Slightly more complex procedure that occurs when a tooth has not yet broken through the gum line or has not yet fully grown into the mouth
- Oral surgeon makes a small incision into the gum to access the affected tooth
- Considered to cause **MODERATE** post-procedural pain

LET'S REFLECT! Does this context change your poll response for Lila's case?

Hersh et al. Prescribing recommendations for the treatment of acute pain in dentistry. Compend Contin Educ Dent 2011;32(3):22, 24-30; quiz 31-2.
American Association of Oral and Maxillofacial Surgeons. Tooth Extraction: Simple vs. Surgical Tooth Removal. Accessed August 13, 2023.

Some Facts to Set the Stage: True or False Time

Question #1: Dentists are the second largest group of opioid prescribers in Ontario.



https://odprn.ca/wp-content/uploads/2021/03/Research-Minute-Dental-opioid-prescription-characteristics-and-the-risk-of-new-persistent-use.pdf
https://odprn.ca/wp-content/uploads/2021/03/Infographic-Dental-opioid-prescription-characteristics-and-the-risk-of-new-persistent-use.pdf

Some Facts to Set the Stage: True or False Time

Question #2:

Among opioid-naive Ontarians newly dispensed an opioid prescribed by a dentist between 2014 to 2018, approximately 1 in 23 developed new, persistent use.

NEW, LONG-TERM USE

New, long-term use occurred among **almost 5%** of opioid-naïve Ontario residents who were newly dispensed an opioid prescribed by a dentist:

An initial daily dose **above 90 MME** was associated with a **20% increase** in the odds of long-term use

A prescription duration of **15+ days** was associated with a **> two-fold increase** in the odds of long-term use

Although rare, receiving a **long-acting opioid** was associated with an almost **eight-fold increase** in the odds of long-term use

https://odprn.ca/wp-content/uploads/2021/03/Research-Minute-Dental-opioid-prescription-characteristics-and-the-risk-of-new-persistent-use.pdf
https://odprn.ca/wp-content/uploads/2021/03/Infographic-Dental-opioid-prescription-characteristics-and-the-risk-of-new-persistent-use.pdf

Step #1: Stay Current

michigan-open.org/prescribing-recommendations/

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OPIOID PRESCRIBING

OPEN takes a preventative approach to the opioid epidemic by **focusing on appropriate opioid prescribing and pain management** best practices in acute care settings (surgery, dentistry, emergency medicine, obstetrics, pediatrics). Excess prescribing of opioids after surgery places patients at risk of developing new persistent opioid use, a significant and common surgical complication.

Among opioid-naïve patients undergoing common surgical procedures, 6-10% continue filling opioid prescriptions 3-6 months after surgery. [1,2]

Further, 72% of opioids prescribed by surgeons go unused by patients, leaving the available for diversion into communities and risky prescription drug use. [3]

DOWNLOADS

- Adult Prescribing Recommendations
- Pediatric Prescribing Recommendations
- Pain and Opioid Data Collection Recommendations

Adult Prescribing Recommendations

OPEN
Evidence. Resources. Engagement.

Procedure	Oxycodone 5mg tablets*
Breast Cancer Surgery	
Breast Biopsy or Lumpectomy	0-5
Lumpectomy + Sentinel Lymph Node Biopsy	0-5
Sentinel Lymph Node Biopsy Only	0-5
Simple Mastectomy + Sentinel Lymph Node Biopsy	0-20
Modified Radical Mastectomy + Sentinel Lymph Node Biopsy	0-30
Cardiothoracic Surgery	
Cardiac Surgery via Median Sternotomy	0-25
Dentistry	
Dental Extraction	0
Obstetrics and Gynecology	
Hysterectomy - Vaginal or Laparoscopic/Robotic or Abdominal	0-10
Cesarean Section	0-20
Orthopaedic Surgery	
Total Hip Arthroplasty	0-30
Total Knee Arthroplasty	0-40
Urology	
Prostatectomy	0-10
Vascular Surgery	
Carotid Endarterectomy	0-5

Procedure	Oxycodone 5mg tablets*
General Surgery	
Anti-reflux (Nissen) - Laparoscopic	0-5
Enterolysis - Laparoscopic	0-5
Excision of Rectal Tumor - Transanal	0-5
Thyroidectomy	0-5
Appendectomy	0-10
Cholecystectomy - Laparoscopic or Open	0-10
Colectomy - Laparoscopic or Open	0-10
Donor Nephrectomy - Laparoscopic	0-10
Enterostomy Closure - Laparoscopic	0-10
Gastrorrhaphy	0-10
Hernia Repair - Minor or Major	0-10
Ileostomy/Colostomy Creation, Re-sitting, or Closure	0-10
Pancreatectomy	0-10
Sleeve Gastrectomy	0-10
Small Bowel Resection or Enterolysis - Open	0-10
Melanoma Surgery	
Sentinel Lymph Node Biopsy Only	0-5
Wide Local Excision + Sentinel Lymph Node Biopsy	0-20

https://doi.org/10.56137/OPEN.000054
michigan-open.org

https://michigan-open.org/prescribing-recommendations/

Dentistry	Oxycodone 5mg tablets*
Dental Extraction	0

SUPPORTING LITERATURE

Akinbade et al. 2022 (Level 1 evidence)

- DOI: 10.1403/njcp.ncjp_544_18
- RCT with 90 patients undergoing impacted third molar extraction randomized to receive either tramadol or celecoxib.
- Greater pain control and tolerability with celecoxib than with tramadol

Freilich et al. 2020 (Level 3 evidence)

- DOI: 10.1016/j.joms.2020.02.032
- Survey was sent to 118 oral and maxillofacial surgeons and collected self-reported data on opioid prescribing patterns for dental extractions.
- 92% of respondents do not regularly prescribe opioids to their patients; opioids are prescribed regularly in small amounts (8-12 doses) for a select few invasive procedures, such as the placement of 6 or more dental implants.

Resnick et al. 2019 (Level 3 evidence)

- DOI: https://doi.org/10.1016/j.joms.2019.02.011
- Prospective cohort study of 81 patients who had asymptomatic third molars extracted at a single institution from June 2018- October 2018
- Average number of oxycodone tablets used was 0.04 ± 0.24
- Highest daily use of opioids was on POD2 (1.0 ± 0.0 tablet)
- Only 6 patients (7%) used opioids during the postoperative period (average of 3.3 tablets per patient)
- 93% used no postoperative opioids; 466 prescribed tablets remained unfilled or unused
- Ibuprofen 600 mg was used by 89% for a mean of 4.6 ± 2.2 PODs; Highest daily use on POD2 (mean of 2.8 ± 0.8 tablets
- Acetaminophen 650 mg was used by 86% for a mean of 3.4 ± 1.9 PODs; Highest daily use on POD2 (mean of 4.2 ± 1.8 tablets)
- Female patients took 8.9 times more postoperative analgesic medication than male patients

Nalliah et al. 2020 (Level 3 evidence)

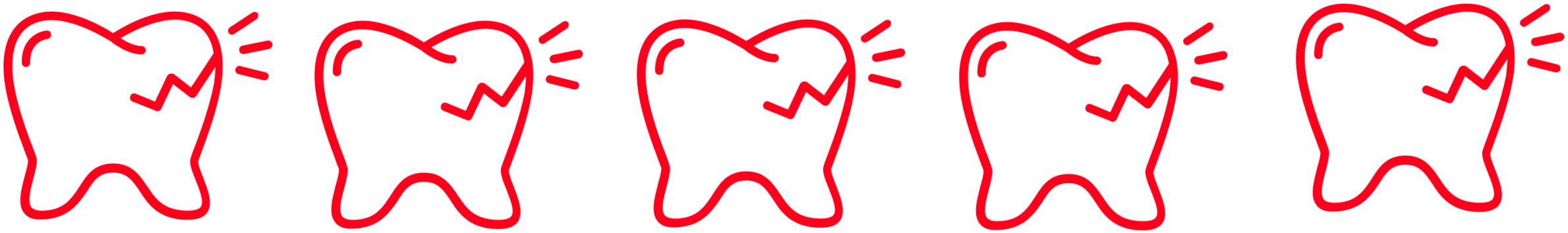
- DOI: 10.1001/jamanetworkopen.2020.0901
- Analyzed data from 329 patients who underwent a routine (174) or surgical (155) dental extraction procedure at a single institution between 1 June 2017- 31 December 2017
- Routine extraction = required no conjunctive removal of bone of extraction of soft tissue because teeth were visible an above gum line
- Surgical extraction = required an incision into the connective tissue to expose teeth
- Surgical extraction: 70.3% were prescribed opioids and 51.6% used opioids after surgical extraction
- Routine extraction: 49.4% were prescribed opioids and 39.1% used opioids after routine extraction
- Opioid users were younger and more likely to be female
- Of those that did not take an opioid, 61.3% used medications such as ibuprofen, celecoxib, or naproxen sodium and 33.3% used acetaminophen or NSAIDS to treat pain after leaving the dental clinic
- Opioid group reported higher pain levels
- No difference in satisfaction scores between opioid and nonopioid group

Pain Associated with Dental Extraction

A systematic review and network meta-analysis on acute post-operative pain due to dental extraction in the adult population was conducted to inform the 2023 clinical practice guidelines being produced by the American Dental Association (ADA).

Key Points

- Analyzed 85 randomized controlled trials (RCTs) reported from 82 publications that compared 10 interventions (including acetaminophen, NSAIDs, opioids, and combinations) to placebo
- Surgical tooth extraction was performed in all included studies
- 75% of studies conducted in USA



Miroshnychenko et al. Acute Postoperative Pain Due to Dental Extraction in the Adult Population: A Systematic Review and Network Meta-analysis. J Dent Res. 2023 Apr;102(4):391-401.

Pain Associated with Dental Extraction

Table 2. Summary of Benefit Outcomes Compared with Placebo (No Treatment).

Characteristic	Pain Relief	TOTPAR	SPID	Global Efficacy Rating	Rescue Analgesia
Time point	6 h	6 h	6 h	6 h	6 h
Scale	0 (none) to 4 (complete)[a]	(0–24): higher better[b]	18 points: higher better[c]	0 (poor) to 4 (excellent)[a]	
Thresholds	−0.4, 0.4	−2.4, 2.4	−1.8, 1.8	−0.4, 0.4	−8, 8
Placebo[d]	0.62	4.1	0.345	0.69	80 per 100
Ibuprofen 200–400 mg plus acetaminophen 500–1,000 mg	1.68 (1.06 to 2.31)	11.07 (8.23 to 13.91)	4.41 (5.78 to 3.04)	—	−55.60 (−70.27 to −31.22)
Oxycodone 5 mg or codeine 60 mg	0.10 (−0.06 to 0.25)[e]	1.13 (0.17 to 2.09)[e]	0.78 (0.02 to 1.55)	0.23 (−0.14 to 0.61)	−3.64 (−20.49 to 7.57)
Acetaminophen 650 mg plus oxycodone 10 mg	1.19 (0.85 to 1.54)	7.91 (6.49 to 9.32)	5.54 (5.26 to 6.02)	1.76 (1.35 to 2.18)	−45.18 (−62.93 to −22.10)
Ibuprofen 400 mg (fast acting or acid)	1.31 (1.17 to 1.45)	8.65 (7.82 to 9.48)	5.58 (4.85 to 6.31)	1.47 (1.27 to 1.68)	−43.01 (−49.50 to −36.02)
Tramadol 37.5 mg plus acetaminophen 325 mg	0.01 (−0.34 to 0.36)[e]	—	—	—	—
Acetaminophen 500–1,000 mg	0.42 (0.23 to 0.62)	4.20 (3.30 to 5.09)	2.95 (2.31 to 3.60)	0.85 (0.65 to 1.06)	−24.00 (−32.02 to −16.30)
Acetaminophen 600–650 mg plus codeine 60 mg	0.49 (0.27 to 0.71)	5.03 (4.04 to 6.03)	2.92 (2.32 to 3.53)[e]	0.98 (0.72 to 1.25)	−21.20 (−32.13 to −11.10)[e]
Naproxen 400–440 mg	1.44 (1.07 to 1.80)	8.47 (6.15 to 10.79)	5.27 (3.50 to 7.03)[e]	—	−51.49 (−64.71 to −33.31)
Ibuprofen 200 mg plus hydrocodone 5 mg	—	—	—	—	—
Hydrocodone 5 mg plus acetaminophen 300–325 mg	—	—	—	—	—

Empty cells: there was no evidence for the specific intervention.
SPID, sum of pain intensity differences; TOTPAR, total pain relief.
[a]We used this scale range as it was the most reported scale for this outcome among the included studies.
[b]The range of possible scores ranged from 0 to 24.
[c]The range of possible scores ranged from −6 to 12, a total length of 18 points.
[d]The expected risk of each outcome with placebo is reported in the gray row. Numbers in the colored cells are the estimated mean differences (95% confidence interval [CI]) or risk differences (95% CI) per 100 patients when compared to placebo.
[e]The best estimate of effect was obtained from direct evidence.

	Benefit Outcomes	
	High/Moderate-Certainty Evidence	Low/Very Low-Certainty Evidence
Among the best	Better than placebo and some alternatives	May be better than placebo and some alternatives
Intermediate	Better than placebo, but no better than any alternatives	May be better than placebo, but no better than any alternatives
Among the worst	No better than placebo	May be no better than placebo

Miroshnychenko et al. Acute Postoperative Pain Due to Dental Extraction in the Adult Population: A Systematic Review and Network Meta-analysis. J Dent Res. 2023 Apr;102(4):391-401.

Pain Associated with Dental Extraction

Table 11. Summary of Adverse Event Outcomes Compared with Placebo (No Treatment). Absolute Estimates of Adverse Events.

	Adverse effects †				
	Drowsiness	Dizziness	Headache	Nausea/ vomiting	Constipation
Time point	Longest reported follow up time point				
Thresholds	-0.3, 0.3	-0.4, 0.4	-0.5, 0.5	-0.8, 0.8	-0.1, 0.1
Placebo*	3 per 100	4 per 100	5 per 100	8 per 100	1 per 100
Ibuprofen 200-400 mg plus Acetaminophen 500-1,000 mg	-	-1.56 (-2.58 to 0.36)	-2.85 (-3.95 to -0.85)	-5.24 (-6.17 to -3.95)	-0.76 (-0.90 to 2.72)
Oxycodone 5 mg or Codeine 60 mg	2.49 (-0.62 to 8.73)	7.73 (0.93 to 21.83)	-2.08 (-4.31 to 5.16)	8.55 (-2.87 to 33.08)	-
Acetaminophen 650 mg plus Oxycodone 10 mg	-1.73 (-3.24 to 19.26)	6.82 (2.07 to 14.73)	-1.03 (-4.38 to 13.45)	15.08 (4.64 to 30.15)	-
Ibuprofen 400 mg (fast acting or acid)	3.90 (0.71 to 9.30)	-0.86 (-1.81 to 0.54)	-0.88 (-1.99 to 0.59)	-2.29 (-3.49 to -0.83)	-0.66 (-0.89 to 2.00)
Tramadol 37.5 mg plus Acetaminophen 325 mg	-	1.10 (-1.93 to 8.64)	-3.55 (-4.88 to 2.84)	-2.42 (-6.07 to 6.03)	-
Acetaminophen 500-1,000 mg	5.56 (0.99 to 14.07)	-0.23 (-1.54 to 1.83)	0.10 (-1.41 to 2.16)	-1.71 (-3.21 to 0.20)	-0.05 (-0.89 to 30.09)
Acetaminophen 600-650 mg plus Codeine 60 mg	6.22 (0.58 to 18.20)	3.76 (0.25 to 9.95)	-1.08 (-2.63 to 1.35)	4.99 (0.08 to 12.10)	-0.09 (-0.89 to 28.94)
Naproxen 400-440 mg	-	2.20 (-2.41 to 19.43)	-3.66 (-4.82 to 0.90)	-1.62 (-6.92 to 17.33)	-0.81 (-0.91 to 1.52)
Ibuprofen 200 mg plus Hydrocodone 5 mg	-	-	-	-	-
Hydrocodone 5 mg plus Acetaminophen 300-325 mg	-	-	-	-	-

Legend		
	ADVERSE EVENTS	
	High/Moderate certainty evidence	Low/Very low certainty evidence
AMONG THE BEST	No more harmful than placebo	May be no more harmful than placebo
AMONG THE WORST	More harmful than placebo and some alternatives	May be more harmful than placebo

*The expected risk of each outcome with placebo is reported in the grey row. Numbers in the coloured cells are the estimated risk differences (95% CI) per 100 patients when compared to placebo.

† The following adverse events were not included in this table due to absolute estimates of 0: syncope, mood alteration, vision, abdominal pain, dysphagia, diarrhea, and dyspepsia.

All estimates of effect were obtained from direct evidence.

Empty cells: there was no evidence for the specific intervention.

Miroshnychenko et al. Acute Postoperative Pain Due to Dental Extraction in the Adult Population: A Systematic Review and Network Meta-analysis. J Dent Res. 2023 Apr;102(4):391-401.

Pain Associated with Dental Extraction

Bottom Line Recommendations from American Dental Association (ADA) Acute Dental Pain Management Guideline

1. For the management of acute post-operative dental pain in adolescents, adults, and older adults undergoing **simple tooth extraction**, the guideline panel **suggests the post-procedural use of non-opioid analgesics** (for example, ibuprofen (200-400 mg) plus acetaminophen (500 - 1,000 mg), ibuprofen (400 mg [fast acting or acid]), naproxen (400-440 mg)) **over the use of opioid analgesics.** ***(Conditional, Low certainty)***

    - **When NSAIDs are contraindicated OR unadvisable,** the guideline panel suggests ***acetaminophen*** (500-1,000 mg) ***alone***. ***(Conditional, Low certainty)***

ADA. Evidence-Based Clinical Practice Guideline for the Management of Acute Dental Pain. Accessed online August 13, 2023.

*NSAIDs = nonsteroidal anti-inflammatory analgesics

Pain Associated with Dental Extraction

Bottom Line Recommendations from American Dental Association (ADA) Acute Dental Pain Management Guideline

1. For the management of acute post-operative dental pain in adolescents, adults, and older adults undergoing **surgical tooth extraction**, the guideline panel **suggests the post-procedural use of non-opioid analgesics** (for example, ibuprofen (200-400 mg) plus acetaminophen (500 - 1,000 mg), ibuprofen (400 mg [fast acting or acid]), naproxen (400-440 mg)) **over the use of opioid analgesics.** ***(Conditional, Low certainty)***

    - **When NSAIDs are contraindicated OR unadvisable,** the guideline panel suggests the post-procedural use of ***acetaminophen*** (500-1,000 mg) ***alone or in combination with an opioid*** (for example, acetaminophen (650 mg) plus oxycodone (10 mg)). ***(Conditional, Low certainty)***

    - **If post-procedural pain control with NSAIDs alone is inadequate,** the guideline panel suggests the **addition of acetaminophen** (500 - 1,000 mg) **or in combination with an opioid** (for example, acetaminophen (650 mg) plus oxycodone (10 mg)). ***(Conditional, Low certainty)***

ADA. Evidence-Based Clinical Practice Guideline for the Management of Acute Dental Pain. Accessed online August 13, 2023.

*NSAIDs = nonsteroidal anti-inflammatory analgesics

Back to Lila

Let’s revisit the original poll results… would you like to keep or revise your response?

Meet Zahra

ID: 61 y.o. elementary school custodian.

Context: Was playing with her grandchild at the playground and injured her back

Situation: Presents to the pharmacy 3 days after the playground incident with a “nagging” pain in the middle of her lower back (4/10) that does not radiate, but worsens (6/10) with movement

Medical history: T2DM, Angina

Medications:
Metformin 1000 mg PO BID
Liraglutide 1.2 mg subcutaneously once daily
Rosuvastatin 20 mg PO once daily
Ramipril 5 mg PO once daily
Amlodipine 5mg PO once daily
Nitroglycerin spray PRN

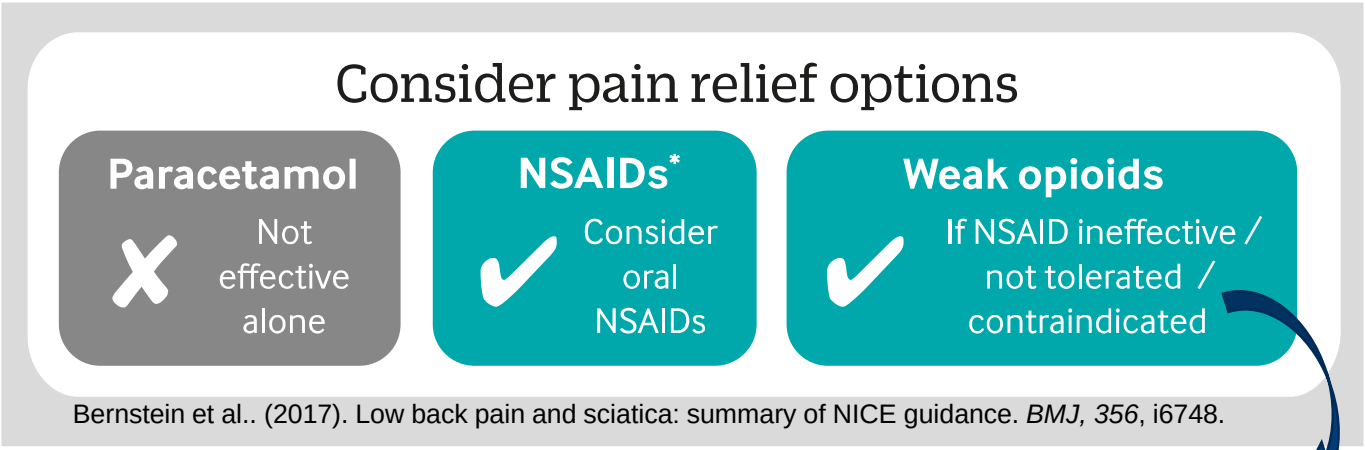
So, what do you do as the pharmacist on duty?

Let's Recap Acute Back Pain Management – What do the Guidelines Recommend?

2017 American Guidelines Acute and Subacute Low Back Pain (LBP)

Recommendation 1: Given that most patients with acute or subacute low back pain improve over time regardless of treatment, clinicians and patients should select nonpharmacologic treatment with superficial heat (moderate-quality evidence), massage, acupuncture, or spinal manipulation (low-quality evidence). If pharmacologic treatment is desired, clinicians and patients should select nonsteroidal anti-inflammatory drugs or skeletal muscle relaxants (moderate-quality evidence). (Grade: strong recommendation)

2016 UK Guidelines re: LBP and Sciatica



Bernstein et al.. (2017). Low back pain and sciatica: summary of NICE guidance. *BMJ, 356*, i6748.

For acute LBP only!

Qaseem et al. Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline From the American College of Physicians. *Ann Intern Med, 2017; 166*(7), 514-530.

The PACE Trial

Design	Multicentre, double-dummy, randomised controlled trial (RCT) across 235 primary care centres in Australia from Nov. 2009 to Mar. 2013.
Patient population	Adults with new episode of acute LBP (< 6 weeks duration) with or without leg pain + at least moderate intensity pain
Intervention	- Acetaminophen regularly scheduled arm - Acetaminophen PRN arm
Comparator	Placebo
Outcome	1º Outcome: • Days to recovery from pain 2º Outcomes: • Pain intensity, disability, function, global symptom change, sleep, quality of life

Williams et al. Efficacy of paracetamol for acute low-back pain: a double-blind, randomised controlled trial. *Lancet. 2014; 384*(9954), 1586-1596.

The PACE Trial

Placebo control:

2 placebo tablets q6-8h
(6 tabs/day)

1 or 2 placebo tablets q4-6h PRN for pain relief
(max. 8 tabs/day)

Regular acetaminophen:

2 tablets modified-release acetaminophen 665 mg q6-8h
(6 tabs/day)

1 or 2 placebo tablets q4-6h PRN for pain relief
(max. 8 tabs/day)

PRN acetaminophen:

2 placebo tablets q6-8h
(6 tabs/day)

1 or 2 acetaminophen 500 mg tablets q4-6h PRN for pain relief
(max. 8 tabs/day

Treatment was taken in all study arms until the patient recovered or for up to 4 weeks.

Williams et al. Efficacy of paracetamol for acute low-back pain: a double-blind, randomised controlled trial. *Lancet. 2014; 384*(9954), 1586-1596.

The PACE Trial:
1º Outcome - Days to Recovery From Pain

Recovery was defined as: the 1st day of 0 or 1 pain intensity, measured on a 0 - 10 pain scale, maintained for 7 consecutive days (sustained recovery)

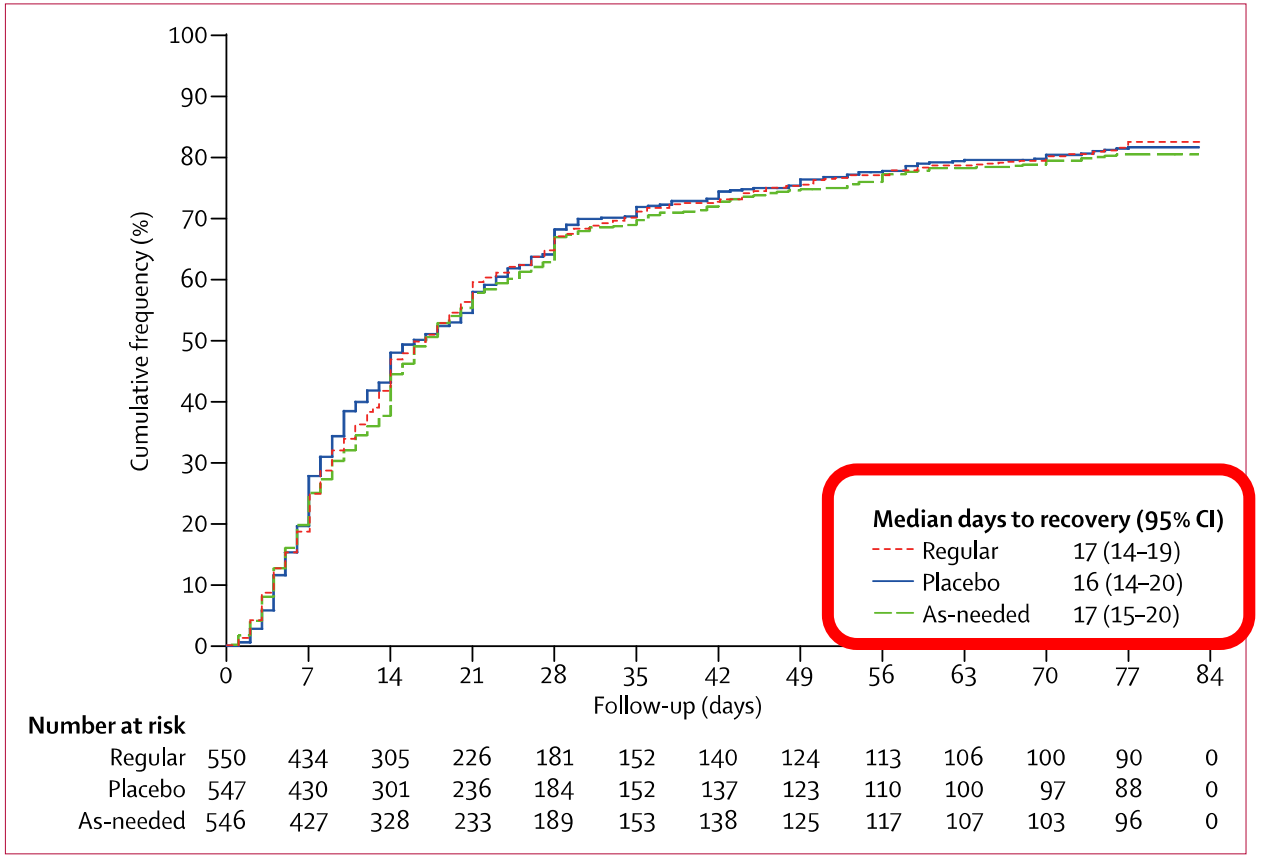


Figure 2: **Kaplan-Meier curves for sustained recovery by treatment group, adjusted for baseline pain score**
Global p=0·79.

Williams et al. Efficacy of paracetamol for acute low-back pain: a double-blind, randomised controlled trial. *Lancet. 2014; 384*(9954), 1586-1596.

If acetaminophen monotherapy doesn't work for acute LBP, there's no point in recommending combination acetaminophen + NSAID therapy.

Cochrane Database of Systematic Reviews | Review - Intervention

Non-steroidal anti-inflammatory drugs for acute low back pain

Wendelien H van der Gaag, Pepijn DDM Roelofs, Wendy TM Enthoven, Maurits W van Tulder, Bart W Koes
Authors' declarations of interest

Version published: 16 April 2020 Version history
https://doi.org/10.1002/14651858.CD013581

Review question

We examined the effect of non-steroidal anti-inflammatory drugs (NSAIDs), such as diclofenac, ibuprofen, and naproxen, for people with acute low back pain. Acute low back pain is defined as the presence of pain in the back, below the ribs and above the buttocks, for under 12 weeks. We compared NSAIDs to placebo, paracetamol, other NSAIDs, other drugs, and non-drug treatments.

Authors' conclusions

Implications for practice

For people with acute low back pain (LBP), non-steroidal anti-inflammatory drugs (NSAIDs) were found to be slightly better in reducing pain (moderate quality evidence) and disability (high quality evidence) than placebo in the short-term. However, the magnitude of the effect is small and probably not clinically relevant. There is low quality evidence that there is no clear difference between selective COX-2 inhibitor NSAIDs and non-selective NSAIDs in reducing pain in the short-term. In all cases, potential (gastrointestinal) adverse events should be taken into account.

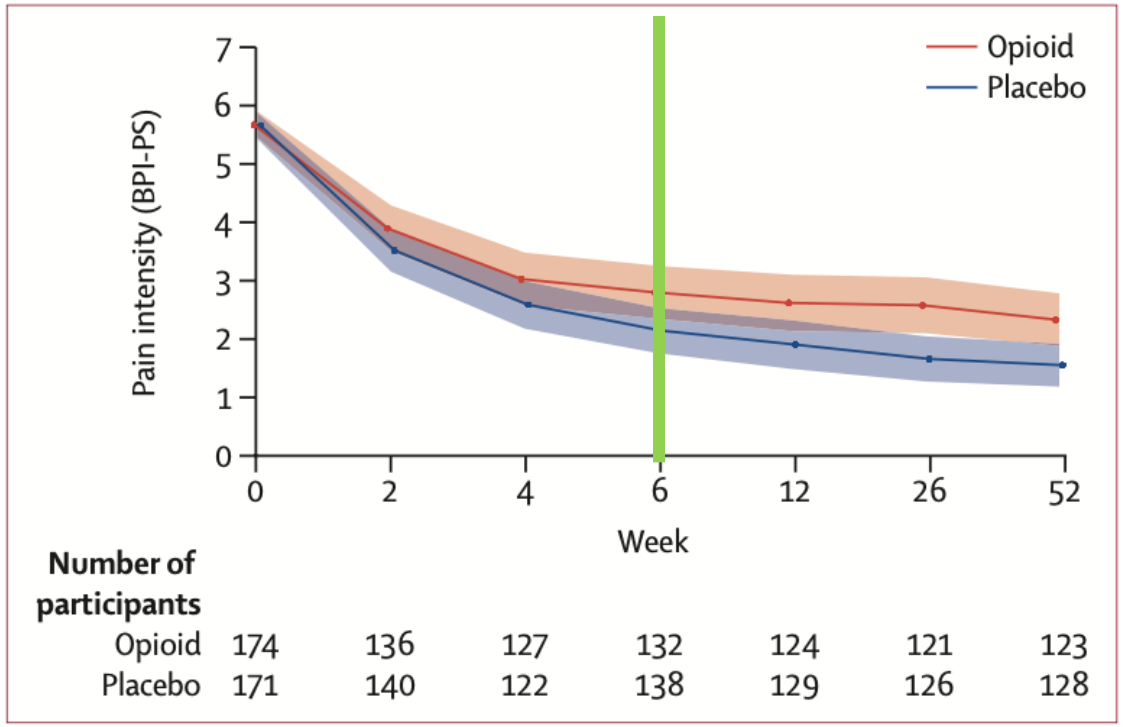
The OPAL Trial

Design	Investigator-led, multicentre, triple-blinded, RCT across 157 primary care or emergency department sites in Australia from Feb. 2016 to Mar. 2022
Patient population	Adults with 12 weeks or less of low back or neck pain (or both) of at least moderate pain severity with or without radiation down the leg or neck, respectively
Intervention	Opioid (oxycodone–naloxone, up to 20 mg oxycodone/day orally)
Comparator	Placebo
Outcome	1º Outcome: • Pain severity at 6 weeks measured with the pain severity subscale of the Brief Pain Inventory

Jones et al. Opioid analgesia for acute low back pain and neck pain (the OPAL trial): a randomised placebo-controlled trial. Lancet. 2023 Jul 22;402(10398):304-312.

The OPAL Trial

1º Outcome:
pain severity at 6 weeks measured with the pain severity subscale of the Brief Pain Inventory (10-point scale)



Number of participants							
Opioid	174	136	127	132	124	121	123
Placebo	171	140	122	138	129	126	128

Figure 2: **Longitudinal plot of mean pain severity score**
Datapoints show mean scores at each timepoint, and the shaded areas show 95% CIs. Estimates are raw values (not modelled). BPI-PS=Brief Pain Inventory, pain severity subscale.

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Bottom Line:
opioids are **NOT** going to benefit individuals with back and/or neck pain

	Opioid (n=174)		Placebo (n=172)		Mean difference (95% CI)	p value
	n	Mean (SE)	n	Mean (SE)		
Pain severity (BPI-PS)						
Week 2	136	3·81 (0·19)	140	3·54 (0·19)	NA	NA
Week 4	127	3·08 (0·20)	122	2·73 (0·20)	NA	NA
Week 6	132	2·78 (0·20)	138	2·25 (0·19)	0·53 (–0·00 to 1·07)	0·051
Week 12	124	2·58 (0·20)	129	2·10 (0·19)	0·48 (–0·06 to 1·02)	0·083
Week 26	121	2·67 (0·20)	126	1·87 (0·19)	NA	NA
Week 52	123	2·37 (0·20)	128	1·81 (0·19)	0·57 (0·02 to 1·11)	0·041
Physical functioning, generic (BPI-IS)						
Week 2	126	3·90 (0·22)	132	3·58 (0·21)	NA	NA
Week 4	115	2·92 (0·22)	115	2·75 (0·22)	NA	NA
Week 6	125	2·64 (0·22)	126	2·12 (0·21)	0·52 (–0·08 to 1·12)	0·088
Week 12	114	2·48 (0·22)	120	1·90 (0·22)	0·58 (–0·03 to 1·19)	0·064
Physical functioning, back (RMDQ)						
Week 6	109	8·89 (0·64)	109	6·56 (0·64)	2·33 (0·55 to 4·11)	0·011
Physical functioning, neck (NDI), %						
Week 6	23	22·70% (3·66)	19	20·98% (3·93)	1·73 (–9·16 to 12·61)	0·75
Quality of life, physical score (SF-12v2)						
Week 2	119	39·24 (0·85)	125	40·00 (0·81)	NA	NA
Week 4	112	41·44 (0·86)	113	42·28 (0·84)	NA	NA
Week 6	119	43·78 (0·85)	117	44·62 (0·83)	–0·84 (–3·17 to 1·50)	0·48
Week 12	111	45·27 (0·86)	118	45·66 (0·82)	–0·40 (–2·74 to 1·95)	0·74
Quality of life, mental score (SF-12v2)						
Week 2	119	47·46 (0·87)	125	48·50 (0·82)	NA	NA
Week 4	112	48·65 (0·88)	113	50·46 (0·86)	NA	NA
Week 6	119	48·01 (0·86)	117	51·26 (0·85)	–3·25 (–5·63 to –0·87)	0·0075
Week 12	111	48·24 (0·88)	118	51·91 (0·84)	–3·67 (–6·07 to –1·27)	0·0028
Global perceived effect scale						
Week 2	121	1·22 (0·23)	126	1·76 (0·23)	NA	NA
Week 4	114	1·81 (0·24)	114	1·93 (0·24)	NA	NA
Week 6	121	2·01 (0·23)	119	2·16 (0·23)	–0·15 (–0·80 to 0·50)	0·65
Week 12	111	2·27 (0·24)	119	2·46 (0·23)	–0·19 (–0·85 to 0·47)	0·58

For all outcomes, higher scores reflect worse outcomes except for quality of life (mental and physical) and global perceived effect, for which higher scores reflect better outcomes. BPI-PS=Brief Pain Inventory Pain Severity. BPI-IS=Brief Pain Inventory Interference Subscale. NA=not applicable. NDI=Neck Disability Index. RMDQ=Roland Morris Disability Questionnaire. SE=standard error.

Table 2: **Model results for primary and secondary outcomes**

Bottom Line:
opioids might also cause worse outcomes even after short-term judicious use

Jones et al. Opioid analgesia for acute low back pain and neck pain (the OPAL trial): a randomised placebo-controlled trial. Lancet. 2023 Jul 22;402(10398):304-312.

Back to Zahra

Let's revisit the original poll results…
…would you like to keep or revise your response?

Best practice would be a multimodal therapeutic approach:

- *Non-pharmacological strategies*:
  - education, light physical activity
- *Pharmacologic recommendation*:
  - oral NSAID if Zahra wishes after being informed about the limited efficacy value

How long should Zahra take the NSAID?

Back to Zahra

What about adverse effects?

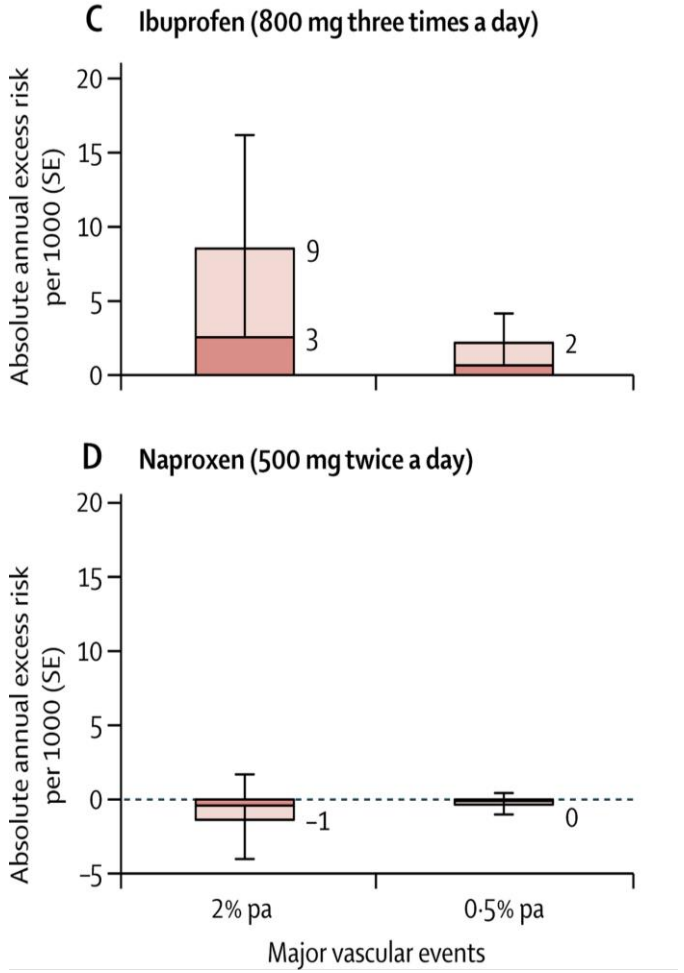
Very low evidence of
no clear difference in the proportion of acute low back pain participants experiencing adverse events in both the comparison of NSAIDs vs. placebo and selective COX-2 inhibitors vs.
non-selective NSAIDs.

van der Gaag et al. Non-steroidal anti-inflammatory drugs for acute low back pain. Cochrane Database Syst Rev. 2020 Apr 16;4(4):CD013581.

Back to Zahra

Which NSAID is most appropriate?

- Increased risk of **serious NSAID adverse effects** in patients with **CV, GI,** or **renal disease**
- **Naproxen** and **ibuprofen (≤1200 mg/day)** may be associated with **less CV risk** than other NSAIDs



Coxib and traditional NSAID Trialists' (CNT) Collaboration. Vascular and upper gastrointestinal effects of non-steroidal anti-inflammatory drugs: meta-analyses of individual participant data from randomised trials. Lancet. 2013;382(9894):769-79.
McGettigan and Henry. Cardiovascular risk with non-steroidal anti-inflammatory drugs: systematic review of population-based controlled observational studies. PLoS Med. 2011 Sep;8(9):e1001098.

Back to Zahra

<u>Reasonable Option If Zahra Opts for an NSAID:</u>

Recommend naproxen 220 mg BID PRN *or* ibuprofen 200-400 mg TID-QID PRN for next couple of days and counsel on:

- Staying well-hydrated to minimize acute kidney injury
- Monitoring blood pressure; if >130/80 mmHg, stop NSAID

Take-Home Summary Points

Recent literature supports moving away from opioids for the management of acute dental extraction pain and acute low back pain.

https://michigan-open.org/prescribing-recommendations/ is an excellent resource focused on appropriate opioid prescribing and pain management best practices in acute care settings.

THANK YOU!

Questions?

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