

# Evidence-Based Clinical Practice Guideline for the Pharmacologic Management of Acute Dental Pain: Postoperative Pain After Simple and Surgical Tooth Extraction(s) in Adolescents, Adults, and Older Adults

## GRADE Certainty of the Evidence

<b>High</b>	We are very confident that the true effect lies close to that of the estimate of the effect.
<b>Moderate</b>	We are moderately confident in the effect estimate. The true effect is likely to be close to the estimate of the effect.
<b>Low</b>	Our confidence in the effect estimate is limited.
<b>Very Low</b>	We have very little confidence in the effect estimate.

## GRADE Interpretation of Strength of Recommendations

Implications	Strong Recommendations	Conditional Recommendations
<b>For Patients</b>	Most individuals in this situation would want the recommended course of action and only a small proportion would not.	The majority of individuals in this situation would want the suggested course of action, but many would not.
<b>For Clinicians</b>	Most individuals should receive the intervention.	Recognize that different choices will be appropriate for individual patients and that you must help each patient arrive at a management decision consistent with his or her values and preferences.
<b>For Policy Makers</b>	The recommendation can be adapted as policy in most situations.	Policy making will require substantial debate and involvement of various stakeholders.

## Guideline Panel Recommendations

- For the management of acute post-operative dental pain in adolescents, adults, and older adults<sup>1</sup> undergoing **surgical** tooth extraction(s), the guideline panel recommends the post-procedural use of non-opioid analgesics<sup>2</sup> **as first-line therapy** instead of opioid analgesics (Conditional, Low certainty).
  - For **surgical** tooth extraction(s), the guideline panel suggests initiating post-operative pain management using a nonsteroidal anti-inflammatory drug (NSAID) alone (e.g., 400 mg ibuprofen or 440 mg naproxen sodium) **OR** in combination with acetaminophen (e.g., 500 mg) (Conditional, Low certainty).
  - In the rare instances when post-procedural (i.e., **surgical** tooth extraction) pain control using NSAIDs alone is inadequate, the guideline panel suggests the addition to the previous first-line therapy prescription (i.e., NSAID) of 325 mg acetaminophen plus a combination of 325 mg acetaminophen with an opioid<sup>3,4,5</sup> (e.g., 5–7.5 mg hydrocodone or 5 mg oxycodone) at the lowest effective dose, fewest tablets, and the shortest duration, which rarely exceeds three days (Conditional, Low certainty).
  - In the rare instances when post-procedural (i.e., **surgical** tooth extraction) pain control using NSAIDs in combination with acetaminophen (e.g., 500 mg) is inadequate, the guideline panel suggests **replacing** the initial first-line therapy prescription with an NSAID (e.g., 400 mg ibuprofen or 440 mg naproxen sodium) and 325 mg acetaminophen **plus** a combination of 325 mg acetaminophen with an opioid<sup>3,4,5</sup> (e.g., 5–7.5 mg hydrocodone or 5 mg oxycodone). The opioid prescription should consider the lowest effective dose, fewest tablets, and the shortest duration, which rarely exceeds three days (Conditional, Low certainty).
  - When NSAIDs are contraindicated<sup>6</sup>, the guideline panel suggests the post-procedural use of acetaminophen alone at full therapeutic dose (e.g., 1,000 mg) **OR** 325 mg acetaminophen **plus** a combination of 325 mg acetaminophen with an opioid<sup>3,4,5</sup> (e.g., 5–7.5 mg hydrocodone or 5 mg oxycodone) at the lowest effective dose, fewest tablets, and the shortest duration, which rarely exceeds three days (Conditional, Low certainty).
  - For the management of acute post-operative dental pain in adolescents, adults, and older adults undergoing **surgical** tooth extraction(s), the guideline panel suggests **against** adding oral, submucosal, or intra-muscular corticosteroids<sup>7</sup> to standard analgesic therapy (Conditional, Very low certainty).
- For the management of acute post-operative dental pain in adolescents, adults, and older adults<sup>1</sup> undergoing **simple** tooth extraction(s), the guideline panel recommends the post-procedural use of non-opioid analgesics<sup>2</sup> **only** and recommends **against** the use of opioid analgesics (Conditional, Low certainty).
  - For a **simple** tooth extraction, the guideline panel suggests initiating pain management using a nonsteroidal anti-inflammatory drug (NSAID) alone (e.g., 400 mg ibuprofen or 440 mg naproxen sodium) **OR** in combination with acetaminophen (e.g., 500 mg) (Conditional, Low certainty).
  - When NSAIDs are contraindicated<sup>6</sup>, the guideline panel suggests the post-procedural use of acetaminophen alone at full therapeutic dose (e.g., 1,000 mg) (Conditional, Low certainty).
- For the management of acute post-operative dental pain in adolescents, adults, and older adults<sup>1</sup> undergoing **simple** or **surgical** tooth extraction(s), the guideline panel suggests the post-procedural use (i.e., before patient discharge<sup>8</sup>) of 0.5% bupivacaine **PLUS** 1:200,000 epinephrine by block or infiltration injection or 4% articaine **PLUS** 1:100,000 / 1:200,000 epinephrine by infiltration injection **instead of** 2% lidocaine **PLUS** 1:100,000 epinephrine or 3% mepivacaine (Conditional, Low certainty).

- The guideline panel defined the following age ranges: adolescents (aged 12–<17 years), adults (aged 17–<65 years), and older adults (≥65 years).
- To minimize adverse effects, analgesic prescriptions should follow the principle of minimum effective dosage to achieve pain relief. The maximum daily dose is 2,400 mg ibuprofen and 1,100 mg of naproxen sodium and 4,000 mg acetaminophen.
- This option should NOT be offered to patients taking gabapentinoids, central nervous system active medications (e.g., benzodiazepines, antidepressants, anticonvulsants, and narcotics), or patients already taking opioids for other medical reasons.
- When opioids are prescribed, clinicians should obtain informed consent from the patient (or the parent or guardian in the case of minors) with detailed information about potential opioid undesirable effects (e.g., physiological dependence, risk of substance misuse, respiratory depression, and adverse effects about the driving/operating machinery). This is particularly critical in adolescents and young adults, who are at increased risk of subsequent misuse and substance use disorder even after a single prescription.
- Alert patients on risks of cumulative acetaminophen dose and that acetaminophen plus opioid combination contains both drugs in one pill. The total dose of acetaminophen should not exceed 4,000 mg per day.
- "A drug should be contraindicated only in those clinical situations for which the risk from use clearly outweighs any possible therapeutic benefit. Only known hazards, and not theoretical possibilities, can be the basis for a contraindication." (Citation from: Guidance for industry. Warnings and Precautions, Contraindications, and Boxed Warnings Sections of Labeling for Human Prescription Drug and Biological Products—Content and Format. U.S. Department of Health and Human Services, Food and Drug Administration. October 2011).
- The role that corticosteroids may play in managing inflammatory complications (e.g., trismus, facial swelling, or infection) is not in the scope of this guideline. Intravenous administration of corticosteroids are also beyond the scope of this guideline.
- Blocking or infiltrating using a local anesthetic right before the patient is discharged is one additional complementary intervention to provide extended pain relief. This does not replace the need for pain management using analgesics.

*This project was financially supported by the Food and Drug Administration (FDA) of the U.S. Department of Health and Human Services (HHS). The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, FDA/HHS or the U.S. government [U01FD007151]*

*These guidelines are intended to help inform clinical decision making by prescribers and patients. They are not intended to be used for the purposes of restricting, limiting, delaying, or denying coverage for, or access to, a prescription issued for a legitimate medical purpose by an individual practitioner acting in the usual course of professional practice.*

# Evidence-Based Clinical Practice Guideline for the Pharmacologic Management of Acute Dental Pain: Postoperative Pain After Simple and Surgical Tooth Extraction(s) in Adolescents, Adults, and Older Adults

## Good Practice Statements

- The guideline panel advises clinicians to counsel patients that they should expect some pain and the analgesics should make their pain manageable. The guideline panel also recommends discussing with the patient their past experiences, preferences, and values regarding managing acute dental pain before prescribing.
- The guideline panel recommends clinicians thoroughly review the patient's medical and social history (including illicit and recreational drug use), current medications, and supplements to avoid overdose and adverse drug-drug interactions.
- To minimize adverse effects, analgesic prescriptions should follow the principle of minimum effective dosage to achieve pain relief and avoid the routine use of delayed (i.e., just-in-case prescription for breakthrough pain) opioid prescriptions.
- If an NSAID alone or in combination with acetaminophen fails to provide adequate pain relief, and if opioids are prescribed, counsel patients regarding appropriate storage and disposal.
- The guideline panel recommends clinicians review the state's prescription drug monitoring program (PDMP) when available to determine the co-prescribing of other controlled substances (e.g., opioids, benzodiazepines). If the patient with acute dental pain is already receiving opioids to manage chronic pain (i.e., long-term use of opioids), clinicians should prioritize the use of nonopioid analgesics (i.e., first-line analgesic therapy).
- Special care should be taken when prescribing opioids to a patient with a substance use disorder, including communication with the patient's other healthcare providers.

