

## Evidence-Based Clinical Practice Guideline for the Management of Acute Dental Pain

### Recommendations for Adolescents, Adults, Older Adults<sup>1</sup>

#### Post-operative acute pain in adolescents, adults, and older adults<sup>1</sup> undergoing simple or surgical tooth extraction

1. For the management of acute post-operative dental pain in adolescents, adults, and older adults<sup>1</sup> 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)<sup>2</sup>, 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<sup>3</sup>, 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)

2. For the management of acute post-operative dental pain in adolescents, adults, and older adults<sup>1</sup> undergoing simple tooth extractions, the guideline panel suggests the post-procedural use of non-opioid analgesics (for example, ibuprofen (200-400 mg) plus acetaminophen (500-1,000 mg)<sup>2</sup>, 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<sup>3</sup>, the guideline panel suggests acetaminophen (500-1,000 mg)<sup>2</sup> alone (Conditional, Low certainty)

3. For the management of acute post-operative dental pain in adolescents, adults, and older adults<sup>1</sup> undergoing simple or surgical tooth extraction, the guideline panel suggests the post-procedural use of bupivacaine (0.5%) + epinephrine (1: 200,000) over lidocaine (2%) + epinephrine (1: 100,000) or mepivacaine (3%)<sup>4</sup>. (Conditional, Low certainty)

4. For the management of acute post-operative dental pain in adolescents, adults, and older adults<sup>1</sup> undergoing simple or surgical tooth extraction, the guideline panel suggests the post-procedural use of either bupivacaine (0.5%) + epinephrine (1: 200,000) by block or infiltration injection or articaine (4%) + epinephrine (1:100,000 / 1:200,000) by infiltration<sup>4</sup>. (Conditional, Low certainty)

5. For the management of acute post-operative dental pain in adolescents, adults, and older adults<sup>1</sup> undergoing surgical tooth extraction, the guideline panel suggests NOT adding oral, submucosal, or intra-muscular corticosteroids to standard analgesic therapy. (Conditional, Very low certainty)

### **Guideline Panel Good Practice Statements**

1. The panel advises clinicians to counsel patients that they should expect some pain and the analgesics should make their pain manageable.
2. The panel recommends clinicians thoroughly review the patient medical and social history (including illicit and recreational drug use) and current medications and supplements to avoid overdose and adverse drug-drug interactions.
3. The panel recommends clinicians review the state's prescription drug monitoring program (PDMP) when available to identify patterns of misuse and diversion or co-prescribing of other controlled substances.

### **Footnotes**

1. The panel used the following age ranges: Adolescents (ages 12 to less than 17 years), adult (ages 17 to less than 65 years old), and older adults (ages 65+).
2. The maximum dose of acetaminophen should not exceed 4,000 mg a day.
3. "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." (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)
4. Blocking or infiltrating using a local anesthetic right before the patient is discharged, as one additional complementary intervention to provide extended pain relief. This does not replace the need for pain management using analgesics.

### **Acute dental pain associated with symptomatic pulpitis (i.e., reversible or symptomatic irreversible pulpitis with or without symptomatic apical periodontitis) or pulp necrosis with symptomatic apical periodontitis or acute apical abscess, in adolescents, adults, and older adults with no immediate access to definitive dental treatment<sup>1</sup>**

1. For the temporary management of toothache (symptomatic pulpitis [i.e., reversible or symptomatic irreversible pulpitis with or without symptomatic apical periodontitis] or pulp necrosis with symptomatic apical periodontitis or acute apical abscess) prior to definitive dental treatment<sup>1</sup> in adolescents, adults, and older adults<sup>2</sup>, the guideline panel suggests the use of lidocaine (2%) + epinephrine (1:100,000), articaine (4%) + epinephrine (1:100,000/1:200,000) or mepivacaine (3%) for the immediate relief of pain. (Conditional, Very low certainty)
2. For the temporary management of toothache (symptomatic pulpitis [i.e., reversible or symptomatic irreversible pulpitis with or without symptomatic apical periodontitis] or pulp necrosis with symptomatic apical periodontitis or acute apical abscess) prior to definitive dental treatment<sup>1</sup> in adolescents, adults, and older adults<sup>2</sup>, the guideline panel suggests the use of non-opioid analgesics (such as, ibuprofen (200-400 mg) plus

acetaminophen<sup>3</sup> (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<sup>4</sup> for the temporary management of toothache (symptomatic pulpitis [i.e., reversible or symptomatic irreversible pulpitis with or without symptomatic apical periodontitis] or pulp necrosis with symptomatic apical periodontitis or acute apical abscess) prior to definitive dental treatment<sup>1</sup> in adolescents, adults, and older adults<sup>2</sup>, the guideline panel suggests acetaminophen<sup>3</sup> (500-1,000 mg) alone or in combination with an opioid (for example, acetaminophen<sup>2</sup> (650 mg) plus oxycodone (10 mg)) (Conditional, Low certainty)

- If pain control with NSAIDs alone is inadequate for the temporary management of toothache (symptomatic pulpitis [i.e., reversible or symptomatic irreversible pulpitis with or without symptomatic apical periodontitis] or pulp necrosis with symptomatic apical periodontitis or acute apical abscess) prior to definitive dental treatment<sup>1</sup> in adolescents, adults, and older adults<sup>2</sup>, the guideline panel suggests the addition of acetaminophen<sup>3</sup> (500-1,000 mg) or in combination with an opioid (for example, acetaminophen<sup>3</sup> (650 mg) plus oxycodone (10 mg)). (Conditional, Low certainty)

3. For the extended temporary management of toothache (symptomatic pulpitis [i.e., reversible or symptomatic irreversible pulpitis with or without symptomatic apical periodontitis] or pulp necrosis with symptomatic apical periodontitis or acute apical abscess) prior to definitive dental treatment<sup>1</sup> in adolescents, adults, and older adults<sup>2</sup>, the guideline panel suggests the supplemental use<sup>5</sup> of bupivacaine (0.5%) + epinephrine (1:200,000) by block or infiltration or articaine (4%) + epinephrine (1:100,000/1:200,000) by infiltration. (Conditional, Very low certainty)
4. For the temporary management of toothache (symptomatic pulpitis [i.e., reversible or symptomatic irreversible pulpitis with or without symptomatic apical periodontitis] or pulp necrosis with symptomatic apical periodontitis) prior to definitive dental treatment<sup>1</sup> in adolescents, adults, and older adults<sup>2</sup>, the guideline panel suggests the use of topical benzocaine<sup>6</sup> (10% or 20%) compared with not using topical benzocaine. (Conditional, Low certainty)

#### **Guideline Panel Good Practice Statements**

1. The panel advises clinicians to counsel patients that they should expect some pain and the analgesics should make their pain manageable.
2. The panel reminds users that these recommendations only apply to settings where definitive dental treatment<sup>1</sup> is not immediately available. These temporary pharmacological strategies will improve pain management until definitive treatment can be obtained.

3. The panel recommends clinicians thoroughly review the patient medical and social history (including illicit and recreational drug use) and current medications and supplements to avoid overdose and adverse drug-drug interactions.
4. The panel recommends clinicians review the state's prescription drug monitoring program (PDMP) when available to identify patterns of misuse and diversion or co-prescribing of other controlled substances.

### Footnotes

1. These recommendations are applicable only when definitive dental treatment is not available. Definitive dental treatment includes pulpectomy, nonsurgical root canal treatment, incision for drainage of abscess, and tooth extraction.
2. The panel used the following age ranges: Adolescents (ages 12 to less than 17 years), adult (ages 17 to less than 65 years old), and older adults (ages 65+).
3. The maximum dose of acetaminophen should not exceed 4,000 mg a day.
4. "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." (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)
5. Blocking or infiltrating using a local anesthetic right before the patient is discharged, as one additional complementary intervention to provide extended pain relief. This does not replace the need for pain management using analgesics.
6. Benzocaine should be applied into the open tooth cavity and the soft tissue surrounding the affected (or symptomatic) tooth.

### Recommendations for Children<sup>1</sup>

#### Post-operative acute pain in children<sup>1</sup> undergoing simple or surgical tooth extraction

1. For the management of acute post-operative dental pain in children<sup>1</sup> undergoing simple or surgical tooth extraction, the guideline panel suggests the use of ibuprofen alone, naproxen alone, or in combination with acetaminophen over acetaminophen alone.<sup>2</sup> (Conditional, Very low certainty)
2. For the management of acute post-operative dental pain in children undergoing surgical tooth extraction, the panel will not formulate recommendations for or against corticosteroids due to the paucity of evidence.

#### Guideline Panel Good Practice Statements

1. The panel advises clinicians to counsel patients and their caregivers that they should expect some pain and the analgesics should make their pain manageable.

2. The panel recommends clinicians thoroughly review the patient medical and social history and current medications and supplements to avoid overdose and adverse drug-drug interactions.

#### **Footnotes**

1. The panel considers children as patients up to 12 years of age.
2. Not all extractions in children will require the use of an analgesic. This recommendation applies only when there is unresolved post-operative pain or when conducting multiple extractions.

#### **Acute pain associated with symptomatic pulpitis (i.e., reversible or symptomatic irreversible pulpitis with or without symptomatic apical periodontitis or symptomatic periapical/furcation involvement) or pulp necrosis with symptomatic apical periodontitis or periapical pathosis/furcation, or acute apical abscess, in children<sup>1</sup> with no immediate access to definitive dental treatment<sup>2</sup>**

1. For the temporary management of toothache (symptomatic pulpitis [i.e., reversible or symptomatic irreversible pulpitis with or without symptomatic apical periodontitis or symptomatic periapical pathosis/furcation involvement] or pulp necrosis with symptomatic apical periodontitis or periapical pathosis/furcation, or acute apical abscess) prior to definitive dental treatment<sup>2</sup> in children<sup>1</sup>, the guideline panel suggests use of ibuprofen alone, naproxen alone OR in combination with acetaminophen over acetaminophen alone. (Conditional, Very low certainty)

#### **Guideline Panel Good Practice Statements**

1. The panel advises clinicians to counsel patients and their caregivers that they should expect some pain and the analgesics should make their pain manageable.
2. The panel reminds users that these recommendations only apply to settings where definitive dental treatment<sup>2</sup> is not immediately available. These temporary pharmacological strategies will improve pain management until definitive treatment can be obtained.
3. The panel recommends clinicians thoroughly review the patient medical and social history and current medications and supplements to avoid overdose and adverse drug-drug interactions.

#### **Footnotes**

1. The panel considers children as patients up to 12 years of age.
2. These recommendations are applicable only when definitive dental treatment is not available. Definitive dental treatment includes pulpotomy, pulpectomy, nonsurgical root canal treatment, incision for drainage of abscess, or tooth extraction.