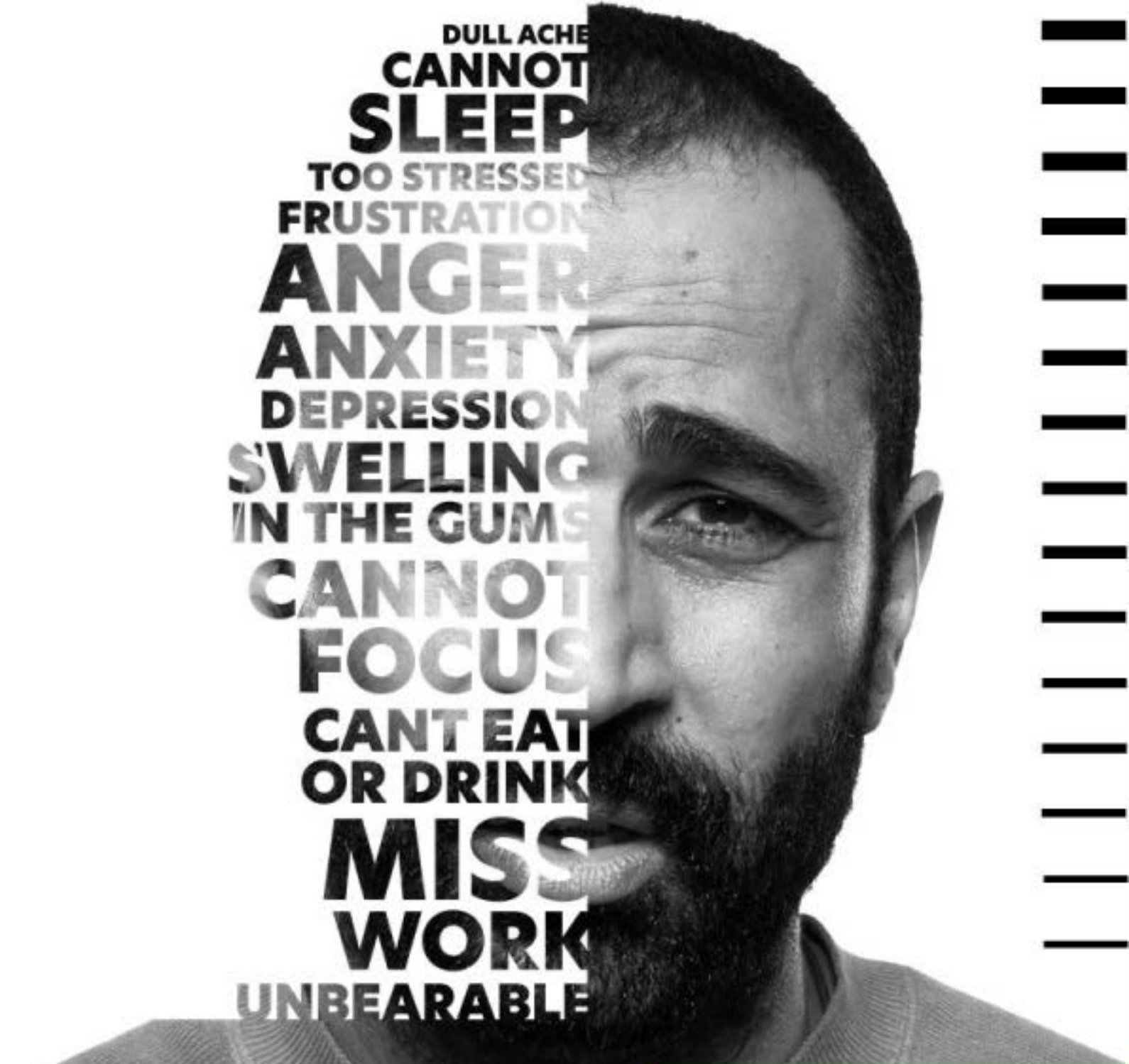


DULL ACHE
CANNOT
SLEEP
TOO STRESSED
FRUSTRATION
ANGER
ANXIETY
DEPRESSION
SWELLING
IN THE GUMS
CANNOT
FOCUS
CANT EAT
OR DRINK
MISS
WORK
UNBEARABLE



**Adult Dental
Pain Protocol**

#ListenToPain

ADULT DENTAL PAIN PROTOCOL IN PRIMARY CARE SETTINGS

STEP 1: ASSESS DENTAL PAIN

1. ASK PATIENT ABOUT PAIN SYMPTOMS¹

Unilateral, bilateral, localized/radiating	Timing (onset and how long)	Throbbing/sharp and shooting	Sensitivity to stimuli	With/without swelling	Severity
--	-----------------------------	------------------------------	------------------------	-----------------------	----------



2. IDENTIFY SYMPTOMS OR CIRCUMSTANCES REQUIRING REFERRAL¹⁻³



- | | |
|---|--|
| <ul style="list-style-type: none"> • Pain that radiates to the eye, ear, or temporal region along with halitosis or an unpleasant taste • Oral ulceration • Pain during normal activities such as chewing or brushing • Pain in the jaw, temple, inside or in front of the ear, which is modified by jaw movements • Pain described with unusual characteristics such as burning, stinging etc. • Pain concurrent with a headache | <ul style="list-style-type: none"> • Pain triggered or exacerbated by palpation of muscles of the head and neck • Formation of pus, marked facial swelling, and patient exhibiting respiratory problems, signs of systemic infection, or dysphagia • Dental pain and injury due to trauma • Bleeding after tooth extraction, especially in vulnerable patient groups |
|---|--|

STEP 2: IDENTIFY TREATMENT CONSIDERATIONS

IDENTIFY ANY CONDITIONS OR MEDICATIONS LIMITING TREATMENT OPTIONS



Medications limiting treatment^{4,6}

- **NSAIDs** – risk of bleeding*, decreased antihypertensive efficacy*, increased drug levels of medicines like methotrexate*
- **Paracetamol** -Increased risk of paracetamol toxicity
- **Opioids** – increased levels with Cytochrome P450 3A4 inhibitors, increased respiratory depression with benzodiazepines/other CNS depressants/alcohol, increased urinary retention/constipation risk with anticholinergics
- **Opioid toxicity** - co-administration with SSRIs/MOAI

Medical conditions limiting treatment^{4,7-12}

- Chronic kidney disease
- Liver disease
- Gastrointestinal disease
- Cardiovascular disease
- Respiratory conditions
- Cerebrovascular conditions

NSAIDs - non-steroidal anti-inflammatory drugs, CNS – central nervous system, SSRI - selective serotonin reuptake inhibitors, MAOI - monoamine oxidase inhibitors
* With systemic NSAIDs

IDENTIFY WHAT THE PATIENT HAS USED IN THE PAST TO TREAT THE PAIN

STEP 3: RECOMMEND TREATMENT

DOES THE PATIENT HAVE ANY PREFERRED TREATMENT BASED ON PREVIOUS EXPERIENCE?

IF YES

Recommend non-pharmacological treatment¹

- Avoid common stimuli such as hot, cold, acidic and sweet drinks or food items
- Use desensitising toothpaste as a temporary option.
- Warm salt water or 0.2% chlorhexidine mouthwash can be used for ulcers.

AND

Recommend the PATIENT's preference if possible, taking into consideration step 2

IF NO

Recommend non-pharmacological treatment¹

- Avoid common stimuli such as hot, cold, acidic and sweet drinks or food items
- Use desensitising toothpaste as a temporary option
- Warm salt water or 0.2% chlorhexidine mouthwash can be used for ulcers.

AND

Recommend appropriate treatment till pain relief occurs¹²⁻¹³

First line-therapy for simple and surgical tooth extraction:

Monotherapy:

- Ibuprofen 400 mg
- Naproxen 440 mg
- Paracetamol 1000 mg

Combination therapy:

- Ibuprofen 400 mg + Paracetamol 500 mg
- Naproxen 440 mg + Paracetamol 500 mg

For surgical tooth extraction when first line of therapy does not provide adequate relief:

NSAIDs + 1 tablet of 325 mg of acetaminophen + 1 tablet of combination 325 mg of acetaminophen with an opioid. (see Table 10)

(Opioids should be given at the lowest effective dose, fewest tablets, and the shortest duration, which rarely exceeds 3 days)

ADULT DENTAL PAIN ALGORITHM

STEP 1

ASSESS SYMPTOMS

- Questions to ask (Table 1)
- Assess the type of pain (Table 2)
[Note: Dental pain can be classified into pulpal pain, periodontal pain and gingival pain. Pain can be either primary (not attributable to another disorder) or secondary (caused by another specific disorder such as inflammation, for instance, due to trauma, infection, or an autoimmune disorder, tissue sensitivity, muscle spasm, structural changes, or injury).]¹⁵
- Symptoms or circumstances requiring referral (Table 3)

→ STEP 2

IDENTIFY TREATMENT CONSIDERATIONS

- Questions to ask to customize dental pain treatment (Table 4)
- Conditions and medications (Tables 5 and 6)
- Assess previous treatment (Table 7)
- Questions to ask about previous treatment (Table 7)

→ STEP 3

RECOMMEND TREATMENT

- Non-pharmacological recommendations (Table 8)
- Pharmacological recommendation (Table 9 and 10)

STEP 1: ASSESS SYMPTOMS

TABLE 1

QUESTIONS TO ASK ^{1,15}
<p>Can you tell me about your dental pain symptoms?</p> <ul style="list-style-type: none"> • Location - Where is it paining? • Onset - When did the pain start? • Quality - Can you describe the pain? Does the pain spread anywhere? • Other issues - Do you have any other problems along with the pain? Do you have a fever? Does it pain more when you bite something? Was the pain preceded by some trauma? • Pattern - Does the pain last for a few minutes or more? How long does it last? • Stimuli - Does anything worsen or improve it? • Severity - How bad is the pain?
<p>DO you have any other symptoms?</p> <ul style="list-style-type: none"> • Look for symptoms that require referral to a doctor (red flag symptoms e.g. swelling, breathing difficulty etc.)
<p>Have you undergone any dental procedures? If so, which one and when?</p> <ul style="list-style-type: none"> • Some symptoms may be related to post-procedural infection or inflammation (e.g. swelling, pus formation)

→ TABLE 2

SUMMARY OF FEATURES DISTINGUISHING TYPES OF DENTAL PAIN ^{1,2,15}			
Dental pain classification	Pulpal pain (Pulp is the soft inner tissue of the teeth that contains nerves, blood vessels and connective tissue)	Periodontal pain (related to severe inflammation of the gums)	Gingival pain (pain in the gums)
Causes	<ul style="list-style-type: none"> • Hypersensitivity due to cracked enamel, exposure of dentin due to wear/abrasion or fracture/dental procedure or other causes • Exposure to dental trauma • Pulpitis (inflammation of the pulp due to infection) • Systemic reasons e.g. sickle cell anemia 	<ul style="list-style-type: none"> • Periodontitis (inflammation due to trauma, infection, disease or post-operative) • Non-inflammatory cause (periodontal or radicular cysts, and tumors) 	<ul style="list-style-type: none"> • Gingivitis (inflammation due to trauma, infection, hypersensitivity or autoimmunity) • Malignancy
Pain stimuli	Biting, hot or cold stimuli (thermal hypersensitivity), and lingering pain after pressing	Mechanical, thermal or chemical stimuli	-
Pain quality and intensity	<ul style="list-style-type: none"> • Sharp, shooting pain OR dull, throbbing, poorly localised pain • Of variable duration; depends on severity 	Mild to severe pain that ranges from pain only upon stimulation to a constant, unprompted pain that worsens upon stimulus, can radiate to other areas	Normally not painful, some pain may occur during acute inflammation (due to infection, trauma, and systemic or local immune reactions)
Special mention: Non-odontogenic causes of dental pain			
Non-odontogenic causes of pain may also present as dental pain. Such patients may describe the pain as not being 'in' the tooth but as 'between, behind, or under' the tooth, and the gingivae may be sensitive to pressure.			

STEP 1: ASSESS SYMPTOMS

→ TABLE 3

SYMPTOMS OR CIRCUMSTANCES REQUIRING REFERRAL ^{1-3,15,16}
<p>The presence of these features in association with dental pain requires immediate investigation and treatment, usually through referral to a specialist.</p>
<ul style="list-style-type: none"> • Untreated periodontitis: Formation of pus, marked facial swelling, infection spreading to the neck and the patient may exhibit respiratory problems, difficulty swallowing, breathing, or speaking or opening the eye, mouth opening of <2 finger breadths or signs of systemic infection (e.g. pyrexia, altered blood pressure and tachycardia) • Dental injuries due to direct or indirect trauma to the teeth or surrounding areas due to physical violence, falls, accidents or sports injuries • Post-extraction bleeding in patients with bleeding disorders or those taking anticoagulants
<ul style="list-style-type: none"> • Alveolar osteitis or 'dry socket': pain at the site of tooth extraction; may radiate to other areas along with halitosis or an unpleasant taste. • Aphthous ulcers or mouth ulcers: with an identifiable border and may be surrounded by an erythematous halo and some swelling
<ul style="list-style-type: none"> • Trigeminal neuralgia: normal activities such as chewing or brushing may be painful • Temporomandibular joint disorder (TMD): characterized by pain that worsens on opening the jaws wide, on pressing the joint and while eating hard food; can occur along with locking or clicking of the temporomandibular joint • Maxillary sinusitis: characterized by unilateral/bilateral dull pain increased by touch, postural changes, biting or exercise along with nasal congestion and discharge, and facial pain or fullness; normally seen in those with recent URTI or history of chronic rhinitis • Bruxism, cluster headaches, or neuropathic pain: characterized by intermittent pain in multiple teeth with/without discomfort, pain or fatigue in the jaw muscles and headache
<p>Other reasons for referral include:</p> <ul style="list-style-type: none"> • Usual treatment options appear ineffective • Pain does not seem to be of neurological origin • Unusual description of pain, for instance, stinging, burning, electric, pins and needles • Pain triggered or increased by applying pressure on certain head or neck muscles • Pain present along with hallucinations or delusions • Pain associated with unusual involuntary movements
<p><i>URTI – Upper respiratory tract infection</i></p>

STEP 2: IDENTIFY TREATMENT CONSIDERATIONS

TABLE 4

QUESTIONS TO ASK TO CUSTOMIZE TREATMENT
<ul style="list-style-type: none"> • Are you taking any medication, both prescribed and over the counter? If yes, what are those and what is the dose? • Do you have any medical conditions? • What have you used before for your dental pain? • What are the aggravating or relieving factors? • Have you undergone any dental procedures recently?

TABLE 5

MEDICATIONS TO USE WITH CAUTION WITH PARACETAMOL/ORAL NSAIDS AND OPIOIDS ^{4-6,12,17,18}	
Concern	Potential drug interaction
Increased risk of bleeding with oral NSAIDs	<ul style="list-style-type: none"> • Some Selective-Serotonin Reuptake Inhibitors (SSRI) • Some tricyclic antidepressants • Corticosteroids • Warfarin • Alcohol
Decreased antihypertensive efficacy with oral NSAIDs	<ul style="list-style-type: none"> • Angiotensin converting enzyme (ACE) inhibitors • Angiotensin II receptor blockers (ARB) • Diuretics • Beta-blockers
Increased drug levels with oral NSAIDs	<ul style="list-style-type: none"> • Lithium • Methotrexate
Increased risk of paracetamol toxicity	<ul style="list-style-type: none"> • Epilepsy medications (e.g. carbamazepine) • Other P450 enzyme inducers (e.g. isoniazid, rifampin) • Alcohol
Increased opioid levels with Cytochrome P450 3A4 inhibitors	<ul style="list-style-type: none"> • Calcium channel blockers (CCBs) e.g. Amlodipine • Statins e.g. Simvastatin • Antiarrhythmic agents e.g. Amiodarone • Psychiatric drugs e.g. Sertraline • Antibiotics e.g. Ciprofloxacin • Azole antifungal agents e.g. Clotrimazole
Increased respiratory depression, coma or death with opioids	<ul style="list-style-type: none"> • Benzodiazepines • Other CNS depressants • Alcohol
Opioid toxicity with certain antidepressants	<ul style="list-style-type: none"> • SSRIs/Monoamine oxidase inhibitors (MOAIs) e.g. Citalopram, Sertraline

STEP 2: IDENTIFY TREATMENT CONSIDERATIONS

→ TABLE 6

CONSIDERATIONS WHEN SELECTING ANALGESICS IN CUSTOMERS WITH COMORBIDITIES	
Comorbidity	Notes
Chronic kidney disease ^{7,8,11}	<ul style="list-style-type: none"> NSAIDs have proven nephrotoxic class effects and should be avoided where possible in patients with symptoms of renal impairment Paracetamol is the preferred first-line analgesic for episodic treatment of mild pain in patients with renal dysfunction, CKD, and/or requiring dialysis. However, dose minimization may sometimes be warranted (a maximum of 3 g/day has been recommended for patients with advanced kidney failure) Opioids should be prescribed with a longer dosing interval in patients with renal dysfunction due to risk of drug accumulation
Liver disease ^{7,8,11}	<ul style="list-style-type: none"> NSAIDs- NSAIDs can cause acute liver injury with variable severity. Paracetamol: Not contraindicated in liver disease. Can cause liver toxicity if taken in large amounts. Opioids should be prescribed with a longer dosing interval in patients with hepatic dysfunction due to risk of drug accumulation
Gastrointestinal disease ^{7,9,11}	<ul style="list-style-type: none"> Chronic NSAID drug use is associated with potentially serious upper gastrointestinal adverse drug reactions including peptic ulcer disease and gastrointestinal bleeding. Paracetamol – Lesser risk of adverse effects compared to NSAIDs Opioids are associated with increased GI adverse events, leading to discontinuation
Cardiovascular disease ^{4,7,10}	<ul style="list-style-type: none"> All non-aspirin NSAIDs may be associated with a potential increase in CV thrombotic risk. NSAIDs are contraindicated in patients who have undergone coronary artery bypass graft surgery Use of paracetamol at recommended doses is not associated with any additional risk of major CV events.
Respiratory conditions ^{11,12}	<ul style="list-style-type: none"> Opioids can potentially cause significant respiratory depression. Avoid in those with moderate/severe sleep-disordered breathing and unmonitored acute or severe bronchial asthma
Cerebrovascular conditions ^{12,19}	<ul style="list-style-type: none"> Effects of opioids on the CNS such as euphoria, sedation and cognitive impairment are more profound in patients with cerebrovascular disease, brain injury or dementia/psychiatric illness

→ TABLE 7

QUESTIONS TO ASK TO ABOUT PREVIOUS TREATMENT
<ul style="list-style-type: none"> What have you used before to treat your dental pain? <ul style="list-style-type: none"> What dose did you use? Was it effective? Did you have any side effects from it? Do you have any preference for any specific treatment?

STEP 3: RECOMMEND TREATMENT

→ TABLE 8

NON-PHARMACOLOGICAL RECOMMENDATIONS FOR DENTAL PAIN ¹
<ul style="list-style-type: none"> • Avoid common stimuli such as hot, cold, acidic and sweet drinks or food items • Use desensitising toothpaste as a temporary option • In the case of ulcers, use warm salt water, a topical anesthetic or 0.2% chlorhexidine mouthwash

→ TABLE 9

MEDICATIONS FOR ACUTE POSTOPERATIVE DENTAL PAIN IN ADOLESCENTS, ADULTS, AND OLDER ADULTS <u>UNDERGOING SIMPLE TOOTH EXTRACTION(S)</u> ^{11-14,21-27}			
Medication dose	Adverse effects and contraindications	Drug Interactions	Comments
<p>NSAIDs alone</p> <p>Ibuprofen 400 mg (MDD = 2400 mg)</p> <p>Or</p> <p>Naproxen 440 mg (MDD = 1100 mg)</p>	<p>Increases risk of GI problems (ulceration, bleeding, and stomach/intestinal perforation)</p> <p>Contraindicated in those with hypersensitivity to NSAIDs including aspirin, patients with history of peptic ulcer or GI bleeding or those undergoing a coronary artery bypass grafting (CABG)</p> <p>Use with caution in patients with heart and kidney disease, liver cirrhosis, high blood pressure, uncontrolled diabetes, glaucoma asthma, urinary incontinence or an enlarged prostate.</p>	<p>Decreases the effect of diuretics like thiazide and furosemide, and ACE inhibitors like lisinopril and captopril</p> <p>Adverse effects may be increased when used along with medications like warfarin and aspirin, and antidepressant SSRIs like sertraline, fluoxetine, and citalopram.</p>	<p>Use naproxen for pain not relieved by ibuprofen</p> <p>Ibuprofen (200-400 mg every 4-6 hrs) exhibits lower adverse GI, liver, or cardiovascular effects vs. agents of same class</p> <p>Avoid during late pregnancy and lactation</p> <p>In patients at high risk of GI disease, use along with mucosal protective agents</p> <p>Use with caution in elderly patients (GI bleed risk); avoid in advanced renal disease</p> <p>No dose adjustments for ibuprofen in hepatic disease</p>
<p>When NSAIDs are contraindicated:</p> <p>Paracetamol 1000 mg (MDD = 4000 mg)</p>	<p>Good safety profile at therapeutic levels.</p> <p>Can cause liver toxicity if taken in large amounts.</p> <p>Dosage must be appropriately adjusted/lowered for poorly nourished patients, those with liver dysfunction, or those undergoing treatment with other hepatotoxic medications.</p>	<p>Paracetamol + isoniazid: may increase the risk of hepatotoxicity</p> <p>Paracetamol + imatinib: may increase levels of paracetamol</p> <p>Paracetamol + warfarin: may increase the risk of bleeding</p>	<p>For managing toothache; first choice for those in whom NSAIDs are contraindicated</p> <p>Adequate hydration and nourishment desirable in all patients.</p> <p>Dose reduction may be needed in severe renal impairment and hepatic disease</p>

STEP 3: RECOMMEND TREATMENT

→ TABLE 9 CONT.

Medication dose	Adverse effects and contraindications	Drug Interactions	Comments
NSAIDs plus paracetamol combination (when NSAIDs alone are not sufficient) Ibuprofen 400 mg + Paracetamol 500 mg Or Naproxen 440 mg + Paracetamol 500 mg	Adverse effects and contraindications of both paracetamol and ibuprofen are applicable for the combination	Interactions for both paracetamol and ibuprofen are applicable for the combination	Do not use with any other drug containing paracetamol to avoid accidental overdose

→ TABLE 10

MEDICATIONS FOR ACUTE POSTOPERATIVE DENTAL PAIN IN ADOLESCENTS, ADULTS, AND OLDER ADULTS UNDERGOING <u>SURGICAL TOOTH EXTRACTION(S)</u> ¹³	
First-line therapy is same as for simple tooth extraction (Table 9)	
<ul style="list-style-type: none"> NSAIDs alone (e.g., 400 mg of ibuprofen or 440 mg of naproxen sodium) or in combination with Paracetamol 500 mg. When NSAIDs are contraindicated, start the therapy with full therapeutic dose of Paracetamol 1000 mg. 	
Medication dose	Important notes/counseling points on opioids
For inadequate postoperative pain control after first-line therapy with NSAIDs alone NSAID (e.g., 400 mg of ibuprofen or 440 mg of naproxen sodium) + 1 tablet of 325 mg of acetaminophen + 1 tablet of combination 325 mg of acetaminophen with an opioid (e.g., 5-7.5 mg of hydrocodone or 5 mg of oxycodone)	<ul style="list-style-type: none"> Opioid should be given at the lowest effective dose, fewest tablets, and the shortest duration, which rarely exceeds 3 days This option should not be offered to patients taking gabapentinoids and 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 on driving or 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. Counsel patients regarding appropriate storage and disposal of opioids. Alert patients about the risks of cumulative acetaminophen dose and that acetaminophen plus opioid combination contains both drugs in 1 pill. The total dose of acetaminophen should not exceed 4,000 mg per day.

STEP 3: RECOMMEND TREATMENT

→ TABLE 10 CONT.

Medication dose	Important notes/counseling points on opioids
<p>For inadequate postoperative pain control after first-line therapy with NSAIDs plus paracetamol (500 mg) combination</p> <p>Replace initial prescription with:</p> <p>1 tablet of NSAID (e.g., 400 mg of ibuprofen or 440 mg of naproxen sodium)</p> <p>Plus</p> <p>1 tablet of 325 mg of acetaminophen</p> <p>Plus</p> <p>1 tablet of combination 325 mg of acetaminophen with an opioid (e.g., 5-7.5 mg of hydrocodone or 5 mg of oxycodone)</p>	<p>Same as above.</p>
<p>For inadequate postoperative pain control after paracetamol 1000 mg (patients in whom NSAIDs are contraindicated)</p> <p>1 tablet of 325 mg of acetaminophen</p> <p>+</p> <p>1 tablet of combination 325 mg of acetaminophen with an opioid (e.g., 5-7.5 mg of hydrocodone or 5 mg of oxycodone)</p>	
<p>The routine use of delayed (i.e., just-in-case prescription for breakthrough pain) opioid prescriptions is not recommended. Use extreme caution prescribing for adolescents: High risk of misuse or substance use disorder; caregiver consent is advised</p>	

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