

Useful Medications for Oral Conditions*

DISCLAIMER: Drug information is constantly changing and is often subject to interpretation. While care has been taken to ensure the accuracy of the information presented, the AAPD is not responsible for the continued currency of the information, errors, omissions, or consequences resulting from the use of these medications. Decisions about drug therapy must be based upon the independent judgment of the clinician, changing drug information, and evolving healthcare practices.

* Pediatric dosage should not exceed adult dosage.

Analgesics

Mild / Moderate Pain¹

Acetaminophen

Both acute and chronic doses of acetaminophen are associated with hepatotoxicity. For this reason, this drug has been reformulated so the products are limited to 325 mg per dosage unit.

Forms: Liquid, tablet, oral disintegrating tablet, caplet, rectal suppository, injectable

Usual oral dosage:^{2,4}

Children <12 years: 10-15 mg/kg/dose every 4-6 hours as needed (maximum 75 mg/kg/24 hours, but not to exceed 4.0 g/24 hours)

OR

ALTERNATIVE DOSING BASED ON AGE OF CHILD ³			
Age	Weight		Dosage mg ³
	lbs	kg	
0-3 months	6-11	2.7-5	40
4-11 months	12-17	5.1-7.7	80
1-2 years	18-23	7.8-10.5	120
2-3 years	24-35	10.6-15.9	160
4-5 years	36-47	16-21.4	240
6-8 years	48-59	21.5-26.8	320
9-10 years	60-71	26.9-32.3	400
11 years	72-95	32.4-43.2	480

Children ≥12 years and adults: 325-650 mg every 4-6 hours

OR 1,000 mg 3-4 times/day as needed (maximum 4 g/24 hours)

Ibuprofen

Forms: Liquid, tablet, injectable

Usual oral dosage:^{2,4}

Infants and children <50 kg: 4-10 mg/kg/dose every 6-8 hours as needed (maximum single dose 400 mg; maximum dose 40 mg/kg/24 hours)

OR

ALTERNATIVE DOSING BASED ON AGE OF CHILD ³			
Age	Weight		Dosage mg
	lbs	kg	
6-11 months	12-17	5.1-7.7	50
12-23 months	18-23	7.8-10.5	75
2-3 years	24-35	10.6-15.9	100
4-5 years	36-47	16-21.4	150
6-8 years	48-59	21.4-26.8	200
9-10 years	60-71	26.9-32.3	250
11 years	72-95	32.4-43.2	300

Children ≥12 years: 200 mg every 4-6 hours as needed (maximum 1.2 g/24 hours)

Adults: 200-400 mg/dose every 4-6 hours as needed (maximum 1.2 g/24 hours)

Naproxen

Dosage expressed as 200 mg naproxen base is equivalent to 220 mg naproxen sodium. For acute pain, naproxen sodium may be preferred because of increased solubility leading to faster onset, higher peak concentration, and decreased adverse drug events.

Forms: Suspension, tablet

Usual dosage:²⁻⁴

Children and adolescents < 60 kg: 5-6 mg/kg every 12 hours as needed (maximum daily dose 1,000 mg/day)

Children and adolescents >60 kg: 250-375 mg every 12 hours as needed (maximum daily dose 1,000 mg/day)

Adults: Initial dose of 500 mg, then 250 mg every 6-8 hours as needed (maximum 1,250 mg/day)

Moderate/Severe Pain

The use of codeine and its alternatives, oxycodone, hydrocodone, morphine, and tramadol, for children as an analgesic is not recommended by the American Academy of Pediatrics.⁵

Systemic Antibiotics

Amoxicillin

Forms: Suspension, chewable tablet, tablet, capsule

Usual oral dosage:²⁻⁴

Infants >3 months, children, and adolescents <40 kg: 20-40 mg/kg/day in divided doses every 8 hours (maximum 500 mg/dose)

OR 25-45 mg/kg/day in divided doses every 12 hours (maximum 875 mg/dose)

Adolescents and adults: 250-500 mg every 8 hours

OR 500-875 mg every 12 hours

Endocarditis prophylaxis:^{3,4,6} 50mg/kg (maximum 2 g) 30-60 minutes before procedure

Amoxicillin clavulanate potassium

Use the lowest dose of clavulanate combined with amoxicillin available to decrease gastrointestinal adverse drug events.

Forms: Suspension, chewable tablet, tablet

Usual oral dosage:²⁻⁴ (based on amoxicillin component):

Children >3 months of age up to 40 kg: 25-45 mg/kg/day in doses divided every 12 hours (maximum single dose 875 mg)
(prescribe suspension or chewable tablet due to clavulanic acid component)

Children >40 kg and adults: 500-875 mg every 12 hours (prescribe tablet)

Azithromycin

This drug is one of two options for patients with Type I allergy to penicillin and/or cephalosporin antibiotics.

Caution: This drug can cause cardiac arrhythmias in patients with pre-existing cardiac conduction defects.

Forms: Tablet, capsule, suspension, injectable

Usual oral dosage:²⁻⁴ (*Note: Doses may vary for extended release suspension depending on the reason for prescribing the antibiotic.*)

Children ≥6 months up to 16 years: 5-12 mg/kg on day 1, single dose, (maximum 500 mg/day), followed by 5-6 mg/kg once daily for remainder of treatment (2-5 days)

Adults: 500 mg on day 1, single dose, followed by 250 mg daily as a single dose for 2-5 days

Endocarditis prophylaxis:^{3,4,6} 15 mg/kg (maximum 500 mg) 30-60 minutes before procedure

Cephalexin

Caution: This antibiotic should not be prescribed to patients with Type I allergic reactions to penicillin antibiotics.

Forms: Suspension, tablet, capsule

Usual oral dosage:²⁻⁴

Children >1 year: 25-100 mg/kg/day in divided doses every 6-8 hours (maximum 4g/day)

Adults: 250-1,000 mg every 6 hours (maximum 4 g/day)

Endocarditis prophylaxis:^{3,4,6} 50 mg/kg (maximum 2 g) 30-60 minutes before procedure

Clindamycin

Note: This is one of two options for patients with Type I allergic reactions to penicillin and/or cephalosporin antibiotics. This antibiotic is effective for infections (e.g., abscesses) with gram-positive aerobic bacteria and gram-positive or gram-negative anaerobic bacteria.

Forms: Suspension, capsule, injectable

Usual oral dosage:²⁻⁴

Children: 8-20 mg/kg/day in 3-4 divided doses as hydrochloride

OR 8-25 mg/kg/day in 3-4 divided doses as palmitate

Adults: 150-450 mg every 6 hours (maximum 1.8 g/day)

Endocarditis prophylaxis:^{3,4,6} 20 mg/kg (maximum 600 mg) 30-60 minutes before procedure

Doxycycline

Important: This drug may cause permanent tooth discoloration, enamel hypoplasia in developing teeth, and hyperpigmentation of the soft tissues. Due to these and other side effects, women who are pregnant and children <8 years old should not use this drug.

Forms: Suspension, tablet, delayed release tablet, capsule, injectable

Usual oral dosage for necrotizing ulcerative gingivitis:²⁻⁴

Children >8 years who weigh <45 kg: 2.2 mg/kg every 12 hours on day 1, then 2.2 mg/kg once/day; for severe infections, 2.2 mg/kg every 12 hours until infection resolves

Children >8 years who weigh >45 kg and adults: 100 mg every 12 hours on day 1, then 100 mg once/day; for severe infections, 100 mg every 12 hours until infection resolves

Metronidazole

Important: Metronidazole is a useful addition to an antibiotic regimen when coverage of anaerobic bacteria is needed. Patients should avoid ingestion of alcohol as a beverage or ingredient in medications while taking metronidazole.

Forms: Tablet, tablet extended release, capsule, injectable

Usual oral dosage:

For anaerobic skin and bone infection:²⁻⁴

Children: 30 mg/kg/day in divided doses every 6 hours (maximum 4 g/24 hours)

Adolescents and adults: 7.5 mg/kg every 6 hours (maximum 4 g/24 hours)

For periodontal disease, including necrotizing ulcerative gingivitis:^{2,4}

Adolescents and adults: 250 mg every 6-8 hours for 10 days in combination with amoxicillin

For aggressive oral infections, may be used in combination with amoxicillin:

250 mg 3 times/day with amoxicillin (250-375 mg 3 times/day) for 7-10 days

Penicillin V Potassium

Caution: The practitioner should use penicillin cautiously in patients with renal impairment or history of seizures. Anaphylactic reactions have been demonstrated in patients receiving penicillin, most notably those with a history of beta-lactam hypersensitivity, sensitivity to multiple allergens, or prior IgE-mediated reactions (e.g., angioedema, urticaria, anaphylaxis).³ This antibiotic should be taken on an empty stomach because it is degraded by acid and enzyme activity in the stomach associated with ingestion of food.

Forms: Liquid, tablet

Usual oral dosage:²⁻⁴

Children <12 years: 25-50 mg/kg/day in divided doses every 6-8 (maximum 3 g/day)

Children ≥12 years and adults: 250-500 mg every 6-8 hours

Systemic Antifungal Agent for Oral Candidiasis

Fluconazole

Important: The drug requires acidic pH in the stomach to disintegrate and dissolve for oral absorption; therefore, absorption is decreased by medications that increase gastric pH. Also, prescribe with caution for patients taking other medications metabolized by CYP enzymes because fluconazole is a hepatic enzyme inhibitor.

Form: Suspension 10 mg/mL, 40 mg/mL; tablet: 50 mg, 100 mg, 150 mg, 200 mg; injectable 200 mg, 400 mg

Usual dosage:²⁻⁴

Neonates >14 days: Single dose of 6 mg/kg on day 1; then decrease to 3 mg/kg once/day for 7 to 14 days

Adolescents and adults: Single dose of 200 mg on day 1; then decrease to 100 mg once/day for 14 days

Topical Antifungal Agents

Topical agents for angular cheilitis

Clotrimazole

Form: Cream 1%

Usual dosage:²

All ages: Apply a thin layer to the corners of the mouth 4 times/day for 14 days or until complete healing.

Miconazole nitrate

Forms: Ointment 2%; cream 2%

Usual dosage:²

Children >2 years and adults: Apply a thin layer to the corners of the mouth 4 times/day for 14 days or until complete healing.

Nystatin

Forms: Ointment, cream (100,000 units/g)

Usual dosage:²

For all ages: Apply a thin layer to angles of mouth 4 times/day for 14 days or until complete healing.

Nystatin, triamcinolone acetonide (not FDA-approved for this use)

Forms: Ointment, cream (100,000 units nystatin/g and 0.1% triamcinolone acetonide)

Usual dosage:² (*Note: Not for use in patients <2 months of age.*)

Apply a thin layer to the angles of the mouth 4 times/day for no longer than 2 weeks.

Topical or transmucosal agents for oral candidiasis

Clotrimazole

Form: Lozenge 10 mg

Usual dosage:^{2,3} (*Note: Not for use in patients <3 years of age.*)

Dissolve one troche 5 times a day for 14 days. Treatment may extend beyond clinical resolution.

Miconazole (Oravig[®])

Form: Buccal tablet 50 mg

Usual dosage:^{2,4}

Adolescents >16 years and adults: One tablet/day for 14 days; apply to the gum region, just above the upper lateral incisor.

Nystatin

Form: Suspension (100,000 units/mL)

Usual oral dosage:^{2,4}

Infants: 200,000 - 400,000 units (2-4 mL) 4 times/day; ½ of dose placed in each side of mouth

Children and adults: Swish 400,000-600,000 units (4-6 mL) 4 times/day for several minutes and swallow; continue at least 48 hours after symptoms resolve

Systemic Antiviral Agents

Systemic agent for primary herpetic gingivostomatitis

Acyclovir (not FDA-approved for this use)

Forms: Suspension 200 mg/5 mL; tablets 400 mg, 800 mg; capsules 200 mg; injectable 50 mg/mL

Usual dosage:^{3,4}

Children: 15 mg/kg 5 times/day for 7 days (maximum 200 mg/dose)

Immunocompromised children: 1,000 mg/day orally in 3-5 divided doses for 7-14 days (maximum 80 mg/kg/day)

Adolescents and adults: 400 mg 3-5 times/day for 10 days or until clinical resolution occurs

OR 800 mg every 8 hours for 7-10 days

OR 200-400 mg 5 times/day for 10 days

Systemic agents for herpes labialis

Acyclovir (not FDA-approved for this use)

Form: Suspension 200 mg/5 mL; tablets 400 mg, 800 mg; capsules 200 mg; injectable 50 mg/mL

Usual dosage:²⁻⁴ (Begin treatment at the earliest signs/symptoms)

Infants and Children: 20 mg/kg/dose 4 times/day for 5 days (maximum 400 mg/dose)

Immunocompromised children: 1,000 mg/day orally in 3-5 divided doses for 7-14 days (maximum 80 mg/kg/day)

Adolescents and adults: 400 mg three times/day for 5 days

OR 200 mg 5 times/day (approximately every 4 hours) for 5 days

OR 800 mg 2 times/day for 5 days

Famciclovir

Form: Tablet 125 mg, 250 mg, 500 mg

Usual dosage:²⁻⁴

Children: Safety and efficacy have not been established.

Adolescents and adults: 1,500 mg as a single dose at the first sign or symptom of infection (maximum has not been established for adolescents; maximum 2 g/day orally for adults for one-day regimens or 1,500 mg/day orally for multiple-day regimens)

Valacyclovir

Form: Tablet 500 mg, 1 g

Usual oral dosage:²⁻⁴

Children ≥12 years and adults: 2 g for 2 doses, 12 hours apart (maximum 4 g/day for one-day regimens or 3 g/day for multiple-day regimens)

Topical Agents for Herpes Labialis

Docosanol (Abreva® – over-the-counter agent)

Form: Cream 10%

Usual dosage:²⁻⁴

Children ≥12 years and adults: Apply a thin layer on the lesion 5 times/day for up to 10 days.

Acyclovir

Form: Cream 5%

Usual dosage:²⁻⁴

Children ≥12 years and adults: Apply a thin layer on the lesion 5 times/day for 4 days.

Acyclovir (minimal absorption)

Important: Contains milk protein concentrate.

Form: Buccal tablet 50 mg

Usual dosage:²⁻⁴

Children ≥12 years and adults: Apply 1 tablet one time to the upper gums in area of canine fossa.

Acyclovir with hydrocortisone (Xerese®)

Form: Cream (5% acyclovir with 1% hydrocortisone)

Usual dosage:²⁻⁴

Children ≥6 years and adults: Apply a thin layer on the lesion 5 times/day for 5 days.

Penciclovir

Form: Cream 1%

Usual dosage:²⁻⁴

Children ≥12 years and adults: Apply a thin layer on the lesion every 2 hours while awake for 4 days.

Topical Anti-inflammatory/Coating Agent

Diphenhydramine hydrochloride and aluminum hydroxide, magnesium hydroxide, simethicone (not FDA-approved for this use)

Important: This suspension may be compounded with viscous lidocaine (2% solution) for a greater topical anesthetic effect. There is a potential for lidocaine toxicity if oral suspension is overused, and there is an increased risk for aspiration if used in children who cannot expectorate.

Form: Suspension [needs to be compounded by pharmacist; 50/50 mixture of liquid diphenhydramine hydrochloride (12.5 mg/5 mL) with aluminum hydroxide, magnesium hydroxide, simethicone suspension]

Usual dosage:^{2,4}

Children and adults: Rinse with 5-10 mL every 2-4 hours for 2 minutes and expectorate.

Note: Maximum dose of diphenhydramine hydrochloride in case the suspension is swallowed:

Children 2 to <6 years: 37.5 mg/day

Children 6 to <12 years: 150 mg/day

Children ≥12 years: 300 mg/day

Adults: 400 mg/day

Topical Antibacterial/Antimicrobial Agents

Chlorhexidine gluconate

Forms: Dental solution 0.12% (**Note:** Most brands contain alcohol.)

Usual dosage for gingivitis/periodontitis and stomatitis (off label use for stomatitis):^{2,4}

Children ≥8 years and adults: Rinse with 15 mL 2 times/day (after breakfast and before bed) for 30 seconds and expectorate.

Mupirocin

Forms: Ointment 2%; cream 2%

Usual dosage for localized impetigo or skin infection:^{2,4} (**Note:** For external use only; not for use in patients <2 months of age)

Apply a small amount of ointment to the affected area 3 times/day. Treatment usually is continued for 1-2 weeks

Retapamulin

Forms: Ointment 1%

Usual dosage for localized impetigo:^{2,4} (**Note:** For external use only; limited information on age group 1 to <9 months of age)

Apply a small amount of ointment to the affected area 2 times/day for 5 days.

Topical Corticosteroids for Aphthous Ulcers

Triamcinolone acetonide (a medium potency corticosteroid)

Form: Dental paste

Usual dosage:²

Adolescents and adults: Apply paste to ulcers 3 times/day, after meals and at bedtime; not to exceed 7 day course.

Fluocinonide (a high potency corticosteroid; not FDA-approved for oral application)

Form: Gel, ointment 0.05%

Usual dosage:²

Adolescents and adults: Apply thin amount of gel or ointment to ulcers 2-4 times a day; not to exceed 7 day course.

Dexamethasone (a high potency corticosteroid; not FDA-approved for oral application)

Form: Elixir, solution (contains alcohol)

Usual dosage:²

Adolescents and adults: Rinse with 5 mL 4 times/day for 2 minutes and expectorate; not to exceed 7 day course.

Clobetasol (a super-high potency corticosteroid; not FDA-approved for oral application)

Form: Gel, ointment 0.05%

Usual dosage:²

Adolescents and adults: Apply thin amount of gel or ointment to ulcers 2-4 times/day, not to exceed 7 day course.

References

1. American Academy of Pediatric Dentistry. Policy on acute pediatric dental pain management. *Pediatr Dent* 2018;40(6):101-3.
2. Jeske AH. *Mosby's Dental Drug Reference*. 12th edition. Elsevier, Inc., St. Louis, Mo., 2018.
3. Lexicomp Online, Pediatric and Neonatal Lexi-Drugs Online. Hudson, Ohio: Wolters Kluwer Clinical Drug Information, Inc., 2018. Available at: "<http://webstore.lexi.com/Pediatric-Lexi-Drugs>". Accessed September 23, 2018. (Archived by WebCite[®] at: "<http://www.webcitation.org/6tmLOJRYJ>")
4. Lexicomp Online, Lexi-Drugs Online. Hudson, Ohio: Wolters Kluwer Clinical Drug Information, Inc., 2018; Available at: "<http://www.wolterskluwercli.com/lexicomp-online/>". Accessed September 23, 2018. (Archived by WebCite[®] at: "<http://www.webcitation.org/6tmLvG0qP>")
5. Tobias JD, Green TP, Cote CJ, Section on Anesthesiology and Pain Medicine, AAP Committee on Drugs. Codeine: Time to say "no". *Pediatrics* 2016;138(4):e20162396.
6. Wilson W, Taubery KA, Gewitz, et al. Prevention of infective endocarditis: Guidelines from the American Heart Association. *Circulation* 2007;116(15):1736-54. Correction: *Circulation* 2007;116:e376-e377.