

Dosing of OTC Products in the Pediatric Population

** Promethazine is sometimes used for children during the cold and flu season, please see our Detail-Document #210411, "Use of Promethazine in Children" for helpful information.**

When administering medication to infants and children, there are a number of important considerations. These include:

- Children cannot be considered "little adults." Ideally, medication doses should be calculated based on age and weight.
- Always use a calibrated medication syringe, dropper, or cup. A kitchen teaspoon can vary between 2 mL and 10 mL and could result in significant underdosing or overdosing of a medication.^{1,2}
- Medications should not be mixed in a bottle of milk or formula, because if the entire bottle is not consumed, the child may not get the entire dose.²
- Counsel parents that many cough and cold preparations contain a number of ingredients. Review the ingredients to make sure children are not getting the same medication (i.e., acetaminophen) in more than one preparation.
- Use caution when recommending brand names. For example, *Kaopectate* formerly contained attapulgate. But, recently, the formulation was changed, and the current *Kaopectate* product contains bismuth subsalicylate, the same ingredient as *Pepto-Bismol*.
- Use caution with dosage forms. These sometimes have differing concentrations. For example, *Tylenol Infants' Drops* are significantly more concentrated (80 mg/0.8 mL in the U.S. and 80 mg/1 mL in Canada) compared with *Tylenol Children's Suspension* (160 mg/5 mL).
- Parents should be reminded not to call medications "candy." If children come upon medications at a later time, they may consider it "candy" and ingest it without supervision.
- Remind parents that a child with a fever over 24 hours or a child under 2 months with any fever needs to be checked.

Generic Name (Brand Name)	Recommended Dose*	Maximum Daily Dose	Notes
Analgesics			
Acetaminophen ^{3,6} (<i>Tylenol, Tempra,</i> <i>Panadol, others</i>)	<ul style="list-style-type: none"> • Full-term infants (greater than 10 days) and children 10 to 15 mg/kg PO or 10 to 20 mg/kg PR q4 to 6h prn OR • 0-3 months – 40 mg q4 to 6h prn • 4-11 months – 80 mg q4 to 6h prn • 12-24 months – 120 mg q4 to 6h prn • 2-3 years – 160 mg q4 to 6h prn • 4-5 years – 240 mg q4 to 6h prn • 6-8 years – 320 mg q4 to 6h prn • 9-10 years – 400 mg q4 to 6h prn • 11-12 years – 480 mg q4 to 6h prn 	<p>90 mg/kg/24h</p> <p>5 doses in 24h</p>	<p>Use caution with dosage forms.^{1,4}</p> <p>Infant drops are more concentrated (80 mg/0.8 mL in the U.S. and 80 mg/1 mL in Canada) compared with children's suspension (160 mg/5 mL). Higher (30 mg/kg) oral loading doses have been safely used to improve antipyretic efficacy.^{3,5}</p>

More . . .

Generic Name (Brand Name)	Recommended Dose*	Maximum Daily Dose	Notes
Ibuprofen ^{3,6} (<i>Motrin, Advil,</i> others)	<ul style="list-style-type: none"> • Infants and children 5 to 10 mg/kg q6 to 8h prn OR • 6-11 months – 50 mg q6 to 8h prn • 12-23 months – 75 mg q6 to 8h prn • 2-3 years – 100 mg q6 to 8h prn • 4-5 years – 150 mg q6 to 8h prn • 6-8 years — 200 mg q6 to 8h prn • 9-10 years – 250 mg q6 to 8h prn • 11 years – 300 mg q6 to 8h prn 	40 mg/kg/24h or 2,400 mg/day whichever is less	Use caution with dosage forms. Infant drops are more concentrated (50 mg/1.25 mL in the U.S. and 40 mg/1 mL in Canada) compared with children's suspension (100 mg/5 mL). ³ For fever in infants/children 6 months to 12 years: Temperature < 102.5°F (39°C): 5mg/kg/dose q6 to 8h prn Temperature ≥ 102.5°F (39°C): 10mg/kg/dose q6 to 8h prn. ⁶
Antihistamines			
Brompheniramine ^{3,12} (often in combination with decongestants such as pseudoephedrine – i.e. <i>Dimetapp</i> , others)	<ul style="list-style-type: none"> • Infants and neonates – not recommended • 2-6 years – 0.5 mg/kg/24h divided q6 to 8h prn or 1 mg q4 to 6h prn • 6-12 years – 2 to 4 mg/dose q6 to 8h prn 	6 mg/24h 12 mg/24h	In small children, no evidence of benefit for treating colds other than inducing sleepiness. Use caution in children with asthma; first-generation antihistamines may cause thickening of secretions thereby making secretions harder to clear and potentially worsening asthma. ⁷⁻¹⁰
Chlorpheniramine ³ (<i>Chlor-Trimeton</i> , others)	<ul style="list-style-type: none"> • 0.35 mg/kg/24h divided q4 to 6h prn OR • Less than 2 years – dosing information not available • 2-6 years – 1 mg/dose q4 to 6h prn • 6-12 years – 2 mg/dose q4 to 6h prn or 8 mg (sustained release) q12h prn 	6 mg/24h 12 mg/24h	In small children, no evidence of benefit for treating colds other than inducing sleepiness. Use caution in children with asthma; first-generation antihistamines may cause thickening of secretions thereby making secretions harder to clear and potentially worsening asthma. ⁷⁻¹⁰
DiMENhydrinate ³ (<i>Dramamine</i> , others)	<ul style="list-style-type: none"> • Less than 2 years – not recommended • 2 years or older - 5 mg/kg/24h divided q6h prn 	2-6 years – 75 mg/24h 6-12 years – 150 mg/24h	Should only be used in the treatment of prolonged vomiting with a known cause. ³ These doses can also be used for motion sickness.

Generic Name (Brand Name)	Recommended Dose*	Maximum Daily Dose	Notes
DiPHENhydramine ³ (<i>Benadryl</i> , others)	<ul style="list-style-type: none"> 5 mg/kg/24h divided q6h prn 	300 mg/24h	Do not use in neonates due to potential for central nervous system effects. ³ In small children, no evidence of benefit for treating colds other than inducing sleepiness. Use caution in children with asthma; first-generation antihistamines may cause secretion thickening thereby making secretions harder to clear and potentially worsening asthma. ⁷⁻¹⁰
Loratadine ³ (<i>Claritin</i> , others)	<ul style="list-style-type: none"> Less than 2 years – dosing information not available 2-5 years – 5 mg once daily 6 years or older – 10 mg once daily 	5 mg/24h 10 mg/24h	None.
Expectorants and Cough Suppressants			
Dextromethorphan ⁶ (<i>Benlyn</i> , <i>Delsym</i> , others)	<ul style="list-style-type: none"> Less than 2 years – dosing information not well established 2-6 years – 2.5 to 7.5 mg q4 to 8h prn or 15 mg q12h prn (sustained-release suspension) 6-12 years – 5 to 10 mg q4h prn or 30 mg q12h prn (sustained-release suspension) 	30 mg/24h 60 mg/24h	The American Academy of Pediatrics recommends against the use of dextromethorphan in children due to the lack of proven effect. ¹¹
Guaifenesin ^{3,12} (<i>Robitussin</i> , others)	<ul style="list-style-type: none"> 6 months-2 years – 12 mg/kg/24h divided q4h prn 2-5 years – 50 to 100 mg q4h prn 6-11 years – 100 to 200 mg q4h prn 	300 mg/24h 600 mg/24h 1,200 mg/24h	Clear evidence of beneficial effects in children is lacking. ⁷⁻¹⁰
Decongestants			
Phenylephrine ³ (<i>Neo-Synephrine</i> , others)	<ul style="list-style-type: none"> Infants less than 6 months – dosing information not available Infants older than 6 months – 1 to 2 drops of 0.16% solution in each nostril q3h prn Less than 6 years – 2 to 3 drops of 0.125% solution in each nostril q4h prn 6-12 years – 2 to 3 drops or 1 to 2 sprays of 0.25% solution in each nostril q4h prn 	None specified. Do not use longer than 3 days.	Can be used for up to three days. 0.16% and 0.125% solution no longer commercially available; may dilute 0.25% with normal saline to achieve desired concentration. Overuse can lead to chronic inflammatory rhinitis. ⁷

Generic Name (Brand Name)	Recommended Dose*	Maximum Daily Dose	Notes
Pseudoephedrine ³ (<i>Sudafed, PediaCare Infant Decongestant Drops</i> , others)	<ul style="list-style-type: none"> Children less than 12 years – 4 mg/kg/24h divided q6h prn OR Less than 2 years – 4 mg/kg/24h divided q6h prn 2-5 years – 15 mg q6h prn 6-12 years – 30 mg q6h prn 	60 mg/24h 120 mg/24h	Use caution in infants. The use of decongestants in children has been associated with irritability, hallucinations, hypertension, and dystonic reactions. ¹¹ Use caution with dosage forms. Infant drops are more concentrated compared with children's liquid. ³
Antidiarrheals			
Bismuth subsalicylate ³ (<i>Pepto-Bismol</i> , others)	<ul style="list-style-type: none"> 100 mg/kg/24h in 5 divided doses OR (doses given q30 minutes to 1h prn up to 8 doses/24h) Less than 3 years – dosing information not available. 3-6 years – 87.3 mg 6-9 years – 174.7 mg 9-12 years – 262 mg 	4,190 mg/24h for up to 5 days 8 doses/24h 8 doses/24h 8 doses/24h	Not recommended for children less than 16 years with flu-like symptoms or chickenpox due to the risk of Reye's Syndrome. Use caution in patients with renal dysfunction, gastritis, or bleeding disorders. ³
Loperamide ³ (<i>Imodium</i> , others)	<p>Initial day</p> <ul style="list-style-type: none"> Less than 2 years – dosing information not available 2-6 years – 1 mg q8h 6-8 years – 2 mg q12h 8-12 years – 2 mg q8h <p>After initial day, 0.1 mg/kg/dose after each loose bowel movement (not to exceed recommended doses on initial day)</p>	3 mg/24h 4 mg/24h 6 mg/24h	Avoid in children less than 2 years due to reports of necrotizing enterocolitis. Do not use more than 2 mg/dose. Discontinue in 48 hours if no improvement. ³
Laxatives			
Bisacodyl ^{3,12} (<i>Dulcolax</i> , others)	<ul style="list-style-type: none"> 3-11 years – 0.3 mg/kg/24h PO or 5 to 10 mg PO to be given 6h before effect required OR Less than 2 years – 5 mg PR as a single dose 2-11 years – 5 to 10 mg PR as a single dose 	5 to 10 mg/day PO 5 mg/day PR 5 to 10 mg/day PR	Should not be used in newborns. Tablets should not be crushed or chewed due to gastric irritation. ³

Generic Name (Brand Name)	Recommended Dose*	Maximum Daily Dose	Notes
Castor oil ⁶ (<i>Purge</i> , others)	<ul style="list-style-type: none"> • Less than 2 years – 1 to 5 mL as a single dose (or 2.5 to 7.5 mL of emulsified castor oil) • 2-11 years – 5 to 15 mL as a single dose (or 7.5 to 30 mL of emulsified castor oil) 	Single daily dose.	Use with caution due to possibility of aspiration pneumonia. ⁶
Docusate sodium ³ (<i>Colace</i> , others)	<ul style="list-style-type: none"> • Less than 3 years – 10 to 40 mg/24h divided in 1 to 4 doses • 3-6 years – 20 to 60 mg/24h divided in 1 to 4 doses • 6-12 years – 40 to 150 mg/24h divided in 1 to 4 doses 	None specified.	None.
Glycerin ³	<ul style="list-style-type: none"> • Neonates – 0.5 mL/kg/dose rectal solution PR as an enema once or twice daily prn or ½ infant suppository PR once daily prn • Children less than 6 years – 2 to 5 mL rectal solution PR as an enema or 1 infant suppository PR once or twice daily prn • Children 6 years or older – 5 to 15 mL rectal solution PR as an enema or 1 adult suppository PR once or twice daily prn 	None specified.	None.
Magnesium citrate ³	<ul style="list-style-type: none"> • Less than 6 years – 2 to 4 mL/kg/24h divided in 1 to 2 doses • 6-12 years – 100 to 150 mL/24h divided in 1 to 2 doses 	None specified.	None.
Magnesium hydroxide ³ (<i>Milk of Magnesia</i> , others)	<ul style="list-style-type: none"> • Less than 2 years – 40 mg/kg/24h divided in 1 to 4 doses • 2-5 years – 400 to 1,200 mg/24h divided in 1 to 4 doses • 6-12 years – 1,200 to 2,400 mg/24h divided in 1 to 4 doses 	None specified.	Use caution as products of different strengths available (400 mg/5 mL, 800 mg/5 mL, and 1,200 mg/5 mL). ³

Generic Name (Brand Name)	Recommended Dose*	Maximum Daily Dose	Notes
Mineral oil ³ (Agoral, Kondremul, others)	<ul style="list-style-type: none"> Less than 5 years – not recommended 5-11 years – 5 to 15 mL/24h PO in 1 to 3 divided doses or 30 to 60 mL PR as single dose 		Do not use in children less than 5 years due to risk of aspiration pneumonitis. ³
Psyllium ³ (Metamucil, Fiberall, others)	<ul style="list-style-type: none"> Less than 6 years – 1.25 to 2.5 g/dose 1 to 3 times/day 6-11 years – 2.5 to 3.75 g/dose 1 to 3 times/day 	7.5 g/24h 15 g/24h	Dose must be mixed in full glass of water or juice. Contraindicated in fecal impaction or GI obstruction. ³
Senna ³ (Senokot, Ex-Lax, others)	<ul style="list-style-type: none"> 10 to 20 mg/kg/dose at bedtime OR 1 month-1 year – 55 to 109 mg at bedtime 1-5 years – 109 to 218 mg at bedtime 5-15 years – 218 to 436 mg at bedtime 	218 mg/24h 436 mg/24h 872 mg/24h	None.
Sodium phosphate ³ (Fleet, others)	<ul style="list-style-type: none"> Less than 2 years – dosing information not available 2-12 years – 67.5 mL enema PR; may repeat once 5-9 years – 5 mL PO of oral solution as a single dose 10-12 years – 10 mL PO of oral solution as a single dose 	2 enemas/24h Single dose/24h Single dose/24h	Contraindicated in severe renal failure, megacolon, bowel obstruction. ³ Do not exceed recommended dose to minimize risk of electrolyte abnormalities. ³

*Some of these doses are not approved by the Food and Drug Administration and/or Health Canada. Use clinical judgment before using this information.

All doses are the oral dose unless otherwise specified.

All doses assume normal renal and hepatic function.

Abbreviations: PO – by mouth, PR – rectally, prn – as needed, h – hours, q – every.

Users of this document are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input from experts, government agencies, and national organizations. Information and Internet links in this article were current as of the date of publication.

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