Potentially Harmful Drugs in Children

The chart below provides information and alternatives for potentially inappropriate drugs and excipients in pediatrics. This chart includes many drugs on the KIDS (**K**ey Potentially **I**nappropriate **D**rugs) List from the Pediatric Pharmacy Association, plus others with known risks not meeting inclusion criteria for the KIDS List. Think of this list as a "warning light" to think twice about using these medications in children, as with the Beers Criteria for the elderly.

Drug or Drug Class	Concern(s)	Other Considerations (e.g., alternatives)
Analgesics		
Aspirin	• Reye's syndrome in children with suspected viral illness (e.g., flu, chickenpox)[1]	• High-dose aspirin is indicated for Kawasaki syndrome.[2] • For alternatives for pain, see our chart, *Keeping Pediatric Patients Safe*.
Choline magnesium trisalicylate (US)	• Reye's syndrome in children with suspected viral illness (e.g., flu, chickenpox)[1]	• For alternatives for pain, see our chart, *Keeping Pediatric Patients Safe*.
Codeine	• Respiratory depression[1,3]	• For alternatives for pain and information on pharmacogenetic concerns, see our chart, *Keeping Pediatric Patients Safe*.
Meperidine	• Respiratory depression, especially in neonates[1]	• See our FAQ, *Analgesics in Kids*, for alternatives.
Oxycodone	• Respiratory depression[3]	• For alternatives for pain, see our chart, *Keeping Pediatric Patients Safe*.
Hydrocodone	• Respiratory depression[3]	• For alternatives for pain, see our chart, *Keeping Pediatric Patients Safe*.
Salsalate (US)	• Reye's syndrome in children with suspected viral illness (e.g., flu, chickenpox)[1]	• For alternatives for pain, see our chart, *Keeping Pediatric Patients Safe*.
Tramadol	• Respiratory depression[1,3]	• For alternatives for pain and information on pharmacogenetic concerns, see our chart, *Keeping Pediatric Patients Safe*.

Drug or Drug Class	Concern(s)	Other Considerations (e.g., alternatives)
Antibiotics, systemic		
Azithromycin	• Hypertrophic pyloric stenosis in neonates[1]	• May be appropriate for *Bordetella pertussis*, *Chlamydia trachomatis* pneumonia, or *Ureaplasma*.[1]
Ceftriaxone	• Kernicterus in newborns[1]	• Acceptable for term infants without hyperbilirubinemia.[2] Ceftazidime or cefepime may be appropriate alternatives (e.g., for meningitis).[2]
Chloramphenicol	• Grey baby syndrome (circulatory collapse) in neonates[1,2]	• Reserve last-line for serious infections.[2] • If used, monitor serum concentrations.[1]
Daptomycin	• Neuromuscular and skeletal adverse events in children <1 year of age[1]	• Not a first-line agent. • For skin/soft tissue infection or endocarditis, consider vancomycin.[5,6]
Demeclocycline (US)	• Tooth discoloration in children <8 years of age[1]	• Rarely used as an antibiotic. For SIADH, consider fluid restriction, saline, diuresis, etc.[47]
Dicloxacillin	• Kernicterus in neonates[1]	• For methicillin-sensitive skin or soft tissue infection, consider cephalexin.[5]
Doxycycline	• Potential for tooth discoloration in children <8 years of age[2]	• Controversial. Short-term use (≤21 days) in children may not be associated with tooth discoloration.[2]
Erythromycin	• Hypertrophic pyloric stenosis in neonates[1]	• May be appropriate for *Chlamydia trachomatis* pneumonia.[1]
Fluoroquinolones	• Articular side effects.[2]	• May be appropriate for anthrax, complicated urinary tract infections, or pyelonephritis.[2]
Minocycline	• Abnormal skeletal and tooth development in children <8 years of age[2]	• Do not use in children <8 years of age.[2]
Nitrofurantoin	• Hemolytic anemia in neonates[1]	• Alternative: empiric therapy as for other febrile infants[2]

Drug or Drug Class	Concern(s)	Other Considerations (e.g., alternatives)
Sulfonamides (sulfamethoxazole, sulfadiazine [US])	• Kernicterus in neonates[1]	• Sulfadiazine (US) may be appropriate for congenital toxoplasmosis.[1]
Tetracycline	• Tooth discoloration and enamel hypoplasia in children, and interference with bone development in premature neonates[1]	• Avoid use in children <8 years of age or <12 years of age (Canadian labeling), unless other options are contraindicated or unlikely to be effective.[9,10]
Tigecycline	• Tooth discoloration and reversible inhibition of bone growth in children <8 years of age[11]	• Use not recommended in children <8 years of age (Canada: <18 years of age, due to paucity of information in children).[11,12]
Antidepressants		
Desipramine	• Sudden cardiac death[1]	• For depression, escitalopram, fluoxetine, or sertraline; they have the best evidence in adolescents.[4] Fluoxetine is FDA-approved for depression in children ≥8 years of age.[48]
Imipramine	• Sudden cardiac death[1]	• For depression, escitalopram, fluoxetine, or sertraline; they have the best evidence in adolescents.[4] Fluoxetine is FDA-approved for depression in children ≥8 years of age.[48] • For ADHD, see our chart, *Comparison of ADHD Medications* (US)(Canada) for alternatives.
Paroxetine	• May pose a higher suicide risk[4]	• For depression, escitalopram, fluoxetine, or sertraline; they have the best evidence in adolescents.[4] Fluoxetine is FDA-approved for depression in children ≥8 years of age.[48] • For anxiety disorders, consider sertraline, fluoxetine, fluvoxamine, or duloxetine.[46]
Venlafaxine	• May pose a higher suicide risk[4]	• For depression, escitalopram, fluoxetine, or sertraline; they have the best evidence in adolescents.[4] Fluoxetine is FDA-approved for depression in children ≥8 years of age.[48] • For anxiety disorders, consider sertraline, fluoxetine, fluvoxamine, or duloxetine.[46]

Drug or Drug Class	Concern(s)	Other Considerations (e.g., alternatives)
Antiepileptics		
Lamotrigine	• Serious dermatologic reaction[1]	• Titrate slowly.[1] Consult product labeling for titration schedule.
Valproate, valproic acid	• Pancreatitis, hepatotoxicity, death in children <6 years of age, especially <2 years of age[1]	• Avoid in children <2 years of age.[1] Use caution in children <6 years of age.[1] • Symptoms may include abdominal pain, loss of appetite, vomiting, lethargy, weakness, fever, worsening seizure control, or jaundice.[13,14] • Parenteral valproate is a second-line option for status epilepticus.[15]
Antiparasitic Agents, systemic		
Ivermectin (oral)	• Encephalopathy in children <1 year old[1]	• See our chart, *Management of Head Lice*, for alternatives. • For scabies, if <2 months of age, sulfur 5% to 10% ointment is safe.[49] If ≥2 months of age (Canada: ≥3 months of age), permethrin 5% cream is the drug of choice.[49,50]
Antipsychotics		
First-generation agents (e.g., haloperidol, chlorpromazine)	• Movement disorders, respiratory depression[1]	• Consider an atypical antipsychotic. Several are approved for use in children of various ages for schizophrenia (e.g., aripiprazole, paliperidone [US], quetiapine [US], quetiapine XR [US], risperidone [US]), autism irritability (aripiprazole [US], risperidone [US]), bipolar disorder (e.g., aripiprazole, asenapine [US], quetiapine [US], quetiapine XR [US], risperidone [US]), or Tourette's disorder (aripiprazole [US]).[30-34,51,52]
Olanzapine	• Higher risk of weight gain, hyperlipidemia, and hyperglycemia than other atypicals[1]	• Avoid use for more than 24 weeks.[1] • If using olanzapine or any alternative atypical antipsychotic, monitor for metabolic side effects. For a monitoring tool, see http://partnersforkids.org/wp-content/uploads/2020/04/APM-Lab-Monitoring-Tool_final.pdf.
Antiretrovirals		
Atazanavir	• Kernicterus in neonates[1]	• Consult guidelines for alternatives (e.g., https://clinicalinfo.hiv.gov/en/guidelines/pediatric-arv/whats-new.
Darunavir	• Seizures and death in children <3 years of age or <10 kg[1]	• Consult guidelines for alternatives (e.g., https://clinicalinfo.hiv.gov/en/guidelines/pediatric-arv/whats-new.
Indinavir	• Kidney stones (children) and kernicterus (neonates)[1]	• Consult guidelines for alternatives (e.g., https://clinicalinfo.hiv.gov/en/guidelines/pediatric-arv/whats-new.

Drug or Drug Class	Concern(s)	Other Considerations (e.g., alternatives)
Cardiac Drugs		
Aspirin	• Reye's syndrome[1]	• High-dose aspirin is indicated for Kawasaki syndrome.[2]
Verapamil	• Asystole in children <1 year of age[1]	• First-line antihypertensives in kids include ACEIs, ARBs, and long-acting dihydropyridine calcium channel blockers.[53,54]
Central Nervous System Agents, misc.		
Midazolam	• Intraventricular hemorrhage, periventricular leukomalacia, or death in very low birth weight (<1,500 g) infants[1]	• Routine use of sedation/analgesia is not recommended in preterm neonates. Consider conservatively-dosed morphine, for the shortest duration necessary, if pharmacotherapy is deemed necessary for sedation in a mechanically ventilated neonate.[16]
Naloxone	• Seizures in neonates when used for postpartum resuscitation[1]	• Follow Neonatal Advanced Life Support algorithm.
Propofol	• Doses >4 mg/kg/hour for >48 hours associated with propofol-related infusion syndrome[1]	• Watch for cardiac depression, arrhythmias, rhabdomyolysis, metabolic acidosis, hyperkalemia, lipemic plasma, or elevation of serum creatinine or transaminases.[55]
Cough, Cold, and Allergy Medications		
Antihistamines	• The risks of side effects or overdose of over-the-counter cough and cold medicines may outweigh benefit in children <6 years of age[18,22]	• For treatment options for seasonal allergies, see our chart, *Managing Seasonal Allergies*. • Diphenhydramine may be more commonly associated with adverse effects and toxicity than other "first generation" antihistamines.[36,56] • Avoid carbinoxamine (*Karbinal ER*, US) in children <2 years of age due to reports of death in this age group.[37]
Cough medicines (e.g., dextromethorphan, codeine) *Continued…*	• The risks of side effects or overdose of over-the-counter cough and cold medicines may outweigh benefit in children <6 years of age[18,22] • Respiratory depression (codeine, hydrocodone).[20,38]	• Consider fluids to thin the mucus to make it easier to cough up.[23] • Consider honey for children ≥1 year of age:[18] o One to five years of age: 2.5 mL o Six to 12 years of age: 5 mL o ≥12 years of age: 10 mL • Consider cough drops/lozenges for children ≥4 years of age.[18] • Consider benzonatate (US only) for children ≥10 years of age.[20,21]

Drug or Drug Class	Concern(s)	Other Considerations (e.g., alternatives)
Cough medicine, continued		• Consider a mentholated rub for children ≥2 years of age (see camphor, below).[18] • US: codeine- and hydrocodone-containing cough medicines are indicated for adults only.[20] • Canada: codeine is not recommended for any use in children <12 years of age, and hydrocodone is not recommended in children <6 years of age.[38]
Decongestants (e.g., pseudoephedrine, phenylephrine)	• The risks of side effects or overdose of over-the-counter cough and cold medicines may outweigh benefit in children <6 years of age[18,22]	• Consider saline nose drops or spray, with a rubber suction bulb for infants.[18] • Consider humidity from a warm shower, or vaporizer or humidifier (follow safety and cleaning instructions).[18,23] • For treatment options for seasonal allergies, see our chart, *Managing Seasonal Allergies*.
Excipients		
Benzyl alcohol, sodium benzoate, benzoic acid	• Gasping syndrome in neonates[1]	• Limit is ≤99 mg/kg/day in neonates.[1] Therefore, many medications that contain it may not exceed limit in small doses. • Sodium phenylacetate/sodium benzoate (*Ammonul*) ok for treatment of urea cycle disorders.[1]
Ethanol	• CNS depression, hypoglycemia[1]	• Use caution in children <6 years of age.[1] Max 5% vol/vol.[1] • Ethanol lock therapy is acceptable.[1] Follow institutional guidelines for age/weight.
Parabens	• Kernicterus[1]	• Use caution in children <2 months of age[1]
Phenylalanine	• CNS damage in children with phenylketonuria[1]	• Avoid if phenylketonuria test is positive or result is unknown.[1]
Polysorbate 80	• Renal and liver failure, thrombocytopenia ("E-Ferol syndrome," named after the intravenous vitamin E supplement with which it was reported in the mid-1980s)[45]	• Avoid in children <1 year of age.[1]

Drug or Drug Class	Concern(s)	Other Considerations (e.g., alternatives)
Propylene glycol (e.g., in lorazepam)	• Lactic acidosis, CNS effects (e.g., seizures, CNS depression), hypoglycemia, hemolysis[1]	• Avoid >3 g/day in neonates, and use caution with doses >34 mg/kg/day in neonates.[1]
Gastrointestinal Drugs		
Bismuth subsalicylate	• Reye's syndrome in children with suspected viral illness (e.g., flu, chickenpox)[1]	• Can use for travelers' diarrhea in children ≥3 years of age (Canada: or ≥2 years of age).[19] • See our charts, *Acute Infectious Diarrhea* for alternatives.
Dicyclomine	• Apnea in children <6 months of age[1]	• For colic, no pharmacotherapy has been shown to be safe and effective. Address parental behaviors and expectations. Consider changing feeding technique or environment.[17] Probiotics (*Limosilactobacillus .reuteri* DSM 17938 drops) are possibly effective[17,25]
Diphenoxylate and atropine	• Respiratory depression and death in children <6 years of age[1]	• See our charts, *Acute Infectious Diarrhea* for alternatives.
Linaclotide	• Death from dehydration in children <6 years of age[1]	• Pharmacotherapy for IBS in children has been poorly studied. Consider parent and child education, cognitive behavioral therapy, and treatment of anxiety or depression.[24]
Loperamide	• Ileus, lethargy, and rarely death in children <3 years of age with acute infectious diarrhea[43]	• See our charts, *Acute Infectious Diarrhea* for alternatives.
Metoclopramide	• Movement disorders (e.g., dystonia), respiratory depression[1]	• Avoid in children <2 years of age.[1] • Consider ondansetron (e.g., for gastroenteritis).[26] • For information on use for treatment of pediatric migraine, see our chart. *Drugs for Acute Migraine*.
Mineral oil (oral)	• Lipoid pneumonia in children <1 year of age[1]	• See our chart, *Management of Constipation*, for alternatives.
Plecanatide (*Trulance*)	• Dehydration and death in children <6 years of age[1]	• Pharmacotherapy for IBS in children has been poorly studied. Consider parent and child education, cognitive behavioral therapy, and treatment of anxiety or depression.[24]

Drug or Drug Class	Concern(s)	Other Considerations (e.g., alternatives)
Prochlorperazine	• Movement disorders (e.g., dystonia), respiratory depression[1]	• Avoid in children <2 years or older children <9 kg.[13] • Consider ondansetron (e.g., for gastroenteritis).[26] • For information on use for treatment of pediatric migraine, see our chart. *Drugs for Acute Migraine*.
Promethazine	• Fatal respiratory depression in children <2 years of age[13] • Extravasation injury[13] • Movement disorders (e.g., dystonia)[1]	• Consider rectal route over parenteral (for children ≥2 years of age, with caution), or ondansetron (e.g., for gastroenteritis).[13,26] • For alternatives for treatment of pediatric migraine, see our chart. *Drugs for Acute Migraine*. •
Sodium phosphate enema	• Electrolyte imbalance, acute kidney injury, arrhythmia, and death in children <2 years of age[1]	• See our chart, *Management of Constipation*, for alternatives.
Sodium polystyrene sulfonate	• Colonic perforation[1]	• Avoid in very low birth weight neonates.[1] Consider insulin/glucose.[27]
Topicals		
Benzocaine	• Methemoglobinemia when used for teething or pharyngitis in children <2 years of age[1]	• For alternatives for **teething**, see the FDA's "Safely Soothing Teething Pain and Sensory Needs in Babies and Older Children" at https://www.fda.gov/consumers/consumer-updates/safely-soothing-teething-pain-and-sensory-needs-babies-and-older-children. • For **pharyngitis**, consider acetaminophen or ibuprofen.[28]
Camphor (e.g., in *Vicks VapoRub*)	• Skin, eye, and nose irritation[29] • Systemic toxicity (e.g., confusion, seizures, vomiting, bradycardia), mostly with ingestion.[7]	• Use as directed, and only in children ≥2 years of age.[23] Put the product out of the child's reach after use.[23]
Chlorhexidine	• Chemical burns in very low birth weight neonates[1]	• Most neonatal intensive care units use chlorhexidine, but it must be used with caution.[1,42] Assess and document skin condition at each use.[8] To reduce exposure, avoid pooling of the antiseptic under the neonate, and rinse the skin with saline after use.[41,44] Avoidance of alcohol-containing solutions has also been suggested.[41,44]

Drug or Drug Class	Concern(s)	Other Considerations (e.g., alternatives)
Corticosteroids, medium to very high potency	• Adrenal suppression due to high systemic absorption when used in children <1 year of age[1]	• Low-potency corticosteroid (e.g., hydrocortisone 1% cream).[35]
Gentamicin ophthalmic ointment	• Severe ocular reactions in neonates[1]	• For neonatal ocular prophylaxis, erythromycin 0.5% ophthalmic ointment is recommended (US).[39]
Hexachlorophene	• Neurotoxicity in neonates[1]	• See chlorhexidine, above.
Isopropyl alcohol	• Chemical burn in very low birth weight neonates[1]	• See chlorhexidine, above.
Lidocaine 2%, viscous	• Seizures, arrhythmia, CNS depression, death when used for teething[1]	• For alternatives for teething, see the FDA's "Safely Soothing Teething Pain and Sensory Needs in Babies and Older Children" at https://www.fda.gov/consumers/consumer-updates/safely-soothing-teething-pain-and-sensory-needs-babies-and-older-children.
Lindane	• Seizures and spasms in children <10 years of age or <50 kg[1]	• See our chart, *Management of Head Lice*, for alternatives.
Malathion	• Organophosphate poisoning in children <1 year of age[1]	• See our chart, *Management of Head Lice*, for alternatives.
Methyl salicylate	• Reye's syndrome in children with suspected viral illness (e.g., flu, chickenpox)[1]	• For alternatives for pain and information on pharmacogenetic concerns, see our chart, *Keeping Pediatric Patients Safe*.
Silver sulfadiazine	• Kernicterus in neonates[1]	• For umbilical care, consider dry cord care.[40]

Abbreviations: ACEI = angiotensin-converting enzyme inhibitor; ARB = angiotensin receptor blocker; CNS = central nervous system; IBS = irritable bowel syndrome; OTC = over-the-counter; SIADH = syndrome of inappropriate antidiuretic hormone secretion

Users of this resource 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.

References

1. Meyers RS, Thackray J, Matson KL, et al. Key Potentially Inappropriate Drugs in Pediatrics: The KIDs List. J Pediatr Pharmacol Ther. 2020;25(3):175-191.
2. Chambers C. The Sanford Guide to Antimicrobial Therapy. Web Edition. Sperryville, VA: Antimicrobial Therapy, Inc., 2023. http://webedition.sanfordguide.com/. (Accessed July 24, 2023).
3. Clinical Resource, Analgesics in Kids: FAQs. Pharmacist's Letter/Prescriber's Letter. March 2018.
4. Cheung AH, Zuckerbrot RA, Jensen PS, et al. Guidelines for Adolescent Depression in Primary Care (GLAD-PC): Part II. Treatment and Ongoing Management. Pediatrics. 2018 Mar;141(3):e20174082.
5. Stevens DL, Bisno AL, Chambers HF, et al. Practice guidelines for the diagnosis and management of skin and soft tissue infections: 2014 update by the Infectious Diseases Society of America. Clin Infect Dis. 2014 Jul 15;59(2):e10-52. Erratum in: Clin Infect Dis. 2015 May 1;60(9):1448.
6. Baltimore RS, Gewitz M, Baddour LM, et al. Infective Endocarditis in Childhood: 2015 Update: A Scientific Statement From the American Heart Association. Circulation. 2015 Oct 13;132(15):1487-515.
7. Manoguerra AS, Erdman AR, Wax PM, et al. Camphor Poisoning: an evidence-based practice guideline for out-of-hospital management. Clin Toxicol (Phila). 2006;44(4):357-70.
8. Paternoster M, Niola M, Graziano V. Avoiding Chlorhexidine Burns in Preterm Infants. J Obstet Gynecol Neonatal Nurs. 2017 Mar-Apr;46(2):267-271.
9. Product information. Tetracycline. Breckenridge Pharmaceutical. Berlin, CT 06037. January 2023.
10. Product monograph. Tetracycline. AA Pharma. Vaughan, ON L4K 4N7. January 2019.
11. Product information for Tygacil. Pfizer. New York, NY 10017. May 2021.
12. Product monograph for Tygacil. Pfizer Canada. Kirkland, QC H9J 2M5. July 2023.
13. Clinical Pharmacology powered by Clinical Key. Tampa, FL. Elsevier; 2023. http://www.clinicalkey.com. (Accessed July 25, 2023).
14. Cofini M, Quadrozzi F, Favoriti P, et al. Valproic acid-induced acute pancreatitis in pediatric age: case series and review of literature. G Chir. 2015 Jul-Aug;36(4):158-60.
15. Becker LL, Gratopp A, Prager C, et al. Treatment of pediatric convulsive status epilepticus. Front Neurol. 2023 Jun 29;14:1175370.
16. McPherson C, Ortinau CM, Vesoulis Z. Practical approaches to sedation and analgesia in the newborn. J Perinatol. 2021 Mar;41(3):383-395.
17. Mai T, Fatheree NY, Gleason W, et al. Infantile Colic: New Insights into an Old Problem. Gastroenterol Clin North Am. 2018 Dec;47(4):829-844.
18. American Academy of Pediatrics. Caring for your child's cold or flu. January 3, 2023. https://healthychildren.org/English/health-issues/conditions/flu/Pages/caring-for-Your-childs-cold-or-flu.aspx. (Accessed July 26, 2023).
19. Clinical Resource, Acute Infectious Diarrhea. Pharmacist's Letter/Prescriber's Letter. November 2022.
20. FDA. FDA Drug safety communication: FDA requires labeling changes for prescription opioid cough and cold medicines to limit their use to adults 18 years and older. Content current as of January 22, 2018. https://www.fda.gov/drugs/drug-safety-and-availability/fda-drug-safety-communication-fda-requires-labeling-changes-prescription-opioid-cough-and-cold
21. Lam SHF, Homme J, Avarello J, et al. Use of antitussive medications in acute cough in young children. J Am Coll Emerg Physicians Open. 2021 Jun 18;2(3):e12467.
22. Health Canada. Health Canada reminds parents not to give cough and cold medication to children under 6 years old. March 24, 2016. http://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2016/57622a-eng.php. (Accessed July 25, 2023).
23. American Academy of Pediatrics. Coughs and colds: medicines or home remedies? December 2, 2022. https://www.healthychildren.org/English/health-issues/conditions/chest-lungs/Pages/Coughs-and-Colds-Medicines-or-Home-Remedies.aspx. (Accessed July 25, 2023).
24. Devanarayana NM, Rajindrajith S. Irritable bowel syndrome in children: Current knowledge, challenges and opportunities. World J Gastroenterol. 2018 Jun 7;24(21):2211-2235.
25. TRC Healthcare. Coenzyme Q10. [Natural Medicines website]. June 12, 2023. Available at: https://naturalmedicines.therapeuticresearch.com/databases/food,-herbs-supplements/professional.aspx?productid=938. (Accessed July 26, 2023).
26. Niño-Serna LF, Acosta-Reyes J, Veroniki AA, Florez ID. Antiemetics in Children With Acute Gastroenteritis: A Meta-analysis. Pediatrics. 2020 Apr;145(4):e20193260 [abstract].
27. Vemgal P, Ohlsson A. Interventions for non-oliguric hyperkalaemia in preterm neonates. Cochrane Database Syst Rev. 2012 May 16;2012(5):CD005257.

28. ESCMID Sore Throat Guideline Group; Pelucchi C, Grigoryan L, et al. Guideline for the management of acute sore throat. Clin Microbiol Infect. 2012 Apr;18 Suppl 1:1-28.
29. Allan GM, Arroll B. Prevention and treatment of the common cold: making sense of the evidence. CMAJ. 2014 Feb 18;186(3):190-9.
30. Product information for Abilify. Otsuka America Pharmaceutical. Rockville, MD 20850. November 2022.
31. Product information for Invega. Janssen Pharmaceuticals. Titusville, NJ 08560. March 2022.
32. Product information for Seroquel. AstraZeneca. Wilmington, DE 19850. January 2022.
33. Product information for Risperdal. Janssen Pharmaceuticals. Titusville, NJ 08560. March 2022.
34. Product monograph for Abilify. Otsuka Canada Pharmaceutical. Saint-Laurent, QC H4S 2C9. February 2021.
35. American Academy of Pediatrics. Point-of-Care Reference. Diaper rash. May 7, 2020. https://publications.aap.org/pediatriccare/article-abstract/doi/10.1542/aap.ppcqr.396155/1621/Diaper-Rash?redirectedFrom=fulltext. (Accessed July 27, 2023).
36. Isbister GK, Prior F, Kilham HA. Restricting cough and cold medicines in children. J Paediatr Child Health. 2012 Feb;48(2):91-8.
37. Product information for Karbinal ER. Aytu BioScience. Englewood, CO 80112. August 2018.
38. Health Canada. New safety measures for prescription codeine and hydrocodone to further restrict use in children and adolescents. July 28, 2016. https://recalls-rappels.canada.ca/en/alert-recall/new-safety-measures-prescription-codeine-and-hydrocodone-further-restrict-use-children##. (Accessed July 26, 2023).
39. US Preventive Services Task Force; Curry SJ, Krist AH, et al. Ocular Prophylaxis for Gonococcal Ophthalmia Neonatorum: US Preventive Services Task Force Reaffirmation Recommendation Statement. JAMA. 2019 Jan 29;321(4):394-398.
40. Stewart D, Benitz W; COMMITTEE ON FETUS AND NEWBORN. Umbilical Cord Care in the Newborn Infant. Pediatrics. 2016 Sep;138(3):e20162149.
41. Sathiyamurthy S, Banerjee J, Godambe SV. Antiseptic use in the neonatal intensive care unit - a dilemma in clinical practice: An evidence based review. World J Clin Pediatr. 2016 May 8;5(2):159-71.
42. American Academy of Pediatrics. AAP News, Kemp, C. Chlorhexidine may reduce infections in neonates. March 1, 2022. https://publications.aap.org/aapnews/news/19573/Chlorhexidine-may-reduce-infections-in-neonates. (Accessed July 27, 2023).
43. Shane AL, Mody RK, Crump JA, et al. 2017 Infectious Diseases Society of America Clinical Practice Guidelines for the Diagnosis and Management of Infectious Diarrhea. Clin Infect Dis. 2017 Nov 29;65(12):1963-1973.
44. Reynolds PR, Banerjee S, Meek JH. Alcohol burns in extremely low birthweight infants: still occurring. Arch Dis Child Fetal Neonatal Ed. 2005 Jan;90(1):F10.
45. Kriegel C, Festag M, Kishore RSK, et al. Pediatric Safety of Polysorbates in Drug Formulations. Children (Basel). 2019 Dec 20;7(1):1.
46. Walter HJ, Bukstein OG, Abright AR, et al. Clinical Practice Guideline for the Assessment and Treatment of Children and Adolescents With Anxiety Disorders. J Am Acad Child Adolesc Psychiatry. 2020 Oct;59(10):1107-1124.
47. Moritz ML. Syndrome of inappropriate antidiuresis. Pediatr Clin North Am. 2019 Feb;66(1):209-26.
48. Product information for Prozac. Lilly USA. Indianapolis, IN 46285. December 2021.
49. CDC. Parasites-scabies. Mediations. Page last reviewed October 2, 2019. https://www.cdc.gov/parasites/scabies/health_professionals/meds.html. (Accessed July 25, 2023).
50. Banerji A; Canadian Paediatric Society, First Nations, Inuit and Métis Health Committee. Scabies. Paediatr Child Health. 2015 Oct;20(7):395-402.
51. Product information for Seroquel XR. AstraZeneca. Wilmington, DE 19850. January 2022.
52. Product information for Saphris. Allergan USA. Madison, NJ 07940. October 2021.
53. Flynn JT, Kaelber DC, Baker-Smith CM, et al. Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents. Pediatrics. 2017 Sep;140(3):e20171904. Erratum in: Pediatrics. 2017 Nov 30. Erratum in: Pediatrics. 2018 Sep;142(3).
54. Rabi DM, McBrien KA, Sapir-Pichhadze R, et al. Hypertension Canada's 2020 Comprehensive Guidelines for the Prevention, Diagnosis, Risk Assessment, and Treatment of Hypertension in Adults and Children. Can J Cardiol. 2020 May;36(5):596-624.
55. Chidambaran V, Costandi A, D'Mello A. Propofol: a review of its role in pediatric anesthesia and sedation. CNS Drugs. 2015 Jul;29(7):543-63. Erratum in: CNS Drugs. 2018 Sep;32(9):873.
56. Halmo LS, Wang GS, Reynolds KM, et al. Pediatric Fatalities Associated With Over-the-Counter Cough and Cold Medications. Pediatrics. 2021 Nov;148(5):e2020049536.

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