



# For Kids, *an* Alternative Solution

Compounded dosages can help ensure medication compliance in children

By Andrea Branvold, MS, RPh



*What options do parents have when their child won't or can't take a prescribed medication? The medication administration problems that parents often face can lead to frustration, stress, and non-compliance. Parents may not be able to follow the exact dosing instructions the pharmacist provided during a consultation at the pharmacy; a child may take a dose of medication and then throw it up after 10 minutes, or an infant may spit out the medication because they are startled by the taste, leaving the parent wondering how much of the medication the child actually received. ▼*

If the cycle continues, there is a significant possibility of treatment failure with the particular drug. It may not be available in a dosage form the child can use at that time, or the child may have special medication needs that are not met by the commercially available form of the drug. In situations such as these, many parents may not know what to do. They may call the doctor to find alternatives, or they might give up trying to administer the drug. Compounding pharmacists can help by suggesting unique dosage forms, alternative routes of administration, and creative solutions to overcome such obstacles.

### Overcoming Reflux Reactions

Many infants suffer from reflux, which causes them to spit up frequently. A commercially available ranitidine syrup often is prescribed to treat the condition, but many babies cannot tolerate its strong, minty flavor. They may spit the medication back up, defeating the purpose entirely. With the prescribing doctor's consent, a compounding pharmacist may try to conceal the mint flavor by adding various sweetening agents and flavor combinations to the commercially available syrup. Still, it is difficult to compensate for both the mint and the bitterness of the ranitidine. However, a compounding pharmacist may make a non-mint flavored ranitidine suspension. As ranitidine is a bitter drug, special sweetening and flavoring considerations must be taken into account. Compounding pharmacists have received outstanding taste results using a combination of grape and cotton candy flavors in a ranitidine suspension, and many infants are finally able to take this medication without gagging.

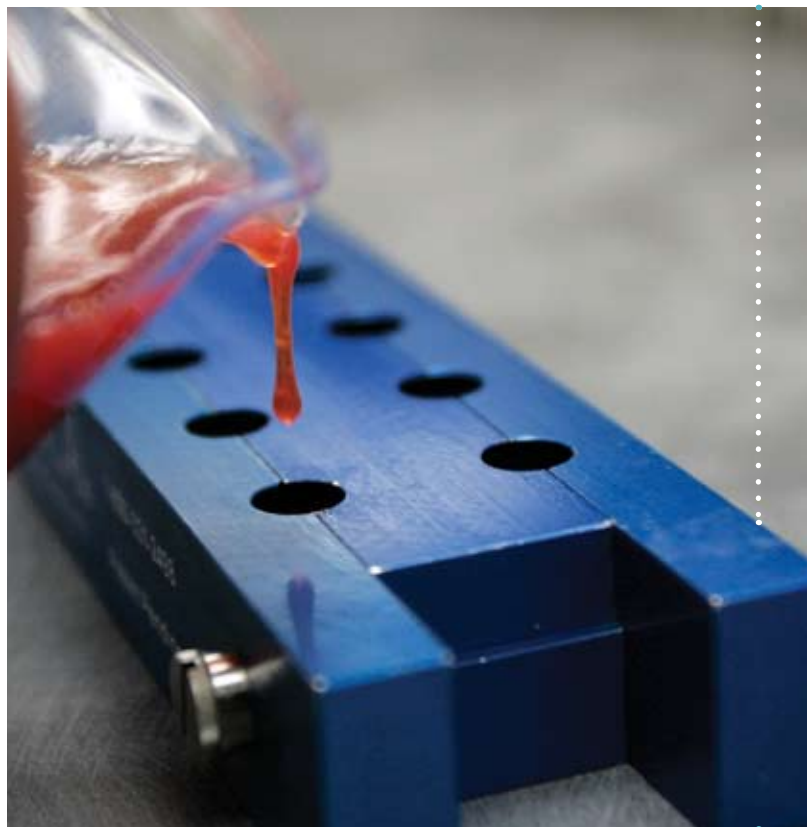
Another problem experienced with young children is that they sometimes refuse medication because of its texture or color, or simply because they know it is medicine. Testy toddlers can be encouraged or persuaded by incorporating medication into colorful, "fun," pleasantly flavored dosage forms such as popsicles, lollipops, or gummy treats. It is important to note that special care should be taken to dispense such dosage forms in childproof packaging so the child (or any other children in the house) does not accidentally overdose on the medication while trying to get an extra "treat."

### Alternative Dosages

If a commercially available drug does not come as a liq-

uid and a child is unable to swallow a capsule or tablet, alternative dosage forms are needed. Strattera® (atomoxetine) is a drug in which this problem commonly occurs. Pharmacists can use crushed tablets to prepare an atomoxetine suspension, yet must consider the preparation's stability and taste. Atomoxetine is not overly stable in an aqueous base, so an oil base is often recommended. The drug does not have a pleasant taste, so pharmacists have created special flavoring and sweetening techniques to mask the drug's bitterness. Mixtures of acesulfame potassium, stevioside, Magnasweet, and saccharin have been helpful in covering the bitterness.

Pharmacists also have utilized flavor combinations that work well in oil, such as powdered chocolate mix with peanut butter flavor. Adding salt can also help reduce bitterness. Atomoxetine has been prescribed in a suppository form as well as in an anhydrous transdermal base to use on children who can't take the medication orally. Studies are not available involving atomoxetine in the various dosage forms or vehicles; however, positive clinical results have been reported by compounding pharmacists at Professional Compounding Centers of America (PCCA) International Seminars.





When children have high temperatures or nausea, they may refuse to take oral medications, regardless of the taste, or may not be able to keep the medication down long enough for the drug to be absorbed without vomiting. In cases such as these, a compounding pharmacist may obtain the physician's permission to provide the drug in suppository form. If the parents of a sick child are unable to insert an anti-nausea suppository, doctors have the option to prescribe transdermal anti-nausea drugs to help solve these problems. Parents and physicians both have reported success with these dosage forms.

### Traveling Medication

Other medication problems arise when parents travel with their children. For example, anti-malarial drugs are often prescribed for children traveling overseas. The dose needed by a child who can swallow tablets often is not available commercially in the exact milligram strength needed, and may not be available in a liquid form for those who cannot swallow tablets. It is often prescribed in a compounded liquid form, yet it is quite likely not

stable for the length of time that the family will be gone.

The parents often cannot crush the tablets and measure out an exact dose themselves, but a compounding pharmacist can make up capsules or powder packets in the required strength. The contents of the capsule or packet can be opened and mixed with a flavorful suspension prepared by a pharmacist or other suitable vehicle at the time of administration. The dose is therefore customized to what the child needs, there are options for vehicles in which to take the drug, and long-term stability in liquid is no longer an issue.

### Special Needs Options

Children with special needs, especially those with autism, may experience many medication challenges. They often require drugs to be incorporated into suspensions because many cannot swallow capsules or tablets. Autistic children also take a multitude of vitamin supplements. They may need those to be incorporated into a suppository, popsicle or other dosage form if the taste or volume makes it difficult for the parents to administer. Another unique dosage form used for administering such medications is an effervescent powder that can be used to make a fizzy drink. The flavor-masking potential of effervescence is powerful.

Physicians sometimes prescribe transdermal chelating agents for children with autism if other dosage forms and routes have posed problems. Special anhydrous penetrating bases are often required to help the drugs maintain stability along with appropriate penetration into the systemic circulation. The smell of some of the drugs can make applying them topically a challenge, yet a pharmacist can add appropriate fragrances or suggest alternate application sites to help with this problem.

Special factors must be taken into account when making compounds for autistic children: are all the ingredients (including flavors) gluten-free, casein-free, soy-free, and dye-free? Pharmacists can familiarize themselves with ingredients that are typically safe for autistic children and become a helpful resource for parents.

### Pain Relief

Pain relief is another area in which compounding can be helpful. Parents often ask pharmacists what their child can use to avoid pain from routine immunizations

## Compounded Comfort

Ryan Dyer, RPh, owns Bayview Pharmacy, a compounding pharmacy in Saunderstown, RI. The pharmacy includes a special nautical-themed area designed to appeal to children. One pediatric patient for whom he recently prepared customized medications is a four-year-old girl who had a tonsillectomy.

After the surgery, she refused to take anything orally (including medicine) due to the severe pain. She therefore became dehydrated, and she and her parents spent the night in the emergency room. Upon discharging the girl the next morning, the doctor wanted to provide her with some pain medication that she would not refuse. He prescribed a topical preparation containing prednisolone to alleviate the swelling, and another transdermal containing acetaminophen and codeine for her parents to apply as needed for the pain.

These medications allowed her to eat and drink, thereby advancing her recovery and preventing another visit to the ER.

— Andrea Branvold

or other shots. Receiving shots can be a very traumatic event for some children. The pain can easily be prevented, yet many offices do not provide local anesthetics for various reasons.

However, judging by frequent conversations with pharmacists who call PCCA to request topical anesthetic formulations for children, it seems that many pediatric offices do believe that preventing pain from immunizations is important. They often need options because a popular commercially available anesthetic can take at least 60 minutes to work once applied, and there usually is not ample time for the anesthetic to be given and take effect before the procedure without being an inconvenience.

In this scenario, the pediatrician usually requests a topical anesthetic or a combination of anesthetics that have a quick onset and short duration of action. With compounded topical anesthetics, the doctors have the ability to select an appropriate percentage strength

and anesthetic combination for the age and weight of the child.

Throat pain from mononucleosis, strep throat, or a tonsillectomy may seem unbearable to a child of any age. The child usually is prescribed oral liquid pain medications, but may not be able to swallow anything due to severe throat pain. Narcotics, if prescribed, may lead to nausea and vomiting. Vomiting while already experiencing throat swelling and pain would be a dreadful experience for anyone. Some doctors have prescribed anesthetic lollipops to help with throat pain, and to potentially minimize narcotic use and potential nausea. The medicated lollipops can be made with extra-long sticks that can easily reach the back of the throat. The child's parents should be warned to not allow the child to eat the entire lollipop at once and to not allow them to eat food immediately after administration as it may numb the gag reflex.

Parents of children with chronic illnesses often handle medication difficulties on a daily basis, but nearly all parents face such a challenge at some point. These parents need help, and compounding pharmacists have many solutions at their disposal with which to respond to various pediatric medication problems. Compounded medications in various dosage forms, strengths, and flavors can help solve medication problems that may otherwise lead to non-compliance and perhaps treatment failures, and can help parents feel confident that the needs of their children are being met in the best possible way. **ap**

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