

## **DIARRHEA AND DEHYDRATATION IN CHILDREN**

**Alan F. Meyers, MD**

Associate Professor of Pediatrics  
Boston University School of Medicine  
Pediatric Primary Care Department  
Boston Medical Center

Almost every infant and toddler gets diarrhea at some time, often accompanied by vomiting. What should you do when it happens to your child? This is an important question, because the infections that cause vomiting and diarrhea can make a small child very sick, and rarely can even be fatal.

Many different kinds of problems could make a small child vomit, including other kinds of infections, but most of the time vomiting and diarrhea are caused by an infection of the stomach and intestines. Many different germs can cause this, including viruses, bacteria, and parasites, but viruses are by far the most common. When a virus is the culprit, the illness often begins with vomiting and moves rapidly to watery diarrhea. Most of the time, the illness will run its course (usually less than a week) and go away, leaving the child unharmed. But unpredictably, some children may get very sick because all the diarrhea will cause them to lose more water from their bodies than they take in by mouth, leading to *dehydration*, meaning not enough water in the body. This is more likely to happen in younger children and infants. When a child has lost water equal to between 3% and 5% of their body weight, they will show signs of dehydration: they become cranky and irritable, their lips and mouth appear dry, they make less tears when they cry, and they make less urine. As they become more dehydrated, they look sicker: they become lethargic (sleepy and out-of-it), their lips and mouth get very dry, their eyes appear dry and sunken. This is a dangerous situation, and any child showing these signs should be brought to medical attention at once.

The good news is that dehydration can usually be prevented. As the child's body loses water from diarrhea and vomiting, the water must be replaced by drinking. Here are some key points:

- if the child is vomiting, give only clear fluids, and no solid food, until the vomiting stops
- if the child vomits the fluid, wait 10 minutes or so and then give just a teaspoon of fluid, as if it were medicine. Even if the child wants more, only give a teaspoon every two minutes. After perhaps a half hour of this treatment, if she has stopped vomiting, give larger amounts, such as a tablespoon. If she still does not vomit after another half hour or so, go up to an ounce (two tablespoons). Only after a couple of hours of this treatment with no vomiting, allow her to drink as much as she wants. If she vomits anytime during the course of this treatment, go back to single teaspoons.
- if she is not vomiting, offer her as much liquid as she wants, and offer it frequently

What kind of liquid should you give? The best is an “oral rehydration solution”, a mixture of water, sugar, salt, and some other minerals. One brand is Pedialyte, but all brands (including generic and store brands) are equally good. You can find them in drugstores and some grocery stores, and if you have a written prescription for it, MassHealth will pay for it. If you can't get any right away, then give plain water. If the child is not vomiting and is old enough to eat solids, then water and a salty cracker is a very good option. You can use juice but only if it is watered down half-and-half with water. Do not use full-strength juice, soda, or other sugar-sweetened drink, since they contain too much sugar and can make diarrhea worse.

If your child is not vomiting and drinking well, it is fine to offer her some food as well, if she is old enough and eats solids. Starchy foods like rice, crackers, cereal, and beans are good choices, but any food she likes is OK so long as it is not too sweet. Children with diarrhea actually get better faster if they eat while they are sick. But don't try to force her to eat; drinking is the most important.



You can expect the diarrhea to last a while. The most common forms of infectious diarrhea last about five days, or sometimes as long as two weeks. If the diarrhea lasts longer than two weeks, you should seek medical advice. If the child can't drink, or won't drink, or if she is showing some of the signs of dehydration mentioned above, or if she just looks too sick to you, you should call your child's doctor, nurse, or nurse practitioner for advice. You can always call the place where your child gets shots, since every place that provides medical care must be available by telephone for sick patients 24 hours a day, every day. If you see blood or mucus in the child's stool, that is also a good reason to call for medical advice, since this could be a type of infection caused by a bacteria, which might need different treatment than that caused by a virus, but the principles of hydration outlined above are the same.

More good news: the most common infection causing diarrhea in small children, rotavirus, can now be prevented with a vaccine given by mouth. This vaccine is given in three doses, and the first dose must be given before the baby is 12 weeks old, or it cannot be used. It is provided free to families by the state of Massachusetts, so if you have a new baby be sure to ask for it.