Acute gastroenteritis
About dehydration, rehydration and nutrition

Dehydration

- The easiest and most effective way of identifying dehydration in a baby or a child is by looking at their mouth.
- When the body needs more water than it receives, because of increased losses, the brain sends signals that decrease the production of fluids that are not essential to maintain life on a short term. Among those fluids are sweat, saliva and tears. Also, the urine production decreases and babies can have less wet diapers than usually. Sweat is difficult to see. Urine is also complicated to distinguish sometimes from a diaper full of diarrhea. You won't make your child cry just to see if tears come out, but if he/she is crying, try to notice it.
- By far, the easiest way to tell if your child is dehydrated is by checking out the state of the mouth. If the mouth is full of saliva, if the tongue is wet, shiny and pink, you can be assured that your child is not dehydrated. At the early stages of the dehydration the tongue will appear "sticky", covered in scarce whitish secretions, not very shiny, and the lips may appear cracked. Severe dehydration means frank dry lips, a dry tongue, with patchy aspect, in a child that is very sick-appearing.

Rehydration tips

- In breast-fed babies, breast feeding should be continued for the whole duration of the symptoms, unless specifically recommended otherwise by the pediatrician, as it is the best tolerated food in such conditions. It prevents dehydration and also provides, apart from nutrients and energy, substances that help fight the actual infection.
- Always use homologated and approved oral rehydration solutions, like Babylite or Pedialyte, specifically designed for the purpose of restoring losses through the digestive tract. They are a mix of water, sugar and minerals and salts (like sodium, potassium, chloride) at a concentration called “physiologic”, which means “just right” for our body, are the best in situations when there is an important loss of water and salts through vomiting or diarrhea, to restore those losses in a concentration that will not harm our body.
- For children who are not dehydrated these solutions are not strictly required. They can drink water, clear soup, herbal teas, milk/formula, unless advised otherwise by the pediatrician. Avoid juices with pulp, as well as those that are high in sugar, as the commercially produced ones. Prefer home made clear juices.
- Do not use sports drinks, like Isostar or Gatorade, as their minerals and nutrients content is inadequate to restore gastrointestinal losses. Also, they are rich in sugar and can produce a secondary “osmotic” diarrhea.
- Drinking the fluids cold, straight from the fridge or with ice, in small sips, will help to tolerate them better and it will decrease the chance of vomiting.
Parents’ corner

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If there's no vomiting:

• Then it's easier, since they can tolerate well orally
• Offer fluids frequently but without forcing
• Not drinking a lot at a time is helpful and easier to tolerate.

In vomiting babies / children:

• Always wait for 20-30 minutes for the stomach to settle and the child to calm down. Attempting the rehydration earlier makes it easy to vomit again.
• After that period, start by giving fluids (for example, the oral rehydration solution) in very small quantities, equal to how much your child can swallow at once or even less, taking a pause of 2-5 minutes approximately between each sip.
• Approximate quantities of oral rehydration solution to give depending on age:

<table>
<thead>
<tr>
<th>Age</th>
<th>Quantities</th>
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<tbody>
<tr>
<td>&lt; 1 year</td>
<td>1-2 ml every 2-5 min If breast-fed, then breast-feeding on demand</td>
</tr>
<tr>
<td>2-3 years</td>
<td>3-4 ml every 2-5 min</td>
</tr>
<tr>
<td>4-7 years</td>
<td>5 ml every 2-5 min</td>
</tr>
<tr>
<td>8-15 years</td>
<td>10 ml every 2-5 min</td>
</tr>
<tr>
<td>&gt; 15 years</td>
<td>10 ml every 1-3 min</td>
</tr>
</tbody>
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• If there is good tolerance, try to increase very progressively the quantity, always without forcing, for the next 2-4 hours. You can change at this point from water / rehydration solution to formula, soup, or other liquids.
• The more they drink, the better, but make sure they drink at least 10 ml for every kg of body weight for every abundant diarrheic stool and 5 ml for every vomit. For example, if your child weighs 9 kg, you should give 10 x 9 = 90 ml per abundant stool and 5 x 9 = 45 ml per vomit.
• For mildly dehydrated children, they should drink approximately 50 ml for every kg of body weight in about 4 hours.
• If in 2-4 hours there's no vomiting and your child is active and hungry, you can start offering solids, but, as before, do it progressively. Start with some rice, a cracker, some potatoes or carrots, or peeled apples or bananas, but in small quantities and taking breaks. It's not good to eat large quantities, even if they are hungry, to reduce the risk of vomiting again. Never force-feed your child.
• If at some point your child vomits again, start over: make a pause of 20-30 minutes, then liquids, then solids, progressively. Repeated vomiting is frequent, so at the beginning, children with gastroenteritis may have a mostly liquid based diet.

Diet while having a gastroenteritis

• There are many myths and urban legends about what is or isn't OK to eat during a gastroenteritis. Here are some facts which have been proven scientifically to be true.
• For infants and young toddlers who are not dehydrated, there's no need to restrict any aliments, since their diet is already healthy and mild. All foods that are recommended for children less than 3-4 years are healthy and safe to eat while having a mild gastroenteritis.
• For older children, avoid fatty foods, or those that are fried or too spicy. Avoid of course unhealthy foods like fast-food, carbonated drinks etc (these should be avoided always, but it is even more important in the context of a gastroenteritis. Offer simple foods, that are fresh, boiled or baked. Bread, rice, wheat, potatoes, lean meats, yogurt, fruits and vegetables are among the best tolerated and most nutritious. Diets that are too restrictive may not be nutritious enough or may even worsen the diarrhea (something called “starvation stools” or “starvation diarrhea”)
Parents' corner  

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- Dehydrated children need to be rehydrated first and oral rehydration is ideal, if possible. After resolving the dehydration, they may resume their regular diet.
- Lactose restriction is not required to start with. In diarrhea that persists for more than 2 weeks, or in children with chronic intestinal diseases, it may be indicated right at the beginning by the pediatrician. This may also happen in children with a mild lactose intolerance, that doesn't require full restriction when they are healthy, but worsens if the intestines are not healthy. Observe your child. If he/she has explosive diarrhea, more gas or abdominal pain after taking dairy products, consider restricting the lactose. Simple dairy products like the yoghurt, laban or fresh cottage cheese are the best tolerated. In children with cow's milk allergy dairy products should be avoided as usually.
- There is no scientific evidence that diluting milk or formula is better tolerated or safer.

References

2. Center for disease control and prevention. Available online at http://www.cdc.gov