

Definition

Dehydration means your body does not have as much water and fluids as it should. Dehydration can be caused by losing too much fluid, not drinking enough water or fluids, or both. Vomiting and diarrhea are common causes.

Infants and children are more susceptible to dehydration than adults because of their smaller body weights and higher turnover of water and electrolytes. The elderly and those with illnesses are also at higher risk.

Dehydration is classified as mild, moderate, or severe based on how much of the body's fluid is lost or not replenished. When severe, dehydration is a life-threatening emergency.

Causes, incidence, and risk factors

Your body may lose too much fluids from: Vomiting or diarrhea, Excessive urine output, such as with uncontrolled diabetes or diuretic use, Excessive sweating (for example, from exercise), Fever

You might not drink enough fluids because of: Nausea, Loss of appetite due to illness, Sore throat or mouth sores

Dehydration in sick children is often a combination of both -- refusing to eat or drink anything while also losing fluid from vomiting, diarrhea, or fever.

Symptoms

Dry or sticky mouth, Low or no urine output; concentrated urine appears dark yellow, Not producing tears, Sunken eyes, Markedly sunken fontanelles (the soft spot on the top of the head) in an infant, Lethargic or comatose (with severe dehydration)

In addition to the symptoms of actual dehydration, you may also have vomiting, diarrhea, or the feeling that you "can't keep anything down," all of which could be causing the dehydration.

Signs and tests: A physical examination may also show signs of: Low blood pressure, Blood pressure that drops when you go from lying down to standing, Rapid heart rate, Poor skin turgor -- the skin may lack its normal elasticity and sag back into position slowly when pinched up into a fold by the doctor; normally, skin springs right back into position, Delayed capillary refill, Shock

Tests include: Blood chemistries (to check electrolytes, especially sodium, potassium, and bicarbonate levels), Urine specific gravity (a high specific gravity indicates significant dehydration), BUN (blood urea nitrogen -- may be elevated with dehydration), Creatinine (may be elevated with dehydration), Complete blood count (CBC) to look for signs of concentrated blood

Other tests may be done to determine the specific cause of the dehydration (for example, a blood sugar to check for diabetes).

Treatment

- Drinking fluids is usually sufficient for mild dehydration. It is better to have frequent, small amounts of fluid (using a teaspoon or syringe for an infant or child) rather than trying to force large amounts of fluid at one time. Drinking too much fluid at once can bring on more vomiting.

- Electrolyte solutions or freezer pops are especially effective. These are available at pharmacies. Sport drinks contain a lot of sugar and can cause or worsen diarrhea. In infants and children, avoid using water as the primary replacement fluid.
- Intravenous fluids and hospitalization may be necessary for moderate to severe dehydration. The doctor will try to identify and then treat the cause of the dehydration.

Most cases of stomach viruses (also called viral gastroenteritis) tend to resolve on their own after a few days. See also: diarrhea

Expectations (prognosis)

When dehydration is recognized and treated promptly, the outcome is generally good.

Complications

Untreated severe dehydration may result in seizures, permanent brain damage, or death.

Calling your health care provider

Call 911 if you or your child have the following symptoms: Dizziness, Lightheadedness, Lethargy, Confusion, Call your doctor right away if you or your child has any of the following symptoms: Not producing tears, Sunken eyes, Little or no urine output for 8 hours, Dry skin that sags back into position slowly when pinched up into a fold, Dry mouth or dry eyes, Sunken soft-spot on the top of your infant's head, Fast-beating heart, Blood in the stool or vomit, Diarrhea or vomiting (in infants less than 2 months old), Listlessness and inactiveness, Also call your doctor if you are not sure whether your attempts to give your child proper fluids are working.

Also call your doctor if: An illness is combined with the inability to keep down any fluids, Vomiting has been going on for longer than 24 hours in an adult or longer than 12 hours in a child, Diarrhea has lasted longer than 5 days in an adult or child, Your infant or child is much less active than usual or is irritable, You or your child have excessive urination, especially if there is a family history of diabetes or you are taking diuretics

Prevention

- **Even when healthy, drink plenty of fluid every day. Drink more when the weather is hot or you are exercising.**
- **Carefully monitor someone who is ill, especially an infant, child, or older adult. If you believe that dehydration is developing, consult a doctor before the person becomes moderately or severely dehydrated. Begin fluid replacement as soon as vomiting and diarrhea start -- DO NOT wait for signs of dehydration.**
- **Always encourage the person to drink during an illness, and remember that a person's fluid needs are greater when that person has fever, vomiting, or diarrhea. The easiest signs to monitor are urine output (there should be frequent wet diapers or trips to the bathroom), saliva in the mouth, and tears when crying.**

References: Barkin RM, Ward DG. Infectious diarrheal diseases and dehydration. In: Marx J, ed. Rosen's Emergency Medicine: Concepts and Clinical Practice. 6th ed. St Philadelphia, Pa: Mosby Elsevier; 2006:chap 171.

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