



Maintaining the fluid balance

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Introduction

When the body loses more fluid than it has taken in, it can lead to dehydration. Without enough fluid, the body is unable to carry out the normal processes needed for it to function.

Dehydration can be classified as mild, moderate or severe. Mild dehydration may be reversed if treated promptly. However, if left untreated, it can quickly progress to severe dehydration, which is a life-threatening medical emergency.

Causes of dehydration

While anyone may be susceptible to dehydration, young children and older adults are more at risk for severe dehydration.

- In young children, the most common cause of dehydration is gastroenteritis (diarrhoea and/or vomiting).
- Older adults are at risk of dehydration, even from minor illnesses, as they normally have a lower body water content and may be taking medications, such as diuretics, which also lower the body water content.

Other causes of dehydration, which can affect any age group without adequate hydration, include, amongst others:

- fever (due to illness), and
- sweating (for example, due to vigorous exercise or working outdoors, especially in hot weather).

People with certain disorders, such as diabetes mellitus, diabetes insipidus, and Addison disease have an increased urine output, which may also lead to dehydration.

Signs and symptoms of dehydration

The first sign of dehydration may be an increase in thirst, which is due to a stimulation of the thirst centre of the brain. It is important

to note that the thirst centre in the elderly does not always function very well, and they may not realise that they are becoming dehydrated.

In general, signs and symptoms of dehydration include:

- Increased thirst
- Dry mouth
- Decreased urine production
- Decreased skin elasticity
- Decreased sweating

Infants and young children may also show:

- Listlessness and irritability
- Sunken fontanelle (infants)
- Sunken eyes
- Lack of tears when crying
- No wet nappy for three hours or more

Infants and young children are unable to tell adults that they are thirsty and depend on adults to give them liquids.

Dark yellow or brown urine, fatigue, dizziness, and confusion may also be symptoms of dehydration in adults.

Preventing dehydration

Understanding some of what causes a person to dehydrate can help prevent dehydration. Ideally, one should drink enough water every day to keep hydrated. It is recommended that, for adults, at least 6 glasses of fluids should be consumed daily. It is important to remember that, as well as being present in most beverages, water is also present in foods, such as fruits and vegetables.

Oral rehydration solutions (ORS) should be given to babies or young children as soon as they start vomiting or have diarrhoea.

People should be encouraged to increase their fluid intake:

- In hot weather
- During or after exercise, especially if exercise is strenuous and/or in hot weather

- During illness, especially vomiting or diarrhoea
- If body temperature increases, such as in the case of fever

Water should be consumed before, during and after exercise. Sports drinks are formulated to replace fluids and electrolytes but should only be consumed during and after strenuous exercise that lasts for at least one hour. Energy drinks are not a substitute for sports drinks.

Treating dehydration

Mild dehydration may be reversed by replacing lost water. However, in the case of moderate to severe dehydration, electrolytes (such as sodium and potassium) may also need to be replaced.

This may be done mostly through drinking ORS, but in some cases, such as severe dehydration, intravenous replacement of fluids may be necessary.

- Commercially available ORS contain the correct balance of electrolytes when reconstituted with the appropriate volume of water.

- Sports drinks should not be recommended for the treatment of dehydration, as they often do not contain the correct balance of electrolytes needed for replacement therapy. Also, many may contain large quantities of sugar.

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