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BLOOD SODIUM DEPLETION DISEASE

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Annotation:
Hyponatremia occurs when the concentration of sodium in your blood is abnormally low. Sodium is an electrolyte, and it helps regulate the amount of water that's in and around your cells.

Keywords: water, hyponatremia, sodium, coma.

In hyponatremia, one or more factors — ranging from an underlying medical condition to drinking too much water — cause the sodium in your body to become diluted. When this happens, your body's water levels rise, and your cells begin to swell. This swelling can cause many health problems, from mild to life-threatening.

Hyponatremia treatment is aimed at resolving the underlying condition. Depending on the cause of hyponatremia, you may simply need to cut back on how much you drink. In other cases of hyponatremia, you may need intravenous electrolyte solutions and medications.

Hyponatremia signs and symptoms may include:

- Nausea and vomiting
- Headache
- Confusion
- Loss of energy, drowsiness and fatigue
- Restlessness and irritability
- Muscle weakness, spasms or cramps
- Seizures
- Coma

Seek emergency care for anyone who develops severe signs and symptoms of hyponatremia, such as nausea and vomiting, confusion, seizures, or lost consciousness.

Call your doctor if you know you are at risk of hyponatremia and are experiencing nausea, headaches, cramping or weakness. Depending on the extent and duration of these signs and symptoms, your doctor may recommend seeking immediate medical care.

Sodium plays a key role in your body. It helps maintain normal blood pressure, supports the work of your nerves and muscles, and regulates your body's fluid balance.

A normal blood sodium level is between 135 and 145 milliequivalents per liter (mEq/L). Hyponatremia occurs when the sodium in your blood falls below 135 mEq/L.

Many possible conditions and lifestyle factors can lead to hyponatremia, including:

Certain medications. Some medications, such as some water pills (diuretics), antidepressants and pain medications, can interfere with the normal hormonal and kidney processes that keep sodium concentrations within the healthy normal range.

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Heart, kidney and liver problems. Congestive heart failure and certain diseases affecting the kidneys or liver can cause fluids to accumulate in your body, which dilutes the sodium in your body, lowering the overall level.

Syndrome of inappropriate anti-diuretic hormone (SIADH). In this condition, high levels of the anti-diuretic hormone (ADH) are produced, causing your body to retain water instead of excreting it normally in your urine.

Chronic, severe vomiting or diarrhea and other causes of dehydration. This causes your body to lose electrolytes, such as sodium, and also increases ADH levels.

Drinking too much water. Drinking excessive amounts of water can cause low sodium by overwhelming the kidneys' ability to excrete water. Because you lose sodium through sweat, drinking too much water during endurance activities, such as marathons and triathlons, can also dilute the sodium content of your blood.

Hormonal changes. Adrenal gland insufficiency (Addison's disease) affects your adrenal glands' ability to produce hormones that help maintain your body's balance of sodium, potassium and water. Low levels of thyroid hormone also can cause a low blood-sodium level.

The recreational drug Ecstasy. This amphetamine increases the risk of severe and even fatal cases of hyponatremia.

The following factors may increase your risk of hyponatremia:

Age. Older adults may have more contributing factors for hyponatremia, including age-related changes, taking certain medications and a greater likelihood of developing a chronic disease that alters the body's sodium balance.

Certain drugs. Medications that increase your risk of hyponatremia include thiazide diuretics as well as some antidepressants and pain medications. In addition, the recreational drug Ecstasy has been linked to fatal cases of hyponatremia.

Conditions that decrease your body's water excretion. Medical conditions that may increase your risk of hyponatremia include kidney disease, syndrome of inappropriate anti-diuretic hormone (SIADH) and heart failure, among others.

Intensive physical activities. People who drink too much water while taking part in marathons, ultramarathons, triathlons and other long-distance, high-intensity activities are at an increased risk of hyponatremia.

Complications

In chronic hyponatremia, sodium levels drop gradually over 48 hours or longer — and symptoms and complications are typically more moderate.

In acute hyponatremia, sodium levels drop rapidly — resulting in potentially dangerous effects, such as rapid brain swelling, which can result in a coma and death.

Premenopausal women appear to be at the greatest risk of hyponatremia-related brain damage. This may be related to the effect of women's sex hormones on the body's ability to balance sodium levels.

The following measures may help you prevent hyponatremia:

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Treat associated conditions. Getting treatment for conditions that contribute to hyponatremia, such as adrenal gland insufficiency, can help prevent low blood sodium.

Educate yourself. If you have a medical condition that increases your risk of hyponatremia or you take diuretic medications, be aware of the signs and symptoms of low blood sodium. Always talk with your doctor about the risks of a new medication.

Take precautions during high-intensity activities. Athletes should drink only as much fluid as they lose due to sweating during a race. Thirst is generally a good guide to how much water or other fluids you need.

Consider drinking sports beverages during demanding activities. Ask your doctor about replacing water with sports beverages that contain electrolytes when participating in endurance events such as marathons, triathlons and other demanding activities.

Drink water in moderation. Drinking water is vital for your health, so make sure you drink enough fluids. But don't overdo it. Thirst and the color of your urine are usually the best indications of how much water you need. If you're not thirsty and your urine is pale yellow, you are likely getting enough water.

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