

## Heat stress and heat-related illness

Heat stress occurs when our body is unable to cool itself enough to maintain a healthy temperature. Normally, the body cools itself by sweating, but sometimes sweating isn't enough and the body temperature keeps rising.

Heat-related illness can range from mild conditions such as a rash or cramps to very serious conditions such as heat stroke, which can kill.

Overexertion in hot weather, sun or bushfire exposure, and exercising or working in hot, poorly ventilated or confined areas can increase your risk of heat stress. Heat can also make an existing medical condition worse, for example heart disease.

### People most at risk of heat-related illness

Anyone can suffer from heat-related illness, but those most at risk are:

- People over 65 years, particularly those living alone or without air conditioning
- Babies and young children
- Pregnant and nursing mothers
- People who are physically unwell, especially with heart disease, high blood pressure or lung disease
- People on medications for mental illness.

Elderly people are more prone to heat stress than younger people because their body may not adjust well to sudden or prolonged temperature change. They are also more likely to have a chronic medical condition and be taking medication that may interfere with the body's ability to regulate temperature.

### Causes

There are many factors which can cause heat stress and heat-related illness, including:

- **Dehydration** – to keep healthy, our body temperature needs to stay around 37°C. The body cools itself by sweating, which normally accounts for 70 to 80 per cent of the body's heat loss. If a person becomes dehydrated, they don't sweat as much and their body temperature keeps rising.
- **Lack of airflow** – working in hot, poorly ventilated or confined areas.
- **Sun exposure** – especially on hot days, between 11am and 3pm.
- **Hot and crowded conditions** – people attending large events (concerts, dance parties or sporting events) in hot or crowded conditions may also experience heat stress that can result in illness.
- **Bushfires** – exposure to radiant heat from bushfires can cause rapid dehydration and heat-related illness. Bushfires usually occur when the temperature is high, which adds to the risk.

### Symptoms

It is important to know the signs and symptoms of heat exposure and how you should respond. Symptoms vary according to the type of heat-related illness. Babies and young children may show signs of restlessness or irritability and have fewer wet nappies. Older people may become lightheaded, confused, weak or faint.

Some heat-related illness and common symptoms include:

- **Deterioration in existing medical conditions** – this is the most common health problem of heat stress.
- **Heat rash** – sometimes called ‘prickly heat’, this is a skin irritation caused by excessive sweating. It can occur at any age, but is most common in young children. It looks like a red cluster of pimples or small blisters. It is most likely to occur on the neck and upper chest, in the groin, under the breasts and in the elbow creases.
- **Heat cramps** – these include muscle pains or spasms, usually in the abdomen, arms or legs. They may occur after strenuous activity in a hot environment, when the body gets depleted of salt and water. They may also be a symptom of heat exhaustion.
- **Dizziness and fainting** – heat-related dizziness and fainting results from reduced blood flow to the brain. Heat causes an increase in blood flow to the skin and pooling of blood in the legs, which can lead to a sudden drop in blood pressure. There can be a feeling of light-headedness before fainting occurs.
- **Heat exhaustion** – this is a serious condition that can develop into heat stroke. It occurs when excessive sweating in a hot environment reduces the blood volume. Warning signs may include paleness and sweating, rapid heart rate, muscle cramps (usually in the abdomen, arms or legs), headache, nausea and vomiting, dizziness or fainting.
- **Heat stroke – this is a medical emergency and requires urgent attention.** Heat stroke occurs when the core body temperature rises above 40.5C and the body’s internal systems start to shut down. Many organs in the body suffer damage and the body temperature must be reduced quickly. Most people will have profound central nervous system changes such as delirium, coma and seizures. The person may stagger, appear confused, have a fit or collapse and become unconscious. As well as effects on the nervous system, there can be liver, kidney, muscle and heart damage.

The symptoms of heat stroke may be the same as for heat exhaustion, but the skin may be dry with no sweating and the person’s mental condition worsens.

## Treatment

Treatment options vary according to the type of heat-related illness. Apply first aid and seek medical assistance immediately if you, or someone you are with, shows any sign of heat exhaustion or heat stroke.

### Heat rash – treatment

Treatment for heat rash includes:

- Move the person to a cooler, less humid environment.
- Keep the affected area dry.
- Try using unperfumed talcum powder to increase comfort.
- Avoid using ointments or creams, as they keep the skin warm and moist and may make the condition worse.

### Heat cramps – treatment

Treatment for heat cramps includes:

- Stop activity and sit quietly in a cool place.
- Increase fluid intake.
- Rest a few hours before returning to activity.
- Seek medical help if there is no improvement.

### Dizziness and fainting – treatment

Treatment for dizziness or fainting includes:

- Get the person to a cool area and lay them down.
- If fully conscious, increase fluid intake.

### Heat exhaustion – treatment

Treatment for heat exhaustion includes:

- Get the person to a cool area and lay them down.
- Remove outer clothing.

- Wet skin with cool water or wet cloths.
- Increase fluid intake if they are fully conscious.
- Seek medical advice.

### Heat stroke – treatment

Heat stroke is a medical emergency and requires urgent attention:

- Call triple zero (000) for an ambulance.
- Get the person to a cool, shady area and lay them down while you're waiting for emergency medical help.
- Remove clothing and wet their skin with water, fanning continuously.
- Do not give the person fluids to drink.
- Position an unconscious person on their side and clear their airway.
- If medical attention is delayed, seek further instructions from ambulance or hospital emergency staff.

## Prevention

Prevention is the best way to manage heat-related illness. Some tips to prevent heat stress include:

- **Keep up your fluids** – you need to drink more during hot weather, regardless of how active you are. Do not wait until you are thirsty to drink. Drink plenty of water or other cool, non-alcoholic fluids. (Check with your doctor if you are on limited fluids or fluid pills.) Avoid alcohol or drinks that contain lots of sugar. Don't have extremely cold liquids, as they may cause stomach cramps.
- **Avoid exposure to heat** – stay out of the sun as much as you can,
- **Protect yourself outside** – if you must be outdoors, remember to protect yourself from the sun – '**slip, slop, slap**' by covering exposed skin with lightweight clothes, using sunscreen and wearing a hat, '**seek**' shade and '**slide**' on sunglasses.
- **Limit physical activity** – too much physical activity on a hot day can lead to heat stress. If you can, restrict activity to cooler parts of the day.
- **Don't leave children or pets in cars** – even on cool days, cars can heat up to dangerous temperatures very quickly. Children or pets that are left unattended in parked cars for even a few minutes are at risk of serious heat-related illnesses and possibly death. Never leave children or pets in a parked car, even if the windows are left open a fraction.
- **Take it easy** – rest often and, whenever possible, stay indoors or in the shade.
- **Stay cool** – and keep air circulating around you. Use air conditioning if possible. (If you don't have air conditioning, consider visiting an air-conditioned shopping centre or public library.) Take a cool shower, bath or sponge bath.
- **Keep up your energy levels** – eat regular, light meals.
- **Watch out for others** – check on older, sick or frail people who may need help coping with the heat (at least twice a day).

## Where to get help

- In an emergency, call triple zero (000)
- Your doctor – if you, or someone you know, may be suffering from a heat-related illness
- Nurse on Call, Tel. 1300 60 60 24 – for expert health information and advice (24 hours, 7 days)
- Maternal and Child Health Line, Victoria Tel. 132 229 (24 hours)
- St John Ambulance Australia – for more information on first aid

## Things to remember

- Heat-related illness can be prevented.
- Keep cool, avoid vigorous physical activity in hot weather, and drink plenty of water and other non-alcoholic fluids.
- Never leave children or pets unattended in a parked car.
- Seek medical assistance if a person shows any signs of heat exhaustion or heat stroke.

**This page has been produced in consultation with, and approved by:**

Content on this website is provided for education and information purposes only. Information about a therapy, service, product or treatment does not imply endorsement and is not intended to replace advice from your doctor or other registered health professional. Content has been prepared for Victorian residents and wider Australian audiences, and was accurate at the time of publication. Readers should note that, over time, currency and completeness of the information may change. All users are urged to always seek advice from a registered health care professional for diagnosis and answers to their medical questions.

For the latest updates and more information, visit [www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)

**Copyright** © 1999/2012 State of Victoria. Reproduced from the Better Health Channel ([www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)) at no cost with permission of the Victorian Minister for Health. Unauthorised reproduction and other uses comprised in the copyright are prohibited without permission.