

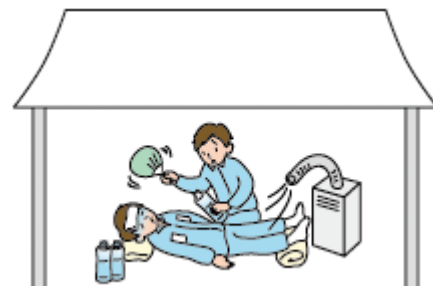


# Common items: Measures against heat strokes

## The important points for Safety and health

### (1) About heat stroke measures

Working in a hot place may result in the heat stroke. In 2018, 28 people died of heat stroke during the work in Japan. Here, heat stroke measures are explained in detail.



#### 1. Environment likely to cause heat strokes

Outdoors in summer and stuffy indoor workplaces are dangerous.

#### 2. Precautions to prevent heat strokes

- When it's hot, get some water and salt even if you're not thirsty, and take a break at a cool place regularly. Cool clothing is also important.
- Depending on the physical condition of the day and chronic illness, you may be more susceptible to get heat stroke. Inform your manager about your chronic illness and the physical condition.

#### 3. If you or your colleague suffers from heat stroke

< Severity: 1 degree > (much sweat, dizziness, muscle pain, etc.)

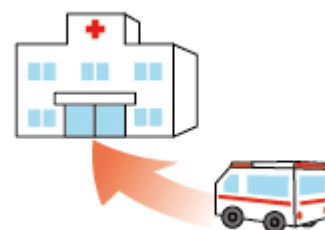
Take water and salt in a cool place. Someone should watch the patient, and carry to the hospital if he/she doesn't recover.

< Severity: 2 degree > (headache, feel ill, dull head, nausea, languor, etc.)

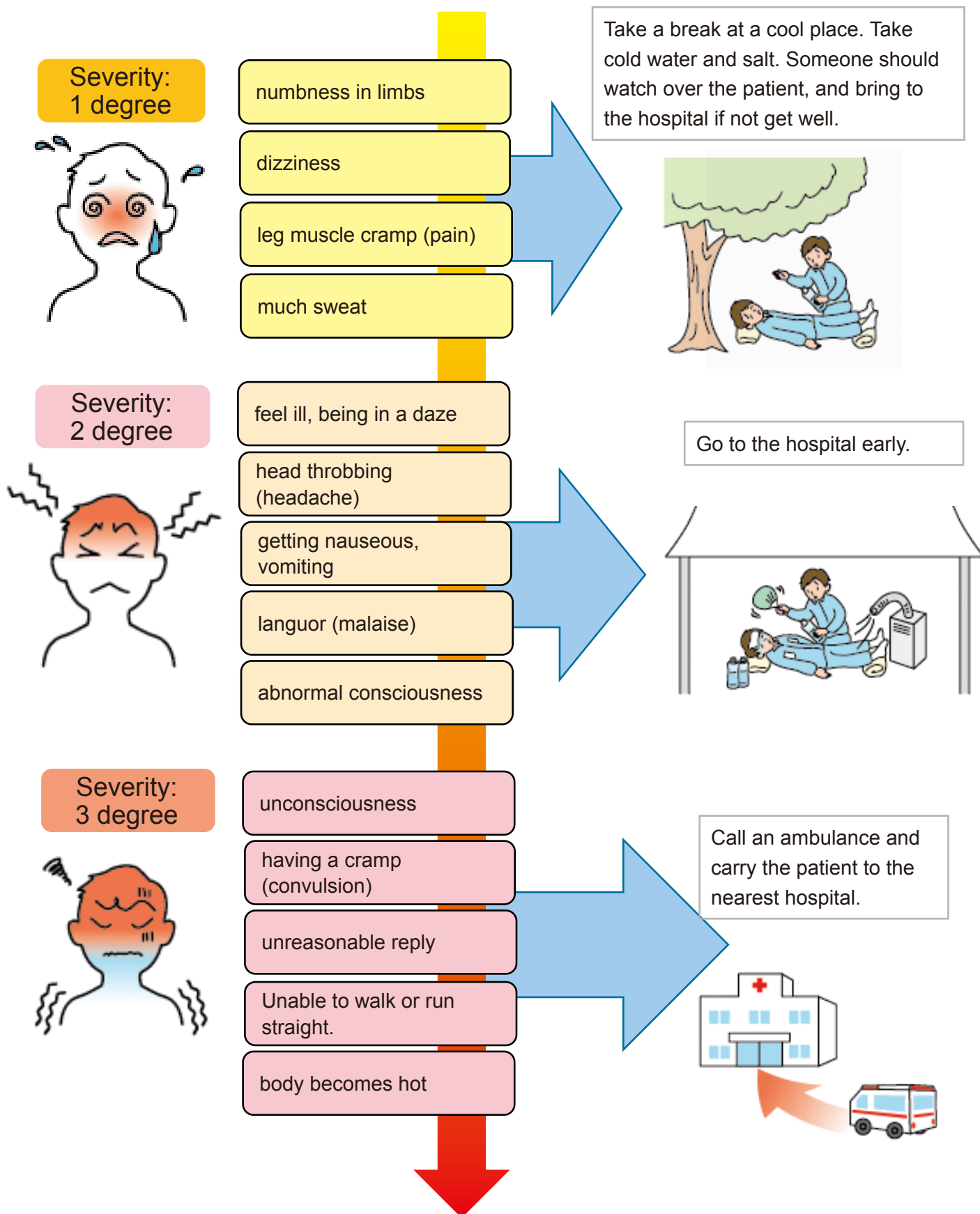
Let's go to a hospital early.

< Severity: 3 degree > (Unconscious, unreasonable reply, convulsion, hot body, etc.)

Call an ambulance immediately.



## (2) The severity of heat stroke and countermeasures



## (3) Factors that cause heat stroke (Especially at a construction site)

### <Environmental factors>

- Temperature is high
- Humidity is high
- Radiant heat is high
- No/weak wind, or fiery winds

### <Work factors>

- Work is heavy
- Short breaking time
- Work by a single worker

### <Clothing factors>

- Poor air permeability and moisture permeability
- High moisture retaining property and endothermy
- Wearing of protective device

### <Time factors>

- Sudden hot weather such as the end of the rainy season
- Within a few days after starting hot environmental work
- Prolonged heat load

### <Human body factors>

- Not getting use to the heat.
- Insufficient supply of water and salt
- Diarrhea/dehydration
- Chronic disease (high blood pressure, heart disease, diabetic, kidney disease, dermatosis, psychiatric disorder, etc.)
- Taking drugs that affects the autonomous nervous system
- Obesity/lack of exercise
- Physical deconditioning (sleep deprivation, hang-over, slight cold, fever, etc.)
- Lack of stamina
- Didn't have breakfast
- Elderly

## (4) Countermeasures for heat stroke

### < Work environment management >

#### 1. What is WBGT value (Wet Bulb Globe Temperature)?

An index of heat proposed to prevent heat stroke. In addition to temperature, it includes elements of “humidity”, “radiant heat”, and “wind speed”.

#### 2. Confirmation of WBGT value, etc.

○ To prevent heat stroke, WBGT value is measured.

WBGT values between 28°C and 31°C are considered “Full alert”, and those above 31°C are considered “Dangerous”. Pay attention to WBGT value.



Stationary type WBGT  
index meter



Portable type WBGT  
index meter

Example of WBGT reduction countermeasures (Reduction of WBGT with a mist fan system)



### 3. Use of rest places, etc.

- Use a cool, shaded or cold rest place with a cooling system, a cold bath, or a shower near your work area.
- Prepare and use ice, cold towels, electric fans, and other items or equipment that can cool your body properly at or near the work place.
- Install and use drinking water in your work area, so that you can easily supply water and salt at any time.

Countermeasures at a construction site (Setting up a rest place)





## <Work management>

### 1. Reduction of working hours, etc.

- Be sure to take time-out and recess during work. In addition, for continuous work in hot places such as work under the blazing sun, consult the person in charge and try to shorten the working hours.

### 2. Acclimation to heat

- Sudden heat increase is dangerous. Gradually try to get your body used to the heat.

### 3. Intake of water and salt

- Take water and salt regularly before, during, and after the work, with or without subjective symptoms.

Measures in a construction site (Intake of water and salt)



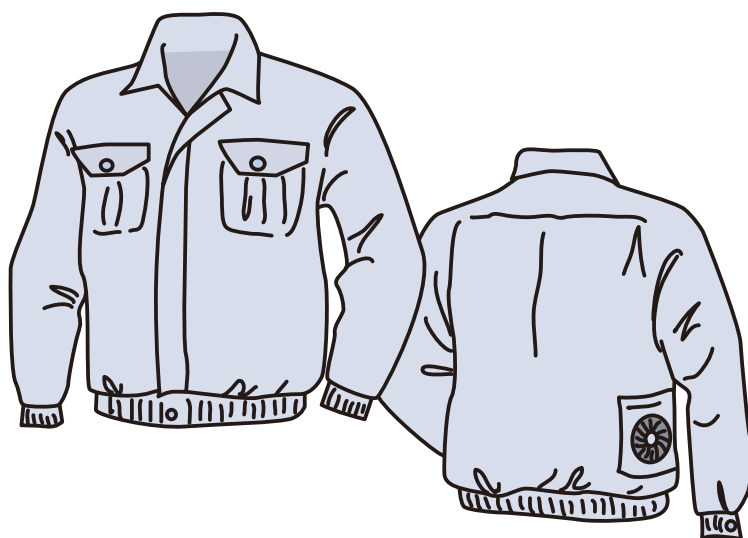
Set up an ice machine, drying pickled plum (umeboshi), etc. in a resting place



Prepare sports drink (powder) and cold water, etc. in a rest place

## 4. Clothes, etc.

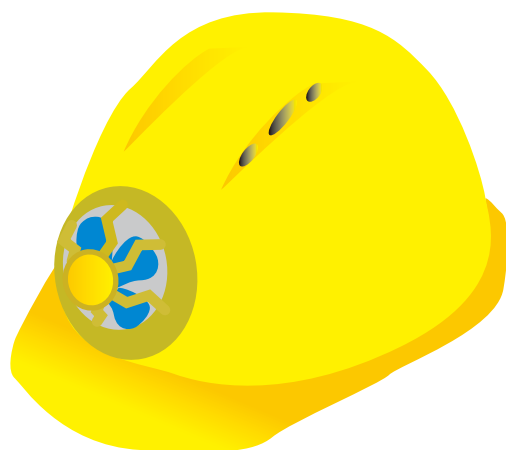
- Wear a workwear with high air permeability. Also, wear work clothes with a ventilation function and a cool vest.
- Under the direct sunlight, wear a high air permeability helmet (cool helmet, heat protection flap, etc.).



(Work clothes with a ventilation function)



(Cool vest)



(Cool helmet)



(Heat protection flap)

## < Health management >

### 1. Countermeasures, etc. based on the results of a health check

Diseases that may affect the pathogenesis of heat stroke include diabetic, high blood pressure, heart disease, renal failure, mental and neurological disorders, and a wide range of skin diseases.

- Getting a health check
  - Get a regular health check.
  - If you are diagnosed with abnormal findings based on the health check, follow the instructions of your doctor or an employer.

### 2. Daily health management, etc.

- Lack of sleep, physical deconditioning, drinking alcohol the previous day, not eating breakfast, fever due to cold, dehydration due to diarrhea, etc. may affect the pathogenesis of heat stroke. Be careful.
- If you are receiving a medical treatment that may affect the pathogenesis of heat stroke, tell your employer about the disease that you are being treated.
- Tell people around you if you have any of the following symptoms:
  - When your heart rate exceeds 120
  - When the body temperature during a break, etc. does not return to the temperature before starting the work
  - Symptoms such as sudden and severe fatigue, nausea, dizziness, and loss of consciousness

