

# THE TIMES OF INDIA

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HYPOTHERMIA

## Hidden Danger

Unlike other warm-blooded animals that have a layer of hair or blubber to keep them warm, you need an extra layer of clothing to shield you from the cold outside. Without that extra layer of clothing, more heat escapes from your body than it can produce. The loss of excessive heat can cause hypothermia. Exposure to cold water and certain medical conditions can also cause hypothermia.

### IS IT COLD ENOUGH?

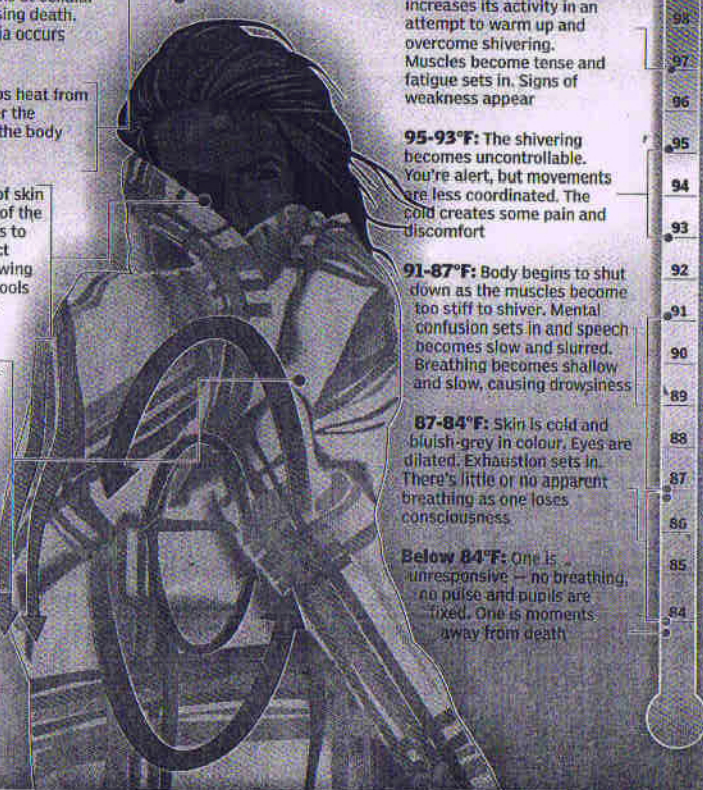
Five to six degrees Celsius — mercury often dips to this level in Delhi during winter, cold enough to lower the temperature of your body to deadly levels. Severe hypothermia stops chemical reactions at cellular levels in the body, causing death. Here's how hypothermia occurs in cold weather

**1 COLD WEATHER** robs heat from the body. The colder the weather the faster the body will lose heat

**2 THE OUTER LAYER** of skin (nearly 10 per cent of the body's mass) begins to cool when in contact with cold. Blood flowing in this region also cools and circulates back to the body

**3 CORE** temperatures drop when cooled blood from the outer layer circulates to the core. The critical organs in this region — heart, lungs and brain — can begin to cool in just 10 minutes

**4 HYPOTHERMIA** occurs when the core temperature drops to 95°F



### BODY TEMPERATURES

**At 98.8°F:** Normal body temperature

**At 97°F:** Body instinctively increases its activity in an attempt to warm up and overcome shivering. Muscles become tense and fatigue sets in. Signs of weakness appear

**95-93°F:** The shivering becomes uncontrollable. You're alert, but movements are less coordinated. The cold creates some pain and discomfort

**91-87°F:** Body begins to shut down as the muscles become too stiff to shiver. Mental confusion sets in and speech becomes slow and slurred. Breathing becomes shallow and slow, causing drowsiness

**87-84°F:** Skin is cold and bluish-gray in colour. Eyes are dilated. Exhaustion sets in. There's little or no apparent breathing as one loses consciousness

**Below 84°F:** One is unresponsive — no breathing, no pulse and pupils are fixed. One is moments away from death



## Elderly at risk as mercury dips

Durgesh Nandan Jha | TNN

**New Delhi:** The extreme cold condition prevailing in the city is proving fatal not just to the homeless but even those living inside closed doors. Doctors say they are getting patients with dangerously low body temperature caused due to prolonged exposure to the winter chill while on a morning walk or attending an evening party. Elderly people, with underlying medical condition like diabetes and hypothyroidism, are at maximum risk.

Precautionary measures, such as wearing layers of warm clothes, staying indoors during foggy weather, and religiously following the medical regimen in case of an underlying condition is important to stay fit, said Dr Anoop Misra, chairman of the Fortis C-Doc Centre for Internal Medicine.

He added, "In the last one week, we have got at least two such patients who had to be rushed to the emergency after they complained of dizziness and fall in blood pressure level due to prolonged exposure to the cold. One of them was 72-

**Doctors say elderly people, with underlying medical condition like diabetes and hypothyroidism, are at maximum risk**

year-old man and had a history of hypertension."

Dr R K Singhal, senior consultant internal medicine at B L K hospital, said that family members should take special care for the elderly and ensure that they are adequately dressed for the cold. "Morning walks should be postponed for

an hour or two. Those who have weak lung-related health problems like asthma and COPD should avoid going out in a foggy weather," he said.

According to the health experts, normally the internal system keeps the body core temperature constant, so that the temperature of the heart, brain, and other central organs is maintained.

"In extreme cold conditions, this is achieved by protective measures, such as putting on warm clothing or keeping the room warm. If the cold exposure continues despite this, blood flow to peripheral tissues and skin suffers and it cools down. If the body temperature falls below 35 degrees Celsius (95 degrees F), it is called hypothermia. It can affect blood circulation and have fatal consequences," a senior doctor said.

According to Dr Randeep

Guleria, professor of medicine at AIIMS, said people generally drink less water in cold weather which leads to dehydration and electrolyte imbalance. "Regular meal and lots of fluid is important to maintain nutritional balance," he said.

Also, the risk of heart attacks increase during winters. Doctors say that warning signs like feeling of suffocation and chest pain in those suffering from diabetes and underlying heart condition should be taken seriously. Small children do not have thicker superficial or subcutaneous fat which acts as an insulating agent to fight against the cold weather. "Mothers should take extra precaution and cover them with two to three layers of warm clothes and ensure the room temperature is affectionate, said Dr Sanjeev Bagai, paediatric nephrologist and CEO Radiant Life.

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### Treatment

Seek immediate medical attention for anyone who appears to have hypothermia. Until medical help is available, follow these guidelines to care for someone suffering from hypothermia

Move the person out of the cold. Preventing additional heat loss is crucial. If you're unable to move the person, shield the person from the cold and wind

Share body heat. To warm the person's body, remove your clothing and lie next to the person, making skin-to-skin contact. Then cover both bodies with a blanket

Monitor breathing. A person with severe hypothermia may appear unconscious, with no breathing. If so, begin cardiopulmonary resuscitation (CPR) immediately

Provide warm beverages. If the affected person is alert and is able to swallow, have the person drink a warm, non-alcoholic beverage to help warm the body