Indian Meteorological Department (IMD) advisory on severe cold wave

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In news

Recently, predicting a severe cold wave in the national capital and several other parts of North India, the IMD issued a rather unusual advisory

What is a cold wave?

A cold wave occurs when the minimum temperature dips to 10 degrees Celsius or less and the departure from normal temperature is 4.5 degrees Celsius or lower. In severe cold wave conditions, departure from normal temperature is 6.5 degrees or lower.

What is IMD's forecast on the cold wave?

- According to IMD, minimum temperatures would rise in the plains of north India including in Punjab, Haryana, Delhi, Uttar Pradesh and north Rajasthan until December 27 (Sunday), before falling by 3 to 5 degrees Celsius.
- As per IMD, cold northwesterly winds blowing from the western Himalayan region would lead to cold or severe cold wave conditions in parts of Delhi, Punjab, Haryana and Chandigarh from 28th December onwards.
- Maximum temperature is also forecast to fall by 3 to 5 degrees Celsius after December 28.
- Rainfall and snowfall is forecast in Jammu and Kashmir, Himachal Pradesh and Uttarakhand under the influence of a Western Disturbance between Sunday and Monday.

What does the IMD say in its impact-based advisory?

- The IMD urged residents of India's northernmost states to protect themselves from the biting cold by avoiding alcohol.
- As per the IMD, the weather conditions were likely to increase the risk of contracting illnesses like the flu, and could also lead to symptoms like runny/stuffy nose and nosebleeds, which usually set in or are aggravated due to prolonged exposure to the cold.
- IMD also warned of frostbite, a condition where the skin turns pale, hard and numb and is eventually left with black blisters when exposed to extreme cold conditions.
- It says "Do not ignore shivering," the notice read. "It is the first sign that the body is losing heat. Get indoors".

What is frostbite?

- A condition in which skin and the tissue just below the skin freeze.
- In other words, Frostbite is an injury caused by freezing of the skin and underlying tissues.
- Frostbite symptoms and signs include tingling, numbness, and changes in the color and texture of the skin.
- Frostbite mostly affects small, exposed body parts such as fingers and toes.
- With frostbite, the skin gets very cold, then numb, hard and pale

- **Recommendations:**
  - In order to avoid an adverse reaction to the cold wave, the IMD shared a list of recommendations, one of which was avoiding alcohol as it "reduces your body temperature".
  - It also urged people to limit outdoor activities, moisturise their skin regularly with oil or cream, eat vitamin-C rich fruits and vegetables and drink warm fluids to maintain immunity.

Why is drinking alcohol bad during cold weather?

- According to IMD, while alcohol may make you feel warmer, it actually reduces your body temperature and compromises your immunity if you then venture out into the cold
- According to a study jointly conducted by the Thermal Physiology and the Medicine Division, US Army Research Institute of Environmental Medicine, alcohol can decrease the core temperature of the body and increase the risk of hypothermia during cold exposure.
- Heavy alcohol consumption is often linked to an increased risk of hypothermia and other conditions linked to extreme cold weather.
- The study points out that alcohol has psychological and behavioural effects, which can impact a person's ability to correctly perceive how cold it is.
- Hence, cases of people succumbing to hypothermia after drinking heavily and passing out outdoors are very commonly reported in places with extreme cold weather

Hypothermia

It is a severe medical condition where the body loses heat before it can generate it, resulting in a dangerously low body temperature. While normal body temperature lies at around 37 degrees Celsius, the body temperature of a person suffering from hypothermia drops to below 35 degrees Celsius. Common signs include shivering, slow rate of breathing, slurred speech, cold skin and fatigue.

- According to the American Association of Family Physicians, a retrospective study in 2004 showed that alcohol consumption is associated with 68 percent of accidental hypothermia cases.

Impact of Alcohol on Body Temperature

- Alcohol is a vasodilator, which means that it causes

blood vessels to relax and dilate or open.

- So after consuming alcohol, the volume of blood brought to the skin’s surface increases, making you feel warmer as a result. This is also what causes an intoxicated person to look flushed.

Vasodilation occurs naturally in your body in response to triggers such as low oxygen levels, a decrease in available nutrients, and increases in temperature. It causes the widening of your blood vessels, which in turn increases blood flow and lowers blood pressure.

- As the body begins to believe that it is warm, the person also starts to sweat a reaction that automatically reduces overall body temperature.
- Drinking copious amounts of alcohol may affect his/her bodies ability to detect the cold properly, which is in place to protect you from frostbite and hypothermia.
- Alcohol is a vasodilator, which means that it causes blood vessels to relax and dilate or open.
- Therefore after consuming alcohol, the volume of blood brought to the skin’s surface increases, making you feel warmer as a result. This is also what causes an intoxicated person to look flushed.