

Measurements of Body temperature



Evaluation of body temperature is one of the oldest known diagnostic methods and is still an important sign of health and disease, both in everyday life and in medical care. Increased body temperature is associated in the first place with infectious disease and fever.

The core temperature refers to temperature in the thoracic and abdominal contents, muscles and the brain, while **the peripheral temperature** refers to the skin and a relatively small amount of subcutaneous tissue. In clinical practice noninvasive methods, such as rectal, oral, ear and axillary measurement are used to estimate the core temperature.

. Normal body temperature 36–37°C

Maintenance of body temperature: The thermoregulatory center is located in the hypothalamus in the brain. It consists of the heat-loss center, the heat-promoting center. This means that the body temperature is kept constant despite external heat or cold stress. The maintenance of constant body temperature is essential for the maintenance of human metabolism.

When the body's ambient temperature drops, the body's own heat production is boosted or heat loss is reduced. This occurs, for example, through voluntary muscular activity (moving, running), involuntary muscular activity (shivering), regulation of skin blood flow

(contraction of vessels), or behavioral change (putting on warm clothes or turning up the heat).

When the ambient temperature rises, excess heat is released by •
conduction (release of heat through the skin when in direct contact with another material), convection (transfer of heat to a medium in motion, usually air), thermal radiation, and evaporation (sweating). In the case of thermal radiation (infrared radiation),

INTRINSIC FACTORS THAT INFLUENCE TEMPERATURE

Circadian rhythm ▲ In evening ▼ In early hours of morning

Age Young and older inability to maintain equilibrium

Exercise ▲ Body temperature

Thyroid hormones ▲ Metabolic rate therefore... ▲ Body temperature

Fever: is a rise in temperature $>38^{\circ}\text{C}$ and is a normal response to infection, inflammation or drug therapy.

Hyperthermia: known simply as overheating, is a condition in which an individual's body temperature is elevated beyond normal due to failed thermoregulation. The person's body produces or absorbs more heat than it dissipates. When extreme temperature elevation occurs, it becomes a medical emergency requiring immediate treatment to prevent disability or death¹ Almost half a million deaths are recorded every year from hyperthermia

In humans, hyperthermia is defined as a temperature greater than $37.5\text{--}38.3^{\circ}\text{C}$

Hypothermia: is a medical emergency that occurs when your body loses heat faster than it can produce heat, causing a dangerously low body temperature occurs as your body temperature falls below

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Oral cavity The oral cavity temperature is considered to be reliable when the thermometer is placed posteriorly into the sublingual pocket This landmark is close to the sublingual artery, so this site tracks changes in core body temperature Electronic or disposable chemical thermometers may be used.

Tympanic temperature: The tympanic thermometer senses reflected infrared emissions from the tympanic membrane through a probe placed in the external auditory canal This method is quick (and easy to perform.

Axillary temperature: Temperature is measured at the axilla by placing the thermometer in the central position and adducting the arm close to the chest wall.

Rectal temperature

Rectal temperature is said to be the most accurate method for measuring the core temperature

Temporal artery temperature The temporal artery thermometer is quick to use. It is held over the forehead and senses infrared emissions radiating from the skin However, its reliability and validity have not been widely tested