

Summer health: the doctor's tips

Humans tend to maintain a constant body temperature. Many activities carried out by the human body, including **digestion**, tend to produce a certain quantity of heat which has to be eliminated.

The mechanisms through which a living body dissipates heat answers to the laws of thermodynamics. **Heat can be ceded through 4 main mechanisms**: by contact with objects (conduction) or the surrounding air (convection), through the emission of electromagnetic waves (radiation) or through water produced by sweating (evaporation).

Environmental **temperature and humidity** can make these mechanisms quite ineffective. In fact, as external temperature is higher than body temperature, conduction, convection and radiation become totally ineffective, and the only way to lose heat is sweating evaporation. However, under conditions of high humidity also the latter mechanism may turn ineffective.

If thermo-dispersion mechanisms become ineffective, **body temperature increases** causing problems of hyperthermia such as painful cramps, simple hyperthermia and heat strokes.

Heat cramps usually occur after intense muscular exercise; they are uncontrolled contractions of fatigued muscles. They result from an imbalance between liquids and body salts due to an **impoverishment of energy sources** (muscular glycogen).

Simple hyperthermia mirrors a poor cardiovascular adaptation following the increase of external environmental temperature. **It manifests itself** through migraine, giddiness, weakness, low blood pressure and a small and frequent heart beat.

Heat strokes are more serious and can be deadly. They are caused by an overload of the thermoregulatory mechanisms which turn out to be insufficient. Perspiration reduces, skin is hot and dry, and deep body temperature **can reach 41.5° C**.

Dehydration and increased body temperature can damage the nervous system, patients are confused and can lose consciousness. In these cases, it is necessary to cool the patient down rapidly by applying ice packs, water immersions and alcohol frictions whose evaporation facilitates heat loss.

Avoid doing physical exercise in the hottest hours and in a high-humidity environment. Drink plenty of liquids for reintegration of mineral salts before, during and after practicing sports. Diet can also help: eat small, light meals in order not to overload your digestive system; fruits and raw vegetables are part of a healthy diet since they contain water, vitamins and mineral salts.

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