

CHRONIC CONDITIONS THAT INCREASE SUSCEPTIBILITY TO HEAT

SOME CHRONIC DISEASES INCREASE THE RISK OF ADVERSE EFFECTS OF THE HEAT TEMPERATURE IN THE GENERAL POPULATION AND WORKERS

Thyroid diseases

Thyroid hormones induce the release of thermal energy from cells

Obesity

In obese subjects, the cardiac effort required to work in hot environments increases

Asthma and chronic bronchitis

The heat can cause bronchoconstriction and asthma attacks, especially in the presence of high humidity levels

Diabetes

- It hinders heat dispersion after a reduction in heat vasodilation due to a global alteration in the reactivity of the microcirculation, a condition exacerbated by a possible peripheral neuropathy, which reduces and slows down the activation of thermoregulatory mechanisms.
- In case of intense physical effort, lowering of blood sugar may occur



Mental disorders and neurological diseases

They can cause an altered perception of the risks associated with heat and the consequent adoption of inappropriate behaviours

Cardiovascular diseases

It can be difficult to raise the necessary cardiac work to disperse heat through an increase in flow towards the peripheral districts and to increase blood flow towards the muscular districts affected by the effort, especially for work tasks with high metabolic demands.

Kidney diseases

- The literature reports a correlation between arterial hypertension and other cardiovascular diseases in people undergoing dialysis or renal insufficiency, as well as an elevated risk of blood pressure change in response to heat.
- Dehydration can worsen kidney failure



Drugs to treat these conditions can increase the risk of heat-related disorders, as can other drugs, including::

- Anticoagulant drugs
- Anti-cancer/chemotherapeutic drugs

WHAT TO DO

People with hypertension and cardiovascular diseases

- Be mindful of maintaining proper hydration, replacing lost fluids, and replenishing mineral salts, particularly when there are other risk factors (such as gastrointestinal illnesses) that may accelerate the development of arrhythmias
- Exercise caution while getting up quickly to prevent sharp drops in blood pressure
- Monitor blood pressure especially during the summer, and talk to your doctor about any necessary therapy adjustments
- Reduce your consumption of salt if you have high blood pressure.

People with respiratory diseases

- Carry the medication you need to treat bronchoconstriction with you.

People with mental illness or neurological disorders

- drink enough water and take your medications on time.

People with kidney disorders

- Regularly check your arterial blood pressure
- Drink plenty of water and eat a balanced diet, focusing on high-fiber, low-potassium foods.

People with diabetes

- monitor blood sugar frequently when in hot temperatures, particularly in the case of insulin therapy
- When engaging in vigorous physical activity, bear in mind that a drop in blood sugar may occur
- expose yourself to the sun with caution using high protection protective creams (spf 50+) to avoid serious burns
- Take a light snack with you to prevent hypoglycemic episodes; consult a dietitian for guidance.
- The equipment and blood sugar strips may be harmed by heat and sunlight.

For all workers with a chronic condition

- Consult your physician about the appropriate actions to take in the event of heat exposure.
- Keep in mind that the body must gradually adjust to the heat.
- Limit your intake of coffee, which causes dehydration, and hydrate yourself with fresh liquids even before your work shift.
- Eat a balanced diet, abstaining from alcohol, and getting adequate sleep.
- Learn about the predictions of how heat would affect employees in different work environments by consulting <https://www.salute.gov.it/portale/caldo/homeCaldo.jsp> and <https://www.worklimate.it/scelta-mappa/>
- Pay attention to symptoms such as intense sweating, headache, nausea, cramps: notify the safety manager and your coworkers right away.
- As soon as your symptoms get worse, please call 118.
- Avoid independently interrupting prescribed treatments: stopping treatment on your own, even temporarily, without a doctor's approval might seriously exacerbate your chronic condition.
- To find out more: <http://www.salute.gov.it/caldo>

Authors

Miriam Levi¹, Francesca de' Donato², Manuela De Sario², Emanuele Crocetti³, Andrea Bogi⁴, Iole Pinto⁴, Marco Morabito⁵, Alessandro Messeri⁵ (meteorologo AMPRO), Alessandro Marinaccio⁶, Simona Del Ferraro⁶, Tiziana Falcone⁶, Vincenzo Molinaro⁶ e Michela Bonafede⁶

1 UFC Epidemiologia, Dipartimento di Prevenzione dell'Azienda USL Toscana Centro

2 Dipartimento di Epidemiologia del Servizio Sanitario Regionale - Regione Lazio

3 UFS CeRIMP, Dipartimento di Prevenzione dell'Azienda USL Toscana Centro

4 Laboratorio di Sanità Pubblica, Laboratorio Agenti Fisici dell'Azienda USL Toscana Sud-Est

5 Istituto per la BioEconomia - Consiglio Nazionale delle Ricerche

6 Dipartimento di Medicina, Epidemiologia, Igiene del lavoro ed ambientale – INAIL

Progetto grafico a cura di Matteo Gramigni (ZonaZero)