



Paris, July 11th, 2024

TO: All staff members

RE: CNRS INSTRUCTIONS IN CASE OF HEAT WAVE

Summer heat waves can be conducive to heat stroke. There are a number of contributing factors:

Environmental factors

- Intense sunshine,
- High ambient temperatures (including at night),
- High humidity levels,
- Insufficient air circulation or circulation of very hot air,
- Atmospheric pollution, etc.

Work-related factors

- Offices and other work spaces in buildings with high thermal inertia,
- Physical exertion (manipulation of heavy materials or under time pressure),
- Insufficient rest breaks,
- Workwear that prevents perspiration from evaporating,
- Heat emitted by machines, products and processes (in foundries, bakeries, laundries, agribusiness, etc.),
- The use of chemical products (solvents, paints, etc.) in confined spaces.

In hot weather, watch for these warning signs:

During hot weather, if you experience any of the following symptoms:

- Sudden weakness,
- Extreme fatigue,
- Light-headedness, dizziness, impaired consciousness,
- Nausea, vomiting,
- Muscle cramps,
- High body temperature,
- Thirst and headache...

Or if you are with someone:

- Whose speech is incoherent,
- Who loses his/her balance,
- Who loses consciousness,
- And/or is having convulsions...

WARNING!

**This could be the onset of heat stroke, which is a medical emergency!
In this case, alert a First Aid Officer (“SST” in French)
or call a medical emergency unit department (dial 15 in France). Emergency
Services will tell you what to do.**

**If you are hearing-impaired, you can text or fax the emergency number 114 or have
someone call 15.**

You can also contact the occupational health department.

You must then take action quickly and effectively while waiting for the emergency personnel.

First aid

Do everything possible to lower the victim’s body temperature: move to a cooler space (air-conditioned, in the shade, etc.), loosen any clothing that may be too warm or too tight, cool the victim by fanning or spraying with cool water.

RECOMMENDATIONS FOR STAFF MEMBERS

The main information on the health effects of heat waves, the recommendations for protecting one's health in the event of a heat wave, as well as information on the national system for the health management of heat waves are posted on the website of the Ministry of Labor, Health and Solidarity:

<https://sante.gouv.fr/sante-et-environnement/risques-climatiques/article/les-vagues-de-chaaleur-et-leurs-effets-sur-la-sante>

The meteorological vigilance system makes it possible to identify the occurrence of heat waves. They are materialized in the form of vigilance maps regularly updated on the site (at least twice a day), when the situation requires it and accessible on the Météo France site: <https://vigilance.meteofrance.fr/fr>

The "heat wave" telephone information platform is activated during heat waves.



During heat waves, an information number is available to the public:

THE "HEAT WAVE" INFORMATION HELPLINE
0800 06 66 66

Open from 9:00 am to 7:00 pm, free from landline phones.

1. Recommended preventive measures

- Remember to check the latest weather reports (radio, press, etc.).
- Check ambient temperatures.
- Drink at least the equivalent of one glass of water every 15 to 20 minutes, even if you are not thirsty.
- Wear loose-fitting garments made of lightweight fabrics (e.g. cotton) that allow the evaporation of perspiration, and prefer light colours for working outdoors.
- Keep your head covered for sun protection.

- Adapt your pace of work according to your heat tolerance, and organise tasks to make it slower (trying to work faster in order to finish earlier can be dangerous!).
- Insofar as possible, reduce or postpone intense physical exertion, scheduling the most strenuous tasks for the coolest times of day.
- Lighten the workload with shorter work/rest cycles (e.g. hourly breaks).
- Remember to request and systematically use mechanical aids (hand trucks, trolleys, hoists, etc.) for materials handling.
- Remember to eliminate all unnecessary heat sources (switch off unused electrical equipment...).
- Avoid all consumption of alcoholic beverages (including beer and wine).
- Eat lighter, possibly more frequent meals.
- Take extra care if you have a high-risk medical history and/or are taking medication.
- Immediately stop all activity as soon as you experience any of the symptoms of heat stroke and inform your co-workers, managers, first aid officers, etc. Do not hesitate to see a doctor.
- Encourage staff members to watch out for one another in order to detect and report any signs or symptoms of heat stroke as quickly as possible.

2. How to recognise heat stroke

If someone working in a high-temperature environment displays one of the following symptoms:

- Sudden weakness, extreme fatigue, light-headedness, dizziness,
- Incoherent speech, loss of balance, loss of consciousness...

WARNING! This could be the onset of heat stroke, which is a medical emergency.

You must take **FAST, EFFECTIVE ACTION** to give first aid.

- **Dial 15 to alert Emergency Services,**
- **Try to cool the victim down,**
- Move the victim into the shade or a cool place and help remove warm clothing (protective equipment, etc.),
- Spray the person's body with cool water,
- Create as much ventilation as possible,
- Have the person drink water if possible (provided the victim is conscious).



The following table gives an overview of the heat stroke risk factors mentioned in scientific publications. The major factors are highlighted in grey.

SUMMARY OF THE MAIN RISK FACTORS FOR HEAT STROKE

Existing pathologies				
Diabetes	Athero-sclerosis	Uncontrolled hypertension	Heart failure	Peripheral vascular disease
Parkinson's disease	Hyper-thyroidism	Psychiatric disorder	Eating disorder	Autonomic nervous system disorder
Infection	Dehydration	Obesity	Major skin lesion (bed sores, burns, etc.)	Respiratory insufficiency
Renal insufficiency	Alzheimer's or related disease	Cystic fibrosis, sickle cell disease		
Environmental factors				
No trees around the dwelling	Unprotected southern exposure	No air conditioning	No access to a cool area during the day	Hot working conditions
Dwelling in the upper floors of a building		Urbanised environment (asphalt, etc.) Large city	Work requiring warm or waterproof clothing	Homelessness
Personal factors				
Elderly persons	Children, especially infants under 12 months	Dependency or disability	History of medical problems during heat waves	Lack of knowledge of preventive measures
Drug use (cocaine, LSD, heroin)	Alcohol	Social exclusion, poverty		
Medications: see table below				

Medications – Summary table

<https://ansm.sante.fr/uploads/2023/06/22/20230622-tableau-recapitulatif-medicament-canicule.pdf>

MEDICATIONS LIKELY TO AGGRAVATE EXHAUSTION-DEHYDRATION SYNDROME AND HEAT STROKE		
<p>Medications that can disrupt hydration and cause electrolyte imbalance</p>		<p>Diuretics, especially loop diuretics (furosemide) and long-term thiazide and distal diuretics Laxatives Some oral antidiabetic drugs such as SGLT2 inhibitors: empagliflozin, dapagliflozin Carbonic anhydrase inhibitors (by reducing perspiration and diuretic effect): diuretic: acetazolamide Anti-epileptics: topiramate and zonosamide</p>
<p>Medications that can affect kidney function</p>		<p>NSAIDs (including salicylates at > 500 mg per day, conventional NSAIDs and selective COX-2 inhibitors) ACE inhibitors Angiotensin II receptor blockers Sulphonamides Indinavir Aliskiren Gliptins and GLP-1 receptor agonists (semaglutide, dulaglutide, teduglutide, liraglutide, exenatide) All drugs known for their nephrotoxicity (such as aminosids, ciclosporin, tacrolimus, iodine contrast agents, etc.)</p>
<p>Medications whose kinetic profile can be affected by dehydration</p>		<p>Lithium salts Antiarrhythmics Digoxin Antiepileptics Hypoglycaemic biguanides and sulphonamides Statins and fibrates</p>
<p>Medications that can prevent caloric loss</p>	<p>Centrally</p>	<p>Neuroleptics Serotonergic antagonists [imipramine antidepressants, serotonin reuptake inhibitors, serotonin and noradrenalin reuptake inhibitors, triptans, some opiates (dextromethorphan, tramadol)]</p>

	Peripherally	Drugs with atropinic properties	<ul style="list-style-type: none"> - Imipramine antidepressants - First-generation antihistamines - atropinic antiparkinsonian agents - Some antispasmodics, especially urinary - Neuroleptics - Disopyramide - Pizotifen - Some bronchodilators (tiotropium etc.) - Atropine – atropine eyedrops - Nefopam - Memantine - Scopolamine
		Vasoconstrictors	<ul style="list-style-type: none"> - Sympathomimetic agonists and amines - Some antimigraine drugs (rye ergot derivatives, triptans)
		Medications that reduce cardiac output	<ul style="list-style-type: none"> - Beta-blockers - Diuretics
<p>MEDICATIONS THAT CAN CAUSE EXCESS PERSPIRATION. Parasympathomimetic drugs: Pilocarpine: cholinergic agonist (for the treatment of hyposaliva, xerostomia, Gougerot Sjögren's disease) Anticholinesterase drugs against certain types of dementia: donepezil, galantamine, rivastigmine Cholinesterase inhibitors: neostigmine, pyridostigmine, ambenonium chloride</p>			
<p>MEDICATIONS THAT CAN CAUSE HYPERTHERMIA (under normal temperature conditions or during heat waves) Neuroleptics (= anti-D2) / sudden cessation of a dopaminergic drug (levodopa, dopaminergic agonists) Serotonergic agonists Thyroid hormones</p>			
MEDICATIONS THAT CAN AGGRAVATE THE EFFECTS OF HEAT		All antihypertensives Antianginals	
Medications that can lower blood pressure			
Medications that affect alertness			



The effects of heat on health: levels of severity

Level	Effect of heat	Symptoms
Level 1	Sunburn	Redness and pain, and in severe cases swelling, blisters, fever, headache
Level 2	Cramps	Painful spasms (legs, abdomen), heavy perspiration
Level 3	Exhaustion	Heavy perspiration, weakness, chills and pale skin, weak pulse, fainting and vomiting
Level 4	Heat stroke	High body temperature, dry and hot skin, neurological impairment, possible loss of consciousness

For more information on medications (in french):

<https://ansm.sante.fr/dossiers-thematiques/produits-de-sante-cosmetiques-et-tatouages-en-ete-adoptez-les-bons-reflexes/le-point-sur-vos-traitements>

<https://ansm.sante.fr/uploads/2024/07/09/20240705-liste-des-medicaments-pouvant-diminuer-l-adaptation-de-l-organisme-aux-vagues-de-chaaleur.pdf>

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<https://ansm.sante.fr/uploads/2023/06/22/20230622-map-canicule-bon-usage-med-2023.pdf>