WORKLIMATE2.0
CLIMA LAVORO PREVENZIONE

DECALOGUE FOR THE PREVENTION OF HEAT ILLNESSES IN THE WORKPLACE - INFORMATION FOR EMPLOYERS –

RECOMMENDATIONS AIMED AT EFFECTIVE PLANNING OF COMPANY INTERVENTIONS REGARDING THE PREVENTION OF MICROCLIMATE RISK, TO BE ADOPTED WITHIN THE SPECIFIC ORGANIZATION OF THE COMPANY PREVENTION SYSTEM (PURSUANT TO ART. 2 PARAGRAPH 2 OF LEGISLATIVE DECREE 81/08)

It is the employer's duty, through the SPP, to specify the steps involved in putting the measures into action and the duties that the firm organisation must play in making them happen. The Legislative Decree No. 81/08 stipulates that assignments may only be made to those who possess the necessary abilities and proficiency

01

DESIGNATE A PERSON TO OVERSEEN THE SURVEILLANCE PLAN FOR THE PREVENTION OF THE EFFECTS OF HEAT STRESS ON HEALTH AND SAFETY AND THE APPROPRIATE RESPONSE

Select a manager who will be in charge of overseeing the activity and is present at the location. This manager may also be the one in charge of keeping an eye on the weather and climate. This manager will be trained to use the heat index and other thermal stress risk indicators appropriately, and they will be in charge of putting specific protective measures in place in the event that thermal stress conditions arise

02

HAZARD IDENTIFICATION AND RISK ASSESSMENT

Identification of hazards includes determining weather conditions, such as high temperatures, high humidity, exposure to direct sunlight or other heat sources, work needs, work clothing, personal protective equipment (PPE), and human risk factors, increase the risk of heat-related illnesses and hazards.Among the identification tools are worker-specific heat warning forecast platforms, like the one created as part of the WORKLIMATE Project (https://www.worklimate.it/scelta-mappa/), which provides customized forecasts depending on the physical activity a worker performs and the conditions of their workplace (e.g., sun exposure or shaded areas).

One of the many simplified indices that are available can be used in the preliminary screening phase to identify the critical conditions and prepare an appropriate action plan, starting with the protection of the subjects exposed at major risk.

These indices only require knowledge of the temperature and humidity of the air, which can be measured in the workplace using a thermo-hygrometer during the evaluation – using historical data for the site where you study on. Calculation tools that enable the prediction assessment of the microclimate risk in relation to various job activities and display situations are accessible on the Physical Agents Portal in the microc–imate section. Clients must abide by the regulations for the prevention and protection of wor–ers' health and safety, including in the case of work contracts. This includes taking into account the danger connected with heat and making special reference to first aid treatments.

03

TRAINING

The goal of the training is to raise workers' understanding of the negative health impacts of heat stress as well as the appropriate precautions and preventative measures. It must contain advice on what to wear, how to stay well hydrated, how to keep a balanced diet, individual risk factors, and how to manage heat illness symptoms, including when and how to recognise signs. It is crucial that worker education be conducted in a language that they can comprehend.
In addition to workers, it is advised that safety officers and first aid personnel receive specialised training on the heat stress related health risks as well as prevention and mitigation techniques.

04

PREVENTION STRATEGIES AND INDIVIDUAL PROTECTIONS FOR WORKERS

Hydration

Potable water for drinking and enjoyment must be readily available. There must always be easy access to fresh drinking water. Workers should be encouraged to drink around one litre of water per hour, or about one glass of water every fifteen minutes, while they are exposed to heat. On cold days, it could be okay to just drink when you're thirsty, but when there's a heat wave or you're exposed to high temps in general, you should adhere to a few easy guidelines for proper hydration.:

- Recommendation for the workers:
  - drink before feeling thirsty and pay close attention to their hydration level;
  - refrain from consuming more than 1.5 litres of water in a single hour. Drinking too much fluids depletes the body of mineral salts, which can have detrimental effects on health.
  - Limit your use of energy drinks during physical activity and/or salt supplements on your own to make up for the salts you lose via perspiration. Energy drinks have the potential to harm you by causing electrolyte imbalances and increased calorie intake. A balanced diet may usually restore the salts lost through perspiration. Supplements and energy drinks should only be consumed under medical supervision.
- Water containers should be installed in different locations in the workplace.
- For outdoor activities, workers can use backpacks or hydration belts equipped with a specific storage system and constant access to water.
- Alternatively, small coolers containing water or large jugs of water can be installed in shaded locations in areas frequented by workers during the day.

Clothing

- Suggest to employees that they wear light, breathable, natural-fiber clothing that covers a large portion of their body (such as a light, long-sleeved t-shirt; it's important to avoid working with bare skin). They should also be advised to wear wide-brimmed sunglasses with UV protection and protection for their faces.
- advise the staff to use high-protection sunscreen (SPF 50+) on any exposed body parts in accordance with the qualified physician's advice.
- Workers who are more exposed to high temperatures may be given vented vests or cooling clothes.

05

REORGANIZATION OF WORK SHIFTS

Changing the working hours might help minimize heat exposure for employees. Check out the heat stress warning forecasts for workers at https://www.worklimate.it/scelta-mappa.

- Those activities that are not priorities and which are to be conducted outdoors should be rescheduled on days with more favorable weather and climate conditions.
- Planning activities that require greater physical effort during the cooler moments of the day
- The alternation of shifts between workers in order to minimize individual exposure to heat or direct sun.
- Interruption of work in extreme cases when the risk of heat-related illnesses is very high.

06

MAKE SHADED AREAS AVAILABLE AND ACCESSIBLE FOR BREAKS

Make every effort to guarantee that fully shaded or air-conditioned spaces are available for breaks and cooling off. Scheduling brief, frequent breaks in shaded areas has been shown to maintain productivity, whereas the absence of planned breaks can slow work pace and increase the risk of human error

- Using audio messages, acoustic signals, or any other kind of efficient communication to remind employees to take breaks in the fresh air for hydration and refreshment is advised in accordance with job activities.
- Meals should always be taken in shady places. When possible, employers should feed staff enough meals high in fruits and vegetables, avoiding items high in fat and salt, which can aggravate digestion and increase the risk of heat exhaustion.

07

PROMOTE THE ACCLIMATATION OF WORKERS

Acclimatization consists of a series of physiological changes that allow the body to tolerate the conduct of work tasks in conditions of exposure to high temperatures. It is achieved by gradually increasing workers' workload and exposure to heat and encouraging frequent breaks to supply water and rest in the shade. Acclimatization takes seven to fourteen days (more if the person is suffering from chronic diseases or is taking certain drugs). International authorities for the protection of occupational health recommend that in the event of a heat wave, experienced workers should start the first day at 50% of the normal load and gradually increase the load over the following days. Newly hired workers and those returning to work after a prolonged absence should start with 20% of the workload on the first day and gradually increase the load each subsequent day.It is important to keep in mind that:

- **Acclimatization** only lasts a few days in the event that work is disrupted.
- **Heat disorders frequently arise on the first few days of a workweek, during a heat wave, or in conjunction with the first seasonal exposure to exceptionally high temperatures;**
- Newly hired employees and younger employees who are in good health but lack work experience or knowledge on heat-related health risks need special attention..

08

CREATION OF THE “COMPANION SYSTEM”

In the event of the onset of symptoms of heat illnesses or worsening of the health status, a fellow worker can call 118 (or the single number 112) and provide first aid.

09

EMERGENCY PLANNING AND RESPONSE

In order to enable early diagnosis and treatment, it is crucial to create a surveillance plan for monitoring the signs and symptoms of heat illnesses and handling emergencies before exposing workers to heat, whether indoors or outdoors. This plan should be developed in conjunction with the safety manager and a qualified physician. The plan needs to outline what to do in the event that someone exhibits symptoms of heat illness, how to get in touch with emergency personnel, and what first aid steps to take while waiting to be rescued. All workers must be updated about the rules and must be able to recognize symptoms related to heat stress.

Being in a confused status, can be a sign of heat stress and can lead to more severe conditions and requires immediate medical attention.

Workers who feel unwell and present heat-related symptoms must immediately stop working, move to a cool shaded space, rehydrate by drinking water , remove unnecessary layers of clothing and footwear (PPE, overalls, jackets, belts, shoes and socks) and cool of by bathing in cold water or applying wet cold cloths/sheets or ice packs covered by a cloth on the skin. . Cooling is the first thing to do and must be done right away in the treatment of a major heat illness..

It is crucial to implement this step at the first sign of symptoms. Keep in mind that:

- Feeling sick while working in high temperatures is a serious warning sign. Any worker who reports feeling unwell while working in hot conditions is at risk of heat exhaustion, which can quickly progress to heat stroke if not treated promptly.
- First aid for suspected heat exhaustion or heat stroke involves COOLING the body as quickly as possible, as well as giving drinking water or administering isotonic sodium chloride solutions to replace salt loss.
- People with bad heat illness are not always able to recognize the risks they are facing. If a worker shows signs of heat exhaustion or heat stroke, they should never be left alone until help arrives.

10

SPECIFIC MEASURES FOR WORKPLACES IN CLOSED ENVIRONMENTS

Workplaces in closed environments can be cooled by using the air conditioner or, alternatively, fans can be used if the outside temperature is below the typical body temperature of 35°C. It’s crucial to keep in mind that mechanical fans do not reduce the outside temperature; they merely quicken airflow. The air conditioner needs to be operated properly. (see Ministry of Health brochure https://www.salute.gov.it/imgs/C_17_opuscoliPoster_117_annex.pdf).
Other methods to lower the ambient temperature include the use of reflective screens to remove radiant heat and the thermal insulation of windows and doors.
To protect workers from radiant heat, it's essential to position them away from radiant sources when possible. Additionally, reducing the emissivity of hot surfaces by covering them with insulating materials can significantly lower heat exposure.

WORKLIMATE2.0
CLIMA LAVORO PREVENZIONE

Authors
Miriam Levi[1], Francesca de' Donato[2], Manuela De Sario[2], Emanuele Crocetti[3], Andrea Bogi[4], Iole Pinto[4], Marco Morabito[5], Alessandro Messeri[5] (meteorologo AMPRO), Alessandro Marinaccio[6], Simona Del Ferraro[6], Tiziana Falcone[6], Vincenzo Molinaro[6] e Michela Bonafede[6]

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)