

Guidelines on prevention of heat-related illness in summer from the **heatwave**



Workplaces should prepare prevention measures toward heat-related illness before the heatwave to implement them by heatwave levels.

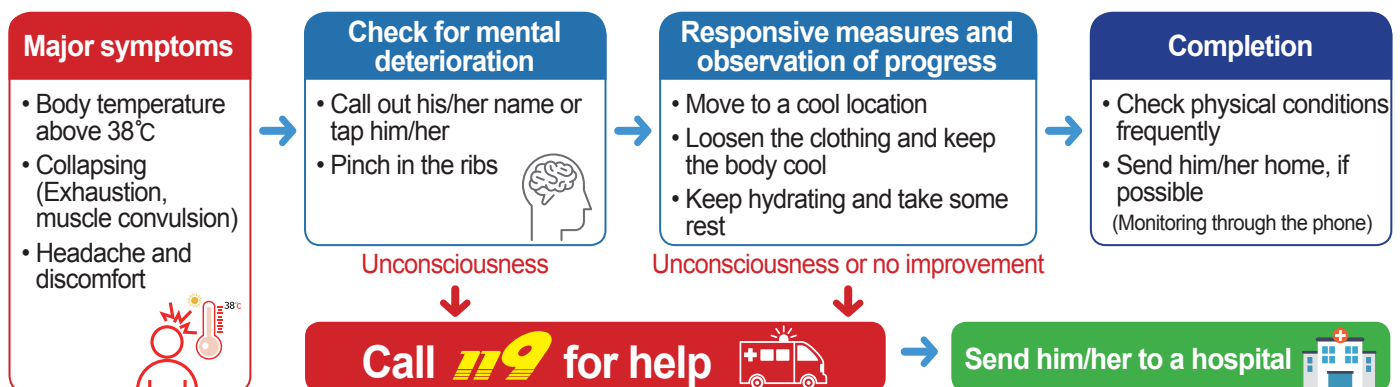
- **Heatwave** refers to a weather phenomenon **sustained period of severe heat in a given area, usually above the normal summer temperature of 31 degrees Celsius**, and this phenomenon poses a risk of illnesses such as heatstroke.
- The government tries to prevent damages from the heatwave by running a heatwave countermeasure period (May 20 - Sept. 30) every summer.

Follow **3 Basic Rules** to prevent heat-related illness.

Outdoor workplaces such as construction sites	Indoor workplaces <small>※ (Applied workplaces) Places that have difficulties in the installation of air-conditioning devices and indoor temperature is affected by the outside temperature</small>
Water <ul style="list-style-type: none"> ☑ Cool and clean water needs to be provided / Regular hydration. 	Water
Shade <ul style="list-style-type: none"> ☑ A shaded area (rest area) near the worksite should be provided. ☑ Shade canopies should be installed at a place that can be ventilated with cool air. ☑ Install additional localized cooling, such as portable air conditioners, as needed 	Wind <ul style="list-style-type: none"> ☑ Need to implement the following measures to keep the temperature within a specific range for daily worksites. <ol style="list-style-type: none"> 1 Installation of a thermo-hygrometer at the worksite. 2 Installation of * zone cooling system or local ventilation to prevent hot air from being stagnated. <ul style="list-style-type: none"> * Air circulation device, fan, cool-air fan, mobile air conditioner, etc. 3 Need to manage the indoor temperature during the night shift.
Rest <ul style="list-style-type: none"> ☑ Upon heatwave warning (watch, warning), need to provide a break for 10 to 15 minutes every hour. ☑ Provide rest and minimize outdoor work during the hours of high temperature (14:00 - 17:00). <ol style="list-style-type: none"> 1 Rescheduling working hours. 2 Adjust the workload by slowing down the working pace and focus on less-demanding tasks. 3 Conduct occupational safety and health education at indoor. 4 Check the health conditions of the workers. <p><small>※ A brief rest is crucial during hours of high temperatures, and it can enhance productivity.</small></p>	Rest

Need to take immediate measures in case of **heat-related illness**.

- 🚨 Need to take **immediate measures** if a worker asks to stop the task due to **pressing risks** such as **possibilities of heat-related illness**.
- 🚨 In case of **heat-related illness** such as **heatstroke** or **heat exhaustion** due to extensive exposure to high temperature and humidity, take immediate measures, as shown below.
- 🚨 In particular, the group susceptible to heat-related illness and the workers engaging in labor of high intensity are required to verify their health conditions before and after engaging in their duties.



※ This guideline is provided to prevent heat-related illness and can be applied at the equivalent or higher level based on the worksite situation and workers' opinions.

Need to take extra countermeasures based on the level of the heatwave according to the Apparent (“Feel-like”) Temperature.

During extremely hot weather seasons when indoor/outdoor worksites are continuously exposed to the heatwave, it's necessary to take extra countermeasures in addition to the basic rules to prevent heat-related illness.

Common issues

Attention
Caution
Alert
Serious

Apparent Temperature at or higher than 31°C

- Check the weather conditions through the website of KMA (or the Weather Notification App), and provide the heatwave information for the workers.
- Prepare cool and clean water as well as shades (rest area) to rest for the workers.
- Need to check if the air conditioning/ventilation systems are adequate in the indoor worksites.
- When working outdoors or at indoor hot worksites, provide cold-reserving gear such as arm protectors upon request of the worker.
- Pay extra attention to the group susceptible to heat-related illness and the workers engaging in high-intensity labor.



What is the group susceptible to heat-related illness?

- ▲ Patients with obesity, diabetes, high/low blood pressure, etc.
- ▲ Persons with a history of heat-related illness.
- ▲ Persons of advanced age.
- ▲ Persons newly assigned to the duties exposed to the heatwave.

What is the labor with high intensity? The labor demands extensive physical intensity and is easily exposed to heat stress

- ▲ (Examples) Duties requiring physical labor with the entire body, such as rack/steel bar/concrete-pouring and welding works, or duties repeatedly lifting, unloading, or handling heavy objects, duties using tools such as shovel/hammer/saw while exposed to extensive heatwave.

Caution or the heatwave watch

Apparent Temperature at or higher than 33°C

- Provide a break in the shade (rest area) for 10 minutes every hour.
 - Arrange additional recess hours for the group susceptible to heat-related illness and the workers engaging in the labor of high intensity.
- Reduce outdoor labors or adjust the working hours during the hours of high temperature (14:00 - 17:00).



Alert or the heatwave warning

Apparent Temperature at or higher than 35°C

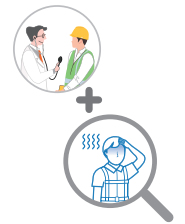
- Provide a break in the shade (rest area) for 15 minutes every hour.
 - Arrange additional recess hours for the group susceptible to heat-related illness and the workers engaging in the labor of high intensity.
- Suspend outdoor labor during the hours of high temperature (14:00 - 17:00) unless unavoidable.
 - Provide sufficient recess hours for unavoidable outdoor labor.
- Assign a person in charge to check the health conditions of the workers.



Serious

Apparent Temperature at or higher than 38°C

- Take a break in the shade (rest area) for 15 minutes or longer every hour.
 - Arrange additional recess hours for the group susceptible to heat-related illness and the workers engaging in high-intensity labor.
- Suspend outdoor labor during the hours of high temperature (14:00-17:00) except for emergency measures required for disaster and safety management.
 - Grant sufficient recess hours when emergency works are executed.
- Restrict outdoor labor for the group susceptible to heat-related illness, i.e., heatstroke.
- Assign a person in charge to check the health conditions of the workers.



How to check the Apparent (“Feel-like”) Temperature

What is the Apparent (“Feel-like”) Temperature? It is the temperature quantitatively expressing the human sensation where the current temperature is perceived lower under low humidity or higher under high humidity by adding the impacts from the humidity and winds.

Outdoor worksites

- KOSHA Homepage → Introduction of project → Occupational Health → Climate Change → Heatwave Impact Forecast (Scan the QR code)
- Check the Weather Alerts app of the Korea Meteorological Administration

Indoor worksites

- Calculate sensory temperature with thermometers in workplaces exposed to extreme heat (Scan the QR code)

Sensible temperature calculator



Apparent Temperature table by the KMA

Temperature Humidity	Attention Caution Alert Serious												
	28	29	30	31	32	33	34	35	36	37	38	39	40
40	26.6	27.6	28.5	29.5	30.4	31.4	32.4	33.3	34.3	35.3	36.2	37.2	38.2
45	27.1	28.1	29.0	30.0	31.0	32.0	32.9	33.9	34.9	35.9	36.9	37.8	38.8
50	27.6	28.6	29.5	30.5	31.5	32.5	33.5	34.5	35.4	36.4	37.4	38.4	39.4
55	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0	36.0	37.0	38.0	39.0	40.0
60	28.4	29.4	30.4	31.4	32.4	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5
65	28.9	29.9	30.9	31.9	32.9	33.9	34.9	35.9	36.9	38.0	39.0	40.0	41.0
70	29.3	30.3	31.3	32.3	33.3	34.3	35.4	36.4	37.4	38.4	39.5	40.5	41.5
75	29.7	30.7	31.7	32.7	33.7	34.8	35.8	36.8	37.8	38.9	39.9	40.9	42.0
80	30.0	31.1	32.1	33.1	34.1	35.2	36.2	37.2	38.3	39.3	40.4	41.4	42.4
85	30.4	31.4	32.5	33.5	34.5	35.6	36.6	37.7	38.7	39.7	40.8	41.8	42.9
90	30.8	31.8	32.9	33.9	34.9	36.0	37.0	38.1	39.1	40.2	41.2	42.3	43.3



Heat-related illness prevention checklist



- 1. This checklist is provided to employers to help them proactively identify potential hazards in the workplace and develop a heatwave response plan.
- 2. If exposure to heatwave can lead to heat-related illness, use this heat-related illness prevention checklist to improve the work environment, follow the three basic rules, and respond quickly in the event of an incident.

Check yourself		Yes	No
Work environment	1. Do you have any outdoor works in hot weather or under direct sunlight?	<input type="checkbox"/>	<input type="checkbox"/>
	2. Do you have indoor works in a hot environment with heat sources such as radiant heat?	<input type="checkbox"/>	<input type="checkbox"/>
	3. Are you engaging in strenuous physical activities that is performed in a hot indoor or outdoor environment?	<input type="checkbox"/>	<input type="checkbox"/>
Preparation	4. Are you performing pre-checks such as sensory temperature checks, health status, fulfillment of the 3 basic rules, and emergency procedures in case of emergency? - Are indoor workplaces equipped with localized cooling and periodic ventilation devices to prevent hot air from stagnating? * Air circulators, fans, coolers, portable air conditioners, etc.	<input type="checkbox"/>	<input type="checkbox"/>
	5. Have you designated a person in charge of managing heat-related illness dangers and symptoms, implementing the three basic rules, and providing feedback to improve the work environment?	<input type="checkbox"/>	<input type="checkbox"/>
	6. Are workers exposed to the heatwave educated about heat-related illness risks, symptoms, and response procedures through TBMs or other means?	<input type="checkbox"/>	<input type="checkbox"/>
Heatwave responsiveness	7. Have a thermometer in the area where workers are working and check their sensory temperature frequently? * (Outdoor) Check the weather alert app of the Korea Meteorological Administration. (Indoor) Check the sensible temperature calculation system (QR code) of the KOSHA.	<input type="checkbox"/>	<input type="checkbox"/>
	8. Are workers who are exposed to the heatwave checked for individualized risks, such as health conditions, workload, and whether they are wearing protective gear?	<input type="checkbox"/>	<input type="checkbox"/>
	9. Are you monitoring for signs and symptoms* of heat-related illness among heat-related illness susceptible groups and workers with high workloads? * Fever, headache, dizziness, nausea, muscle cramps, sweating, nausea, fatigue, etc.	<input type="checkbox"/>	<input type="checkbox"/>
	10. Are you adhering to the three basic rules, responsiveness to heatwave steps, and immediate action in the event of an accident. * (Indoor) localized ventilation device check and periodic ventilation measures, and provision of cooling equipment	<input type="checkbox"/>	<input type="checkbox"/>
	11. If a worker requests suspension of work due to imminent danger, such as fear of heat-related illness, is it possible to immediately suspend work?	<input type="checkbox"/>	<input type="checkbox"/>