LMU KLINIKUM
Institut und Poliklinik für Arbeits-,
Sozial- und Umweltmedizin

Surviving the Summer Heat
Information for Staff in Health Professions

With tips on infection protection measures on hot days

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High temperatures and health

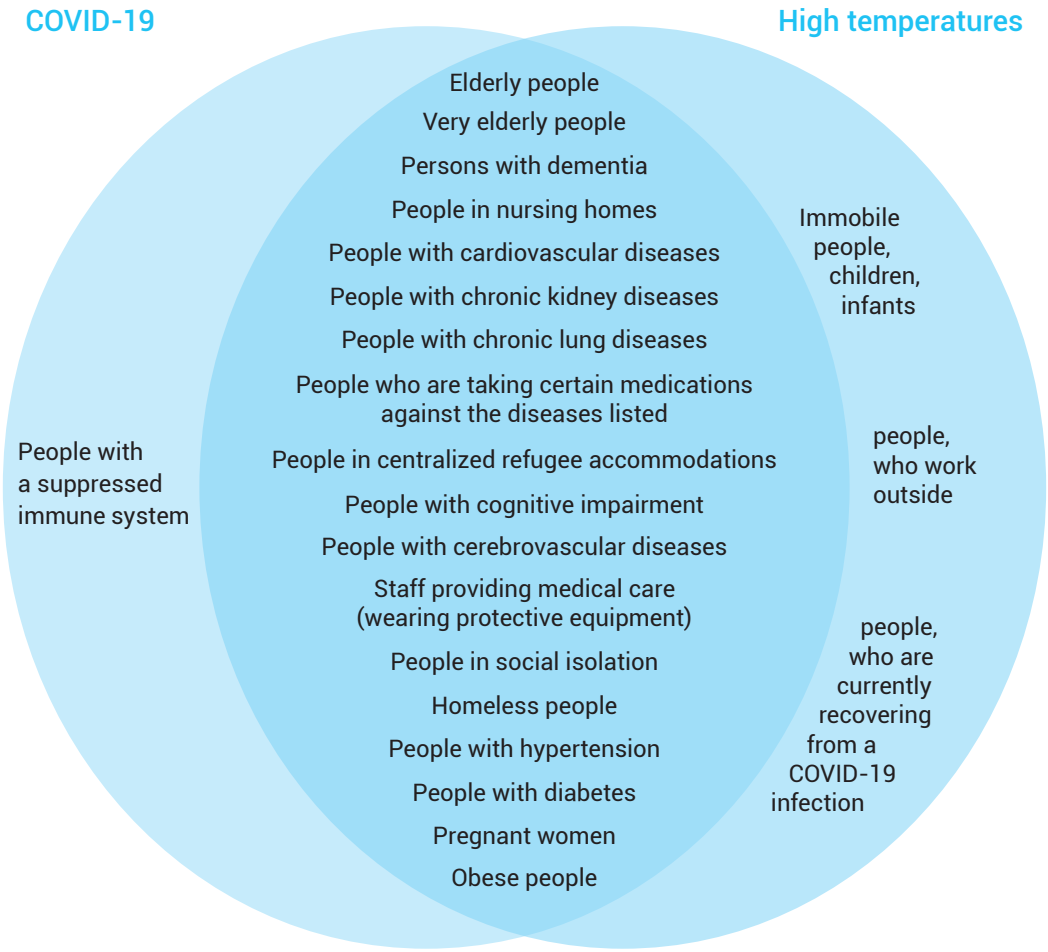
Heat events are a great strain on the human body, and long hot spells can be particularly dangerous to our health. Studies show that a particularly high number of hospital admissions and even deaths occur during such hot spells. In Germany, longer and more intense heatwaves are expected in the future due to climate change.

Long-lasting hot spells are a health risk, especially for older people over 65, people with acute or chronic diseases, e.g. chronic lung, kidney or cardiovascular diseases, as well as for those who are immunosuppressed and obese. The longer the heat waves last, the higher the chances of experiencing heat-related health problems. But heat waves are not just a strain on the body for the aforementioned risk groups. High temperatures can also constitute a serious threat to your health during your daily work.

The COVID-19 pandemic in 2020/2021 has shown that infection protection measures on hot days can be very strenuous and constitute an additional stress factor – not only for you but also for people in need of care and assistance.

In this brochure, we inform you how you can best protect yourself and those in need of care and assistance in your professional life against heat-related health problems – with an additional chapter providing tips on infection protection measures on hot days.

Who is particularly affected?



Elderly and especially very elderly people have an increased risk of developing heat-associated health problems. However, hot temperatures can be dangerous for other risk groups as well, such as people with dementia or immobile people, including infants. The COVID-19 pandemic has shown that the risk groups for heat-related health problems and a severe disease progression can overlap with an infection. Therefore, these groups are multiply at risk in the summer.

Tips for your daily routine on hot days

1 **Stay informed about upcoming heat waves** with the Deutscher Wetterdienst (German National Meteorological Service, **www.DWD.de**). Subscribe to the newsletter to heat alerts or use an **app that provides heat alerts** (**www.dwd.de/app**).

Tip: Well before a heatwave, plan in advance what you need to change in your workflows in order to protect yourself and those in need of care and assistance.

The DWD differentiates in two risk warning levels between high heat stress as of a perceived temperature of 32°C without cooling off at night and extreme heat stress as of a perceived temperature of 38°C. The heat stress is associated with very great danger for the risk groups and also for you. As of a perceived temperature of 32°C, it is essential for you to remain **very vigilant** with those in need of care and assistance, your team and you yourself and ensure a good level of protection. Elderly persons already experience extreme heat stress as of a perceived temperature of 36°C.

2 **Discuss the upcoming heat wave in your team** and how you can work together to adapt your activities to the temperatures. For example, you can discuss whether the rules for breaks can be adapted individually to how strenuous the work being done is. It may also be possible to perform certain activities at times of the day where the temperature is lower. **Create and use a heat action plan.**

- Discuss with your team who could draw up a heat action plan. You could also put together a "Heat" work group. You can find a heat action plan for inpatient nursing care facilities at **www.klimawandelundbildung.de.**

3 **Keep an eye on the indoor temperature and the relative air humidity** (max. 24–26°C and 40–60% rel. humidity).

4 **Drink enough fluids,** approximately one glass every one to two hours (150–250 ml), also before your shift. Water is best. You can easily check whether you are drinking enough. Your urine should be light yellow and not smell. If the urine has a dark yellow color, it probably comes from not drinking enough fluids. Please be aware that drinking too much liquid can also lead to physical discomfort.

5 **Take breaks regularly** and use them to cool down and drink something (such as chilled water or very diluted, chilled juice).

6 **To cool down, rest during your breaks** in the shade in nearby parks, gardens, or shady backyards, or in cool break rooms.

7 **Wear light clothing** with single-layer breathable fabric – particularly under your work clothing.

8 **To cool down, place wet compresses on your arms, legs, forehead, or neck** whenever possible.

9 **Use a spray bottle to spray water on your arms, legs, face, and neck.**

10 **Let cool water flow over your wrists every now and then.**

11 **Pay attention to yourself and your colleagues.** Act quickly if one of your colleagues is not feeling well. Pay attention to signs and symptoms that may indicate a heat-related illness (page 9).

Tips for reducing the indoor temperature on hot days

- **Make consistent use of shades, such as external blinds or roller blinds.**
- **Air out common rooms** and, where possible, treatment rooms in the cool hours of the morning. Cross ventilation is particularly effective.
- **Switch off devices which emit heat** that are not currently necessary.

Courses on measures against heat stress are generallywell-received. Check whether your team also offers training courses. Find training material on heat and infection protection on the homepage **www.klimawandelundbildung.de.**

Tips for your daily routine at home on hot days

- **Use the tips for reducing indoor temperatures at home as well.**
- **Take a cool shower before lying down to sleep.**
- **Make sure that you get enough sleep in a cool environment** (below 24°C at night) – this will allow you to recover from your stressful workday. Keep your apartment as cool as possible via (cross) ventilation in the morning and at night, as well as by using shades and blinds.
- **Improve your fitness, as regular exercise strengthens the cardiovascular system** and increases its performance. The cardiovascular system is under particular stress when temperatures are high.

Tips on how you can help on hot days

You, as a health professional, can take on the important role of multiplier. In other words, you can effectively support those in need of your care and assistance through the dissemination of information and through targeted actions involving health-related heat protection.

- **Use the brochures** *"Surviving the Summer Heat – Information for People of Age 65 and Older"* and *"Surviving the Summer Heat – Information for Family Caretakers"* to disseminate information to the people who need it.
- If possible, schedule **appointments for those in need of care and assistance** in the risk group **at cooler times of the day.**
- **Keep reminding about drinking fluids.**
- **In treatment rooms/practices, have beverages** (e.g. water) freely available **on hot days.**

- **Have the beverages in sight and within reach for those in your care.** Be aware of anything that would hide them from view.
- During nursing procedure or other treatments, **distribute water from a spray bottle on the arms, legs, face, and neck** of the person in need of care or assistance. Caution: The use of cold packs can cause cold damage to the skin.

- **Make sure** that the person in need of care or assistance is wearing **light-colored and lightweight clothing.** If necessary, remind the person or family members about proper clothing on hot days.
- **When making a home visit, be aware of the favorite place and sleeping place** of the person in need of care or assistance. It may be possible to shift them to cooler areas in the residence.
- **Make sure** that the person in need of care or assistance is using **lightweight bedding** or remind the person in need of care or assistance and family members of this.

Physical warning signs of heat-related health problems

Pay particular attention if the following signs or symptoms occur, in the person in need of your care or assistance, in your colleagues, or in yourself. They might be indications that you or they are not taking the heat well.

Signs / symptoms You notice the following signs / symptoms in persons in need of care or assistance / colleagues or in yourself:	
Feeling faint, dizzy, or weak; unconsciousness (especially when changing position)	☐
Nausea	☐
Loss of equilibrium	☐
Seeing flashes of light, stars, or dark spots	☐
Sensitivity to light	☐
Blurred vision	☐
Headache	☐
Stiff neck	☐
Abdominal pain	☐
Diffuse pain	☐
Shortness of breath	☐
Feeling of constriction in the chest	☐
Noticeable palpitations	☐
Cramps, tingling, or numbness in the legs and / or hands	☐
Sudden incontinence (loss of bladder or intestine function)	☐
Very dark and concentrated urine	☐
Is or feels confused or disoriented	☐
Is or feels overly anxious	☐
Is or feels aggressive, irritable and / or restless	☐
The skin feels dry and hot or is cold and moist	☐
The eyes are sunken	☐
The mouth is dry (lack of saliva)	☐
The lips are cracked, raw, and / or dry	☐

If one or more symptoms occur, please alert the doctor in charge immediately.

Health problems triggered by heat are not always easy to detect. Different signs and symptoms overlap with those of other illnesses or physical limitations.

Note that symptoms may also occur with a significant delay after being in the heat! To differentiate between fever due to an infection and an increase in body temperature because of heat, the person affected should remain in a cool environment for at least 30 minutes and be given sufficient mineral water to drink. If the body temperature has not decreased by then, the person may have an infection, and you should contact the doctor in charge by phone.

You should immediately contact the emergency doctor in the following cases:

- Disorientation with reduced responsiveness.
- Severe lapses of consciousness and / or confusion.
- High/low blood pressure.
- Severe breathing difficulties.

First aid:

- Quickly remove the affected person from the heat / sunlight.
- Open / remove the affected person's clothing.
- Cool the affected person with moist, lukewarm cloths on the head, neck, hands, and feet.
- Offer electrolyte-containing drinks (mineral water, electrolyte drinks, or lightly salted water) as long as the affected person is not nauseated or have a clouded consciousness.

Medicines and heat

During periods of high temperatures, pay particular attention to the **administration of medicines to persons in need of care or assistance.** Heat has an influence on the absorption, distribution, breakdown, and excretion of drugs in the body. It is best for you to ask the doctor in charge about this.

Some medicines may …

- reduce sweating.
- influence body temperature.
- constrict blood vessels.
- lead to the loss of fluids.

Pay attention to the storage temperatures of the medicines. Some medicines must not be stored at high temperatures, or they will lose their effectiveness. Your pharmacy will be able to provide you with more information.

Tip: On the packaging, write the date when it was opened, and note the shelf life after it is opened.

Good combination – infection protection measures on hot days

Elderly (65+) – especially very elderly people (80+) – and people with severe underlying illnesses have high risk of severe disease progressions due to infections. The health of such persons is also put in jeopardy by high temperatures.

The COVID-19 pandemic has shown that health protection on hot days can contradict the actions for protecting against infection. For example, physical distance is recommended to protect against infection with airborne viruses, such as Sars-CoV-2. However, it is especially during heat events that people in need of care or assistance require social support, such as for choosing appropriate clothing or drinking sufficient liquids.

Infectious diseases can have very different routes of infection. That is why the recommendations for health protection may be very different depending on the type of viral, bacterial, fungal, or parasitic infection.

For this reason, the basic recommendations for protecting against infection are as follows:

- **Comply with the current, confirmed findings and recommendations.**
- **Closely adhere to the heat action plan.**
- **Closely adhere to the hygiene plan.**
- **Discuss instructions with your team and assign tasks according to skills.**

Important: Some measures – whether to protect from heat or from infection – may not be circumvented or replaced. That is why the measures should always be considered and adjusted depending on the individual situation.

Infection protection measures on hot days, using the COVID-19 pandemic as an example

Medical/therapeutic treatments or nursing activities are often physically strenuous – especially when temperatures are high. However, it is even more strenuous when personal protective equipment (PPE) also needs to be worn. Wearing PPE is an occupational safety measure and should be implemented according to the risk assessment performed by your employer. Here you can find additional tips and recommendations on how you – using the COVID-19 pandemic as an example – can protect yourself from heat despite infection protection measures.

1 While wearing personal protective equipment (PPE)

- Before putting on the protective equipment, **drink sufficient** chilled mineral water or diluted juice. Please be aware that drinking too much liquid can also lead to physical discomfort.
- For additional comfort, **wear breathable clothing** under the PPE wherever possible. Be sure to avoid wearing multiple layers of clothing. You can also wear a cooling vest under the protective equipment.

2 While wearing FFP2 masks and medical mouth and nose protection

- Wearing medical mouth and nose protection and FFP2 masks can be strenuous due to the increased resistance when breathing – particularly on hot days. You should therefore use the mask according to the risk assessment. You can find more information on the different masks in the links in the "Helpful Links" chapter (p. 15).
- **Replace** medical mouth and nose protection and/or an FFP2 mask immediately **once it is thoroughly moist.**

3 **Meticulous hand hygiene is quintessential.** In addition to hand disinfection, wash your hands with cold or lukewarm water and soap. For protection against infection, it is not necessary to wash your hands with hot water. The length of the washing procedure (30 sec.) and the sufficient use of soap are crucial in this context. If, after washing your hands, you then allow cold or lukewarm water to flow over your wrists, this will also have a pleasant, cooling effect. Do not forget to perform regular and conscientious skin care as well.

Caution: Be sure to following the hygiene plan of your institution, as it may deviate from this recommendation.

4 **Airing.** In the early morning and at night, it is still cool outside. If you are at work during this time, you can cross-ventilate the rooms of the persons in need of your care or assistance – or the consultation and common rooms. This has a lasting cooling effect on the rooms, while also helping to keep the viral load low in the rooms.

5 **If your patients / the persons in need of your care or assistance suffer from heart or lung diseases,** observe them carefully while wearing a mouth and nose covering, medical mouth and nose protection or an FFP2 mask with regard to:

- their vital parameters and
- labored breathing,
- cold sweat,
- disorientation or
- restlessness.

In addition, you can also measure the oxygen saturation in the blood.

The measures and information contained in this booklet are based on the current scientific findings on heat and COVID-19 (as of 03/09/2021). New findings and changes to the current state of knowledge are constantly being released. Please keep track of the latest findings and adapt the new circumstances to your individual situation.

Helpful links

Deutscher Wetterdienst (German National Meteorological Service)
www.dwd.de
Learn about upcoming heat waves here.

Deutscher Wetterdienst (German National Meteorological Service) – heat warning system
www.dwd.de/DE/leistungen/hitzewarnung/hitzewarnung.html
Learn about upcoming heat waves and register for the newsletter here.

Bundeszentrale für gesundheitliche Aufklärung (Federal Center for Health Education)
www.bzga.de
Here you can find the latest information related to your health.

Zentrum für Qualität in der Pflege (Center for Quality in Care)
www.zqp.de
Here you can find useful information for all persons in healthcare occupations.

Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (Federal Institute for Occupational Safety and Health)
www.baua.de/DE/Themen/Arbeitsgestaltung-im-Betrieb/Coronavirus/pdf/Schutzmasken.pdf?__blob=publicationFile&v=18
Here you can find current recommendations for protective masks in connection with the COVID-19 pandemic.

Umweltbundesamt (German Environment Agency)
www.umweltbundesamt.de/publikationen/klimawandel-gesundheit-tipps-fuer-sommerliche-hitze
Here you can find additional materials on heat and climate changel.

Der Hitzeknigge (Heat Tips)
www.umweltbundesamt.de/sites/default/files/medien/5750/publikationen/210215-hitzeknigge-allgemein-web.pdf

Information specifically for caregivers
www.klimawandelundbildung.de

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