UNIVERSITÄT BIELEFELD

Guideline

Heat and Heat Protection

Tips and Advice for Employees at Bielefeld University During Periods of Hot Weather

Guideline:
Heat and Heat Protection

AGUS &
Health Management
As of: May 2026

1. Introduction

The effects of climate change have led to heatwaves in recent summers, and it is expected that the summer months will continue to become warmer in the coming decades. These heatwaves not only affect people's well-being but also pose health risks, especially for people who are vulnerable to heat.

During a period of heat, temperatures at the workplace can also be significantly higher than usual. To counteract heat at the workplace and reduce heat stress as much as possible, you will find tips and advice below on how to deal effectively with periods of heat.

1.1 Human Perception of Heat and Heat Warnings Issued by the German Weather Service

The perception of heat stress is a complex process. The German Weather Service (DWD) uses model calculations to assess the "perceived temperature," which describes the heat perception of an average adult outdoors. The "perceived temperature" is higher than the air temperature under warm, sunny, and low-wind summer conditions. In extreme cases in Central Europe, it can be up to 15 °C higher than the measured air temperature.[1]

From May to September, the German Weather Service (DWD) checks the thermal stress situation in Germany on a daily basis and distinguishes between two levels of thermophysiological heat stress:

High Heat Stress (Warning level 1)

High heat stress is experienced during a weather situation lasting several days that is associated with intense sunshine, high air temperatures (around 29 °C in the shade), increased relative humidity, and little wind. The "perceived temperature" is above 32 °C.[2]

Extreme Heat Stress (Warning level 2)

Extreme heat stress is experienced during a stable weather situation lasting several days that is characterized by intense sunshine, extremely high air temperatures (around 35 °C in the shade), increased relative humidity, little wind movement, and little cooling at night. The "perceived temperature" is above 38 °C.

For heat protection measures, the heat warning system of the German Weather Service (DWD) with the corresponding warning levels[3] is decisive. The warning refers to a period of "persistent high heat stress," which in practice lasts at least two days.[4] Heat warnings are issued by the DWD for the current day and the following day each morning no later than 10:00 a.m.[5]

[1] Federal Environment Agency and German Weather Service. (2019). *Climate change and health: Tips for heat and heatwaves.* Available at: www.umweltbundesamt.de/publikationen. Accessed 2025.
[2] German Weather Service (DWD). (n.d.). *Perceived temperature.* Available at: https://www.dwd.de/DE/leistungen/hitze_thermische_belastung/gefuehlte_temperatur.html. Accessed 2025.
[3] German Weather Service (DWD). (n.d.). *Heat and UV warnings.* Available at: https://www.dwd.de/DE/wetter/warnungen_aktuell/kriterien/uv_hitze_warnungen.html. Accessed 2025.
[4] City of Bielefeld. (2024). *Heat action planning for the City of Bielefeld: Hot times, cool head.* Available at: https://www.bielefeld.de/hitzeportal. Accessed 2025.
[5] German Weather Service (DWD). (n.d.). *Heat warning.* Available at: https://www.dwd.de/DE/leistungen/hitzewarnung/hitzewarnung.html. Accessed 2025.

1.2 Health Risks and Psychological Strain Caused by Heat

Hot days with temperatures above 30 °C and tropical nights, when temperatures do not drop below 20 °C, can place a significant strain on the human body and endanger physical and mental health. Dehydration, worsening of various illnesses, heat cramps, as well as sunstroke and heat stroke can occur as a result. Serious warning signs from the body include: circulatory problems, muscle cramps in the arms and legs, abdominal cramps, headaches, dizziness, nausea, vomiting, increased pulse, a feeling of exhaustion or restlessness, confusion, and a dry mouth.[6]

Heat can affect the health of all people. However, some groups are particularly vulnerable on hot days and are more likely to experience serious health effects. This especially applies to people with disabilities or (chronic) illnesses, older people, pregnant women, children and adolescents, as well as people exposed to work-related risks. In addition, certain medications may cause harmful side effects during hot weather or negatively affect the body's ability to regulate temperature.

Depending on the temperature and the duration of heat exposure, the reactions of the human body can range from mild heat exhaustion or sleep disturbances to serious health effects and organ damage, and even heat-related deaths (Figure 1).

Figure 1: Spectrum of the effects of heat on human health[7]

Heat Stress	Feeling of strain such as exhaustion, sleep disturbances due to heat exposure, or a feeling of impairment during physical exertion or work.
Heat Cramps	Muscle cramps during physical exertion in hot conditions.
Overheating	Mild to moderate strain caused by loss of water and/or salts (dehydration) during heat exposure or heavy physical work. Symptoms include in particular: body temperature between 37 and 40 degrees Celsius, weakness, low blood pressure, vomiting, headaches, and confusion.
Heat Synkope	Fainting at high ambient temperatures due to dilation of the blood vessels.
Heat Stroke	When the body can no longer cool itself through measures such as sweating, heat builds up in the body. The body temperature then rises quickly to 40 degrees Celsius and the brain swells – potentially leading to brain edema, known as "heat stroke".
Exsiccosis (Dehydration)	With heavy sweating and insufficient fluid intake, the body suffers from a lack of water and becomes dehydrated. Feelings of thirst, dry skin and mucous membranes, reduced skin turgor (skin fold remains standing), tachycardia (with symptoms such as dizziness, rapid or pounding heartbeat, shortness of breath, or heavy sweating), and hypotension (low blood pressure) are common consequences.
Hyperthermia	Increase in body temperature when thermoregulation is disturbed by illness, medication, or by excessive external or internal heat input or heat production. Hyperthermia can take forms that are harmful to health or life-threatening.

[6] Federal Environment Agency and German Weather Service. (2019). *Climate change and health: Tips for heat and heatwaves.* Available at: www.umweltbundesamt.de/publikationen. Accessed 2025.
[7] Thuringian Ministry for the Environment, Energy and Nature Conservation. (2022). *Municipal Heat Toolbox Thuringia.* Available at: https://umwelt.thueringen.de/aktuelles/anzeigen-medieninformationen/hitzeschutz-vor-ort-thueringens-gemeinden-und-staedte-besser-auf-hitzewellen-vorbereiten.

In addition to physical health risks, heat can place strain on mental health and reduce the ability to work. Heat as an external stressor can worsen symptoms of existing mental health conditions or cause new ones to occur. In addition, sleep disturbances caused by heat exposure can negatively affect mental health, even without pre-existing conditions. On hot days, reduced attention and performance as well as increased aggression and exhaustion due to heat stress may also occur (Source: see reference).

2. Tips for Behaviour During Hot Weather[8]

2.1 Drink Enough Fluids

Around two to three liters of fluids should be consumed throughout the day. In the case of certain illnesses (e.g., heart and kidney conditions), the appropriate amount of fluid intake should be discussed with the treating doctor. To support access to drinking water, Bielefeld University provides water dispensers for all employees, students, and guests. The water dispensers are located at:

- UHG in front of Sowls/main entrance B01
- UHG A0-304
- UHG Uni hall near building section V
- UHG U2 (next to room U2-123)
- X building next to E0-108

Water, cooled or lukewarm herbal and fruit teas without added sugar, and diluted fruit juice drinks are best suited during heat periods. Even if you do not feel thirsty, it is recommended to drink a glass of water every hour if possible. Heavy sweating leads to significant water loss in the body. As a result, health problems may occur. Since the feeling of thirst usually appears only after the body has already lost too much fluid, it is important to prevent this.

Avoiding ice-cold drinks helps protect the stomach. The consumption of caffeine, theine, and sugar should be limited. Sugary drinks remove fluids from the body; drinks containing caffeine or theine (e.g., coffee, energy drinks, green and black tea) may put additional strain on the circulatory system.

2.2 Light Meals and Mineral Intake

On hot days, several small meals should preferably be eaten. Light, fresh, and cool foods and meals with a high-water content should be preferred, for example fruit, vegetables, salads, low-fat soups, low-fat milk, or dairy products.

People who sweat heavily also lose minerals (especially sodium) from their bodies. Due to its high capacity to bind water, sodium plays an important role in regulating the body's fluid balance and is essential for life. When sweating heavily, the lost sodium should be returned to the body by eating normally salted foods and drinking enough water. Otherwise, a so-called electrolyte imbalance may occur.

An electrolyte imbalance can lead to tiredness, fatigue, delayed reaction times, or in extreme cases even confusion.

[8] Source (adapted from): University Hospital Regensburg, Staff Unit for Occupational Medicine and Occupational Safety. (2024). Heat and heat protection.

2.3 Actively Cooling the Body

Cooling measures such as wetting the forehead, neck, or wrists can help regulate body temperature. Letting cold tap water run over the inside of the wrists can help cool the body down quickly.
In addition, sweating is the most important mechanism for the body's thermoregulation.

When sweat evaporates from the skin, heat energy is removed from the body (it cools down), which can help prevent overheating, for example in high outdoor temperatures. Wearing tight or non-breathable clothing can interfere with this natural cooling process.

2.4 Taking Sufficient Breaks

To reduce heat stress, breaks should be spent in a cool environment whenever possible. During periods of heat lasting several days, the overall strain on the body continues to increase (heat stress). Therefore, it is important to ensure sufficient recovery after work. In view of the strain and health risks mentioned in section 1.1, it may sometimes be necessary to adjust the workload or performance expectations accordingly during periods of intense heat.

2.5 Ventilation and Sun Protection in Office Areas

To prevent health strain and make the indoor climate as comfortable as possible during high temperatures, cross-ventilation should be carried out especially in the early, cooler morning hours. All windows should be opened at the same time, and if possible, also windows and doors on opposite sides. Through this so-called cross-ventilation, fresh and still cool air can enter all rooms particularly quickly.

If the temperature outside is higher than in the workrooms, ventilation no longer has a cooling effect. In this case, the windows should be kept closed and external blinds, curtains, or slats (sun protection) should be used. If the indoor humidity is very high, for example due to work processes, ventilation should still take place, as sweating is hindered in very humid air. The same applies to mail rooms where "dry ice packages" are handled. While the package is present in the room, a window should be set in a tilted position.

If it is possible to keep the external blinds closed overnight in university rooms (only permitted if no thunderstorms or storms are forecast), windows may also be left open overnight. In the renovated first construction phase of the main university building, it is currently not possible to keep the external blinds closed overnight, as they are automatically controlled depending on sunlight and wind conditions.

Note: The Biological Agents Ordinance (BioStoffV) / Genetic Engineering Safety Ordinance (GenTSV) states that when working with certain biological agents, windows must remain closed during the activity or must not be opened at all. If necessary, ask your supervisor which requirements apply to your work area.

Note: In rooms located on the ground floor, opening the windows overnight is not permitted due to the risk of burglary (even if the blinds are closed).

Note: Please report defective external blinds to: Central Control Room of the University, Tel.: 7777

2.6 Switch Off Unused Electrical Equipment

Electrical devices generate waste heat – therefore the following applies: switch off electrical devices that are not needed (e.g., copiers, printers, computers, and similar devices). Stand-by modes should also be avoided and chargers should be disconnected from the power supply.

2.7 Use of Fans

Artificial air movement also has a cooling effect, which is why fans can be helpful. Although they do not actually cool the air, the airflow across the skin still feels cooling. It also helps to dry sweat on the skin. The resulting evaporative cooling further cools the body.

Note: Make sure that fans are not directed straight at a person and are placed at some distance. Some people are sensitive to drafts. In addition, a fan uses energy and therefore also produces some heat itself. Please coordinate the purchase and use of electrically tested fans with your supervisor (circular directive February 2013 – electrical equipment).

2.8 Adjusting Daily Routines to Hot Weather

Existing flexitime arrangements and the option of mobile working/flexwork should be used, where possible, to shift working hours to the cooler morning or evening hours. Activities outdoors should, where possible, take place in cooler or shaded areas.

2.9 Look Out for People Around You

During heat stress, a person's health condition can suddenly worsen. It is therefore important to look out for yourself and your colleagues and to support each other, as not everyone tolerates heat equally well. For example, people with pre-existing health conditions (e.g., high blood pressure, diabetes, or asthma) as well as particularly vulnerable employees (e.g., pregnant and breastfeeding women, adolescents, older people) often react more sensitively to heat.

Warning signs may include, for example:
- cold and damp skin,
- low blood pressure and rapid pulse,
- rapid but weak breathing,
- nausea,
- dizziness and/or
- vomiting.

If you notice one or more of these symptoms in yourself or others, you should react immediately and inform your supervisor without delay. If a medical emergency is suspected, report it via:

- university internal landline: 112
- mobile phone: 0521-106-112
- the EVALARM app of Bielefeld University (information about the app)

Further information on the university's emergency organization can be found at the following link: https://www.uni-bielefeld.de/themen/hilfe-notfall/index.xml

Further information on heat and emergencies is also available on the University of Bielefeld heat portal: https://www.uni-bielefeld.de/themen/hitze

Supervisors in particular should pay attention to especially vulnerable persons (e.g., adolescents, older people, pregnant women, breastfeeding mothers) as well as employees with pre-existing health conditions and, if necessary, take additional measures that have been defined in advance through the risk assessments.

2.10 Room Temperature in the Workplace

In principle, a "health-appropriate room temperature" must be ensured at the workplace during working hours. According to the Technical Rule for Workplaces on room temperature (ASR A3.5), the air temperature in workrooms should not exceed +26 °C. If this limit is exceeded due to solar radiation, suitable sun protection systems for shading must be used (e.g., external blinds). When outdoor temperatures exceed +26 °C, special regulations apply. If the room air temperature exceeds +26 °C despite sun protection systems, additional measures should be implemented. If the air temperature in the room exceeds +30 °C, effective measures must be taken to reduce the strain on employees. In doing so, technical and organizational measures should take priority over personal measures.[9] Supervisors should prioritize technical and organizational measures over personal measures.

Above +35 °C, the room is unsuitable for work; temporarily moving to cooler workrooms or using Flex Work is necessary. Cooler workplaces for temporary use are available, for example, in the cafeteria of the X building or in the library. Meetings or discussions may also be moved outdoors if appropriate and should be limited to the absolutely necessary duration on hot days. Less urgent matters can be addressed in meetings on cooler days.

Protection against heat stress can also be supported by the type of clothing worn; light, loose, and breathable clothing should be worn. This allows air to circulate around the body. Suitable fabrics include viscose, thin cotton, linen, and silk. Color also has an effect on body temperature. Light-colored clothing should preferably be worn, as it reflects sunlight better than dark clothing. Even more important than the color, however, is that the clothing fits loosely so that air can circulate. Requirements for wearing personal protective equipment must also be followed during periods of heat.

Note: Answers to the most frequently asked questions on "**office climate**" can be found in DGUV Information 215-520 (December 2025) (link: https://publikationen.dguv.de/regelwerk/dguv-informationen/456/klima-im-buero-antworten-auf-die-haeufigsten-fragen). For questions regarding heat protection at the workplace, please contact your supervisor. Further information for **supervisors**, **staff**, **teaching staff** and **students** is available on the University of Bielefeld heat portal.

2.11 Information for Particularly Vulnerable Groups

Some groups of people may be particularly affected on hot days due to certain risk factors and suffer more severe health consequences from the heat. These include people with disabilities or (chronic) illnesses, older people, pregnant women, children and adolescents, as well as people with work-related risks. Detailed information can be found on the University of Bielefeld heat portal.

[9] German Social Accident Insurance (DGUV). (2026). *Heat and drought.* Available at: https://www.dguv.de/de/praevention/klimawandel/hitze-und-trockenheit/index.jsp

2. Contacts

If you have questions regarding health or heat protection, you can contact the Health Management department (E-mail: campusinbalance@uni-bielefeld.de), the AGUS staff unit (E-mail: arbeitssicherheit@uni-bielefeld.de) or the Occupational Health Service of the University of Bielefeld (E-mail: betriebsmedizin@uni-bielefeld.de).

If you have questions about repairs/building services (e.g., defective external blinds), please contact the Central Control Room of the university, Tel.: 7777.

For further information, please visit the University of Bielefeld heat portal:
https://www.uni-bielefeld.de/themen/hitze/

3. Further Information and Links

- **BMG – Federal Ministry of Health:**
https://www.bundesgesundheitsministerium.de/themen/praevention/hitze.html

- **Federal Institute for Public Health (BIÖG) – formerly Federal Centre for Health Education (BZgA):**
https://www.bioeg.de/was-wir-tun/hitzeschutz-klimawandel-und-gesundheit/

- **DGUV:**
https://publikationen.dguv.de/

https://publikationen.dguv.de/widgets/pdf/download/article/456

https://publikationen.dguv.de/regelwerk/dguv-informationen/456/klima-im-buero-antworten-auf-die-haeufigsten-fragen

- **Robert Koch Institute (RKI):**
https://www.rki.de/DE/Themen/Gesundheit-und-Gesellschaft/Gesundheitliche-Einflussfaktoren-A-Z/H/Hitze/Hitzefolgekrankheiten_inhalt.html?templateQueryString=Hitze

- **City of Bielefeld (Heat Portal):**
https://www.bielefeld.de/hitzeportal

- **Federal Environment Agency (UBA):**
https://www.umweltbundesamt.de/themen/tipps-gegen-die-sommerhitze

2. First Aid for Acute Heat-Related Illnesses

Based on the DGUV card *First aid for acute heat-related illnesses*[10]

10 German Social Accident Insurance (DGUV). (2026). Heat and drought. Available at: https://www.dguv.de/de/praevention/klimawandel/hitze-und-trockenheit/index.jsp

3. Sources for the Guideline “Heat and Heat Protection”

Most sources are included directly at the point where they are used in the text as electronic cross-references (hyperlinks). All other references can be found in this directory, sorted by topic.

Impact on Mental Health:

- **AOK:** https://www.aok.de/pk/magazin/koerper-psyche/psychologie/hitze-auswirkungen-auf-die-psyche-und-moegliche-folgen/
- **Techniker Health Insurance:** https://www.tk.de/techniker/aktionen/extreme-hitze-wie-sie-sich-am-besten-schuetzen/wie-hitze-die-psyche-beeinflusst-2197198
- **German Federal Chamber of Psychotherapists**: https://www.bptk.de/pressemitteilungen/hitze-belastet-psyche-und-arbeitsfaehigkeit-erheblich/
- **Medical University of Vienna:** https://www.meduniwien.ac.at/web/ueber-uns/news/2023/news-im-august-2023/hitze-kann-psychische-erkrankungen-ausloesen-oder-verstaerken/
- **Heinrich Böll Fondation:** https://www.boell.de/de/2025/01/21/ein-uebersehenes-risiko-hitze-gefaehrdet-die-psychische-gesundheit

Drinks During Hot Weather:

- AOK: https://www.aok.de/pk/magazin/ernaehrung/gesunde-ernaehrung/richtige-ernaehrung-bei-hitze-so-sorgen-sie-fuer-abkuehlung/

Thermoregulation: Evaporation Through Sweating:

State Office for Health and Occupational Safety: https://www.lzg.nrw.de/hitze/gesundheitsrisiken/koerper/index.html (Flüssigkeit, Elektrolythaushalt, UV-Strahlung)

Tips for Behaviour During Hot Weather:

- Source (adapted from): Universitätsklinikum Regensburg, Stabsstelle Arbeitsmedizin und Arbeitssicherheit. (2024). *Hitze und Hitzeschutz*.

Contact

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