



Policy Brief

Beat the heat: protecting children from heatwaves in Europe and Central Asia

Overview

Heatwaves pose serious risks to children’s health and well-being. Children exposed to heatwaves are prone to a multitude of health problems ranging from heat-stroke to diarrhoea, and low birth weight. Children’s unique vulnerability to heatwaves also puts them at greater risk of asthma, allergies, cardiovascular illness, and respiratory problems.

Pregnant women exposed to heatwaves can experience a greater risk of labor complications. Heatwaves can put children’s access to safe water at risk, as droughts persist. During heatwaves, children’s ability to learn becomes more challenging as they struggle to concentrate.

Adults experience heat differently than children, making it difficult for parents and other caretakers to identify dangerous situations or symptoms of heat-related illness in children.

In recent years, heatwaves across the region have become more frequent. Latest estimates show that around half of children¹ living in 50 countries across Europe and Central Asia are exposed to frequent heatwaves. This is double the global average of 1 in 4 children.

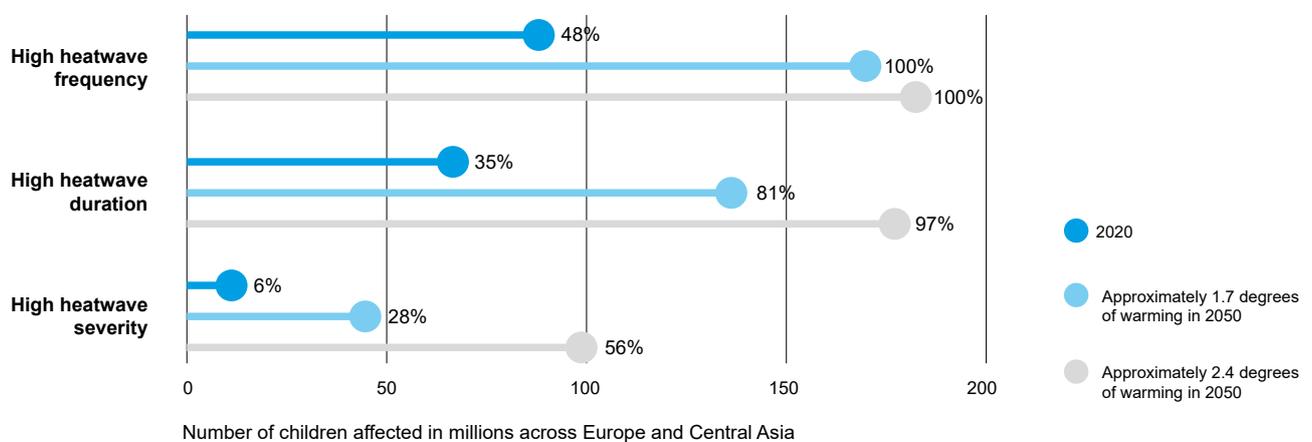
Last year, Europe experienced the second warmest year on record for the region. For some countries in southwestern Europe, it was the warmest on record². In Central Asia the frequency of heatwaves has increased by 30 per cent in 60 years.³

Across Europe and Central Asia, the frequency of heatwaves is set to increase further over the coming years. Even under the most conservative temperature increase scenarios of 1.7 degrees Celsius, all children in Europe and Central Asia are estimated to be exposed to high frequency heatwaves by 2050, 81 per cent are estimated to be exposed to high heatwave duration and 28 per cent are expected to be exposed to high heatwave severity.

Under higher temperature increase scenarios of 2.4 degrees Celsius, 97 per cent of children in the region are expected to be exposed to high heatwave duration and 56 per cent are expected to be exposed to high heatwave severity.

Despite the extensive risks children face from heatwaves and other climate hazards, public awareness, policy responses and financing are deeply inadequate. This policy brief outlines the severity of the problem and provides clear recommendations on how to protect children and their societies from the impact of heatwaves.

Children exposed to high heat measures in 2020 and under low emission scenario with approximately 1.7 degrees warming and under a very high emission scenario with approximately 2.4 degrees warming by 2050, UNICEF Europe and Central Asia Region Reporting Countries.



¹ UNICEF estimates based on data from 50 countries across Europe and Central Asia <https://www.unicef.org/reports/coldest-year-rest-of-their-lives-children-heatwaves>

² WMO (2022). State of the Climate in Europe 2022

³ Yu S. et al., 2020, Trends in summer heatwaves in Central Asia from 1917 to 2016, <https://doi.org/10.1002/joc.6197>



A need for action

The ability to avoid, manage and build resilience to chronic heat exposure in the future will depend on decisions taken now. Urban design and infrastructure investment, socioeconomic inequality and climate change risks must be managed simultaneously.

Residents of dense urban areas can be particularly susceptible to heatwaves. Communities with less tree canopy, more streets, and higher building densities can magnify urban heating. Necessary actions include reforming building standards, undertaking vulnerability reviews, and investing in infrastructure built to withstand, as well as minimize, chronic heat exposure, particularly in informal settlements home to vulnerable people. Lower income residents can also be at risk to heatwaves as they often lack the resources to protect themselves. Urban residents who rent their homes may not be able to modify their dwellings.

Heat alert systems are common throughout Europe. A heat alert system constitutes a set of incremental activities based on temperatures or heat advisories issued by the national weather service or other governmental agencies that provide weather forecasts and warnings. This supports a city or municipality in preparing a comprehensive plan that includes preparedness and response activities, which in turn allow for instituting an effective notification system through various communication channels. In comparison, heat alert systems in countries across Central Asia are rare.

Central Asia is an arid and semi-arid region and water scarcity, land degradation, and a lack of emergency management capacity have increased children's vulnerability to a number of natural hazards, including heatwaves. Over the past century, surface warming has been 20–40 per cent higher over global drylands

than over more humid lands⁴. Therefore, drylands such as those found in Central Asia are at higher risk from extreme temperatures.

To tackle rising temperatures and protect vulnerable groups, policies should focus on early warning systems, public awareness, financial support for lost income, linkages to key services, leveraging social workers, climate-resilient infrastructure, education, and research. UNICEF calls on governments to act urgently, and civil society and donors to provide support to reduce children's exposure to heatwaves and ensure that the needs and rights of children are at the heart of climate change adaptation and mitigation efforts.



Heatwave: Any period of three days or more when the maximum temperature each day is in the top 10 per cent of the local 15-day average.



High heatwave frequency: Where there are on average 4.5 or more heatwaves per year.



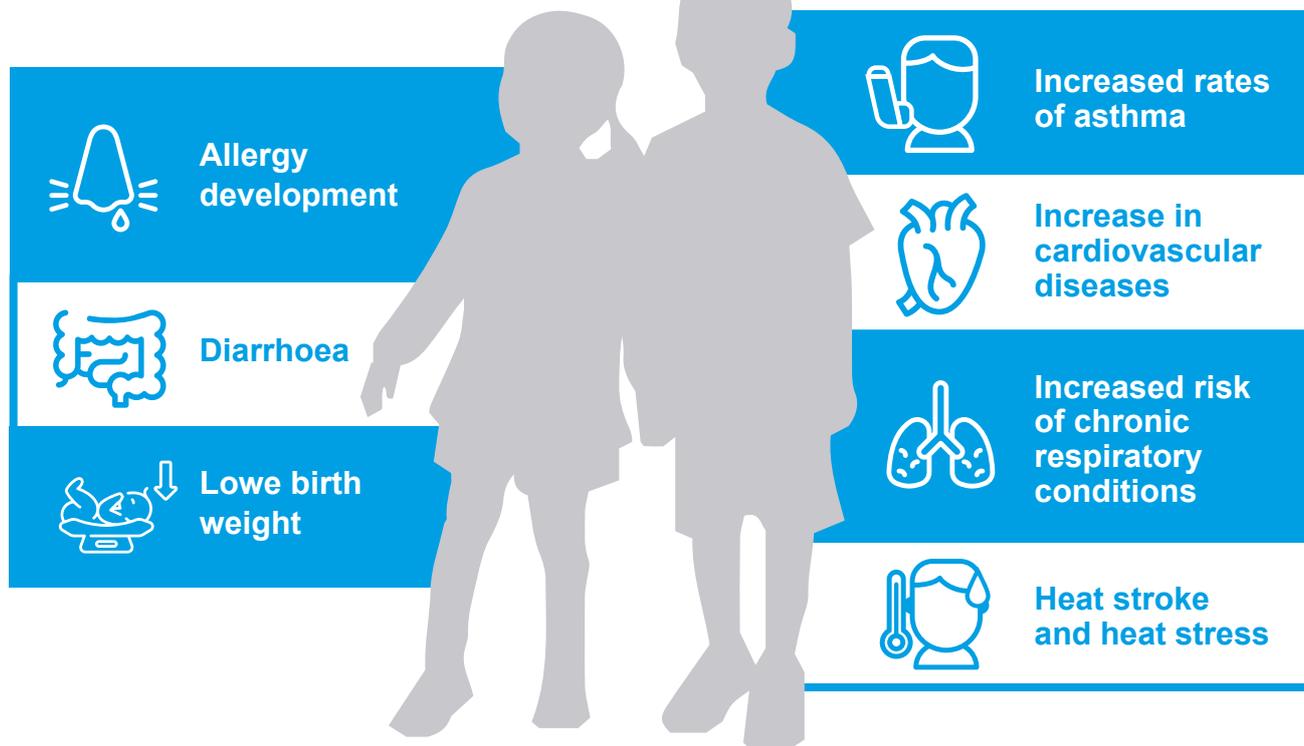
High heatwave duration: Where the average heatwave event lasted 4.7 days or longer.



High heatwave severity: Where the average heatwave event is 2°C or more above the local 15-day average.

⁴ Nature Climate Change, Volume 7, Issue 6, pp. 417-422 (2017)

Risks to physical health include:



Heat-related illnesses occur when exposure to high temperatures and humidity, which can be intensified by physical exertion, overwhelms the body's ability to cool itself. Cases range from mild, like heat rashes in infants, to more serious, life-threatening outcomes like heatstroke, diagnosed once the body temperature rises above 40 degrees Celsius, with a high risk of organ failure.

Prevention is key. Creating cooler places for infants and children, drinking plenty of water, avoiding the outdoors during the hot midday and afternoon hours, and taking it slow when adjusting to exercise are the most effective ways to avoid heat-related illness.

Children are uniquely vulnerable to heatwaves as their bodies take longer to increase sweat production. They take longer to acclimatize in a warm environment than adults do. Young children are also more susceptible to dehydration because a larger percentage of their body weight is water.

Infants and younger children have trouble regulating their body temperature. Studies have shown that young children who spent 30 minutes in a 35-degree Celsius room saw their core temperatures rise significantly higher and faster than their mothers' — even though they sweat more than adults do relative to their size. Paediatricians advise caretakers to monitor how much water children consume and encourage them to drink before they ask for it. Thirst indicates the body is already dehydrated.

UNICEF works with governments and partners across the region to develop and implement heat action plans and heat alert systems. UNICEF has extensive country presence focused on strengthening existing systems to better protect children – including education and health care services – where heatwave mitigation and adaptation mechanisms can be incorporated.



Recommendations to governments:

Science shows that increased temperatures are a result of climate change. UNICEF urges governments across Europe and Central Asia to reduce CO2 emissions to limit global warming to 1.5 degrees Celsius and double adaptation funding by 2025.

1.

Incorporate heatwave mitigation and adaptation into National Determined Contributions (NDC), National Adaptation Plans (NAP), and Disaster Risk Reduction and disaster risk management policies, keeping children at the centre of all plans.

2.

Invest in primary health care to support prevention, early action, diagnosis, and treatment of heat-related illness among children. This includes training community health workers, teachers, early child development caregivers, midwives, nurses, and doctors.

3.

Invest in national climate early warning systems, carry out local environmental assessments, and support emergency preparedness and resilience building initiatives.

4.

Adapt water, sanitation and hygiene, health, education, nutrition, social protection and child protection services to cope with the impacts of heatwaves.

5.

Ensure adequate financing to fund interventions that protect children and their families from heatwaves.

6.

Equip children and young people with climate change education and green skills training.

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