

Extreme heat can be risky during pregnancy: How to you look after yourself and your baby

January 25 2024, by Adrienne Gordon, Camille Raynes-Greenow and Ollie Jay



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As we face the continued effects of [climate change](#), the frequency and intensity of heat waves is increasing. We've recently learnt 2023 was [the hottest year](#) on record.

Extreme [heat](#) presents a major public health threat. It can be [especially dangerous](#) for people who are socioeconomically disadvantaged, and people who have reduced physiological ability to adapt, such as older adults and those with certain medical conditions.

Pregnant people are also more vulnerable, with evidence showing exposure to [extreme heat is associated with](#) increased risks for the baby.

What are the risks?

Globally one stillbirth occurs [every 16 seconds](#) and [15 million babies](#) are born preterm (before 37 complete weeks of pregnancy) every year. Complications of preterm birth are the leading cause of death and disability for children aged under five years old.

A [systematic review](#) which included studies from 27 countries showed that for every 1°C increase in ambient (environmental) temperature, the risk for preterm birth and stillbirth increased by 5%.

The risk of stillbirth and preterm birth attributed to heat is greater in lower- and [middle-income countries](#) where women are often employed in agriculture or other manual labor positions, and their work continues until [the end of their pregnancy](#).

Within [high-income countries](#) the risk [is greater](#) in [disadvantaged populations](#).

Recent Australian research has also suggested a mother's exposure to [extreme temperatures](#) may [influence a baby's birth weight](#). Pregnant people are thought to be at increased risk of heat stress due to changes in their body's capacity to [regulate temperature](#). These changes include:

- increased body mass and body fat which reduces a pregnant

- woman's ability to dissipate heat to the environment
- decreased ratio of surface area to [body mass](#) can make sweating less effective
- additional energy produced from the baby increases the mother's core body temperature.

The effects on the body and baby

When the ambient environment is hotter than the pregnant woman's core body temperature (that is when the air temperature reaches around 38 degrees or above) [blood flow](#) is diverted to the skin to allow sweating. This can decrease blood flow to the placenta, meaning less nutrition and oxygen to the baby.

If dehydration occurs, hormonal changes can include the release of prostaglandin and oxytocin, potentially triggering labor prematurely.

Heat exposure can also release heat-shock protein (a family of proteins produced by cells secondary to stressful conditions) which can damage placental cells and placental function. This can contribute to poor fetal nutrition, leading to [low birth weight](#).

However, actual thermo-physiological data from pregnant women during heat exposure is sparse. Our [recent review](#) showed no study has assessed thermoregulatory function in pregnant women at temperatures higher than 25°C.

Our subsequent [climate chamber study](#) with pregnant women showed their bodies regulate temperature up to 32°C as well as non-pregnant women.

Five ways to beat the heat while pregnant

Evidence of the effectiveness of interventions that address acute heat exposure during pregnancy specifically are limited. Air-conditioning is exceptionally protective, however it is unaffordable for many in Australia and globally.

More evidence of the effect of extreme heat on pregnancy outcomes at a population level in both low and [high income countries](#) will help us develop ways to protect pregnant people and the community.

In the meantime, with the threat of more very hot summer days, simple strategies to [beat the heat](#) when pregnant include:

1. Drink enough water—take a water bottle with you when out and about
2. Plan your day—avoid the hottest part of the day if you can. Take a hat or umbrella with you for shade
3. Stay cool—use fans or [air-conditioning](#) if possible, close blinds and curtains, visit a cooled public environment
4. Dress down—wear lightweight, long-sleeved, light-colored, loose-fitting clothes made from natural fibers, such as cotton or linen
5. Go to sleep on your side—at night and for daytime naps to allow the best blood flow to the baby.

These strategies need to be adapted to personal circumstances, and of course seek medical advice if you feel unwell. Signs of heat exhaustion that can lead to [heat stroke](#) if not treated early include:

- sweating and pale, cool, damp skin
- dizziness and weakness
- a headache
- nausea or vomiting
- a rapid pulse and fast, shallow breathing
- muscle cramps

- fainting
- feeling restless and anxious
- heat rash.

If you have these symptoms, find a cool place to rest, drink cool water or a rehydration drink, remove excess clothing, have a cool shower or bath, or sit for a while with your feet in [cool water](#).

More [severe symptoms](#) indicating heatstroke include intense thirst, slurred speech, lack of coordination or confusion, and aggressive or strange behavior. Heatstroke is a medical emergency, so call triple 0.

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