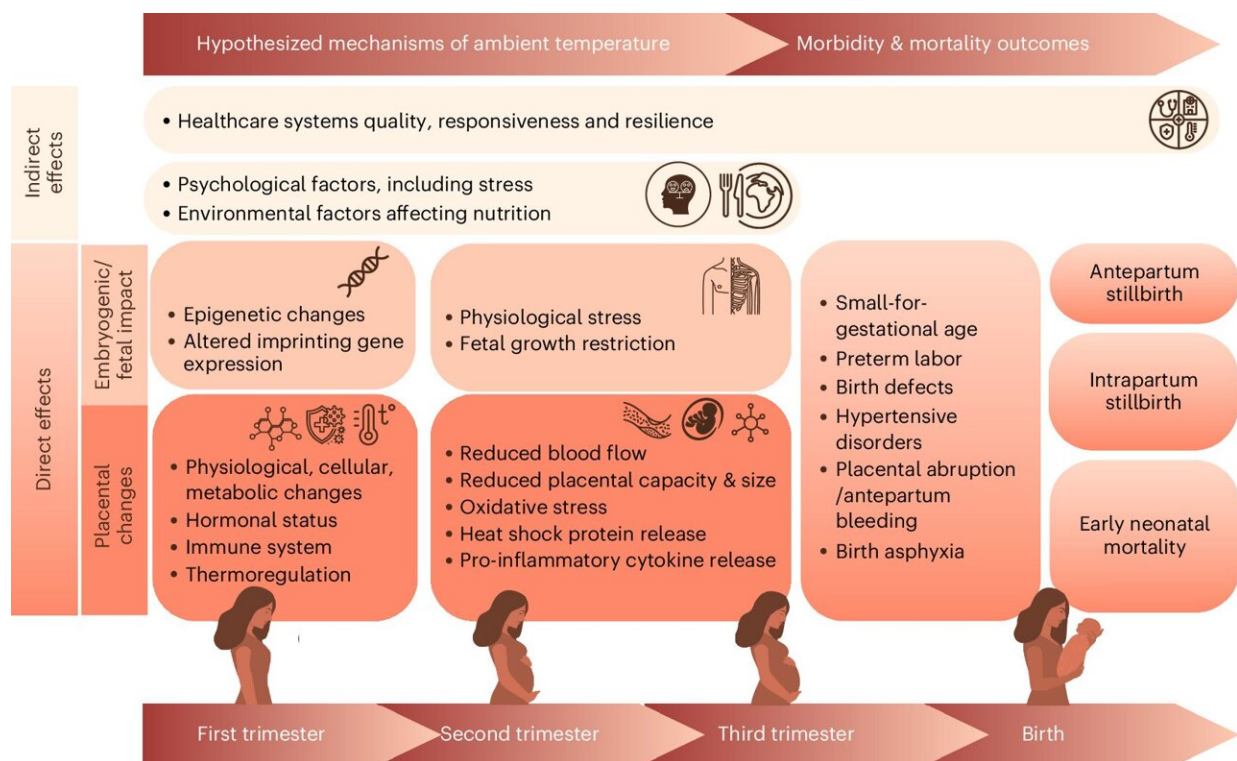


Rising temperatures in Africa may increase perinatal deaths

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Hypothesized physiological, environmental and health system pathways of the effect of extreme heat on perinatal outcomes. Credit: *Nature Medicine* (2024). <https://doi.org/10.1038/s41591-024-03245-7>

Heat waves in sub-Saharan Africa are predicted to become more common due to climate change. A new study by researchers at Karolinska Institutet and others, [published](#) in *Nature Medicine*, reveals a

worrying correlation between high temperatures in the final week of pregnancy and an increased risk of stillbirth and early neonatal mortality.

"While temperatures are rising in sub-Saharan Africa, knowledge of how they affect [pregnant women](#) and their babies is scant," says the study's corresponding author Claudia Hanson, docent at the Department of Global Public Health, Karolinska Institutet, Sweden.

"Our results indicate that mother and newborn care in this region must be improved to ensure that hard-won improvements in reducing mortality are not lost to [climate change](#)," adds Andrea Pembe, professor at the Department of Obstetrics and Gynecology, Muhimbili University of Health and Allied Sciences, Tanzania.

The study included over 138,000 births at 16 hospitals in four countries in sub-Saharan Africa: Benin, Malawi, Tanzania and Uganda. The researchers analyzed the association between high temperatures in the week before birth and [perinatal mortality](#), which is to say a death just before, during, or within 24 hours after birth.

High temperatures were defined as an increase in average weekly [temperature](#) for a typically warm week (between 22 and 28°C depending on country, corresponding to the 75th percentile) to an exceptionally warm week (between 24 and 29°C, corresponding to the 99th percentile).

Babies whose mothers had been exposed to high temperatures the week before childbirth had a 34 percent higher risk of perinatal death, a risk that doubled during the six hottest months of the year. Unlike in many other countries, a large proportion—almost half—of all stillbirths occurred during labor.

"Our study shows that there is an urgent need to develop and implement

interventions that protect pregnant women and their babies during heat waves," says co-lead author Jeroen de Bont, a postdoctoral researcher in Petter Ljungman's research group at the Institute of Environmental Medicine, Karolinska Institutet.

In sub-analyses of heat-associated mortality by timing of death (before, during or after labor), the researchers observed trends towards increased stillbirths during labor, but not all estimates reached statistical significance.

The next phase of the research needs to focus on redesigning maternity wards to mitigate the effects of heat on pregnant women and staff, including using improved construction techniques such as ceiling insulation, and creating adjacent green areas, which can bring additional health benefits.

The researchers will also be studying how heat affects other maternal and childbirth outcomes, and how it interacts with [environmental factors](#) such as air pollution.

More information: Claudia Hanson et al, A time-stratified, case–crossover study of heat exposure and perinatal mortality from 16 hospitals in sub-Saharan Africa, *Nature Medicine* (2024). [DOI: 10.1038/s41591-024-03245-7](#)

Provided by Karolinska Institutet

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