

# MATERNAL EXPOSURE TO AMBIENT TEMPERATURE AND THE RISK OF PRETERM BIRTH AND STILLBIRTH

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**Background and Aims:** Almost 10% of all births are preterm and 2.2% are stillbirths. Recent research has suggested that environmental factors may be a contributory cause to these adverse birth outcomes. We examined the association of preterm birth and stillbirth with ambient temperature in Brisbane, Australia

**Methods:** We obtained data on meteorological factors, air pollution and births ( $n = 101,870$ ) in Brisbane, Australia between 2005 and 2009. We used a Cox proportional hazard model to assess the association of preterm birth and stillbirth with ambient temperature. We also examined if there were any periods of the pregnancy particularly vulnerable to high temperatures.

**Results:** We found an association between maternal exposure to higher ambient temperature and increased risk of stillbirth. With increasing temperatures from 12 °C to 21 °C, the hazard ratio for stillbirth increased by about 70%. The temperature effect was greatest for fetuses of less than 36 weeks of gestation. We also found an association between higher temperatures and shorter gestations and the hazard ratio for live birth increased by about 6% as the mean temperature increased from 15 °C to 25 °C. This effect was greatest at later stages of the pregnancy.

**Conclusions:** The results provide strong evidence of an association between exposure to higher temperature during pregnancy and increased risk of stillbirth and shorter gestations.