

Research Summary

The Latrobe ELF Study | Exposure to mine fire smoke and the risk of pregnancy-related health problems

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Background

The fire in the Morwell open cut brown coal mine adjacent to the Hazelwood Power Station blanketed the town of Morwell and the surrounding area in smoke and ash for six weeks in February and March 2014. The smoke event was recognised as one of the most significant air quality incidents in Victoria's history. It caused considerable community concern within Morwell and the broader community. In response to these concerns, and following extensive community consultation, the Hazelwood Health Study was established to examine the impacts of the mine fire. The HHS involves multiple research streams targeting different health outcomes and different vulnerable groups.

The **Latrobe Early Life Follow up (ELF) Study** is the part of the Hazelwood Health Study that follows the health and growth of children who were younger than two years old when the fire happened. This includes children whose mothers were pregnant with them at the time.

Analysis aims

We aimed to find out whether pregnant mothers exposed to mine fire smoke were more likely to experience complications in pregnancy, including gestational diabetes, high blood pressure, or placental problems, compared to mothers who were not exposed in their pregnancy.



What we found

We found that pregnant women exposed to smoke from the coal mine fire were more likely to be diagnosed with gestational diabetes compared to pregnant women who were not exposed to coal mine fire smoke. Exposure in the second trimester of pregnancy was associated with the greatest risk of gestational diabetes. The number of extra cases of gestational diabetes that were likely to be connected to smoke exposure from the fire was 16. We found no evidence that exposure to smoke was associated with other complications in pregnancy, including high blood pressure conditions or problems with the position or attachment of the placenta.

Meet the team

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To request a copy of the full technical report, please call 1800 985 899 or email contact@hazelwoodhealthstudy.org.au



What we did

- After obtaining ethical approval for this research, we obtained anonymous Victorian Perinatal Data Collection records for pregnant women in the Latrobe Valley who gave birth at 20 or more weeks gestation between 1st March 2012 to 31st December 2015.
- We used the recorded home address at the time the baby was born to estimate how much smoke pregnant women had been exposed to during the fire.
- We looked to see if the amount of smoke exposure during the fire was associated with whether the mother had gestational diabetes, high blood pressure in pregnancy or an abnormally positioned or implanted placenta. When we analysed the data, we took into account other factors that can affect pregnancy complications, including whether the mother smoked in pregnancy, the mother's age and year of conception.



Where to from here?

These findings will be shared with relevant organisations and the scientific community to ensure they are used to shape services for the future health of the Latrobe Valley. Additionally, findings will help guide responses to severe smoke events in the future, by supporting the need for pregnant women to be provided with targeted advice to reduce their exposure during the event.

Considerations

We calculated exposure based on the mother's address at delivery. This means we may not have captured changes in smoke exposure that resulted from movement within and outside of the Latrobe Valley during the fire.

The Latrobe ELF Cohort Study is led by the Menzies Institute for Medical Research at the University of Tasmania with collaborators from Melbourne University and the Telethon Kids Institute.

The HHS is led by Monash University with collaborators from Menzies, Federation University, The University of Adelaide, and CSIRO.

