

Updated analysis of birth outcomes in the Latrobe ELF cohort Research Summary

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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 (HHS) 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 HHS that follows the health and growth of children who were younger than two years old when the fire happened. This includes children who were in the womb and had not been born yet.

Analysis aims

We aimed to repeat our first analysis of birth outcomes using improved estimates of smoke exposure and health data to find out whether babies born to pregnant mothers exposed to mine fire smoke were born earlier or smaller compared to those born to mothers who were not exposed.

Meet the team

Fay Johnston, Shannon Melody, Alison Venn, Karen Wills, Jane Ford, Marita Dalton, Grant Williamson, Tierney O'Sullivan.



What we found

We found that babies born to mothers exposed to the coal mine fire smoke during pregnancy were no different in their birthweight and were not more likely to be born too early. This supports our findings reported previously.

As with our first analysis we found that smoking during pregnancy was associated with lower birthweights in babies.

A detailed report describing the findings from this analysis can be found at

<http://hazelwoodhealthstudy.org.au/study-findings/study-reports/>

Website: www.hazelwoodhealthstudy.org.au/study-reports



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What we did

- After obtaining ethical approval for this research, we enrolled children born between 1st March 2012 and 31st December 2015 who lived in the Latrobe Valley. We then asked families to complete a detailed survey about the study child, their family, their health and the pregnant mother's whereabouts during the fire.
- We looked to see if the amount of smoke exposure during the fire was associated with whether babies were born early and how much they weighed. When we analysed the data, we took into account other factors that can affect birthweight and maturity, including infant sex, the mother's age, health and smoking status during pregnancy.
- In this updated analysis, we used information collected in the survey about the mother's whereabouts during the fire to calculate a more detailed estimate of smoke exposure. We also did additional analyses using the birth data recorded by midwives or doctors at the time of the birth in addition to the parent-reported birth outcomes used in the first analysis.

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.



Considerations

There were some factors that might affect birthweight, such as pregnancy complications and how many pregnancies a mother has had, which we were unable to account for in this analysis. We are investigating some of these separately.

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.

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