

# Premature baby girls shorter as adults

December 12 2016

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Credit: University of Auckland

Baby girls born very premature could be almost three times more likely to grow into very short adults than female babies born at term, according to a new international study.

The study, by researchers from the Liggins Institute at the University of

Auckland and Uppsala University in Sweden, also found women born very premature (before 32 weeks) were 2.3 cm shorter on average as adults than their sisters born at term (37-41 weeks).

"We were a little surprised by the results," says the lead author Dr José Derraik, a senior research fellow at the Liggins Institute.

"There is some evidence that babies who were born premature tend to be shorter in childhood, but they usually catch up with those born at term in late adolescence. But our study shows that women who were born very preterm fail to reach the stature you'd expect based on their parents' and siblings' heights."

This is the latest of a series of studies by collaborators from the Liggins Institute and Uppsala University. The researchers have been analysing a rich body of data from more than 200,000 Swedish women to explore questions about the long-term effects of early life events occurring before, during, and after pregnancy.

The Swedish data were collected between 1991 and 2009 from women aged over 18 years.

"This is one of the very few studies that has specifically investigated the association between premature birth and adult height," says Dr Derraik. "Also, we believe this is the first study to examine this association between adult siblings."

Comparing siblings allowed researchers to control for possible genetic effects on height.

"The 2.3 cm height difference between women born very premature and their adult sisters born at term may not sound much, but to put it into perspective, women born during the Great Chinese Famine in

1959-1961, who experienced severe malnutrition early in life, were about 1.7 cm shorter as adults," he says.

Researchers are yet to establish why [premature birth](#) should lead to shorter adult stature.

"It may be related to the fact that [premature babies](#) are often quite thin at birth," says Dr Derraik. "One of the study's collaborators from the Liggins Institute, Professor Wayne Cutfield, has previously shown that small size at birth is associated with changes in the way growth hormone works in the body, which could eventually reduce [adult height](#)."

He says a study from Sweden that looked at male military conscripts showed a similar increase in the risk of short height in men born very preterm.

"However, they did not examine siblings as we have done in our study, and this is something that we are aiming to do in the near future."

In New Zealand in 2014, 4421 (7.4 percent) of babies were born premature, including 748 (1.3 percent) at less than 32 weeks of gestation.

Worldwide, it's estimated that 9.6 to 11.1 percent of all babies are born premature, with rates significantly higher in poor countries (18 percent in Malawi, for example).

**More information:** José G. B. Derraik et al. Association Between Preterm Birth and Lower Adult Height in Women, *American Journal of Epidemiology* (2016). [DOI: 10.1093/aje/kww116](https://doi.org/10.1093/aje/kww116)

Provided by University of Auckland

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