High survival rate among children who have suffered from growth restriction

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Almost all children with restricted growth live to see their 18th birthday as long as they survive their first month of infancy. This is indicated in a study by researchers at Karolinska Institutet in Sweden, which is

published in the journal *PLOS Medicine*.

Reducing child mortality is one of the U.N.'s Millennium Development Goals, but the work is progressing slowly. Improved maternal health and a desire to reduce growth restriction during the foetal period are two ways to decrease child mortality. Growth restriction in foetuses has previously been associated with an increased risk of stillbirth and increased mortality in the neonatal period, but whether or not growth restriction also has an affect on long-term survival in children is unclear.

In the study, the researchers analysed the relationship between severe or moderate growth restriction and the risk of death later in childhood in a total of 3.8 million live-born children and 2.8 million siblings born in Sweden between 1973 and 2012.

The researchers examined mortality in the range of one month up to 18 years of age by comparing children who had suffered from growth restriction with children experiencing normal growth. The researchers also compared siblings of children with restricted growth. Sibling comparisons make it possible to account for a variety of environmental factors such as socioeconomic factors and lifestyle, as well as genetic factors from the mother, which may be important with regard to child mortality.

Approximately one out of 105 children with severe growth restriction died before reaching their 18th birthday, compared to 1 out of 202 with moderate growth restriction and 1 out of 289 children with normal development.

"This corresponds to 2.6 times, or a 160 per cent increase in the risk of death among children with severe growth restriction, both when compared with all children experiencing normal growth and compared with siblings who had normal foetal growth. Moderate growth restriction

during the foetal period was also a risk factor for death before reaching 18 years of age, with these children having a 37 per cent increased risk," says Jonas F. Ludvigsson, professor at the Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, and the study's lead author.

The highest risk of death was observed during the first year for children suffering from growth restriction, where infections and neurological disorders were the most common causes of death.

"Growth restriction during pregnancy is not only dangerous for the newborn's health but has also been associated with an increased risk of death later in childhood. But as a parent, you should still remember that even among children who have experienced severe growth restriction and made it past the first month, 99 out of 100 will get to celebrate their 18th birthday regardless," says Jonas Ludvigsson.

More information: "Small for gestational age and risk of childhood mortality: A Swedish population study". Jonas F Ludvigsson, Donghao Lu, Lennart Hammarström, Sven Cnattingius and Fang Fang. *PLOS Medicine*, online 18 December 2018.

Provided by Karolinska Institutet

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