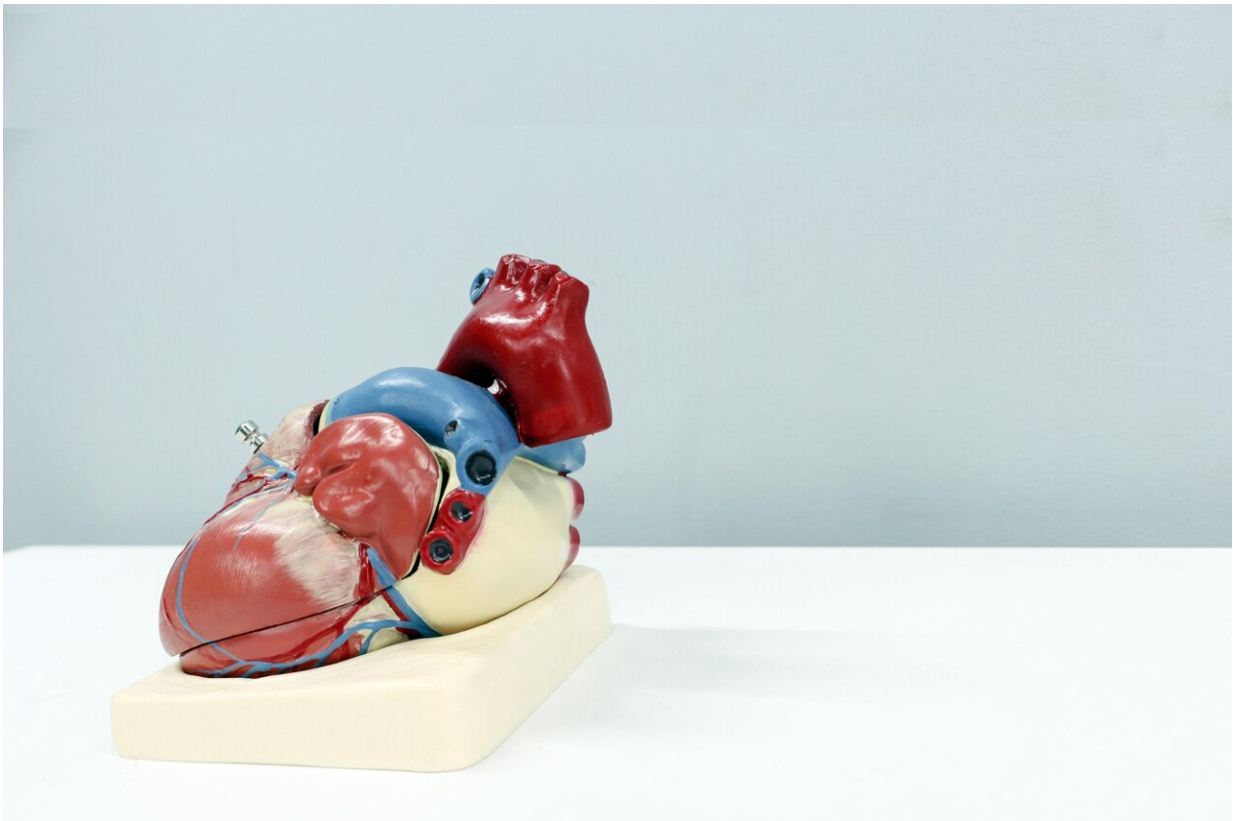


# New insights on the risk for atrial fibrillation in children and young adults

April 24 2023

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Researchers at Karolinska Institutet in Sweden have investigated how preterm birth and fetal growth are related to the risk of atrial fibrillation up to middle-age. The study, which is published in *JAMA Pediatrics*,

shows that being born preterm or large for gestational age was associated with increased risks of atrial fibrillation later in life. Being small for gestational age at birth was only associated with an increased risk of atrial fibrillation up to the age of 18.

The incidence of atrial fibrillation in the young has increased over the past few decades, from low levels.

"Atrial fibrillation at a young age may involve a heavy socioeconomic burden for the affected individuals and we need to learn more about the underlying causes of the disease," says the paper's first author Fen Yang, doctoral student at the Department of Global Health, Karolinska Institutet. "Our findings may highlight the need to monitor and prevent the disease in individuals with an elevated risk of atrial fibrillation."

According to the National Board of Health and Welfare, approximately 5% of babies born in Sweden are preterm (i.e., born before week 37). Previous studies have shown that those born preterm or with fetal growth restriction are slightly more likely to develop cardiovascular diseases, such as [ischemic heart disease](#), stroke and heart failure, later on in life.

## **Low incidence in the young**

To date there have been little or mixed findings regarding the risk of atrial fibrillation in those with adverse birth outcomes. Atrial fibrillation increases the risk of stroke and other cardiovascular conditions, and is the most common form of cardiac arrhythmia. It mainly affects the middle-aged and the elderly. The estimated incidence in the young is low, 0.12% to 0.16%.

A collaborative study involving researchers from Karolinska Institutet has now investigated the risk of atrial fibrillation according to [preterm birth](#) and fetal growth.

"We found that individuals born preterm and those who were large for [gestational age](#) at birth had a slightly higher risk of developing atrial fibrillation up to middle-age than those with corresponding normal birth outcomes," says principal investigator Krisztina László, associate professor at the Department of Global Public Health, Karolinska Institutet, and senior lecturer at the Department of Public Health and Caring Sciences at Uppsala University. "Individuals who were small for gestational age at birth had an increased risk of atrial fibrillation up to the age of 18, but not later in adulthood."

The risk increase was 30% for individuals born preterm, 55% for individuals who were large at birth and 71% for individuals who were both preterm and large for gestational age at birth.

## **Eight million participants**

The results of the study are based on statistical analyses of more than eight million births from Danish (1978–2016), Finnish (1987–2014) and Swedish (1973–2014) medical birth registries who were followed for incident atrial fibrillation in the national patient and cause of death registries up to 2021. The results were compared with siblings in the same families. Since the study was observational, no causal relationships could be ascertained.

The researchers say that future studies may investigate the association between preterm birth, fetal growth, and the risk of [atrial fibrillation](#) up to old age.

**More information:** Preterm Birth, Small for Gestational Age, and Large for Gestational Age and the Risk of Atrial Fibrillation Up to Middle Age, *JAMA Pediatrics* (2023). [DOI: 10.1001/jamapediatrics.2023.0083](#)

Provided by Karolinska Institutet

Citation: New insights on the risk for atrial fibrillation in children and young adults (2023, April 24) retrieved 27 April 2024 from <https://medicalxpress.com/news/2023-04-insights-atrial-fibrillation-children-young.html>

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