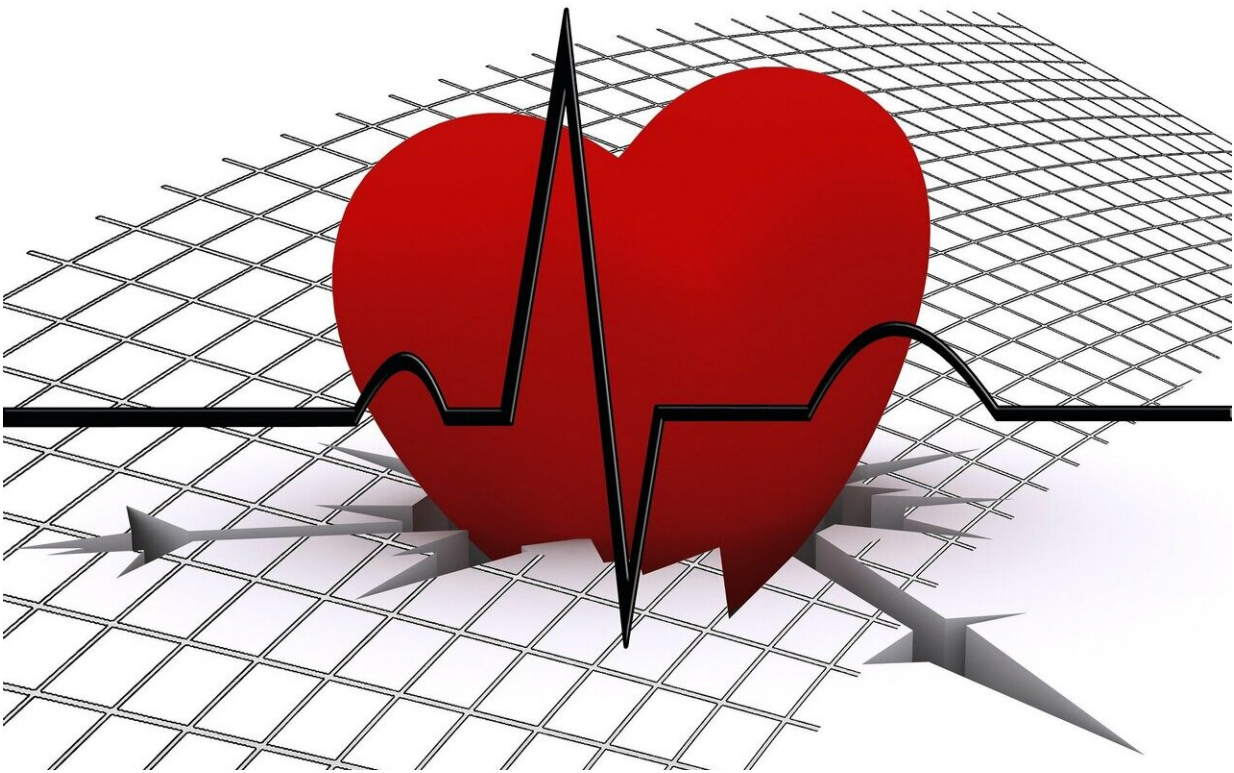


Adults with congenital heart disease face higher risk of abnormal heart rhythms

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Almost 1 in 5 adults with congenital heart disease living in Israel had or developed an abnormal heart rhythm/arrhythmia during a five-year study, according to new research published today in the *Journal of the*

American Heart Association.

The study of more than 11,000 adults with [congenital heart disease](#) between 2007 and 2011 found that those who developed forms of abnormal heart rhythms had an increased risk for hospitalization and twice the risk of early death compared to study participants who did not have an irregular heart rhythm.

"Our findings highlight the need for ongoing, lifelong, clinical follow-up for people with congenital heart disease," said lead study author Nili Schamroth-Pravda, MBCh, a cardiologist at the Rabin Medical Center in Petah Tikva, Israel. "With the improvement of medical and [surgical techniques](#), the number of patients with congenital heart disease reaching adulthood is increasing, as well as the complications associated with these heart conditions.

"The health care system should be aware of the unfavorable effects of arrhythmias in this increasing population and the consequent increase in both primary care visits and hospitalizations," Schamroth-Pravda said.

The analysis found:

- Almost 20% of adults with congenital heart disease had irregular heart rhythms at the study's start, or developed them over five years.
- Adults with congenital heart disease who developed a fast heart rate originating in the heart's upper chambers—atrial tachyarrhythmia—faced a 65% increased risk of dying earlier compared with those who did not have an irregular heartbeat.
- Those who developed a fast heart rate caused by rapid contracting of the heart's lower chambers—ventricular tachyarrhythmia—faced a twofold increase of dying earlier compared with those who did not have an irregular heartbeat.

- Patients who had experienced abnormal heart rhythms (atrial arrhythmia, ventricular arrhythmia or atrioventricular block—a slowed heartbeat) within the previous six months had up to a 33% higher rate of hospitalization compared to those without an [abnormal heart rhythm](#).

Researchers note that surgical scar tissue in the heart, even years after repairing a congenital heart defect, may increase the risk for abnormal heart rhythms later in life. The challenge to clinicians is to achieve early detection and early management of arrhythmias that could pose life-threatening health risks. Learning more about the frequency of these different types of arrhythmias and how they progress among adults with congenital heart disease can help improve treatment for these patients and prevent complications and hospitalizations.

The study is among the first to analyze health care use in association with arrhythmias among adults with congenital heart disease.

"Our study suggests that the development of arrhythmias is a critical point in the life of adult patients with congenital heart disease and this has a profound impact on the [health care system](#) providing care for these patients," Schamroth-Pravda said.

"Our study is from large, real-world data and gives insights into a population that is under-studied," she said. "Congenital heart disease can be varied with people having simple or complex heart lesions, however, they all carry some risk of an abnormal heart rhythm in later life and should be assessed individually and monitored on a regular basis."

According to the [2024 Heart Disease and Stroke Statistics: A Report of U.S. and Global Data From the American Heart Association](#), an estimated 13.3 million people globally were living with congenital heart diseases in 2019. Occurrences increased by 28% between 1990 and

2019, driven largely by increases in the number of adolescents, younger adults and middle-aged adults living with congenital heart diseases.

Study background and details:

- The study included 11,653 adults with a diagnosis of congenital heart disease living in Israel between January 2007 and December 2011 and followed for 5 years. Citizens of Israel have universal health insurance, and this data was taken from the two largest national health services.
- The average age of participants at the start of the study period was 47 years; 52% were women; 70% were Jewish, about 7% were Arab and 23% were noted as "mixed." "Mixed" referred to the group in which the locality of where the patients lived could not clarify the patient's ethnicity since there are regions in Israel with mixed Jewish/Arab residents.
- The analysis of the data was conducted in 2023.
- Most study participants had a single heart defect, and all had at least one documented congenital heart lesion or a specific congenital heart malformation repair procedure.
- At least 18 distinct types of congenital heart defects—some are simple and some are complex—are recognized according to the American Heart Association.
- Thirty percent of adults in this study had an [atrial septal defect](#); 26% had aortic valve disease; and 14% had a ventricular septal defect.
- A total of 8.7% of patients were diagnosed with tachyarrhythmia (abnormally fast heart rate) at the start of the study; 1.5% had a conduction disturbance, which is the slowing or abnormal conduction of electrical signals in the heart; and 0.5% had both conditions.
- Among the subgroup with tachyarrhythmia 60% had abnormally fast heart rates in the upper atrial regions of the heart and 5.7%

had abnormally fast heart rates in the lower ventricular regions of the heart.

- Patients without arrhythmia at baseline were younger, with a median age of 45 years compared to patients with arrhythmia having a median age of 50 years.

One of the limitations of the findings is that it is based solely on patients in Israel. How these findings might translate to adults with congenital heart disease in the United States is unclear.

More information: Arrhythmia Burden Among Adult Patients With Congenital Heart Disease: A Population-Based Study, *Journal of the American Heart Association* (2024).

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