

# Bypass surgery has long-term benefits for children with Kawasaki disease

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Coronary artery bypass surgery provides long-term benefits for children whose hearts and blood vessels are damaged by Kawasaki disease, Japanese researchers report in *Circulation: Journal of the American Heart Association*.

Researchers followed 114 people for up to 25 years who had bypass surgery as children or adolescents (ages 1 to 19) to treat Kawasaki disease. The observational study found:

- The survival rate 25 years after surgery was 95 percent.
- Cardiac event-free rates 25 years after surgery were 60 percent.
- Seventy-seven percent of the 109 patients who had survived 25 years remained on medication, but all were symptom-free at their last assessment.
- In a 20-year follow-up, bypass grafts taken from an internal thoracic artery (ITA) remained open and blockage-free in 87 percent of surgeries, while about 40 percent of grafts taken from the saphenous vein (SVG) were open and blockage-free.

"Survival for more than 20 years of children and adolescents after a bypass operation for severe coronary artery involvement secondary to Kawasaki disease is encouraging," said Soichiro Kitamura, M.D., lead

author of the study and professor of surgery and president emeritus of the National Cardiovascular Center in Osaka, Japan.

Kawasaki disease is an acute infection of unknown origin that strikes young children, more often boys and those of Asian ancestry. About 5,300 cases were diagnosed in the United States in 2003, according to the American Heart Association.

Researchers note a decreasing trend for small children to undergo this operation because of the progress in medical care includes early treatment with the drug gamma globulin. Furthermore, less invasive procedures, such as percutaneous [coronary intervention](#) (which routes a catheter through a blood vessel to the site of the blockage), are often attempted prior to surgery. However, long-term benefits are not known.

Researchers have concerns over the gradual increase in post-operative problems. But the increase in cardiac events can be successfully managed if closely monitored, Kitamura said.

While young bypass recipients require regular checkups, they also tend to lead normal lives. "Some kids with total coronary artery obstructions treated with ITA grafts are now top athletes in school and college," Kitamura said.

Researchers also said that obstruction of the heart's blood supply made some patients totally dependent on an ITA graft.

"My surprise was the excellence of the ITA graft, which proved superior to SVG and showed a continued benefit on clinical outcome up to 25 years," said Kitamura, who pioneered surgical treatment of Kawasaki disease patients and used the first ITA grafts in pediatric bypass procedures in 1983.

The grafts have multiple benefits, Kitamura said. ITA is rarely involved in Kawasaki disease and is flexible, adapting in size and length as children grow. It also releases active natural substances that contract or relax the coronary circulation and may protect against degenerative artery wall changes that Kawasaki disease caused, he said.

"Pediatric coronary bypass surgery using the ITA should be an established treatment for severe heart disease due to Kawasaki disease," Kitamura said.

In an accompanying editorial, University of Toronto pediatric cardiologist Brian McCrindle, M.D., M.P.H., notes that successfully transitioning Kawasaki patients into adult care is an important issue.

"Outcomes must be tracked seamlessly into adulthood if ongoing concerns about prognosis are to be resolved," he writes. "In the meantime, advocacy for healthy lifestyle, screening and management of cardiovascular risk factors for all patients is prudent and recommended."

Source: American Heart Association ([news](#) : [web](#))

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