

# Newly donated blood reduces complications from heart surgery, study shows

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Heart surgery patients who received newly donated blood have significantly fewer post-operative complications than those who received blood that had been donated more than two weeks before their surgery, a study presented at the Canadian Cardiovascular Congress has shown.

The study examined records at the New Brunswick Heart Centre (NBHC) in Saint John for non-emergency heart surgeries performed over almost nine years, from January 2005 to September 2013, on [patients](#) who received [red blood cells](#) either during their surgery or afterwards and who stayed in hospital less than 30 days.

Of 2,015 patients, just over half (1,052) received only "new" [blood](#), donated within 14 days of the transfusion, while the rest had received only or some "old" blood, donated more than 14 days before. Canadian protocols allow blood to be stored and used up to six weeks after it is donated.

After adjusting for differences in age, sex and other health conditions between the two groups of patients, the study found those given only new blood had fewer in-hospital complications such as re-operation for bleeding, ventilation longer than 24 hours, infection, renal failure and death. Overall the patients who received new blood fared significantly better than those who received some or all old blood.

"The findings show that we need to pay attention to the age of the blood we give [cardiac surgery](#) patients," says Dr. Ansar Hassan of the

department of cardiac surgery at NBHC, the study's senior author.

Given the benefits to patients of timely cardiac surgery, Dr. Hassan believes surgeries should not be postponed if new blood is not available. "Perhaps more importantly, we need new studies to determine what is driving this relationship between the age of blood and the outcomes we are seeing."

Dr. Hassan notes that previous non-Canadian studies have reached contradictory conclusions on this subject, which was a reason this study was undertaken. The question is important to cardiac surgeons because their work is one of the foremost users of blood products, with 30 to 50 per cent of cardiac [surgery patients](#) requiring transfusions. The average cardiac surgery requires five pints of blood.

Heart disease and stroke is the leading cause of hospitalization in Canada, accounting for almost 17 per cent of total hospitalizations. More than 25,000 cardiac surgeries are performed in Canada each year. These procedures – including coronary artery bypasses, valve replacements and heart transplants – save and extend the lives of thousands of Canadians every year.

"Cardiac surgery creates [heart](#) disease survivors," says Dr. Beth Abramson, Heart and Stroke Foundation spokesperson, author of Heart Health for Canadians. "We need to ensure outcomes are as successful as possible. This study is an important reminder for Canadians to donate blood so that blood products are available for these surgeries."

She reminds all Canadians that 80 per cent of premature [heart disease](#) can be prevented with healthy lifestyle choices. "It is possible to reduce our risks with changes to five controllable behaviours: physical inactivity, smoking, stress, poor diet and excessive alcohol consumption."

The Canadian Cardiovascular Congress is co-hosted by the Heart and Stroke Foundation and the Canadian Cardiovascular Society.

Provided by Heart and Stroke Foundation of Canada

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