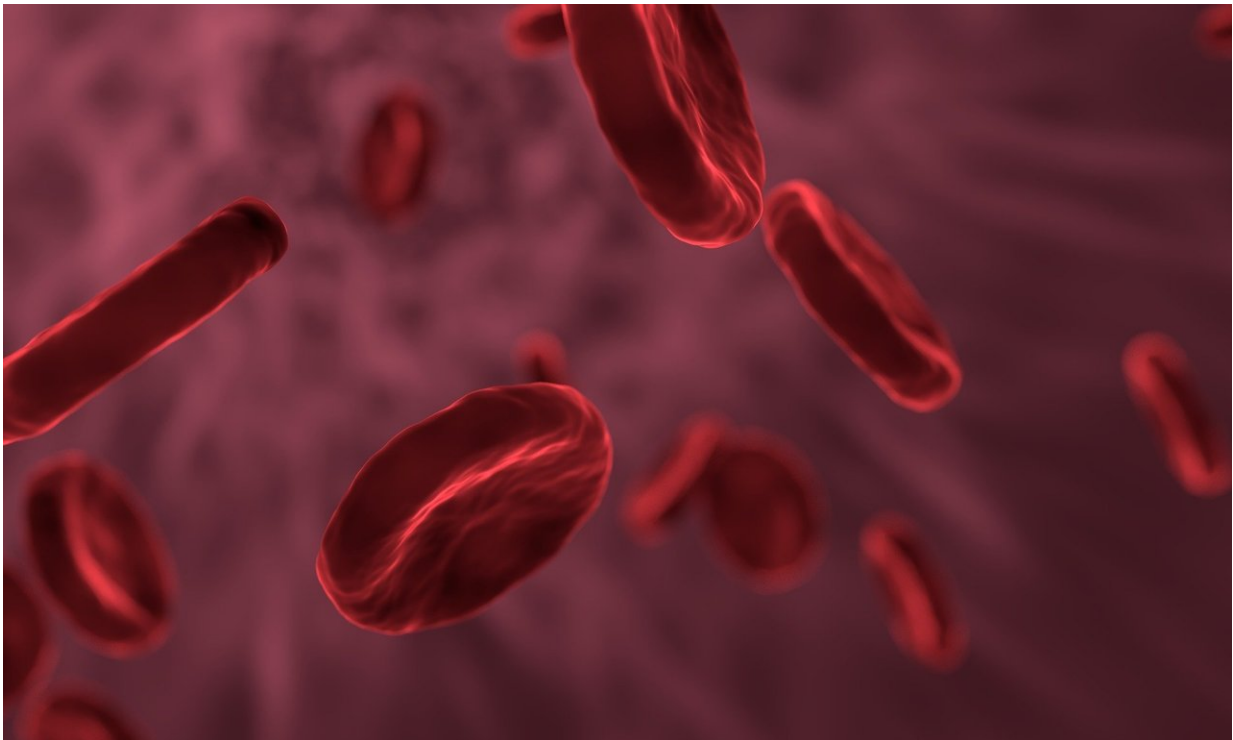


Transfusions with older blood linked to adverse events, death, new study finds

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After a serious injury, the leading cause of death is loss of blood. Major trauma victims who receive transfusions of packed blood 22 days old or older may face increased risk of death within 24 hours, according to a new study in *Annals of Emergency Medicine*.

"Our analysis shows that transfusions of packed red [blood](#) cell units stored for 22 days or longer are potentially toxic," said Allison R. Jones, Ph.D., RN,CCNS, Assistant Professor, Department of Acute, Chronic and Continuing Care, School of Nursing, University of Alabama at Birmingham and lead study author. "To avoid [adverse events](#) or death, patients who require massive transfusions may benefit from receiving fresh stored packed red blood cells, or those stored for 14 days or less."

Packed red blood cells aged 22 days or more were associated with a 5 percent increase in mortality risk, according to the study, "Older Blood Is Associated With Increased Mortality and Adverse Events in Massively Transfused Trauma Patients." The secondary analysis of data from the Pragmatic, Randomized Optimal Plasma and Platelet Ration (PROPPR) trial looked at 678 patients in 12 Level I trauma centers across North America.

As more units of packed [red blood cells](#) were transfused, the likelihood of harm increased, the study found. Major trauma victims can require massive transfusions of blood or blood products in a very short time. Clinical effects of stored blood toxicity include elevated risk of clot formation, infection, sepsis, organ failure and death.

"This study highlights a public health challenge that needs more attention—the nation's health care providers are in the middle of a blood and plasma shortage. We all need to do a better job of encouraging qualified individuals to donate blood and blood products in order to avoid delays in lifesaving care and to replenish our blood supply," said Dr. Jones.

The retrospective analysis looked at [patients](#) who received a mix of old and fresh blood. Future studies are needed to compare patient outcomes among those who receive only fresh blood versus those who receive only old blood, the authors note.

More information: Allison R. Jones et al, Older Blood Is Associated With Increased Mortality and Adverse Events in Massively Transfused Trauma Patients: Secondary Analysis of the PROPPR Trial, *Annals of Emergency Medicine* (2018). [DOI: 10.1016/j.annemergmed.2018.09.033](https://doi.org/10.1016/j.annemergmed.2018.09.033)

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