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## Blood Test Can Help Predict Stroke After Heart Surgery



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Researchers at Wake Forest Baptist Medical Center (NC, USA) have found that the results of a blood test done immediately after heart surgery could be a meaningful indicator of postoperative stroke risk. The finding is published online in the *Annals of Thoracic Surgery*.

An acutely elevated level of blood urea nitrogen (BUN) — a measure of kidney function detected through blood testing — was the most powerful predictor of postoperative stroke among the study's subjects, the researchers noted. In the case-controlled study, the investigators analysed 5,498 adults 18 to 90 years old who underwent cardiac surgery from 2005 to 2010 and identified 180 who suffered a stroke within 10 days of surgery. An elevated BUN level was not only the most accurate predictor of stroke in this group, it greatly surpassed the predictive accuracy of more commonly recognised risk factors such as smoking, pre-operative high blood pressure and emergency surgery, the researchers said.

"An elevated BUN level after surgery tells us that the kidneys aren't working well, which could mean that the blood vessels feeding the kidneys may be narrow," said the study's lead author Martinson K. Arnan, MD, assistant professor of neurology at Wake Forest Baptist. "We found that if kidney vessels aren't performing well, it is likely that other vessels in the body, including the brain, aren't working well either resulting in a higher risk of stroke."

Data show that up to nine percent of cardiac surgery patients suffer postoperative stroke, and these events are significantly more serious and more frequently fatal than those experienced in the general population.

The test that measures BUN is inexpensive and routinely administered before and after all cardiac surgeries. However, the test is most effective as a predictor for stroke if it is administered immediately after surgery rather than at the discretion of the physician, which is the current practice, Dr. Arnan explained.

"Based on our research, we need to more carefully monitor patients with high BUN postoperatively for any symptoms of stroke so that they may benefit from therapy immediately," Dr. Arnan said. "Anything that can help us better assess that risk can help decrease the incidence of stroke, decrease disability and reduce expenses."

He notes that this research also suggests that there may be a role for evaluating the narrowness of blood vessels bringing blood to the kidneys prior to surgery as a means of decreasing stroke risk.

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Source: [Wake Forest Baptist Medical Center](#)

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