

# Botox may prevent irregular heartbeat after bypass surgery

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Botox—known for reducing facial wrinkles—may also prevent irregular heart rhythms when injected into fat surrounding the heart after bypass surgery, according to research in the American Heart Association journal *Circulation: Arrhythmia and Electrophysiology*.

Botulinum toxin, commonly known as Botox, is produced by *Clostridium botulinum* bacteria. When a small amount of Botox is injected into a muscle, it blocks nerve signals that tell muscles to contract.

Atrial fibrillation (also called AFib or AF) is a quivering or irregular heartbeat (arrhythmia) that can lead to blood clots, stroke, heart failure and other heart-related complications.

"About a third of all patients undergoing bypass surgery will develop [atrial fibrillation](#), putting them at higher risk for cardiovascular complications," said Jonathan S. Steinberg, M.D., senior study author and Adjunct Professor of Medicine at the University of Rochester and Director of the Arrhythmia Institute in the Valley Health System in Ridgewood, New Jersey. "Atrial fibrillation is also always associated with lengthened hospitalization and that means increased healthcare costs."

In two Russian hospitals, researchers randomly assigned 60 patients to receive Botox or saline injections. The injections were made in the four major fat pads surrounding the heart. To avoid bias, neither patients nor doctors knew whether the injections contained Botox or saline.

Researchers found that:

- In the 30 days following surgery, those who received Botox injections during [heart bypass surgery](#) had a 7 percent chance of developing AF, compared to 30 percent chance in patients who received saline.
- One year after surgery, none of the patients who received Botox had AF, compared to 27 percent of the patients who received saline.
- No complications from the Botox injections were reported. But complications from the bypass surgery were similar in both groups, including time in intensive care and on a breathing machine, and infection rate.

The results must be replicated in larger studies before Botox injections are routinely used to prevent AF after [bypass surgery](#), researchers said. If confirmed in heart bypass patients, Botox injections could also help prevent AF in people undergoing valve repair or replacement. About half of those patients will develop AF after surgery.

"This first-in-man study has opened a whole new line of thinking and research," Steinberg said. "In the near future, [botox injections](#) may become the standard of care for heart bypass and valve [patients](#), but we're not quite there yet."

Provided by American Heart Association

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