

New therapy to lower sky-high cholesterol

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Nurse Margaret Bowen cares for Bob Guesno, whose cholesterol levels skyrocket to three times the norm. Weekly LDL apheresis at URMC helps lower his risk of heart attack or stroke.

University of Rochester Medical Center cardiologists are first in Upstate New York to offer a blood-cleansing therapy for people with extremely high cholesterol, including two-time heart attack survivor Bob Guesno, whose cholesterol level was nearly three times the norm.

Heart & Vascular Center doctors have introduced apheresis to filter excess [cholesterol](#) from the body, providing a potentially life-saving reduction in the risk of stroke or [heart attack](#) for people with hypercholesterolemia.

"This new therapy offers a tremendous advance for patients with familial hypercholesterolemia, which is a genetic cause of very [high cholesterol](#) and relatively rare, but can be very dangerous because standard medications are ineffective in sufficiently lowering the cholesterol levels," said Robert Block, M.D., M.P.H., a lipids expert and director of the URMC LDL Apheresis Program.

It takes about four hours to filter the cholesterol from the blood, and patients undergo the procedure as many as four times per month.

Cholesterol is a soft, waxy substance that is present in every cell in our bodies and essential to hormone manufacturing. The appropriate amount of cholesterol is created in the liver, however, a regular diet adds more to the bloodstream. There are two types of cholesterol – high density lipoprotein (HDL), which is considered "good cholesterol," and low-density lipoprotein (LDL) also known as "bad cholesterol."

When we get too much cholesterol, large deposits of the LDL form along the walls of our arteries, increasing the chance of stroke and heart attack. Doctors assess the cholesterol levels and depending on a person's risk of heart disease, may prescribe statin medications to lower it. But if the medicines don't work, therapeutic LDL apheresis is an effective way to cut the cholesterol.

This nonsurgical technique involves filtering a patient's blood using apheresis technology that separates the cholesterol from the plasma before returning it to the body.

Guesno, 42, started this new therapy four months ago. "By the second day after the treatment, I have more energy and I can exercise again. I didn't have the muscle stamina before, but now I can walk up to four miles on the treadmill," said the father of three sons.

He was diagnosed with familial hypercholesterolemia as a teenager. It runs in his mother's side of the family – she has it, and her father suffered a heart attack in his mid-30s, and her grandfather died after a heart attack in his late-30s.

Within a few years, Guesno's cholesterol levels climbed up over 500 mg/dL.

When his cardiologists prescribed statin medications to manage Guesno's cholesterol levels, he suffered severe back aches, muscle weakness and pain that made it difficult to walk. He adopted a plant-based diet, to help reduce his cholesterol because he couldn't tolerate the medications.

"We tried everything we could and he couldn't tolerate any of them," said John D. Bisognano, M.D., Ph.D., preventive cardiologist and director of outpatient cardiology. "Without a doubt, when he wasn't taking medications, he was rolling the dice."

Without therapy, Guesno's [cholesterol levels](#) continued to rise and in 2008, at 36, he suffered two heart attacks in consecutive weeks. His care team suggested LDL apheresis, but at the time, the closest center to offer it was in Pittsburgh. Guesno made the four-hour trip there, but suffered an allergic reaction to a medication necessary for the therapy.

Block urged Guesno to try again, since UPMC now offers the therapy and there have been advances in the medications required. The weekly treatments have been successful in reducing his cholesterol from more than 360 mg/dL when he arrives to under 60 mg/dL after the four-hour apheresis.

"It's a constant game of trying to get the LDL out quickly and not let it rise higher and higher," Guesno said.

Provided by University of Rochester Medical Center

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