

## Heart of the matter

• New Memorial technology allows doctors to get clearer images of potential problems in arteries

By Bob Gross  
Staff reporter

Chris Bilyeu stands intently at ghostly gray images on a computer screen.

"That's a clump of hard plaque," he says, pointing to a bright dot on the wall of the main artery supplying blood to the heart. "You can identify calcification right there."

He points to a gray spot intruding into the artery.

"You see the white contrast here and then the gray part — that's the soft plaque," he said.

Bilyeu, manager of medical imaging at Sheridan Memorial Hospital, was examining a coronary angiogram, a snapshot of the heart and the blood vessels that supply it made possible by the hospital's 64-slice CT (computerized) scanner.

"What makes this unique, with the new technology of the 64-slice CT scanner, is it's finally enabled people to get clear images of a beating heart," said Bilyeu.

With each rotation, the scanner takes images of the heart in 64 half-millimeter slices looking up from the feet to the head, according to Bilyeu.

"We're taking pictures between heartbeats," he said. "It's just like taking pictures of a kid on a bicycle. You get a lot clearer picture if he's sitting still."

The procedure — called coronary angiography — allows doctors to see inside the blood vessels supplying the heart muscle, said Bilyeu.

Other tests don't offer that perspective — they may indicate

### Heart-healthy advice from a dietitian ...

According to Annie Barker, dietitian at Sheridan Memorial Hospital, the National Heart, Lung and Blood Institute has issued guidelines for a heart-healthy diet. They are:

- Only 8 to 10 percent of the day's calories should be from saturated fats.
- Only 30 percent or less of the day's calories should be from fats.
- The diet should include less than 300 milligrams of dietary cholesterol in a day.
- The diet should be limited to no more than 2,400 milligrams of sodium daily.
- The diet should have only enough calories to achieve or maintain a healthy weight and to reduce blood-cholesterol levels.

flow, yet fail to detect the potential blockages such as plaque that could result in a heart attack.

Plaque, which forms on the interior walls of blood vessels, comes in two types, said Bilyeu: Hard plaque, which is stable and can cause narrowed and hardened arteries, and soft plaque, which can rupture and cause blood clots.

"Soft plaque, when it ruptures, is where you get a heart attack," said Bilyeu. "Oxygen flow to the heart muscle is cut off due to a blockage."

"There are really only a couple of ways to evaluate soft plaque in the vessel," he said. "Coronary angiography is one."

The test involves injecting a dye into the patient's blood vessels, then taking a CT scan of the heart.

"It's not without risk," said Bilyeu. "This is minimally invasive. We do have to inject some contrast material, and you are exposed to some radiation."

Coronary angiography is used in conjunction with other tests when a patient comes to the emergency department with the

symptoms of a heart attack.

It can help physicians determine whether a patient is having a heart attack or some other condition that mimics a heart attack, said Bilyeu.

"A small percentage of patients don't meet all the criteria of a heart attack," he said. "Their blood work is normal. They get sent home, and they did have a heart attack."

The procedure also can give otherwise healthy patients and their doctors a heads-up to heart problems that might not be apparent.

"It's diagnostic in hopes you can make some lifestyle changes and maybe some statin (anti-cholesterol drug) therapy so you can prevent a heart attack in the future," said Bilyeu. "If you do nothing, maybe you will have a heart attack 10, 15 years in the future."

Lifestyle changes usually mean eating better and becoming more active, said Annie Barker, dietitian at the hospital.

"Diet and exercise kind of go together if you're going to make heart-healthy changes in your life," she said. "Often times, one without the other isn't going to give you the full benefit."

The things many Americans eat, she said, aren't exactly conducive to a healthy heart.

"The standard American diet appears to be very processed," she said. "Just looking at our population, it appears to be higher in calories."

"My perception of the American diet is it is not a heart-healthy diet — too much fat, too much salt and too many calories," said Barker.

To be heart-healthy, she said, load up on the fruits and veggies



The Sheridan Press/Michael Sullivan

Sheridan Memorial Hospital Medical Imaging Manager Chris Bilyeu stands in front of a 3-D workstation connected to a 64-slice computerized tomography scanner at the hospital Wednesday. According to Bilyeu, the scanner incorporates the most modern technology in medical imaging.

and "moderate your intake of cheese and meats, which are higher in saturated fats."

Also, exercise for at least 30 minutes at least three times a week, she said.

While that advice can apply to just about everyone, undergoing coronary angiography can be the shove some folks need to make the necessary changes, said Bilyeu.

"This is a new and upcoming

technology that is available nationwide and is available here in Sheridan," he said. "It's a great test if you want it."

"This is a good time to talk to your doctor: Am I a candidate for this test?" he said.

"If you have the test, and your doctor tells you that you have some narrowing in your arteries, that's pretty powerful incentive to go ahead and make some lifestyle changes."