

Cardiac PET Perfusion at Rush University Medical Center

Cardiac positron emission tomography (PET) perfusion with flow quantification, the latest advancement in nuclear stress testing, is used to examine how well blood flows to the heart muscle. Rush University Medical Center is the first and only hospital in Illinois to offer this technology. Traditionally, nuclear stress testing is performed with SPECT. However, cardiac PET perfusion has high sensitivity and specificity for angiographically significant obstructive coronary artery disease, and has been proven to outperform SPECT and other non-invasive approaches. It also gives higher count images with better spatial resolution.

For clinicians, the advantages of PET are the ability to quantitate coronary flow at rest and stress, determine coronary flow reserve, and the ability to get a true stress ejection fraction. This information can help evaluate for balanced ischemia/high risk disease and for microvascular or diffuse coronary artery disease. In addition, a coronary calcium score can be performed with the study.

Cardiac PET perfusion is only used for patients who need a pharmacologic stress test. High-resolution images are obtained using the lowest radiation dose possible for nuclear stress testing, which means patients are less likely to be exposed to long-term adverse effects. Rush's state-of-the-art PET scanner has a large bore size and can accommodate up to 500 pounds, making it ideal for bariatric and claustrophobic patients. In addition, patients can complete this test in approximately 35 minutes, compared to three or four hours with SPECT. This is helpful in patients who aren't able to remain still for extended periods of time.

Our capabilities

- Low radiation exposure
- High-quality images
- Thirty-five minute study
- Non-invasive quantification of blood flow
- Assessment of coronary artery calcification
- Ideal for bariatric patients, those who cannot perform physical activity and patients who need a preoperative stress test
- Only indicated for those needing a pharmacologic stress test

In one case, an 80-year-old woman with diabetes and hypertension presented with vague shortness of breath. Images of her PET can be seen on the reverse side.

**To refer a patient,
call (312) 942-5741**



U.S. News & World Report ranked Rush University Medical Center's cardiology and cardiac surgery program among the best in the nation.

Location

Rush University Medical Center
1653 W. Congress Pkwy.
Chicago, IL 60612

Cardiac PET perfusion can be ordered by a physician at any clinical office, but can only be performed at Rush University Medical Center.

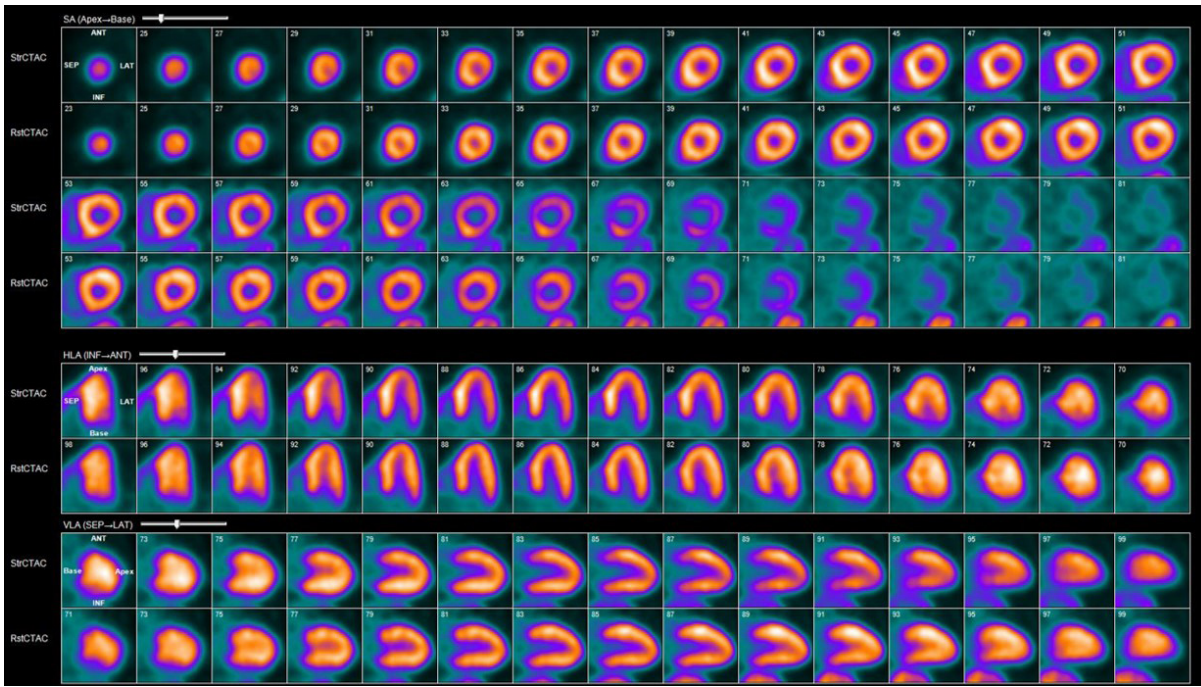
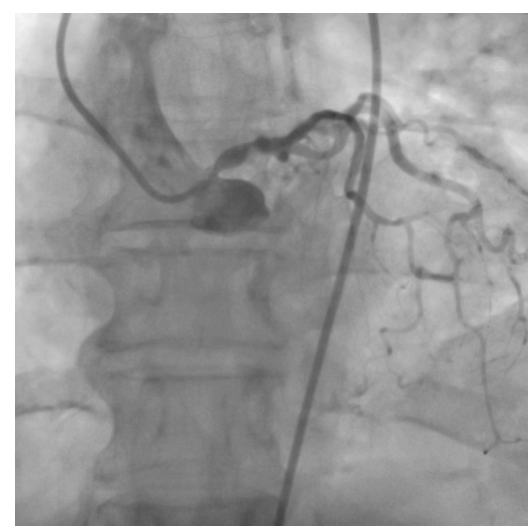
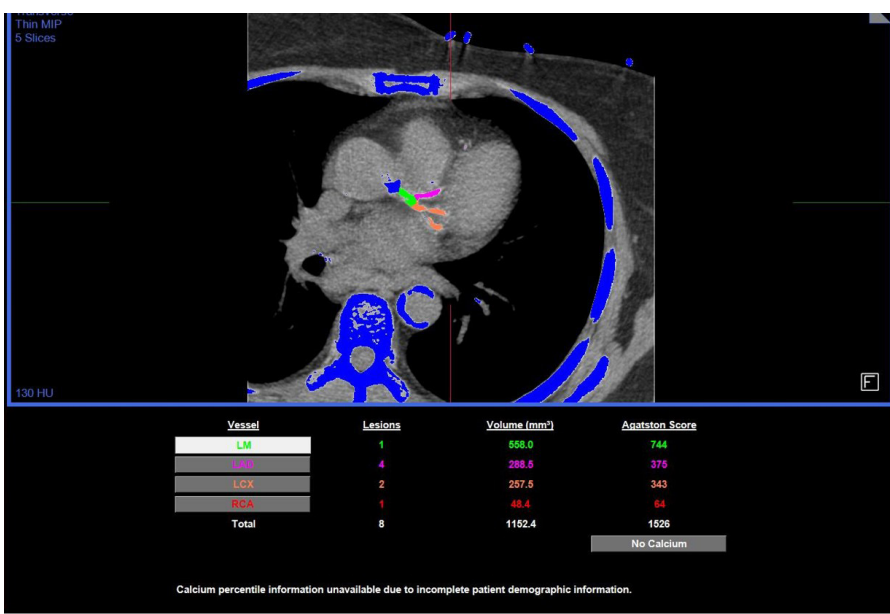


Image shows myocardial perfusion with mild to moderate lateral ischemia.



Patient's cath shows significant left main coronary artery disease.

Image shows high coronary artery calcium of 1525, predominantly in the left main artery.

Global Results					
Region	Mean		Flow (ml/min/g)		Reserve
	Str	Rst	Str	Rst	
LAD	83 %	87 %	2.22	1.69	1.31
LCX	75 %	85 %	1.75	1.64	1.07
RCA	85 %	84 %	2.48	1.55	1.60
TOT	81 %	85 %	2.14	1.65	1.30

Image shows diminished global myocardial flow reserve of 1.3, which is a high risk marker.