



## Patient Education Pamphlet MIBI Scan

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Your specialist has booked you for a MIBI scan. This pamphlet explains what to expect from the test, and why you are having it.

The heart is a pump that sits in the centre of your chest, and beats every second of the day. It is made of muscle, and contains priming and pumping chambers. Blood flow is regulated by one-way valves, and there is an electrical system too that give you heartbeats. The fuel-lines of the pump are CORONARY ARTERIES, which run on the surface of the heart, delve down into the muscle itself, and supply fresh blood to the beating muscle.

As we get older - or if we have risk factors like diabetes, smoking, high blood pressure and high cholesterol – these CORONARY ARTERIES can narrow or block. Narrowing causes ANGINA, a chest tightness brought on by exertion, resolving with rest. Blockages cause damage to the heart, and a reduction in the strength of the pump.

Tests that look at the health of heart arteries include (a) an EKG, or cardiogram (b) a stress test (c) a MIBI scan (d) an angiogram. Each of these tests is more sophisticated than the one before, but also more accurate. For example, a stress test might be 70% accurate, and a MIBI scan more than 90% accurate.

MIBI is the name given to a radioactive tracer dye that is injected into an arm vein. This dye is safe (see later). It circulates in your circulation, and when it passes through the heart, it is absorbed into HEALTHY HEART MUSCLE CELLS. Of course, if the heart muscle has a poor blood supply, or is damaged, MIBI won't be absorbed.

A MIBI scan is done in two sittings. The first day you have the 'RESTING' picture. The dye is injected, and 1-2 hours later, you lie down inside a large scanner for half an hour. The second day, you have the 'EXERCISE' or **STRESS** picture. Again you have a MIBI injection, but in conjunction with some form of activity – like a walk on a treadmill, or the intravenous infusion of **PERSANTINE\*** or **DOBUTAMINE** (these drug infusions mimic exercise). Again, a picture is taken in the scanning room.

The results are available to your doctor within 48-72 hours. You will be told (a) is there muscle starved of blood supply (b) is there a scar on my heart from old damage (c) is my heart pump strong? All with an accuracy of 90-95% (nothing can be absolutely accurate!).

### **PREPARATION:**

A MIBI scan does need you to be properly prepared. If not, the test may be less accurate, or might have to be cancelled.

1. We don't do this test on pregnant women (tell your doctor if this could be possible)!
2. The test is done when you are FASTING. So come to hospital with an empty stomach for 4 hours pre-test. Diabetic patients may eat a light breakfast, however.
3. **CAFFEINE** interferes with the accuracy of this test. Do not take any CAFFEINE for 48 hours prior to day 2 of the test. CAFFEINE is found in all coffees, all teas, pop, chocolate, Tylenol #3 and sometimes cold medications.
4. Some medications have to be stopped before a MIBI scan.
  - a) stop NITROPATCH 12 hours before day 1
  - b) stop PERSANTINE, or THEOPHYLINE drugs, 24 hours before day 1
  - c) Your doctor will tell you if any other drugs need to be stopped. Of course, REMEMBER TO RESTART these drugs after day 2 of the test! Never stop anticonvulsant drugs, or insulin.

### **CONTACT:**

You will be contacted by the Nuclear Medicine Department of the hospital to give you your appointment. When you know your date, call your cardiologist's/internist's secretary to book a time to review the results.

### **SAFETY:**

MIBI scans are safe. They are not 'invasive' - they do not involve catheters entering your circulation. However, a small amount of radioactive material is used. The dose of this radiation is small, 10-15mSi, similar to a CT chest but 100x more than a chest x-ray. The radioactive tracer is eliminated from your body quickly. More detailed information can be found at this website:

[http://sitenav.bidmc.harvard.edu/display.asp?leaf\\_id=5926](http://sitenav.bidmc.harvard.edu/display.asp?leaf_id=5926)

\*Some people can feel nausea, or warmth, or even chest discomfort with PERSANTINE, but an antidote [AMINOPHYLINE] can be given if necessary.