

Choosing Wisely[®]

An initiative of the ABIM Foundation



Medical tests before surgery

When you need them—and when you don't

Doctors often order medical tests for patients before surgery. These are called pre-operative or “pre-op” tests. They include chest X-rays, blood and urine samples, and heart and lung tests.

These tests can be helpful if you are having serious surgery, especially if you have health problems. The tests can show if you will need special care or a delay or change in your operation.

But often, pre-op tests are not necessary. It is not a good idea to get them just because you're having surgery—with little thought about the type of surgery and your overall health. In these cases, pre-op tests usually don't help. And they can even cause harm.

You may need pre-op tests for some kinds of surgery, or if you have certain health problems. Talk with your doctor about the pre-op tests that are right for you. If your doctor or the hospital's medical team can't give you a clear reason for a test, discuss your concerns with them.

Unneeded tests can cause false alarms.

Doctors often order tests for healthy people before minor surgery, such as eye, hernia, or skin surgery. But these procedures are very safe, and the tests rarely make them safer.

If your risk is low, pre-op tests are more likely to cause false alarms than to find serious problems. False alarms often lead to more tests and procedures, such as a biopsy. These can be risky and expensive. And they can cause unnecessary delays in your surgery.

Think twice about having the tests.

In the Choosing Wisely series, medical organizations list pre-op tests that are often done when they aren't necessary. When that happens, the tests can do more harm than good. The Choosing Wisely recommendations are listed below.



HEART IMAGING AND STRESS TESTS

American College of Cardiology, American Society of Echocardiology, American Society of Nuclear Cardiology, Society for Vascular Medicine, Society of Thoracic Surgeons

These tests can show if you are at risk of a heart attack or another serious heart problem during surgery. The tests take pictures of the heart in different ways:

- Echocardiography uses sound waves (ultrasound).
- A stress echocardiography is done when the heart is working hard.
- Nuclear cardiology uses a small amount of radioactive matter and is done when the heart is working hard.
- In an exercise stress test, you walk or jog on a treadmill with electrodes attached to your chest.
- A cardiac CT scan uses X-rays.

You may need one of these tests if:

- You have a high-risk heart condition, such as uncontrolled heart failure, severe valve disease, or a recent heart attack.
- You have symptoms that might be heart-related, such as chest pain, trouble breathing, or getting tired or out of breath more easily than before.
- You will have major surgery, such as chest surgery, joint replacement, or bypass surgery for a blocked artery in the leg. You also have both of these risks:
 - Diabetes, kidney disease, or a history of coronary artery disease, heart failure, or stroke;
 - You cannot walk a short distance or climb stairs without having symptoms, like chest pain or shortness of breath.

You probably don't need the tests if:

- You don't have a serious heart condition or symptoms. And your surgery is low-risk and not related to the heart.

CORONARY ARTERY CALCIUM SCORING

Society of Cardiovascular Computed Tomography

In this test, a CT scan is used to check the arteries in the heart for calcium build-up. This is an early sign of blocked arteries.

You do not need the test before surgery.

Calcium scoring should not be used before any surgery, even if you are a high-risk patient. The test is not very good at showing your short-term risk for a heart attack. And the test can lead to more tests and costs.



CHEST X-RAY

American College of Radiology, American College of Surgeons

A chest X-ray takes a picture of the inside of the chest. It can find a disease or infection of the heart or lungs.

You may need the test if:

- You smoke.
- You have symptoms of heart or lung conditions, such as chest pain, coughing, shortness of breath, swelling of the ankles, fever, a recent heart attack, or a cold or lung infection that does not go away.
- You are older than age 70, with heart or lung disease. And you haven't had a chest X-ray in the past six months.
- You are having major surgery, especially if the surgery is in the chest, heart, lung, or upper abdomen.

You probably don't need the test if:

- You are under age 70, you are not having chest surgery, and you don't have worrisome symptoms.

BREATHING TESTS

Society of Thoracic Surgeons

These tests look for problems in the lungs. They may be done before heart surgery to check your risk of getting a complication—such as breathing problems or pneumonia.

You might need the tests if:

- You have been a smoker.
- You have a lung disease such as asthma or chronic obstructive pulmonary disease (COPD).
- You have certain symptoms: coughing, shortness of breath, wheezing, or chest tightness.

You probably don't need the tests if:

- You don't have symptoms, you haven't been a smoker, and you haven't been diagnosed with lung disease.

CAROTID ULTRASOUND

Society of Thoracic Surgeons

This test can show if the carotid arteries, on the sides of the neck, are blocked. If one of the arteries is blocked, you may be at risk for a stroke after heart surgery. If the test shows a problem, doctors can do a procedure to clean out the blocked artery. This will make the heart surgery safer.

You may need the test if:

- You have had a stroke or mini-stroke (transient ischemic attack or TIA).

You probably don't need the tests if:

- You have not had a stroke or mini-stroke. In this case, you have a low risk of stroke from heart surgery. There is no evidence that the procedure will make your surgery safer.

If your risk is low, pre-op tests are more likely to cause false alarms than to find serious problems. They often lead to more tests and procedures.

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PRE-OPERATIVE WORKUP

American Academy of Ophthalmology, American Society for Clinical Pathology, Society of General Internal Medicine

Some doctors routinely order a set of pre-operative tests. The set may include chest X-rays, an electrocardiogram (EKG) to look for heart abnormalities, and several blood tests.

Usually, you should only get the tests you need. Most people do not need a full set of tests before surgery.

You might need one or more tests if:

- You have a new or worrisome symptom. In this case, you should have the correct test. For instance, you may need an EKG if you have chest pain.
- Your history and physical exam show a risk of having complications during surgery.
 - For example, diabetes increases the risk of infection. So you may need a blood test to make sure your diabetes is under control.
 - If you bruise easily or use a blood-thinning medicine, you may need a blood test to show your risk for bleeding problems.
- You are having major surgery, such as heart, lung, or brain surgery.

You probably don't need the tests if:

- You are having low-risk surgery and do not have worrisome signs or symptoms.

