Screening Tests

Screening tests are used to identify a condition in people who may have a disease before the symptoms are obvious (early detection). Screening tests may include blood tests, imaging (x-ray or computed tomography scans), or testing of a person's ability to complete a task. Some examples of screening tests are blood tests in newborns for thyroid disease and cystic fibrosis, and blood lead level tests and hearing tests in children. In adults, examples of screening tests are Papanicolaou (Pap) tests for cervical cancer, mammograms for breast cancer, blood pressure measurements for hypertension, blood glucose measurement for diabetes, and colonoscopy for colorectal cancer.

WHEN ARE SCREENING TESTS USED?

- The condition is serious.
- A delay of treatment may be harmful.
- A treatment is available if the condition is detected early.
- Early treatment may improve outcome, be easier to tolerate than more intense treatments later in the disease course, or decrease the transmission of the disease to others (if it is an infection).
- The disease is common.

HOW DO SCREENING TESTS WORK?

A perfect test is one for which the result is always positive if you have the disease and always negative if you don't have the disease. Unfortunately, no test is perfect.

It is important to carefully choose who should undergo testing and to carefully interpret results. A test result may be positive even if you do not have the disease (false positive) and may be negative when you actually do have the disease (false negative). If a test is falsely positive, many people will get other tests they may not need. If a test gives too many false-negative results, there will be a delay in identifying people who have the condition.

Screening tests do not really diagnose a disease. They tell you if you are at higher risk and need further testing to prove you have the condition. Many screening tests are done in 2 steps.

- The first test will try to identify as many people at risk as possible—this test may have some false positives but will have few false negatives. People who receive a positive result at this step usually will go on to the second step.
- The second test is performed among people who had a positive result on the first test. This test will have few false positives, so many people at this stage who have a negative test will receive reassuring news. If the second test is positive, however, the chances are good that the person has the condition. This test is very **specific** because it focuses on people who will truly benefit by early detection.

WHAT CAN YOU DO?

- Ask your health care practitioner which tests are best for someone in your circumstances at your age.
- Understand the information that the test will provide and the next steps if the test result is positive.
- Do not assume that "no news is good news." Follow up with your health care practitioner to be sure he or she has seen the results of your test.
- Understand what risks you may have, either because of family history or lifestyle activities.

FOR MORE INFORMATION

- Agency for Healthcare Research and Quality
  www.ahrq.gov/ppip/healthywom.pdf
  www.ahrq.gov/ppip/healthymen.pdf
  www.ahrq.gov/consumer/quicktips/tiptests.pdf
- National Cancer Institute
  www.cancer.gov/cancertopics/pdq/screening/overview/patient
- US Food and Drug Administration
  www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/InVitroDiagnostics/LabTest/default.htm
- American Association for Clinical Chemistry
  labtestsonline.org/understanding/

Sources: Agency for Healthcare Research and Quality; National Cancer Institute; US Food and Drug Administration; Peckham CS, Dezateux C. Issues underlying the evaluation of screening programmes. Br Med Bull. *1998;54(4):767-778.*

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