Cancer Screening

This section has been reviewed and approved by the Cancer.Net Editorial Board [1], April / 2012

Key Messages:

- The goal of cancer screening is to reduce the number of people who develop and die from cancer.
- Talk with your doctor about which screening tests are right for you and the benefits and risks of these tests.

Scientists have developed, and continue to develop, tests that can be used to screen a person for cancer. Many people think that the main purpose of these screening tests is to look for cancer in people who don't have any signs of the disease, or to find cancer in an early, easily treatable stage. But the overall goals of cancer screening are to:

- Lower the number of people who die from the disease, or eliminate deaths from cancer altogether
- Lower the number of people who develop the disease

Not all screening tests are beneficial

Although some cancer screening tests have proven benefits that can help achieve these goals, others do not. When talking about cancer screening, it's important to understand that these tests can increase the apparent "cure rate" of a cancer without actually affecting how many people die from the disease or the risk of dying from the disease. That's because sometimes cancer screening tests find cancer that isn't causing a person harm and won't cause a person harm in his or her lifetime.

One example is screening for prostate cancer. Because of the widespread increase in prostate cancer screening, the disease is being found in more men. However, many of these cancers do not pose a health threat. That's one reason why the number of deaths from prostate cancer today is still similar to what it was in 1975, even though the number of men who have been diagnosed with the disease and "cured" has gone up dramatically.

Because cancer screening tests can detect some tumors that don't need to be treated, improved cancer survival rates don't always mean that a test benefits everyone. In fact, the risks of having a screening test could outweigh the advantages. The best way to tell if a screening test has actual benefits, including a decrease in cancer deaths, is through randomized controlled clinical trials (research studies in people).

Screening benefits and risks

Deciding whether to have a screening test is not always as straightforward as it may seem. Screening has potential risks and benefits that a person should talk about with his or her doctor, especially in the context of his or her personal and family medical history. The benefits include a potential decrease in the number of deaths from cancer. The risks include:

Overdiagnosis. Cancer screening tests may find slow-growing cancers that otherwise would not have been found or caused harm in a person's lifetime. The result is that a person may receive potentially harmful, painful, stressful, and/or expensive treatment that the person didn't need.

False positives. Sometimes a cancer screening test will suggest that a person has cancer when they do not.

Increased testing. Both overdiagnosis and false positives can lead to additional tests that a person may not need. These tests can be physically invasive, costly, and cause a person unnecessary stress and worry.

False reassurance. Sometimes a cancer screening test will suggest a person does not have cancer when they actually do. As a result, a person may not get needed treatment.

Screening test recommendations

Different organizations provide guidelines on cancer screening tests. Recommendations vary on which cancers people should have screening tests for, which screening tests should be used to screen for a particular cancer, and when and how often those tests should be done. It's important for people to talk with their doctors to determine which tests are appropriate for their age and medical history.

Two groups that provide cancer screening test guidelines are the American Cancer Society (ACS) [2] and the U.S. Preventive Services Task Force (USPSTF) [3]. Below is an overview of recommendations from both groups for common cancer screening tests for people without symptoms.

Breast cancer

Mammography. An x-ray of the breast.

- ACS recommendation: Women 40 and older should have one every year.
- USPSTF recommendation: Women 50 to 74 years old should have one every two years. They recommend that mammography be considered in women aged 40 to 49 after evaluating the risks and benefits of this test with a doctor.

Read about what to expect during a mammography [4].

Clinical breast examination. A breast examination performed by a medical professional.

- ACS recommendation: Women 20 to 40 years old should have one at least every three years. Women 40 and older should have one every year.
- USPSTF recommendation: The current evidence is insufficient to assess the additional benefits and harms of clinical breast examination beyond screening mammography in women 40 years or older.

Breast self-examination. A breast examination performed by women on their own breasts.

- ACS recommendation: Women 20 and older should be told about the benefits and limitations of this examination and the importance of talking with the doctor about any breast changes. This examination is considered "optional." However, if a woman chooses to perform breast self-examinations, she should have her doctor review her method at periodic check-ups.
- USPSTF recommendation: Recommends against teaching breast self-examination.

Cervical cancer

Pap test. Cells are gently scraped from the outside of a woman's cervix and vagina and examined.

The ACS and the USPSTF recommend the following:

- Women should have a Pap test within three years of beginning vaginal sexual intercourse or by age 21, whichever comes first.
- Women should be screened every three years with a conventional or liquid-based Pap test. Women age 30 and older who have had three normal test results in a row can have screening every three years. Women older than 30 may also have a Pap test and the human papillomavirus (HPV) [5] test every five years.
- Women who are 65 and older can stop screening if their previous three Pap tests were normal and there were no abnormal tests within 10 years.
- Screening after a hysterectomy (removal of the uterus and cervix) is not necessary unless the surgery was done to treat cervical cancer or precancer. Women who have had a hysterectomy without removal of the cervix should continue screening until age 70.

The American College of Obstetricians and Gynecologists recommends the following:

- Starting at age 21, women should have Pap tests every two years.
- After three normal Pap tests in a row, women 30 and older may have Pap tests every three years. Women with specific medical conditions [6] should be screened more often.
- Women 30 and older may be tested for HPV with the Pap test. If both are normal, the tests are not needed for another three years.
- Starting at age 65 to 70, women can stop screening if they have had three normal Pap tests in a row in the previous 10 years. However, they should continue screening if they are sexually active, have had multiple sexual partners, or have a history of abnormal Pap tests.

Talk with your doctor for more information and read about what to expect during a Pap test [7].

Colorectal cancer

The American Gastroenterological Association, the American College of Gastroenterology, the American Society for Gastrointestinal Endoscopy, the ACS, and the American College of Radiology recommends screening for colorectal cancer beginning at age 50 for both men and women using one of the tests mentioned below. The USPSTF recommends screening from the age of 50 to 75 with specific tests (see below). USPSTF further recommends that adults between 76 and 85 should not have routine screening, because the risks outweigh the benefits, and that adults older than 85 can forgo colorectal cancer screening. It is important to talk with your doctor about colorectal cancer screening and the type of test and screening method that is best for your situation.

Common screening tests include:

Colonoscopy. This test checks the upper and lower part of the colon with a thin, lighted tube. The ACS and USPSTF recommend that men and women 50 and older have a colonoscopy every 10 years.

Read what to expect during a colonoscopy [8].

Fecal occult blood test (FOBT) and fecal immunochemical test (FIT). These tests are used to detect hidden blood in stool (feces). The ACS recommends that men and women 50 and older should have a FOBT or FIT every year, and the USPSTF recommends that men and women 50 and older should have a high-sensitivity FOBT every year.

Read what to expect during a fecal occult blood test [9].

Sigmoidoscopy. This test checks the lower part of the colon with a thin, lighted tube. The ACS and USPSTF recommend that men and women 50 and older should have one every five years, preferably with a FOBT between sigmoidoscopy tests.

Read what to expect during a sigmoidoscopy [10].

Double-contrast barium enema. This test uses an x-ray to check the colon and rectum. A contrast medium (special dye) is used to create a clearer picture. The ACS recommends that men and women age 50 and older have this test every five years.

Read about what to expect during a barium enema [11].

Stool DNA test. This test looks for abnormal genes from cancer in the stool. The ACS recommends this test for men and women older than 50, but how often it is needed is uncertain.

Digital rectal exam. In this test, a doctor inserts a gloved finger into the rectum to feel for anything abnormal. The ACS and USPSTF do not have recommendations for this test.

Read what to expect during a digital rectal exam [12].

In addition, the USPSTF does not think there is enough evidence of benefit or harm to recommend virtual colonography (also known as virtual colonoscopy) and fecal DNA testing for regular colorectal cancer screening. The ACS recommends that a virtual colonography may be done every 5 years for men and women 50 and older.

All tests that indicate an abnormality should be followed up with a colonoscopy.

Prostate cancer

Prostate-specific antigen (PSA) test. This blood test measures the level of a marker called PSA that may detect early prostate cancer. However, high PSA levels may also indicate conditions that are not cancer.

- ACS recommendation: Men 50 and older should be informed of the risks and benefits before choosing PSA testing.
- USPSTF recommendation: There is not enough evidence to recommend PSA testing in men.

Skin cancer

Complete skin examination. A doctor checks the skin for signs of skin cancer.

- ACS recommendation: Men and women should have one done periodically.
- USPSTF recommendation: There is not enough evidence for or against skin examinations.

Learn about protecting your skin from the sun [13].

Conclusions

Screening for cancer has an understandable appeal. Although cancer screening can potentially lower cancer deaths and the distress of cancer, it is important to remember that a person must weigh the potential risks and benefits for each screening test with their doctor. Some screening tests may be more appropriate for those who have a personal or family history of cancer or an inherited cancer-related syndrome. The best way to find the value of cancer screening tests is through randomized clinical trials.

More Information

Understanding Statistics Used to Estimate Risk and Recommend Screening [14]

Risk Factors and Prevention [15]

Last Updated: April 20, 2012

Links:
[1] http://www.cancer.net/about-us
[2] http://www.cancer.org
[3] http://www.ahrq.gov/CLINIC/uspstfix.htm
[4] http://www.cancer.net/node/24584
[5] http://www.cancer.net/node/24561
[6] http://www.cancer.net/node/18674
[7] http://www.cancer.net/node/24638
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