

How Can We Screen for Cancer?

Highlighted here are some of the most commonly used cancer screening tests. When to use these tests and in whom is discussed elsewhere.

Breast Cancer



Screening mammogram:

- Uses X-rays to image the breast.
- The information generated by the procedure can be stored on film (a conventional mammogram) or electronically (a digital mammogram).
- In most cases, the image is 2-dimensional, but some machines generate 3-dimensional images in a process called breast tomosynthesis.
- Can detect breast cancers at any stage of development, but the aim of screening is to find them at the earliest possible stage.

Cervical Cancer



Pap test:

- Samples cervical cells, which are analyzed under a microscope to look for abnormalities.
- Can detect precancerous or cancerous cervical lesions, but the aim of screening is to find them at the earliest possible stage.

HPV test:

- Detects the presence of certain cervical cancer-causing types of human papillomavirus (HPV).
- Does not directly detect precancerous or cancerous cervical lesions, but identifies people for whom further testing is recommended.

Colorectal Cancer



Stool tests:

- Some test for the presence of red blood cells in stool samples. Others test for both red blood cells and certain genetic mutations linked to colorectal cancer.
- Do not directly detect colorectal precancerous lesions or cancers, but identify people for whom further testing is recommended.



Computed tomography (CT) colonography (virtual colonoscopy) and double-contrast barium enema:

- Use X-rays to image the colon and rectum.
- Can detect colorectal precancerous lesions or cancers, but the aim of screening is to find them at the earliest possible stage.



Flexible sigmoidoscopy and colonoscopy:

- Both use a thin, flexible, lighted tube with a small video camera on the end to allow physicians to look at the lining of certain parts of the colon and rectum.
- Can detect colorectal precancerous lesions or cancers at any stage; the aim of screening is to find and remove them before cancer develops.



Blood test:

- Detects epigenetic abnormalities linked to colorectal cancer in blood.
- Does not directly detect colorectal precancerous lesions or cancers, but identifies people for whom further testing is recommended.

Lung Cancer



Low-dose CT scan:

- Uses low doses of X-rays to image the lungs.
- Can detect lung cancers at any stage of development, but the aim of screening is to find them at the earliest possible stage.

Prostate Cancer



PSA test:

- Measures the level of a protein called prostate-specific antigen (PSA) in blood.
- Does not directly detect prostate cancer, but the blood level of PSA is often elevated in men with prostate cancer. Thus, the test identifies men for whom further testing is recommended.