

Colon cancer screening the right way!

Colonoscopy is the safest early-detection method for colorectal (colon) cancer. However, many patients avoid this procedure and prefer to have a test for hidden traces of blood ("occult blood") in the stool instead. However, this test detects only a portion of cases of cancer and occasionally leads to a false alarm. Men should particularly be aware of this, since their risk of developing colorectal cancer is twice as high as that of women. Scientists from the German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) have now discovered that men whose stool tests are negative have colon cancer or precursor lesions even more frequently than women with positive test results. The scientists therefore recommend that people should not rely on the results of a stool test taken on a single occasion for a proper diagnosis.

Starting at 55 years of age, a person's statutory health insurance covers a colonoscopy examination every 10 years. This is by far the most reliable method for early colon cancer detection, because it facilitates detecting and removing most tumors and their precursor lesions at an early stage. However, only about 25 percent of those 55 or older take advantage of this procedure. Many patients prefer to have a so-called guaiac-based stool test. Some people who have a tumor exhibit blood in the stool, which is detected by the test. If the results are positive, the physician in charge will recommend a colonoscopy examination. However, testing for such fecal "occult" blood has a significant drawback: many tumors do not bleed until they have reached a late stage - and even then they do not do so continuously. As a result, the stool test detects only a fraction of colon cancer cases, and only very rarely precancerous lesions. "To improve the chances of detecting colon cancer using the stool test, it would have to be done at least once a year," says Professor Hermann Brenner. "But many physicians and patients are not aware of this."

To assess the diagnostic value of stool tests for men and women, Brenner and his team evaluated the data of 200,000 colonoscopies carried out on patients between the ages of 55 and 74. The analysis confirmed that colorectal cancer and its precancerous lesions are about twice as prevalent in men as in women. The scientists used model calculations to draw conclusions about the incidence of colorectal cancer in patients with negative stool tests. The result: men with negative test results have an even higher incidence of colorectal cancer or precancerous lesions than women with positive test results. "This is due to the higher incidence rate in men and the inaccuracy of the test," says Brenner. "Therefore it is inconsistent that doctors should treat men and women alike. If they recommend that women undergo colonoscopy after a positive stool test, then the logical conclusion to draw would be to recommend that men have a colonoscopy in any case, independent of any stool test, because their risk of colon cancer is significantly higher."

Ideally the tests would have better predictive value. There are new alternatives: immunological tests for fecal occult blood detect colon cancer and its precursor lesions more reliably than the guaiac-based test and are therefore recommended by experts for colon cancer screening. These tests are already available in a number of countries but have not yet been introduced in Germany. Even the immunological tests need to be conducted regularly. Particularly men should not make the mistake of thinking themselves safe just because their test result was negative; instead, they should come back for another test the following year. "It would be even better if they opted for a colonoscopy right away," Brenner says. Usually the findings are negative, which ensures that a person will have peace and quiet for another 10 years!

Brenner H, Hoffmeister M, Birkner B, Stock C.: Men with negative results of guaiac-based fecal occult blood test have higher prevalences of colorectal neoplasms than women with positive results. *Int J Cancer*. 2013 Nov 21. doi: 10.1002/ijc.28618.

The German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) with its more than 2,500 employees is the largest biomedical research institute in Germany. At DKFZ, more than 1,000 scientists investigate how cancer develops, identify cancer risk factors and endeavor to find new strategies to prevent people from getting cancer. They develop novel approaches to make tumor diagnosis more precise and treatment of cancer patients more successful. The staff of the Cancer Information Service (KID) offers information about the widespread disease of cancer for patients, their families, and the general public. Jointly with Heidelberg University Hospital, DKFZ has established the National Center for Tumor Diseases (NCT) Heidelberg, where promising approaches from cancer research are translated into the clinic. In the German Consortium for Translational Cancer Research (DKTK), one of six German Centers for Health Research, DKFZ maintains translational centers at seven university partnering sites. Combining excellent university hospitals with high-profile research at a Helmholtz Center is an important contribution to improving the chances of cancer patients. DKFZ is a member of the Helmholtz Association of National Research Centers, with ninety percent of its funding coming from the German Federal Ministry of Education and Research and the remaining ten percent from the State of Baden-Württemberg.

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