

Screening with a PSA test has a small impact on prostate cancer deaths but leads to overdiagnosis, finds study

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The largest study to date investigating a single invitation to a PSA blood test to screen for prostate cancer has found it had a small impact on

reducing deaths, but also led to overdiagnosis and missed early detection of some aggressive cancers.

The CAP trial, published in the *Journal of the American Medical Association (JAMA)* and carried out by researchers from the universities of Bristol, Oxford and Cambridge, involved over 400,000 men aged 50-69. Just under half received a single invitation for a PSA test as part of the trial.

After following up for 15 years, there was a small difference in the number of men who died from [prostate cancer](#) between the two groups—nearly 7 men out of every 1,000 in the group invited for screening had died from prostate cancer, compared to nearly 8 men out of every 1,000 in the group who hadn't been invited for screening.

The results of the trial show that an estimated 1 in 6 cancers found by the single PSA screening were overdiagnosed.

Cancer Research UK warns that overdiagnosis of prostate cancer is the main worry with PSA testing for early detection. This can result in the unnecessary treatment of cancers that would not have caused any harm in someone's lifetime.

Overdiagnosis can have a negative psychological impact, and treatment of prostate cancer may cause physical side effects including the possibility of infection following a biopsy, erectile dysfunction, and bladder and bowel problems.

Cancer Research UK also raises awareness of the importance of listening to your body and getting to know what's normal for you. If you notice a change that doesn't go away or is new, then speak to your doctor.

If a man has [urinary symptoms](#)—most of which are caused by a non-

cancerous enlargement of the prostate—he can contact his GP for advice, and this may include a PSA test.

Professor Richard Martin, lead author and Cancer Research UK scientist at the University of Bristol, said, "Our studies have been measuring the effectiveness of the PSA test with hundreds of thousands of men for 15 years. The key takeaway is that the small reduction in prostate cancer deaths by using the test to screen healthy men does not outweigh the potential harms.

"This results in some men going on to have invasive treatment that they don't need, many years earlier than without screening, and the test is also failing to spot some cancers that do need to be treated. We need to find better ways to spot aggressive prostate cancers, so we can treat them early."

Prostate cancer is the 2nd biggest cancer killer of men in the UK, causing 12,000 deaths a year. There is currently no national screening program for the disease. The UK National Screening Committee (NSC), which reviews the evidence for screening programs, doesn't currently recommend [screening for prostate cancer](#) because it is unclear that the benefits outweigh the harms.

Despite being widely used to decide when to send men with urinary symptoms for further checks, when used to screen for prostate cancer, research has shown that the PSA test is inaccurate—it increases detection of low-risk prostate cancers and misses some high-risk ones.

There have been improvements in diagnosing and treating the disease in the years since this trial began, including the introduction of MRI before biopsy. These changes may help to prevent some harms associated with PSA testing, but more research is needed into ways to find aggressive cancers that need to be treated.

Naser Turabi, director of evidence and implementation at Cancer Research UK, said, "Prostate cancer remains the second most common cause of cancer death in men in the UK. Despite breakthroughs in treating the disease, there's more we can do.

"The evidence shows that using a single invitation for a PSA test for a prostate cancer screening program is likely to do more harm than good for men.

"We are funding research to help us find ways of diagnosing the disease early to reduce mortality, and we have trials taking place to find the best treatment for men with prostate cancer. Our search is not over—we're determined to find ways to accurately detect aggressive prostate cancer early and identify those at highest risk."

Early prostate cancer usually has no symptoms so early detection is challenging. To try and save more lives from the disease, Cancer Research UK is funding more trials and research into prostate cancer. This includes speeding up diagnosis for men with aggressive disease with new blood, urine or genetic tests so they can start treatment sooner.

Other research, such as the STAMPEDE trial, is aiming to find the best treatment for men with [advanced prostate cancer](#) to further improve survival and quality of life. The charity has spent £21 million on prostate cancer research over the last two years to improve outcomes for patients.

Dr. Neil Smith, GP for Cancer Research UK and GP Lead for Lancashire and South Cumbria Cancer Alliance, said, "With prostate cancer causing 12,000 deaths in the UK every year, we completely understand why men want to know if they have the disease, even when they don't have symptoms.

"However, this research highlights that a PSA test for early detection can

do more harm than good—it's simply not accurate enough and can lead to some men having tests and treatment that they don't need. You know your body best—so if you do notice any unusual changes, contact your GP. It probably won't be cancer, but if it is, then spotting it earlier means that treatment is more likely to be successful."

More information: PSA Screening and 15 - year Prostate Cancer Mortality : The CAP Randomized Clinical Trial, *JAMA* (2024). [DOI: 10.1001/jama.2024.4011](https://doi.org/10.1001/jama.2024.4011)

Provided by Cancer Research UK

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