

# USA's largest ever prostate cancer screening program shows high compliance and consistent results

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Just under five per cent of the men who took part in the prostate cancer element of the USA's largest ever cancer screening trial were diagnosed with the disease and the majority of those were picked up by screening programmes, according to research published in the December issue of the urology journal *BJU International*.

A total of 154,934 men and women aged from 55 to 74 took part in the multi-centre Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial and 38,349 men were selected at random to receive a prostate-specific antigen (PSA) test and a digital rectal examination (DRE).

"The aim of the study is to determine the impact of annual PSA and DRE screening on prostate cancer mortality by comparing the men who were screened with men undergoing standard medical care without screening" explains Professor Gerald Andriole, Chief of the Division of Urology at Washington University School of Medicine, USA.

"This paper reports the findings from the first three of the five annual follow-up screening rounds. It looks at whether the men continued to take part in the screening programme and examines the characteristics of the cancers that were discovered."

Ten screening centres took part in the research, which was funded by the National Cancer Institute.

Key test findings included:

- The majority of the men included in the study complied with the PSA and DRE tests - 89% complied with both tests at baseline and this figure was 85% by year three.
- Approximately one in seven men received either a positive PSA or DRE test at the baseline, one, two and three year screenings (14%, 13.5%, 14.4% and 15.1% respectively).
- An average of 8% of the men had a PSA positive result of more than 4ng/mL over the four tests (7.9%, 7.7%, 8.2% and 8.8% respectively).
- Just over 7% of the men had a positive DRE result when the four tests were averaged out (7.2%, 6.8%, 7.3% and 7.6% respectively).
- Both tests were positive in just over 1% of cases (1.2%, 1%, 1.1% and 1.2% respectively).

Key cancer findings included:

- 1,902 men (4.9%) were diagnosed with prostate cancer and just over 84% of these (1,603) were picked up as a result of PSA or DRE screening.
- Just over a third of the cancers were picked up at baseline (34.2%). Cancers picked up at this stage tended to be more serious than cancers picked up later in the screening programme. For example, 5.8% of the cancers at baseline were stages three or four, compared with 1.5% in year three.
- Cancers picked up at baseline were also more likely to have a higher Gleason score, meaning that the cancer was more aggressive and more

likely to be fatal. 34% had a Gleason score of seven to ten at baseline, compared with an average of 25.6% in years one to three.

-- 84% of the men who were diagnosed as a result of PSA screening had a PSA of more than 4ng/mL.

-- But not all the cancer patients had an elevated PSA. DRE picked up a further 16% of cancer cases in patients who had a PSA of less than 4ng/mL.

-- The screening programme picked up 16 cancers per thousand men screened at baseline, 11.5 in year one, 10.8 in year two and 11.1 in year three.

"There has been much debate about the benefits of PSA screening in the United States" says Professor Andriole. "For example the American Cancer Society, the American Urological Association and the National Comprehensive Cancer Network recommend that normal risk men receive annual PSA screening with DRE from the age of 50.

"However, the US Preventative Services Task Force and the American College of Physicians - American Society of Internal Medicine do not recommend screening because they feel that clear benefits have not been demonstrated.

"Our research found that compliance was high with both PSA and DRE screening. It also showed that PSA and DRE screening consistently detected new cases of prostate cancer and that these became less and less aggressive as the screening programme progressed.

"Longer follow-up of this study group is necessary to link the test results to death rates and determine the benefits of PSA and DRE screening in reducing deaths due to prostate cancer."

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