

Prostate cancer test may lead to harmful overdiagnosis in Black men

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A new study from experts at the University of Exeter has found that a widely used test for prostate cancer may leave Black men at increased risk of overdiagnosis.

Prostate-specific antigen (PSA) testing is routinely used as the first step in the UK to investigate men with [urinary symptoms](#) such as blood in

urine or urinating very frequently. Men aged over 50 years without symptoms are also able to request the [blood test](#) from their GP.

The study, "Association between patient ethnicity and prostate cancer diagnosis following a Prostate Specific Antigen test: a cohort study of 730,000 men in primary care in the UK," is published in *BMC Medicine*.

The new study sought to investigate the performance of the PSA test in identifying prostate cancer among men in different ethnic groups. It is well-known that Black men in the UK are more likely to be diagnosed with prostate cancer; what remains less clear is whether outcomes are worse for these men than their British white counterparts.

The study looked at patient records of 730,000 men to assess how many men received a diagnosis of prostate cancer following a raised PSA test result. More than 80 percent of the men in the study had normal PSA levels, regardless of ethnicity. However, the study reports, for the first time in a robust UK dataset—that PSA levels vary by ethnicity, with Black men found to have higher PSA levels than white men, and Asian men having the lowest PSA levels.

Further analysis found that diagnoses of prostate cancer after the raised PSA result were highest in Black men, compared with white men and Asian men. However, when the team looked at how many men in each group had advanced prostate cancer, levels between Black men and white men were very similar—suggesting that the relatively higher PSA levels may be influencing prostate cancer diagnosis in Black men.

Prostate cancer accounts for around a quarter of new cancer cases in men—approximately 52,000 men are diagnosed per year in the UK alone. It is the second most common cause of cancer death in men in the UK, and five-year survival doubles if it's diagnosed at the earliest stage compared to the most advanced stage. Symptoms are common and easily

misdiagnosed, and an estimated 14 percent of prostate cancer deaths could be avoided if they were diagnosed earlier.

PSA testing has been under scrutiny before as only one in three men with a positive PSA test have cancer and one in seven men with prostate cancer do not have raised PSA levels. This latest study suggests that Black men may be significantly more likely to undergo diagnostic testing, including prostate MRI and biopsy, because their natural PSA levels are higher anyway.

Dr. Tanimola Martins, Senior Research Fellow and Lecturer at the University of Exeter, said, "The British Black, Asian and other ethnic minority groups are historically under-represented in [cancer research](#). As such, findings from previous research, including those informing PSA testing and prostate cancer diagnosis, may not fully reflect their perspectives, needs or experiences. Our study provides an important message for providers, policymakers, charities, and advocacy groups campaigning for prostate cancer screening.

"Over-diagnosis of cancer may not sound as worrying as under-diagnosis, but we need to redress the balance in the evidence base to get more precise and accurate prostate cancer diagnosis to avoid unnecessary biopsies which can lead to psychological distress and sepsis. We need more research to ensure everyone gets the best diagnosis, regardless of their ethnicity."

Naser Turabi, Director of Evidence and Implementation at Cancer Research UK, said, "Overall, research shows that using the PSA test in men with no prostate symptoms does not reduce the number of prostate cancer deaths. This study highlights that the test may be causing harm to Black men in particular. This may be because they have naturally higher levels of the protein PSA, making the test even less accurate at finding prostate cancers that need to be treated.

"The PSA test is not suitable for men who do not have symptoms of prostate cancer, and more research is needed to find an effective and accurate test that saves lives from the disease and reduces unnecessary treatment."

The study comprised 649,445 white men, 37,827 Black men, and 31,053 Asian men. In Asian men, the study found consistent results that the lowest PSA levels, lowest cancer diagnoses and also the lowest rates of advanced [prostate cancer](#).

The study used data on patients registered at general practices in England contributing to the Clinical Practice Research Datalink Aurum dataset. Those eligible were men aged 40 and over with a record of ethnicity and a PSA test result recorded between 2010 and 2017 with no prior cancer diagnosis.

More information: Association between patient ethnicity and prostate cancer diagnosis following a prostate-specific antigen test: a cohort study of 730,000 men in primary care in the UK, *BMC Medicine* (2024). [DOI: 10.1186/s12916-024-03283-5](https://doi.org/10.1186/s12916-024-03283-5)

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