PROSTAGRAM: 15-MINUTE SCAN THAT COULD UNMASK AGGRESSIVE PROSTATE CANCER EARLIER

A pioneering 15-minute, non-invasive ‘short scan’ could prove a ‘game changer’ for some 12,000 UK men who die each year from aggressive prostate cancer by unmasking the disease earlier, according to a landmark study conducted by researchers at Imperial College, London.

The new procedure or PROSTAGRAM is the first clinical trial to assess a rapid MRI (magnetic resonance imagining) scan as a screening test for prostate cancer, a condition which affects one in eight men during their lifetime, with more than 50,000 UK males diagnosed each year.

The detailed results from this large clinical trial covering over 400 volunteers aged between 50 and 69 years will be presented at American Society of Clinical Oncology (2020) Annual Meeting in Chicago, USA on Friday 29 May 2020.

Crucially, the study suggests that PROSTAGRAM might offer timelier detection of the more aggressive cancers than the PSA (prostate specific antigen) blood test, the current standard which is known to lead to over-diagnosis of unimportant cancers – unlikely to harm those affected during their lifetime – and, as a consequence, provoke unnecessary medical interventions with unpleasant side-effects including urine leak or erectile dysfunction.

PROSTAGRAM uses magnetic waves that have no radiation risk to produce a detailed picture of the prostate making it safe as well as non-invasive. It is a shorter version of the full 30-40 minute MRI scan which has recently been recommended by the National Institute for Health and Care (NICE) for use in men already referred to hospital by their family doctor. The approach is similar to mammograms which are offered to women to screen for breast cancer.

“PROSTAGRAM has the potential to form the basis of a new screening programme for prostate cancer and could be a game-changer,” says senior author, Professor Hashim Ahmed, Chair of Urology at Imperial College London. “The number of aggressive prostate cancers missed by PSA highlights the importance of ramping up our research efforts into alternative ways to screen for prostate cancer.

“MRI has the advantage of passing over the many cancers which don’t need to be diagnosed and focussing on the types of cancers which are more likely to shorten life. By finding these aggressive cancers at the earliest opportunity, men have the opportunity to be offered less invasive treatments with fewer side effects”.

Dr David Eldred-Evans, the study’s first author and the Imperial College Research Fellow who developed PROSTAGRAM added: “We have found that PROSTAGRAM is a non-invasive, safe and more acceptable way to test men for prostate cancer. Unfortunately, men can often be put off from seeking medical advice when they have prostate issues because they are worried about the need for a rectal examination. One of the key advantages of PROSTAGRAM
is that it can avoid the need for rectal examination, and may encourage more men to have a prostate health check”

“Our next step therefore is to scale-up PROSTAGRAM and see if the results can be replicated on a larger number of men across the UK. This bigger study is 1-2 years away and the final impact on guidelines from this larger study is at least 5-6 years away”. PROSTAGRAM needs more research funding which the team are actively pursuing to see if it can work a much greater scale across the UK.

In the study 411 volunteers aged 50 to 69 years were screened for prostate cancer applying both a PSA test and PROSTAGRAM. The study completed recruitment 19 months ahead of schedule and received widespread support from well-known personalities including the actor Stephen Fry and community leaders in London.

The PROSTAGRAM scans were reported by doctors before the results of the PSA test to allow a fair comparison of the tests. If either test was suspicious for prostate cancer the men underwent a prostate biopsy which took samples of tissue from the prostate to check whether there was cancer. This allowed the study team to check the accuracy of each test.

The researchers found that PROSTAGRAM outperformed PSA at uncovering aggressive prostate cancer. PROSTAGRAM increased the number of aggressive prostate cancers detected by 50-100% compared to PSA. In total 4% of volunteers had aggressive prostate cancer of which 65% to 82% were identified by PROSTAGRAM and only 41% by PSA. The researchers recommended that a larger study recruiting thousands of men was needed to change national screening guideline.

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Case Studies

Examples of the PROSTAGRAM scans from these participants (below) and contact details and original photos are available on request

Mark’s Story

Mark Jenkins, 61, was diagnosed with aggressive prostate cancer with a PROSTAGRAM despite having a normal PSA test. He has been successfully treated for prostate cancer.

Quote: “Being diagnosed with prostate cancer picked up by the MRI was a bit of a shock. I had some prostate issues around 7 years ago and had a PSA test and everything was fine.

If I hadn’t taken part in the trial and just gone to my doctor I would have accepted that my PSA was still completely normal. Now if someone asked me, I’d say to request an MRI scan because the PSA is useful but it does have weaknesses.

My surgeon and I decided a prostatectomy would be the best course of action for treatment. The cancer was completely removed and I was back at work quickly.”
Stuart’s Story

Stuart Ray, 61, was also found to have aggressive prostate cancer with a PROSTAGRAM before he had symptoms. He was suitable for less invasive treatment known as focal therapy.

*Quote:* "From my point of view the PSA test was ineffective for me. I guess that if it detects it in some people well then it’s valid but it wasn’t effective for me.

It’s never a particularly pleasant experience to be told that you’ve got cancer but the urologist was very good in talking me through the options that were available.

*In the end, it seemed that the focal treatment option was indeed the best option for me. I feel I am recovering well and I was very soon returned to playing a bit of golf and going to the gym and getting on with life”

Gamal’s Story

Background: Gamal, 57, could be reassured after a normal PROSTAGRAM gave him the all clear.

*Quote:* “Prostate cancer is particularly prevalent within men of African Caribbean and South Asian background, and it was something that had always been in the back of my mind. When I was told about the study I thought it was a great idea.

* I was told my PSA level was low and that my MRI was negative. It’s always nice to hear that you don’t have anything to worry about.”

For media enquiries contact Martin Evans at Imperial Prostate on martin.evans@imperial.ac.uk or out of hours, on 07866 743176

Notes for Editors

1. **Prostate Cancer and PSA**

For the first time the number of men dying from prostate cancer has surpassed breast cancer and a successful screening programme could significantly improve life expectancy for some 12,000 UK men who die each year from aggressive prostate cancer.

While breast cancer screening is routinely offered to women from 50 years, there is no equivalent screening programme for prostate cancer. This is because the current PSA blood test used in the community has been shown routinely to miss aggressive life-threatening cancers. About 15% of men with aggressive prostate cancer can still have a normal PSA level. As a result, screening for prostate cancer using PSA blood tests is not recommended in any country.
2. The Study and Presentation in Chicago, USA on 29 May 2020

Abstract ID: 5513 (293241)

Title: Population-based prostate cancer screening using a prospective, blinded, paired screen-positive comparison of PSA and fast MRI: The IP1-PROSTAGRAM study


Presentation session: “Genitourinary Cancer—Prostate, Testicular, and Penile”

Date and Time: 29/05/2020, 8:00 AM - 11:00 AM;

3. Funders

The research was funded by the Welcome Trust, The Urology Foundation, the BMA foundation for Medical Research, the Royal College of Surgeons and National Institute of Health Research Imperial Biomedical Research Centre (NIHR Imperial BRC). The MRI scans were performed at Imperial College Clinical Imaging Facility and Paul Strickland Scanner Centre and the biopsies and further clinical management of patient was carried out at Imperial College Healthcare NHS Trust.

5. Institutions

**Imperial College London** is a world top ten university with an international reputation for excellence in teaching and research. Consistently rated amongst the world's best universities, Imperial is committed to developing the next generation of researchers, scientists and academics through collaboration across disciplines. Located in the heart of London, Imperial College is a multidisciplinary space for education, research, translation and commercialisation, harnessing science and innovation to tackle global challenges.

**Imperial Prostate** is a world-leading team of researcher-practitioners who work towards improving the lives of men who develop or are being investigated for prostate cancer and other prostate diseases. The group’s mission is to improve the speed, accuracy and safety of prostate disease diagnosis, and to evaluate new treatments which have fewer side effects than standard techniques without losing treatment efficacy. It is partnered with scientists at Imperial College, who help us develop our research based on the latest scientific discoveries, techniques and technology.

**Imperial College Healthcare NHS Trust** is one of the largest hospital Trust’s in England, providing acute and specialist healthcare for a population of nearly two million people. The Trust has five hospitals – Charing Cross, Hammersmith, Queen Charlotte’s & Chelsea, St Mary’s and The Western Eye – as well as community services.

**Wellcome Trust** is a global charitable foundation dedicated to achieving extraordinary improvements in human and animal health. The Trust supports biomedical research and the medical humanities. Its breadth of support includes public engagement, education and the application of research to improve health. The Trust is independent of both political and commercial interests.
The Urology Foundation (TUF) is the only UK charity dedicated to all urology diseases and its goal is to put an end to the suffering and deaths that these diseases cause. TUF is administered by a Board of Trustees which includes urologists and lay people.

The BMA Foundation for Medical Research is a charity that supports around £900 000 for a for medical research each year. It is solely funded by legacies and donations left to the Foundation by generous individuals.

The Royal College of Surgeons of England is an independent professional body and registered charity that promotes and advances standards of surgical care for patients, and regulates surgery and dentistry in England and Wales. The College safeguards experience, treatment and outcomes of the UK's surgical patients through the ongoing state of the art training of surgeons and pioneering research.

NIHR Imperial Biomedical Research Centre (BRC) is a translational research partnership between Imperial College London and Imperial College Healthcare NHS Trust. It provides the infrastructure to conduct early stage experimental medicine and aims to exploit the scientific power of Imperial College’s Faculties of Medicine, Engineering and Natural Sciences, and provide proof-of-principle of new breakthroughs within the clinical setting.

Paul Strickland Scanner Centre is a specialist medical imaging centre working as an independent charity to improve the lives of people affected by cancer and other serious conditions. The centre’s team provides the best possible patient care using high quality imaging equipment, and by being actively involved in medical research.

6. Important

Men who are concerned about prostate cancer should in the first instance discuss this with their family doctor (GP). Queries from patients and GPs can also be forwarded to imperial.prostate@nhs.net but GP referrals will be needed for those men who meet the referral criteria set by NICE (UK) for prostate cancer. The following website has further information: www.imperialprostate.org.uk

7. For Further Information

Contact Details:

Martin Evans
Imperial College London
South Kensington Campus
London SW7 2AZ
Tel: +44 7866 743176
Email: martin.evans@imperial.ac.uk