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Q&A: Professor Ros Eeles

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The Professor of Oncogenetics at The Institute of Cancer Research, London (ICR) and Consultant in Clinical Oncology and Oncogenetics at The Royal Marsden explains how a genetic test could spot men at risk of developing prostate cancer.

What is oncogenetics?

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Broadly speaking, oncogenetics is the study of genetic variants that may increase a person?s risk of cancer or have implications for cancer treatment. For example, people who carry mutations to their DNA repair genes may have a higher risk of developing cancer and may respond to certain targeted agents.

In my team, we?re particularly interested in looking for DNA changes that affect a man?s predisposition to prostate cancer. We?re also working to take these findings into the clinic, by applying cancer genetics to the way we manage the disease.

How can genetics affect a person?s risk of prostate cancer?

That?s what we?re trying to find out. More than 47,000 men are diagnosed with prostate cancer in the UK every year, making it the most common male cancer. But there isn?t one ?prostate cancer gene? that tells us whether a man will or won?t develop the disease. We do know of more than 150 common genetic changes that, when inherited, can increase a man?s risk of prostate cancer. Each of these common individual genetic variants only increases a man?s risk slightly, but inheriting many can raise this risk substantially.

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What is the OncoArray?

The OncoArray is a test that can look at more than half a million single-letter changes in DNA. We used it to compare the DNA of nearly 80,000 men with prostate cancer and more than 61,000 men without it, and found 63 new variants in DNA that increase a man?s risk of developing the disease.

According to our findings, a man in the top one per cent of risk is almost six times more likely to develop prostate cancer than the average. That?s a one-in-two chance compared with the average of about one in 11 by the age of 80.

How could your work lead to better outcomes for patients?

- Our research: Prostate Cancer [6]
- News: Breast cancer drug effective in 80 percent of men with BRCA-mutant prostate cancer [7]

Based on the results from our OncoArray work, we have uncovered vital new information about the genetic factors that can predispose someone to prostate cancer. We are now conducting a small study in GP practices to establish whether genetic testing using a saliva sample can identify men at the highest risk of developing prostate cancer. We?ve already taken samples from 300 men, and we will ask those identified as being at high risk to come back in for further testing.

If this pilot study shows that this spit test can pick out men who either have, or will go on to develop, prostate cancer, it could change the way we diagnose the disease. We could use that information to develop a monitoring programme to catch the disease early ? or even prevent it altogether.

Links
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