

New findings on men's genes could alter interpretation of PSA test

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By studying a specific part of the male DNA, it may be possible to refine the interpretation of PSA tests. This would reduce the risk of men being treated for prostate cancer unnecessarily.

The findings have been presented in a thesis by Christel Björk at Lund University, Sweden, who has carried out the study with her colleague Hannah Nenonen, supervised by researcher Yvonne Lundberg Giwercman.

A PSA test measures the level of PSA (prostate-specific antigen) in the blood, and raised PSA can signal an increased risk of cancer; however, this is not the case for everyone. The problem is that there is no good way to separate those with naturally high levels of PSA from those at increased risk of [prostate cancer](#).

"If we know that a man has a naturally high level of PSA, this can be taken into account in a [PSA test](#), and the patient may be able to avoid arduous treatment with a risk of side-effects", says Christel Björk, a doctoral student at the Department of [Clinical Sciences](#), Lund University.

The present study shows how a man's genetic characteristics can affect the androgen receptor, a protein that has an important function in the male reproductive system. It regulates the effect of testosterone and controls production of prostate-specific antigen.

The researchers studied healthy [men](#) in different age groups and discovered a connection between PSA levels in the blood and [DNA structure](#) of the androgen receptor. The highest PSA levels were found in the men with the most common variant of the [androgen receptor](#), i.e. the largest group of men.

"Both the PSA level and the genetic characteristics can be identified with a [blood test](#)", says Yvonne Lundberg Giwercman, Associate Professor at the Department of Clinical Sciences, Lund University.

The study is based on samples from around 400 men from Sweden and Norway. Before the results can be implemented for PSA tests in the health service, the study must be repeated on a larger group.

"We have access to material covering around 3 200 men from seven European countries and the idea is to investigate whether our preliminary findings can be verified on this group in the near future", explains Yvonne Lundberg Giwercman.

Provided by Lund University

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