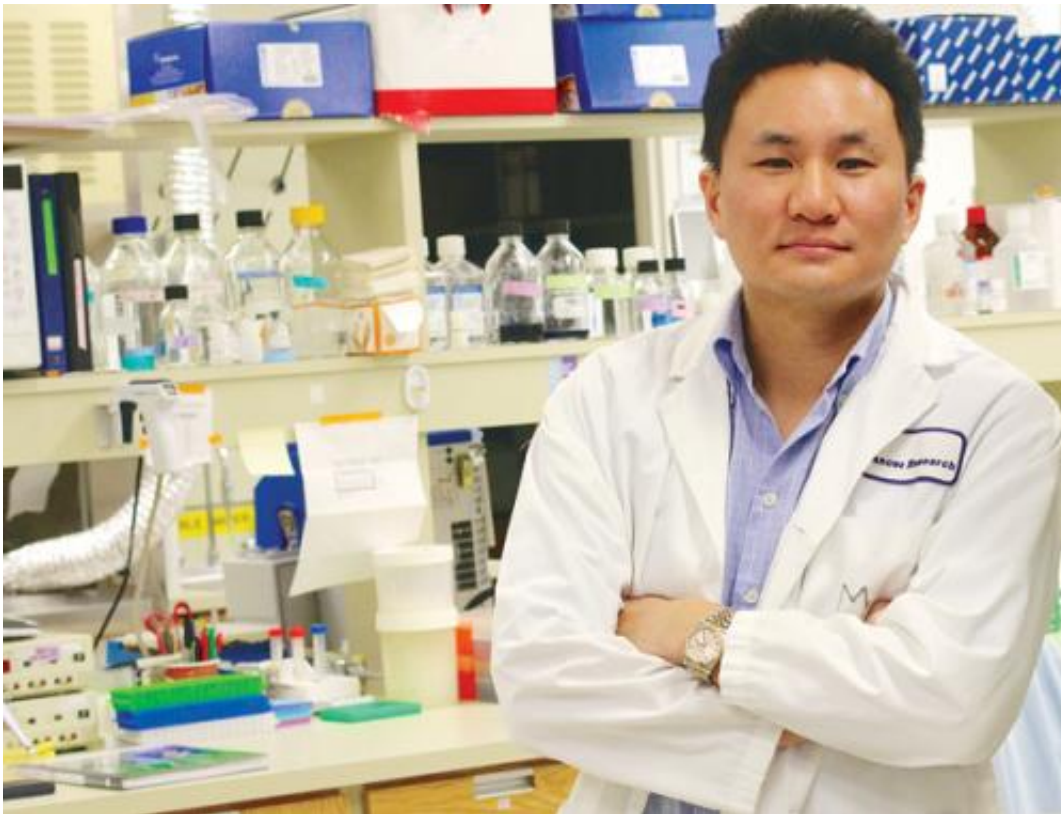


# New prostate cancer test could change treatment

February 8 2013, by Paul Mayne

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Schulich School of Medicine & Dentistry professor Hon Leong has developed a new blood test which could detect the potential for prostate cancer earlier.

Thousands of men face a prostate biopsy following higher-than-normal results from their annual prostate-specific antigen (PSA) test, the traditional screening for prostate cancer. But recent studies have shown three in four of these biopsies were unnecessary, leading to 165,000

unnecessary procedures and 6,930 related hospitalizations each year.

Schulich School of Medicine & Dentistry professor Hon Leong is looking to alleviate such unnecessary procedures with the creation of a new blood test. His non-invasive, inexpensive procedure could detect the potential for cancer earlier, thus providing a window of opportunity to allow clinicians to focus on high-risk [prostate cancer](#) patients, before the cancer spreads to the bone and lymph nodes.

Basic PSA tests look for protein produced by cells in the prostate gland – high levels are a warning sign for cancer. However, these elevated levels could indicate other benign conditions like inflammation or enlargement. With Leong's potentially more accurate prostate cancer-screening tool, his blood test measures actual prostate cancer fragments.

In his study, Leong and his team at Lawson Heath Research Institute ran the [blood test](#) on a mix of 50 non-cancer and cancer patients. Leong's test – looking for circulating tumour fragments, which he calls microparticles – was 90 per cent accurate in identifying the patients with actual prostate cancer. There were also no false positives found by the test.

"We expected it (the results) because of the markers we're using," said Leong, who was recently named one of Prostate Cancer Canada's Rising Stars, receiving \$150,000 each year for three years through its Movember Foundation. "It's in contrast to the PSA, which looks at proteins secreted by not only normal cells but also prostate cancer cells. So if you have an elevated PSA it doesn't necessarily mean you have cancer, just that you have something wrong with your prostate.

"What this test does is just look for actual prostate cancer fragments in the blood, and only for that."

Based on these early results, and with the new funding allowing his study groups to grow the number of patients tested to well over 1,000 men (75 per cent of whom will have prostate cancer as confirmed by [biopsy](#)), Leong is confident his fragment method can more accurately identify prostate cancer than the PSA. He is anticipating an 80-90 per cent accuracy rate with these larger groups.

Leong said he still sees the importance of men getting screened with a [PSA test](#) and then, if there's a need to see their urologist and get this other test he is developing done, it would tell you definitively if you have cancer or not, without the whole rigmarole of getting a physical exam or biopsy.

The research has the potential to generate tremendous savings for the health-care system – with biopsies costing \$500 each – and provide improved health benefits to patients, Leong said.

"This award is really important because it means that we're doing something clinically relevant for all prostate [cancer patients](#)," he said. "Given the current state of how people are being diverted to whatever treatment, if we can reduce the 75 per cent false-positivity rate, I think it can have a profound impact. There is always going to be room for improvement, but the goal is to for it be implemented worldwide.

"It has the potential to change the way we treat men's health."

Moving forward, Leong also hopes to develop a similar screening process for pancreatic and ovarian cancers as well.

"It's the same concept. Instead of looking for protein that is secreted exclusively by the cancer, which is never, because the same protein is always expressed by other normal cells in the body, we're asking the question can we see tumour fragments in the blood," he said. "That kind

of philosophy can be applied to all these other areas."

Provided by University of Western Ontario

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