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Dr. Yves Fradet, Department of Surgery  
at Université Laval

## Towards Early and Painless Detection

**Bladder and prostate cancer can be found using urine tests, not surgery**

By: Arthur Churchyard

Cancer testing could lose its painful surgical connotation as Dr. Yves Fradet, a clinical researcher at Université Laval, brings less invasive testing technologies to the front lines. He's been exploring novel cancer testing and treatment techniques for more than 25 years, and his latest innovations – both of which have been commercialized – include tests that can save lives by detecting cancer early, through urine samples.

“Diagnostic tests are the first step to a cure,” says Fradet. “We can beat cancer by screening for it early on, and making the best use of the tools we already have.”

Fradet's new cancer-detecting tests are appealing because they can trace cancer cells in urine samples. That could reduce the dependency on invasive tests such as biopsies, where tissue samples are surgically removed.

It's a relief for patients who have endured repeated probes, needles, tubes and surgeries over years of cancer recurrences.

As a urological cancer surgeon and researcher, Fradet knows the new tests will be valuable to Canadians and others abroad. The diagnostic test for bladder cancer could be used to screen people who are especially at risk, such as smokers and people who work with carcinogenic substances. By detecting cancer in its earliest stages and nipping malignant cells in the bud, Fradet hopes lives will be saved and patients will recover with less difficulty.

The prostate cancer tests will help better identify patients at higher risk of cancer and allow health practitioners to ensure patients are receiving the right level of treatment.

Fradet's Université Laval research team came across the tests while examining ways in which cancer cells could be detected in urine samples. By studying the molecular pathways that are influenced by cancer cells in the prostate and bladder, Fradet was able to pinpoint genes and antibodies associated with cancer cells.

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The test for bladder cancer was developed by working with the mouse immune system to make it distinguish a bladder tumour cell from a healthy bladder cell. This strategy allowed the researchers to produce monoclonal antibodies, which form the basis for the test.

Similarly, Fradet's test for prostate cancer can be used to detect a specific gene in urine that is very active in patients with prostate cancer. Fradet's prostate test can use high or low levels of the gene in urine, called PCA3, to detect prostate cancer, even after other tests fail. The test was licensed to San Diego-based Gen-Probe for distribution in North America and Europe.

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