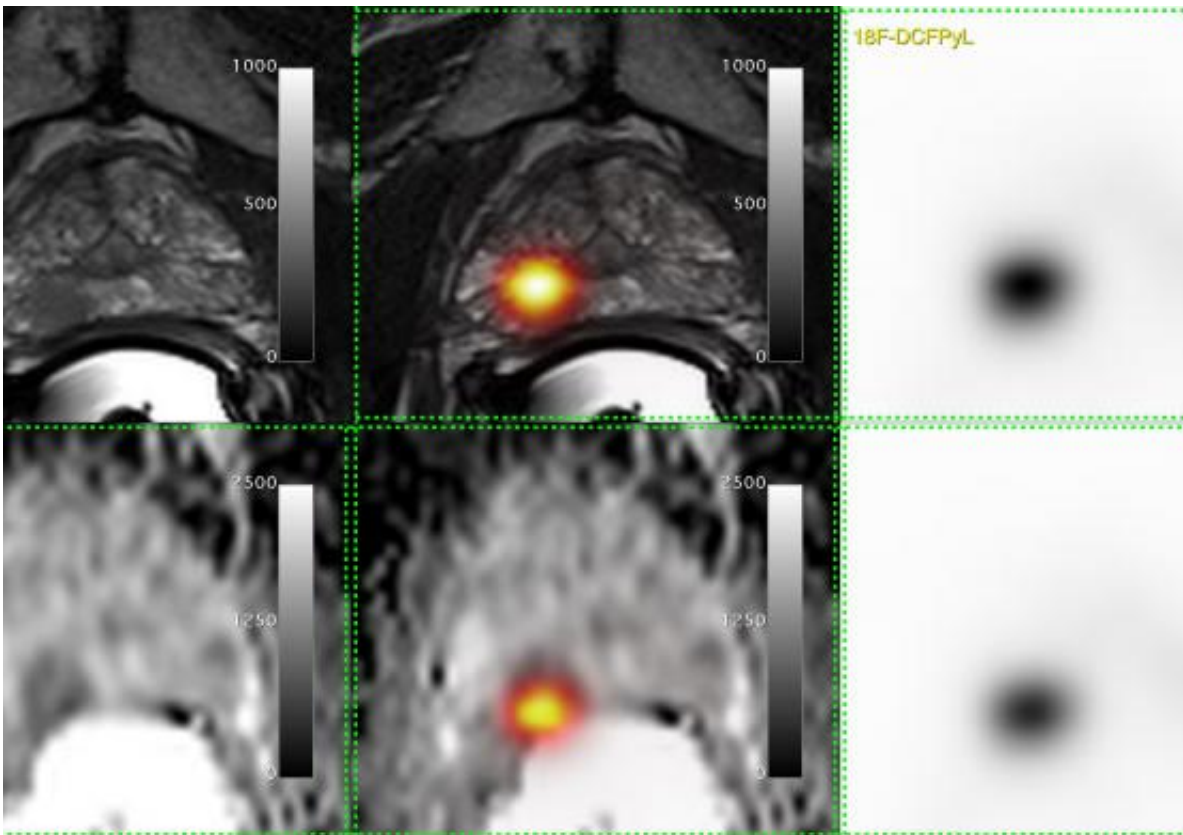


London researchers first in Canada to use improved prostate cancer imaging

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Credit: Lawson Health Research Institute

Scientists at Lawson Health Research Institute are the first in Canada to capture prostate cancer images using a new molecule. Known as a Prostate Specific Membrane Antigen (PSMA) probe, the new molecule is used in Positron Emissions Tomography (PET) scans. The probe

targets PSMA, a unique molecule on prostate cancer cells, to provide highly specific images for better diagnosis and management of patient disease.

PET probes are used in imaging to correctly diagnose cancer. The probes are injected into a patient where they spread to identify sites of disease. PET scans are commonly acquired as combined or "hybrid" images with Computed Tomography (CT) or Magnetic Resonance Imaging (MRI). The CT or MRI component helps more accurately determine where the PET [probe](#) is being concentrated.

The most common PET probes are suitable for many types of cancer, but are not as sensitive in identifying [prostate cancer](#). PSMA probes provide higher accuracy by targeting PSMA molecules, which are highly over-expressed on [prostate cancer cells](#).

PSMA probes are gaining popularity across the globe. This specific probe is a molecule called 18F-DCFPyL and was developed by Dr. Martin Pomper at the John Hopkins Hospital in Baltimore. Dr. Pomper, also a Scientific Advisor to Lawson's prostate imaging team, worked in collaboration with Canada's Centre for Probe Development and Commercialization (CPDC) to bring the probe to our nation.

Lawson's Canadian Institutes of Health Research (CIHR) Team in Image Guidance for Prostate Cancer gained early access to the PSMA probe due to a history of close collaboration with Dr. Pomper and the CPDC. Marking the first time a PSMA probe has been used in Canada, the team captured PET/MRI and PET/CT images from a 64-year-old prostate cancer patient on March 18, 2016 at St. Joseph's Hospital.

"This is a tremendous step forward in the management of prostate cancer," said Dr. Glenn Bauman, a Lawson scientist and Radiation Oncologist at London Health Sciences Centre. "PSMA probes have the

potential to provide increased accuracy and detection which leads to better treatment for individual patients."

The most common PSMA probe in other countries is ⁶⁸Gallium. Early studies suggest the ¹⁸F-DFCPyL molecule has advantages over ⁶⁸Gallium. For example, ¹⁸F-DFCPyL can be made efficiently in cyclotrons such as the one available at Lawson Health Research Institute, and appears to perform better in the identification of disease.

Lawson plans to study the probe with an additional 20 men over the next two years as part of an ongoing clinical trial funded by the Ontario Institute for Cancer Research (OICR). Lawson scientists are working with researchers across Ontario to develop other clinical trial protocols that will use ¹⁸F-DCFPyL to measure responses to drug treatments and to evaluate men with suspected recurrence of prostate cancer after radiotherapy.

"The goal of these studies is to establish the value of PSMA probes, particularly ¹⁸F-DCFPyL, and provide evidence to support the use of these probes in routine clinical care," said Dr. Bauman.

This is one example of how Lawson Health Research Institute is working to make Ontario healthier, wealthier and smarter. Donor funding through London Health Sciences Foundation was one catalyst in this research, providing initial funding to hire Research Associate, Catherine Hildebrand, who set up citywide cancer imaging workshops and helped the team prepare successful grant applications to secure key funding from CIHR and OICR.

Provided by Lawson Health Research Institute

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