

# New method makes it easier to treat prostate and pancreatic cancer

February 15 2012

---

Laser light in combination with certain drugs – known as photodynamic therapy – can destroy cancer tumours, but is today used mostly to cure skin cancer. The reason that internal tumours are not treated with the method is that the technology does not exist to check that the precise amount of light is administered. However, software developed by researchers in atomic physics at Lund University in Sweden looks like being able to solve the problem.

"I think we are about to see a real breakthrough, both for us and for other research groups around the world who conduct research on cancer treatment using laser light", says Johannes Swartling, Doctor of Atomic Physics at Lund University and Chief Technical Officer at SpectraCure, the company that is now developing the software.

The software's unique feature is that it uses the optical fibres for more than simply emitting light. Intermittently they also gather information about the tumour, which they send back to the laser instrument.

"In this way, the software can continually calculate the optimal light dose and adjust it if necessary. The entire tumour must be removed, while damage to adjacent organs must be avoided", says Johannes Swartling.

According to the researchers, the software could also be used with other light therapies that use LEDs or infra-red lasers.

Tests on [prostate cancer](#) patients in Sweden have shown that the method

also works for internal tumours, and in the spring a clinical study on recurrent prostate cancer will begin in the US and Canada. An application for approval to carry out the study is pending. Meanwhile, the same laser light technology is being tested in the UK on pancreatic cancer.

"The advantage of [laser light](#) is that it appears that side effects can be minimised. With current treatment methods, prostate cancer patients who are cured risk both impotence and incontinence."

In addition, traditional treatments entail a risk of cancer recurrence, says Johannes Swartling.

The international tests focus on adjusting dosage, guaranteeing safety and ensuring the effectiveness of treatment. If everything goes smoothly, SpectraCure hopes the method will be approved by the US Food and [Drug](#) Administration and Health Canada within a few years.

"This really could be revolutionary", says Sune Svanberg, Professor of Laser Physics at Lund University and one of the researchers behind the technology.

"The new technology has great potential to help certain patient groups, for whom current treatment methods have major limitations", says Professor Dr Katarina Svanberg, Department of Oncology, Lund University, who has been involved in the medical side of the development of the method.

## **How photodynamic therapy works**

Before the procedure, the patient is given a light-activated drug, which has no effect without light. The drug spreads throughout the body, including to the area of the tumour. The patient then receives a local or

general anaesthetic and the doctor inserts needles with optical fibres into the area affected. These channel light into the cancer tumour. When the light comes into contact with the light-activated drug, it reacts with the surrounding oxygen, causing the cells in the target area to die.

The hardware and software are based on patents developed by atomic physicists in Lund, led by Sune Svanberg and Stefan Andersson-Engels. The idea was to allow the same optical fibres used for treatment to be used for diagnostic measurements that make it possible to calculate the light dose required. The method was soon seen to be practicable and has been developed over the years, now by SpectraCure. The implementation has been carried out by programmers.

Provided by Lund University

Citation: New method makes it easier to treat prostate and pancreatic cancer (2012, February 15) retrieved 4 May 2024 from

<https://medicalxpress.com/news/2012-02-method-easier-prostate-pancreatic-cancer.html>

|  |
|--|
| <p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p> |
|--|