

Success Stories



ontario network of excellence **A Toronto Success Story**

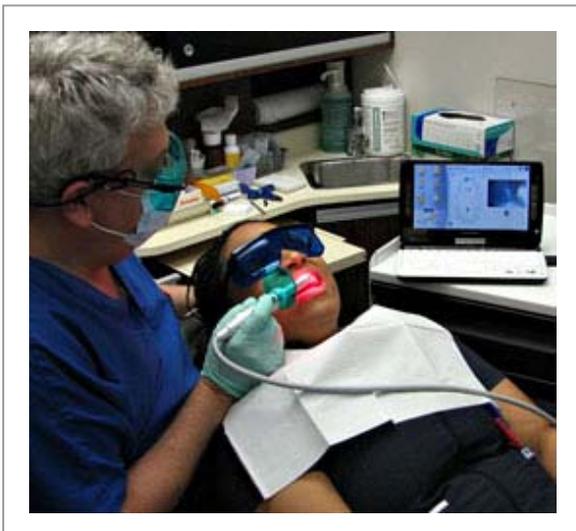
Quantum Dental Technologies

A Quantum Leap For Dental Care

Drilling and filling cavities could soon be a thing of the past thanks to revolutionary new technology developed by Toronto dentist Stephen Abrams and U of T engineer Andreas Mandelis.

Called The Canary System, the technology uses light waves and can find cavities even before they show up on x-rays. The system is safe, non-invasive and painless – and lets dentists halt decay by using pastes or gels to remineralize teeth.

“This really is breakthrough technology,” says Abrams, now president of Quantum Dental Technologies, the company he and Mandelis formed to develop and manufacture the system.



With The Canary System, a dentist uses a handheld laser that emits a low-power light to examine tooth surfaces. The system measures the amount of light and heat emitted from each tooth. Since healthy tooth enamel produces a specific wavelength signature, any deviations can be analyzed, and can pinpoint problems as tiny as 50 microns (half the diameter of a strand of hair) up to five millimetres below the tooth surface.

Custom reports are generated and displayed on an interactive, touch-screen monitor for immediate chairside review. They can also be downloaded onto a smartphone or personal computer, helping patients take ownership of their own oral health care.

The Canary System, which won a National Instruments Graphical System Design Achievement Award in the medical device category for 2010, is expected to be available to dentists in Canada beginning in April 2011.

For Abrams and Mandelis, bringing the technology to market has been an exciting adventure that began 10 years ago in Abrams' dental office when Mandelis was visiting for a routine check-up.

Abrams was bemoaning the state of preventative care in dentistry. Mandelis, an expert in thermophotonics, suggested perhaps lasers could be adapted to assess oral health. □

The two brought their idea to the Ontario Centres of Excellence, which got the ball rolling with start-up funding and help with product development. Along the way, the Health Technology Exchange also contributed product development expertise and funding, and MaRS provided advisory services on positioning and branding.

“These commercialization programs have been very helpful to us,” says Quantum's vice president of corporate development, Josh Silvertown. “For those who want to use them, government resources

are there. The key is to be creative and take advantage of them.”

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