

Breakthrough Technology That Will Revolutionize the Treatment of Tooth Decay

Revolutionary early detection system finds cavities before X-rays allowing dentists to remineralize affected teeth. No drilling or filling required.

Toronto, Ontario – July 3, 2008 – Quantum Dental Technologies, a Canadian diagnostic device company, revealed its breakthrough technology which detects and monitors the early onset of tooth decay without the need for dental x-rays. It reduces the number of invasive and painful procedures, and encourages better oral health. Quantum introduced its Dental Caries Detection System prototype, known as The Canary System, at the International Association for Dental Research (IADR) Conference in Toronto, Canada.

“Dentists are limited in their abilities to detect and monitor the early stages of tooth decay with traditional diagnostic tools such as the X-ray and visual examination,” said Dr. Stephen Abrams, Chief Executive Officer of the Toronto-based Quantum Dental Technologies and dental clinician. “Now, with this innovative new system that is pain free, non-invasive and provides early caries detection, we can finally move away from intervention, or the filling of cavities, to focus on prevention and actual remineralization or healing of small areas of tooth decay.”

The Canary System uses a handheld laser that emits a low-power light to examine tooth surfaces. When laser light is shone onto the tooth, the system measures the level of glow (luminescence) and heat released from the tooth. Laser light interacts differently with healthy teeth than with decayed teeth. By varying the pulse of the laser beam, a depth profile of the tooth can be created to permit detection of decay as deep as 5mm from the tooth surface and as small as 50 microns in size (20 times smaller than a millimeter). With The Canary System, the dentist is able to identify areas of decay much earlier than with current methods.

This technology is based on extensive research including 30 published research articles in peer-reviewed dental and medical journals. The Quantum Dental group is presenting three posters at the IADR conference on this new technology.



The Canary Dental Caries Detection System

The Canary System can scan for caries on smooth enamel surfaces, root surfaces, biting surfaces, between teeth, and around existing fillings. Current methods are not as sensitive in detecting early decay in these areas.

Early detection of dental caries within the enamel shell of the tooth allows applied remineralization therapies to halt or delay the decay. These therapies work to repair the teeth by recrystallizing the minerals onto the enamel surface. If detection of decay is delayed until it has broken completely through the enamel shell, remineralization will not work and a filling is required.

For patients, the placement of a dental filling is an invasive procedure which causes some short term trauma to the tooth. Restorations do not last a lifetime, and there is a cycle of continued placement and replacement of fillings. Each new restoration gets larger, eventually leading to more invasive treatments including crowns, root canal or extraction.

The Canary System:

- Is less invasive and safer than traditional approaches for detecting and monitoring early-stage tooth decay;
- Extends the natural lifecycle of the tooth by providing a chance to remineralize the decayed area;
- Eliminates the need for painful needles and fillings;
- Reduces the cost barriers to dental services by treating small “cavities” before invasive and more expensive technologies are required.

“For dentists, The Canary System will open up a new source of patients needing care,” says Dr. Abrams. “Other clinical staff such as dental hygienists or assistants may perform the procedure and administer remineralization treatment. It’s a win-win for everybody.”



The Canary Dental Caries Detection System

“For the research community, it means a sensitive, non-invasive device for monitoring tooth decay in the lab or in field trials,” says Dr. Andreas Mandelis, Professor at the University of Toronto and President of Quantum Dental Technologies. “The technology is robust and will provide the researcher with a real-time view of the lesion without destruction of the tooth.”

The Canary System will be in clinical trials for the next 18-24 months with collaborators in both research and clinical settings, and will be ready for market release in 2010.

ABOUT QUANTUM DENTAL TECHNOLOGIES

Quantum Dental Technologies is a new Canadian diagnostic device company focused on the field of oral health care. QDT has designed and developed The Canary Dental Caries Detection System, a patented technology, to provide patients with an alternative to the traditional “drill, fill and bill” approach to dental care. For more information, please visit www.thecanarysystem.com.

For additional information or an interview, please contact:

Pamela Arora
NATIONAL Public Relations
416-586-0180
parora@national.ca

or

Jayani Perera
NATIONAL Public Relations
416-848-1368
jperera@national.ca