Research Published Showing the Canary System Can Accurately Detect Caries Beneath the Intact Margins of Amalgam Restorations

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The Open Dentistry Journal has just published a study entitled “In Vitro Detection of Caries Around Amalgam Restorations using Four Different Modalities” (https://benthamopen.com/contents/pdf/TODENTJ/TODENTJ-11-609.pdf). This paper concluded that The Canary System® can detect caries under the intact margins of amalgam restorations more accurately than Spectra, DIAGNOdent and visual examination.

Finding caries beneath amalgam margins is a challenging clinical problem because of the nature of the material. Typically, older amalgam restorations may cause marginal staining but, visually these margins may appear intact and sound. This study found that visual examination could not detect caries.

Amalgam is dense, radiopaque and reflects light from its surface. The glow or fluorescence from the amalgam prevented Spectra from detecting any marginal caries. DIAGNOdent was also unable to consistently differentiate sound from carious tissue at various distances from the amalgam margins. It was only able to detect 45% to 75% of the caries depending upon the handpiece’s distance from the amalgam margin. However, The Canary System was able to detect 95% of the lesions around the amalgam margins.

“The Canary System can detect and monitor tooth decay beneath the edges of fillings, crowns and bridges; one of the most common clinical conditions that leads to the failure of these restorations. When an amalgam is placed, x-rays can only detect tooth decay in certain limited areas and not along its visible margins”, said Dr. Stephen Abrams, co-founder of Quantum Dental Technologies. “Early detection of tooth decay, before it is seen on an x-ray or detected with visual inspection means that dentists can treat problems before the decay has destroyed large amounts of vital tooth structure compromising the tooth’s structural integrity.”

The Canary System, with its unique crystal structure diagnostics, can, quantify, image, monitor and record changes in the structure of enamel, dentin and cementum. It can detect caries beneath opaque sealants, around the margins of restorations, around orthodontic brackets and beneath interproximal, occlusal and smooth surfaces. The Canary Cloud enables dentists to view and manage this data and track Canary usage in the office.