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**Stains mistaken as tooth decay**

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**LONDON, UK:** Stains on teeth are often mistaken for signs of decay, according to a new research. A study of 200 private dental patients in the UK found that in over 60% of cases, stains that were hard to remove were mistaken for decay. The stains were only identified using an advanced device that cleans teeth with a blast of fine abrasive particles.

Dental researchers examined a particular ‘premolar’ situated between the front and back teeth and found signs of decay in 79 per cent of cases. But 63 per cent of them turned out to be stains, where they were examined again, using the CrystalAir abrasion device instead of mirrors and scrapers.

The research suggests that stained teeth may result in dentists drilling unnecessarily.

Dr Robin Horton, from the Wayside Dental Practice in Harpenden in Hertfordshire, who co-led the study, claimed that “traditional dental check-ups have led to unnecessary dental treatment for millions of patients.” The CrystalAir abrasion device blasts away dirt, debris and stains using a narrow stream of aluminium oxide particles propelled by helium. It is used in conjunction with a laser probe that can detect deeply hidden decay by shining a light beam through the tooth. The research found that using the two systems together was 70% more accurate in picking up decay than traditional techniques.

**British Asian kids avoid the dentist**

Children of Bangladeshi, Indian and Pakistani origin in the UK visit the dentist less frequently than any other ethnic group, according to recent research. Three-quarters of all children under 16 in England have been found to be a check-up in the last year, but for all British Asian groups the statistics are low. The government claims that Bangladeshi children from deprived backgrounds, who often have a high amount of sugar in their diet, are the worst affected. The Department of Health is developing guidance notes for all Primary Care Trusts, aiming to provide ideas on promoting oral health care to the British Asian community.

**Dental snapshots in 3-D**

Under contract by the German dental company Hint-ELs, an expert team at the Fraunhofer Institute for Applied Optics and Precision Engineering IOF. “After an all-around measurement system identifies any image faults and removes them from the complete image.

Since patients are moving while the images are being captured, the researchers have ensured that the process is quick.” The image sequence for each measurement position is captured in less than 200 millisecond.

Two camera optics provide the sensor chip with image information from different measurement perspectives. After the pixel-precise comparison of various camera images, the evaluation programme identifies any image faults and removes them from the complete image.

In order to obtain precise results, the researchers have utilised fringe projection in which a projector shines strips of light on the tooth area to be measured. From the phase-shifted images, a evaluation software determines the geometric contour data of the tooth.

The research on shorter wave-length lasers or the so-called blue lasers has shown them to be effective in diagnosing cancer cells. With this in mind, how do you see the use of the laser in general dental practice developing in the years to come?

Many dentists focused on minimal intervention have embraced laser fluorescence in the diagnosis of demineralisation of tooth structure. With these new applications, such cancer screening becomes cost effective and will become a common part of general dentistry. The main issue is that laser effects are frequency specific, & as applications develop, this will lead to a plethora of technology that becomes difficult for the clinician to incorporate into a practice. I envisage, in the near future, a diode-based laser that will have multiple, switchable frequencies that will allow one to perform a number of tasks that require different frequencies. As uptake of laser technology increases, costs will decrease, making it more attractive to more of the profession.

Do you expect lasers to be an essential part in every dental practice in 15 years? The multiple applications of lasers are only going to expand in the future. At the moment, the lasers with the most clinical applications in one unit are the Erbium family, and many dentists have embraced this technology and are constantly expanding its clinical applications. If we look back over 60 years to the initial introduction of the high-speed hand piece, there was initial and significant resistance to the technology, and it took over 10 years before it was readily accepted into general practice. Lasers have had a slower journey, mainly because of the need for advanced technology to make them more applicable in the field of dentistry and the associated research & development costs that are reflected in the price of lasers. Taking the cost of a laser out of the equation, it is very easy to visualise a laser in every practice in the near future.

Thank you very much for the interview.