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Brighter Smiles

LASER CAVITY DETECTION

One of the most important things we (dentists) do for our patients is to identify and fill cavities. Since even the smallest spot of decay can threaten the integrity of the entire tooth, finding and filling cavities is the key to preventing further problems of all kinds. Historically, that's why lengthy poking and prodding sessions have been an acceptable part of typical dental exams.

However, many people don't realize that these methods of decay detection are only 50% to 75% accurate. Cavities often hide along fissure lines, or inside biting or occlusal surfaces. Further, these mechanical exploratory methods are limited to finding only the start of cavities that are equal to or larger than the probe head. The decay then spreads horizontally deeper into the tooth. So, if the opening is not big enough for the probe head it may go undetected despite there being a lot of decay inside the tooth. For all these reasons, many dentists have invested in DIAGNOdent: a revolutionary and relatively new, thorough means of detecting cavities,

so your exam can be fast, easy, and nearly imperceptible.

DIAGNOdent technology uses a simple laser diode to inspect your teeth, comparing reflection wavelength against a known healthy baseline wavelength to uncover decay. How? First, the dentist aims the laser onto one of your healthy enamel tooth surfaces to give us a benchmark reading. Then, he/she continues on around your mouth, shining the laser into all suspect areas. As the laser pulses into grooves, fissures and cracks, it reflects fluorescent light of a specific wavelength.

This light is measured by receptors, converted to an acoustic signal, evaluated electronically to reveal a value between one and 100, then displayed on a screen. Anytime the laser encounters a surface that reads differently than the healthy baseline value, it stimulates emission of fluorescent light of a different wavelength. A reading of 10-20 indicates some enamel softening, pointing to a potential problem area that merits close monitoring. A reading of 21-100 indicates a definite area of decay requiring a filling.

Using DIAGNOdent technology allows your dentist to catch more areas of decay sooner and with more precision. Further, it requires no x-rays, and is a relatively comfortable procedure. Not only can it help prevent the spread of decay, but catching decay early means fillings required are simpler and shallower, preserving more of the tooth. This allows your dentist to use minimally invasive filling procedures, such as drill-free air abrasion. Finally, we're able to objectively monitor any suspicious areas without repeated x-rays, harm to tissues, or need for protective measures.

Unfortunately, the laser does not work through existing fillings and sealants. However, laser detection should be an absolute must before sealants are placed. It is also not accurate in detecting decay between teeth for which x-rays are necessary. The DIAGNOdent is over 90% accurate vs. the 50-75% accuracy of a dental probe. It is an essential tool for a dental practice – and especially one that sees kids.

Dr. St. Clair maintains a private dental practice in Rowley and Newburyport dedicated to health-centered family dentistry. If there are certain topics you would like to see written about or questions you have please email them to him at jpstclair@dentalhealthforlife.com. You can view all previously written columns at www.dentalhealthforlife.com.

