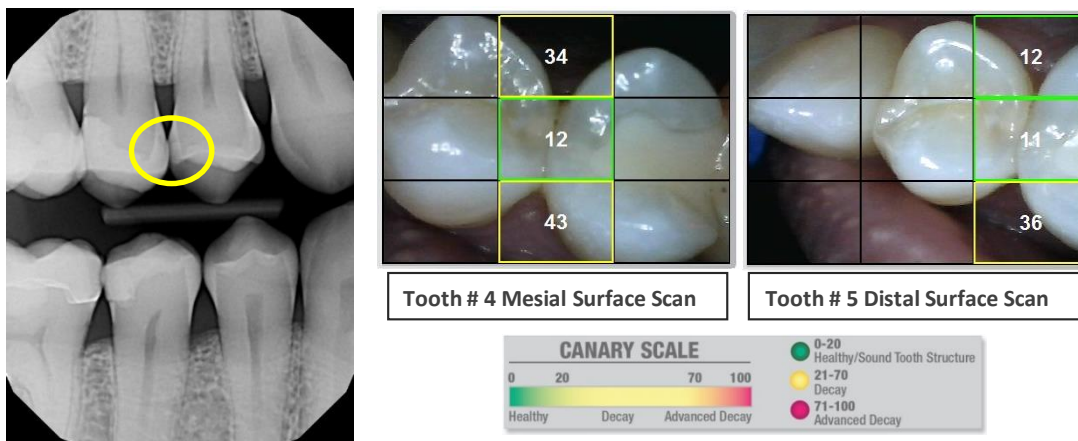


CANARY CASE REPORT: ARE RADIOGRAPHS REALLY THE GOLD STANDARD FOR CARIES DETECTION?

RADIOGRAPHIC FINDINGS: Bitewing radiographs taken on August 26, 2014 showed lesions in the mesial surface of tooth #4 (maxillary right second bicuspid) and distal surface of tooth #5 (maxillary right first bicuspid). On the radiographs, the lesions appeared to be confined to the outer half of the enamel and did not involve the dentin.

CANARY SCAN: A Canary Scan performed in September 2014 indicated that the lesions were more substantial than what appeared by radiography. On Tooth #4, which has an existing DO composite, the Canary Number (CN) was 34 on the mesio-lingual surface and 43 on the mesio-buccal surface. On Tooth #5, the CN was 12 for disto-lingual surface and 36 on the disto-buccal surface. Overall, Canary Numbers were lower on the distal surface of #5 than on the mesial surface of #4, indicating that the lesion was larger on tooth #4.



PREVENTIVE TREATMENT: The radiographs indicated that caries had not broken the dentin enamel junction (DEJ). The decision was made to attempt to remineralize the interproximal lesions with the use of in-office fluoride varnish application and 3M ESPE Clinpro 5000 toothpaste at home for 4 months. The areas were re-scanned in January 2015 with no reduction in the CN. Further review of risk factors indicated that the patient continued to consume one to two carbonated sugared drinks per day thereby possibly interfering with the remineralization process.

RESTORATIVE TREATMENT: Based upon The Canary findings, tooth #4 underwent restorative treatment. As soon as the mesial portion was opened, a large lesion was found which extended beyond the DEJ. Visual examination of the distal surface of tooth #5 revealed an area of brown decalcification with no obvious pathology (see photographs below). The distal surface of tooth #5 was opened (indicated with a yellow arrow) and a large lesion was found.



DISCUSSION: In this case study, The Canary System was able to provide a more accurate measurement of the interproximal lesions than digital x-ray. In March 2015 at the IADR, results from an independent clinical trial were released, comparing The Canary System to traditional digital bitewing x-rays for detection of interproximal lesions. The investigators found that The Canary System correctly diagnosed 92% of the lesions while x-rays could only find 67% of the caries. The authors concluded that The Canary System was more accurate than x-rays for the detection of interproximal caries.