Abstract: The purpose of this paper is to review current knowledge concerning conventional and new diagnostic methods for occlusal caries. Accurate diagnosis of occlusal caries in early stages is difficult. Conventional examination for caries detection is based primarily on subjective interpretation of visual examination and tactile sensation, aided by radiographs. Studies based on these methods often show low sensitivity and high specificity, that is, a large number of lesions may be missed. Some of new diagnostic technologies are including; electrical conductance (EC), quantitative light-induced fluorescence (QLF) and laser-induced fluorescence (LF). Specificity of EC is generally lower than of visual or radiographic techniques. QLF and LF have better sensitivity but poorer specificity than visual examination alone or radiographic examination alone and also are affected by a lot of factors such as saliva, plaque, stain and by fissure morphology.

Conclusion: Clinical judgment based on the patient’s case history, visual cues, review of radiographs and probability of disease is still the most important aspect of optimum patient care. New technologies may provide supplemental information, but they cannot yet replace established methods for the diagnosis of occlusal caries.

Key words: dental caries/diagnosis; fluorescence; human lasers

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