

Clinical Manuscripts

Truelove et al. **Narrow band (light) imaging of oral mucosa in routine dental patients. Part I: Assessment of value in detection of mucosal changes.** *General Dentistry*. 2011:281-291.

This is one of the seminal clinical papers regarding the use of Fluorescence Technology in screening for oral abnormalities. After the examination using white light and fluorescence of 620 patients, 28 of them were scheduled for either a follow up or biopsy because the lesions were seen under fluorescence and were not visible under white light. Of these 28 patients, 9 biopsies were acquired. The results of the biopsies showed that two were lichen planus (a potential malignant lesion), two were inflammation, and five were dysplastic. Although a different device than the OralID was used, the technology in the Truelove paper is identical and the wavelengths used are near equivalent to the OralID.

Also note on page 286 the differential diagnosis of various lesions of the oral cavity.

The conclusion of the manuscript states: "The findings of this study support the use of NBI [fluorescence technology] as a simple adjunctive diagnostic device that, when used as one component of a standard diagnostic protocol, could help clinicians to detect inflammatory and dysplastic tissues. ... [Fluorescence technology] appears to have the potential to assist general practitioners in assessment and decision-making related to mucosal tissues and lesions."

Laronde et al. **Influence of fluorescence on screening decisions for oral mucosal lesions in community dental practices.** *J Oral Pathol Med*. 2014; 43: 7–13.

The more recent Laronde manuscript assesses 2404 patients with both white light and FV [fluorescence technology]. Their results demonstrated that when the clinician utilized information about the lesion risk under white light AND information from fluorescence, their results were better than using either method alone. Also, they conclude that the strength of their models increased when the first quarter of subjects were excluded from the analysis. This suggests that a learning curve is required for FV since the clinicians are learning how to interpret new visual information. A final main point of the article states that a follow up period (here 3 weeks) is a requirement given that many benign lesions will resolve after the initial visit. Intermediate- and high-risk lesions (as viewed with white light), which have a loss of fluorescence at the initial and follow up visit are candidates for gathering additional information such as cytology (CytID) or a biopsy.

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Page 12 along with Table 6 provide a brief summary why a loss of fluorescence is observed with abnormal mucosal tissue.

Epstein et al. **The limitations of the clinical oral examination in detecting dysplastic oral lesions and oral squamous cell carcinoma.** *JADA*. 2012; 12:1332-1342.

This paper reviewed available literature to determine how effective the clinical oral exam (COE) is at predicting dysplasia or squamous cell carcinoma. The COE consists of "a thorough head and neck examination, evaluation of oral mucosa by means of visual inspection under incandescent overhead or halogen illumination, and palpation." Their conclusion states, "...we determined that a COE of mucosal lesions generally is not predictive of their histologic diagnosis. The fact that OSCCs [oral squamous cell carcinomas] often are diagnosed at an advanced stage emphasizes the need for improving the COE and the need to develop adjuncts to assist in oral mucosal lesion detection and diagnosis."

This manuscript highlights the need for adjunctive technology, such as fluorescence of the OralID, to aid in earlier detection of OSCC and other soft tissue abnormalities.