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[\[PDF \(351K\)\]](#) [\[References\]](#)**Relationship between Colors of Carious Dentin and Laser Fluorescence Evaluations in Caries Diagnosis**[Yukiteru IWAMI](#)¹⁾, [Ayako SHIMIZU](#)¹⁾, [Mikako HAYASHI](#)¹⁾, [Fumio TAKESHIGE](#)¹⁾
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Abstract:

This *in vitro* study investigated the relationship between assessments of dentin caries using a laser fluorescence device (DIAGNOdent) and a caries detector dye during caries removal. The dentin of eight extracted carious molars was removed at 300- μ m interval points from the dentin surface toward the pulp chamber. Before and after each removal, images of the carious surfaces were taken in association with color-matching stickers (for color correction) and the surfaces were evaluated by DIAGNOdent based on fluorescence emission from the tooth surface. For the L^* values (CIE 1976 $L^*a^*b^*$ color system), there was a strong negative correlation between DIAGNOdent results and the corrected L^* values of the carious surfaces (Pearson's correlation coefficient: -0.853); additionally, there was a significant correlation between them ($p < 0.05$). However, there were no significant correlations between the DIAGNOdent results and the corrected a^* and b^* values of the carious surfaces (Pearson's correlation coefficients: 0.108 and 0.018 respectively). In conclusion, DIAGNOdent was shown to be applicable for caries diagnosis during caries removal.

Key words:[Color](#), [Laser fluorescence device](#), [Caries diagnosis](#)



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