

Original Article

# Diagnostic reliability of the Digital Imaging Fiber Optic Transillumination: a review

Giovanni Bruno<sup>1,2\*</sup>  
Michele Basilicata<sup>\*2,3</sup>  
Alessandra Semisa<sup>1</sup>  
Simona Giani<sup>7</sup>  
Antonio Gracco<sup>1</sup>  
Patrizio Bollero<sup>2,5</sup>  
Raffaella Docimo<sup>8</sup>  
Roberto Sorrentino<sup>6</sup>  
Alberto De Stefani<sup>1,4</sup>

<sup>1</sup> Dental Clinic, Department of Neuroscience, University of Padua, 35121 Padua, Italy

<sup>2</sup> Department of Experimental Medicine and Surgery, University of Rome Tor Vergata, 00133 Rome, Italy

<sup>3</sup> UOSD Special Care Dentistry, Policlinico Tor Vergata, 00133 Rome, Italy

<sup>4</sup> Department of Pharmacological Sciences, University of Padua, 35121 Padua, Italy

<sup>5</sup> Department of Systems Medicine, University of Rome Tor Vergata, 00133 Rome, Italy

<sup>6</sup> Department of Neurosciences, Reproductive and

pers published from 1990 to 2022 were included. Nine articles comparing two different methods for early detection of carious lesions were selected.

An analysis of the existing literature seems to support the hypothesis that making diagnosis by using the Digital Imaging Fiber Optic Transillumination systems represents a safe and effective support for early diagnosis of interproximal carious lesions within enamel. However, it is still to be considered a complementary method to traditional bitewing and periapical radiographs.

**Keywords:** DIFOTI, Digital Imaging Fiber Optic Transillumination, Caries, Pediatric Dentistry, Special Care Dentistry, Early Diagnosis, Restorative Dentistry.

## Introduction

Dental caries represents nowadays the most prevalent chronic disease throughout most of the world, affecting approximately 97% of the population [1, 2] with a prev