

THE LASER TIMES

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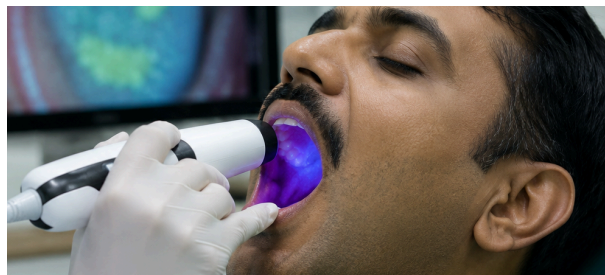
HIGHLIGHTS

Potentially Malignant Oral Disorders (PMODs) and Oral Squamous Cell Carcinoma (OSCC) continue to present a significant diagnostic challenge in routine dental practice. While conventional Oral Examination remains the gold standard for screening, subtle epithelial alterations are often difficult to appreciate during their earliest stages, particularly in high-risk individuals with chronic tobacco exposure.

The emphasis today is no longer solely on identifying established lesions but on recognising biochemical and structural changes in tissue that precede visible clinical manifestations. This shift has driven the integration of adjunctive Fluorescence-based technologies into contemporary Oral Cancer screening protocols.



ENHANCED LESION VISUALIZATION



Tissue autofluorescence is based on the interaction of specific wavelengths of light with endogenous fluorophores such as collagen cross-links, Flavins, NADH, and FAD. Healthy mucosa demonstrates a characteristic fluorescence pattern, whereas dysplastic and malignant tissues frequently exhibit fluorescence attenuation secondary to epithelial disorganisation, altered metabolic activity, increased vascularity, and degradation of the stromal collagen matrix.

The ability to visualise these changes in real time offers clinicians an additional layer of diagnostic information beyond conventional White-Light examination. Rather than replacing biopsy or histopathological assessment, Fluorescence imaging serves as an adjunctive tool to improve lesion visualisation, risk stratification, and clinical documentation.

“FLUORESCENCE-GUIDED ORAL CANCER SCREENING: REDEFINING EARLY DETECTION IN CONTEMPORARY DENTAL PRACTICE”

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BLUE DIODE FLUORESCENCE

Over the last decade, optical diagnostic technologies have significantly expanded the armamentarium available for Oral Cancer screening. Among these advancements, Blue Diode Fluorescence imaging has emerged as a promising adjunctive modality for evaluating oral potentially malignant disorders and early mucosal alterations.

Blue Diode Fluorescence technology utilises specific wavelengths to excite endogenous tissue fluorophores, generating characteristic fluorescence patterns within healthy oral mucosa. Alterations in epithelial architecture, metabolic activity, vascularity, and stromal integrity associated with dysplasia and malignant transformation often result in a measurable loss or alteration of fluorescence. These optical changes may become evident before significant clinical changes are appreciable under conventional white-light examination



For clinicians routinely managing patients with tobacco-related lesions, oral submucous fibrosis, leukoplakia, erythroplakia, and other high-risk conditions, blue diode fluorescence-assisted screening provides an additional diagnostic endpoint that complements conventional visual and tactile examination. The technology does not replace biopsy or histopathological confirmation; rather, it enhances lesion visualisation, assists in identifying suspicious areas, and supports more informed clinical decision-making.

The introduction of chairside platforms such as OraLBLU™ Theranostics has enabled the practical integration of Blue Diode Fluorescence imaging into routine dental workflows, making advanced screening more accessible within General Practice, Oral Medicine, and Specialist settings.

As dentistry continues to move toward preventive and precision-based care, Blue Diode Fluorescence imaging is positioned to play an increasingly important role in the Early detection and monitoring of Oral Mucosal abnormalities.

**“BLUE DIODE FLUORESCENCE IMAGING:
FROM RESEARCH TO CHAIRSIDE
APPLICATION”**

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HIGHLIGHTS

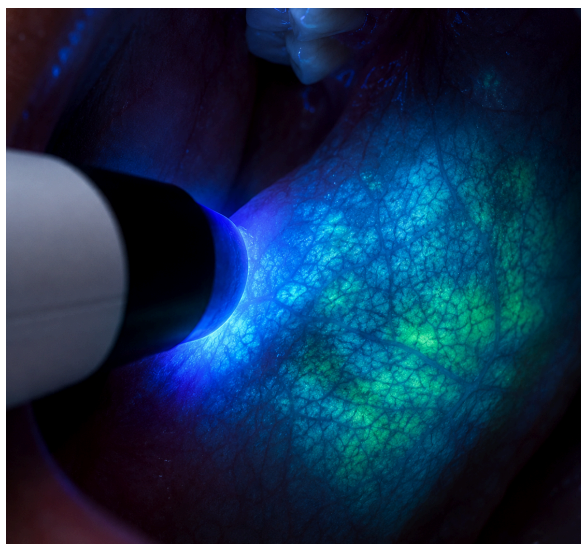
The future of oral cancer screening lies in the convergence of clinical expertise, optical diagnostics, and preventive healthcare. Advances in fluorescence imaging represent an important step toward identifying disease at a biologically active stage rather than waiting for overt clinical progression.

For the practising dentist, this evolution is particularly significant. Dental professionals remain the first line of defence against oral cancer, often encountering patients more frequently than any other healthcare provider. The ability to identify subtle tissue alterations during routine examinations may have a profound impact on patient outcomes.

Adjunctive fluorescence technologies are not intended to replace conventional examination or histopathological confirmation. Their value lies in improving visualisation, enhancing clinical confidence, and supporting evidence-based decision-making when evaluating suspicious mucosal changes.



PRECISION ORAL DIAGNOSTICS



As screening protocols continue to advance, the focus will increasingly shift toward risk-based assessment, early intervention, and longitudinal monitoring. In this regard, fluorescence-guided diagnostics represent not merely a technological innovation but a meaningful advancement in the pursuit of earlier detection and improved patient care.

The future of oral oncology will not be defined solely by how effectively we treat disease, but by how early we identify it.

“THE FUTURE OF ORAL CANCER SCREENING: TOWARDS PRECISION DIAGNOSTICS”

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LASER STAR OF THE MONTH



Dr. Divya Gayatri P.S

- **Periodontist, Implantologist and Laser Specialist**
- **International Research Fellow (IRF) AALT, Singapore**
- **Founder & Chief Periodontist, Adriti Dental Care, Guntur**

DR. DIVYA GAYATRI P.S

Dr. Divya Gayatri P.S. is a dedicated clinician with 10 years of experience and expertise in laser dentistry. Passionate about soft and hard tissue applications, she has a special interest in photobiomodulation and photothermodynamic therapy for enhanced healing and patient outcomes.

Inspired by Prof. Chandrashekar Yavagal, she integrates scientific principles into clinical practice using the Novolase TriBlu laser system. Her preferred laser procedure is Photobiomodulation with Combo Coherence, which she considers a powerful tool for tissue regeneration and recovery.

Dr. Divya envisions herself as a "Laser Surgeon with Healing Hands," combining precision treatment with advanced healing technologies. Her guiding philosophy is to thoroughly understand every procedure, anticipate outcomes, and always prioritise patient safety, effective treatment, and overall well-being.



"ADVANCING HEALING THROUGH PRECISION LASER DENTISTRY"

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LASER PRODUCT OF THE MONTH

**Endodontic Laser Irradiation
for Xtended Intracanal
Reconditioning™**

NovoLase
Light Inspired!

**MICROBIAL
ELIMINATION**

ELIXIR™
Laser
+ Flexi Optics
+ Gel Dynamics

PHOTONICS

**TISSUE
DEBRIDEMENT**

**CANAL
OPTIMIZATION**

novolase.in

ELIXIR™ (Endodontic Laser Irradiation for Xtended Intracanal Reconditioning) redefines Root Canal Therapy by moving beyond conventional irrigation and embracing energy-mediated intracanal reconditioning. By combining advanced Laser Photonics, adaptive medicament rheology, and precision fibre-optic delivery, ELIXIR™ targets complex canal anatomies with exceptional accuracy.

This innovative synergy supports effective Tissue Debridement, Enhanced Microbial Reduction Optimisation of the Canal Environment for long-term treatment success. Rather than simply cleaning the canal, ELIXIR™ reconditions it—creating a biologically favourable foundation for healing and obturation. ELIXIR™ represents a new era in Endodontics, where precision, energy, and innovation work together to transform treatment outcomes.

“ELIXIR™: Future of Endodontics starts where conventional Irrigation ends!”

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LASER EVENT OF THE MONTH

To mark World No Tobacco Day 2026, LaserVEDA Dental Institute, under the leadership of Prof. Chandrashekar Yavagal, organised a comprehensive screening, awareness, and Tobacco De-addiction initiative. More than 100 participants underwent oral health evaluations and received counselling on the risks of tobacco use and the importance of preventive care.



By integrating advanced screening technology with De-addiction support, the initiative emphasised the importance of early intervention in preventing and managing Oral Cancer. The program empowered participants with knowledge, encouraged regular oral cancer screening, and reinforced LaserVEDA's commitment to innovation, community health, and preventive oral healthcare.



A key component of the program was Laser-Assisted Tobacco De-addiction Therapy, offering a non-invasive, evidence-based approach to help individuals quit Tobacco. The event also featured OralBLU Theranostics, an innovative Blue Diode Fluorescence technology designed to aid in the early detection of oral potentially malignant disorders and suspicious tissue changes before obvious clinical signs appear.



“WORLD NO TOBACCO DAY 2026: SCREENING, AWARENESS, AND DE-ADDICTION DRIVE”

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LASER CASE OF THE MONTH



Laser Success Story

A 20-day-old male infant presented with a symptomatic lingual frenum causing significant breastfeeding difficulties and distress for both mother and child.

Despite myofunctional exercises, feeding challenges persisted. A Laser-assisted Frenectomy was performed using the Novolase Gold Diode Laser (810 nm, 1.5 W). Adjunctive Photobiomodulation therapy was administered before and immediately after the procedure using the Novolase Therapy Pod (810 nm, 100 mW and 650 nm, 100 mW) to reduce inflammation and enhance healing.

The Laser enabled a precise, minimally invasive release of the frenum with excellent safety and rapid recovery.

Immediate improvement in breastfeeding was reported, along with complete relief of maternal pain. Follow-up focused on feeding assessment and wound healing, both of which progressed favourably.

This case, managed by **Dr. Abhinav Talekar**, Pedodontist, and **Dr. Shruti Kumbhare**, Periodontist and Laser Specialist, highlights the effectiveness of early Laser intervention and Photobiomodulation in managing neonatal ankyloglossia and improving maternal-infant well-being.

Early Laser Intervention for Tongue-Tie in a 20-Day-Old Infant
A Case Managed by
“Dr. Abhinav Talekar and Dr. Shruti Kumbhare”