

# GOCCOLES®



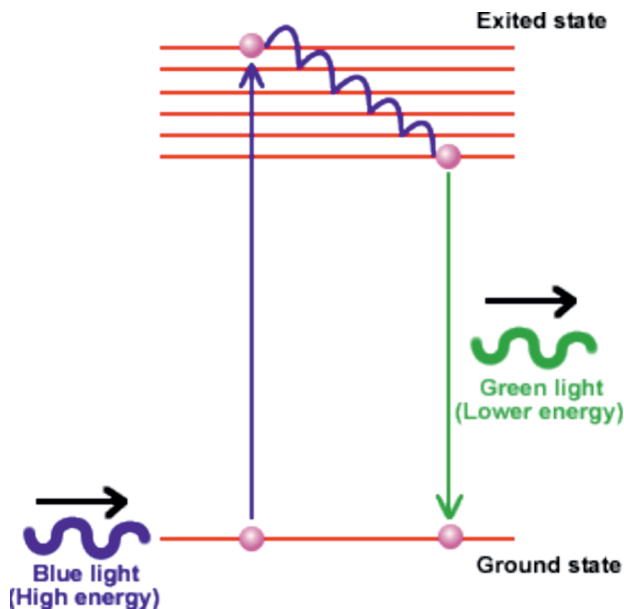
GLASSES FOR ORAL CANCER CURING LIGHT EXPOSED SCREENING

Early screening can save lives

# What is fluorescence and cells-tissues autofluorescence

Cells contain fluorescent molecules, also called fluorophores or simply fluors, which become fluorescent when excited by UV/Vis radiation of suitable wavelength, responding distinctly to light compared to other molecules. This fluorescence emission, arising from endogenous fluorophores, is an intrinsic property of cells and is called auto-fluorescence (to be distinguished from fluorescent signals obtained by adding exogenous markers).

In simpler terms, fluorescence is a property of some molecules in which light of one colour is absorbed that results in light of a different colour being emitted.



In medicine the fundamental approach to the fluorescence detection of dysplasia and early malignancy is to use tissue specific endogenous auto-fluorescence. Tissue auto-fluorescence behaviour can be easily seen in oral mucosa with an optical filter after exciting cells using an excitation light (like curing light). This technique enables the rapid screening of the internal surface areas of the oral mucosa in order to provide an accurate, non-invasive detection of dysplasia and early cancer.

*The Jablonski energy diagram (on the left) represents fluorescence (the molecular absorbance at the emission of light). The purple arrow represents vibrational relaxation from single excited state.*



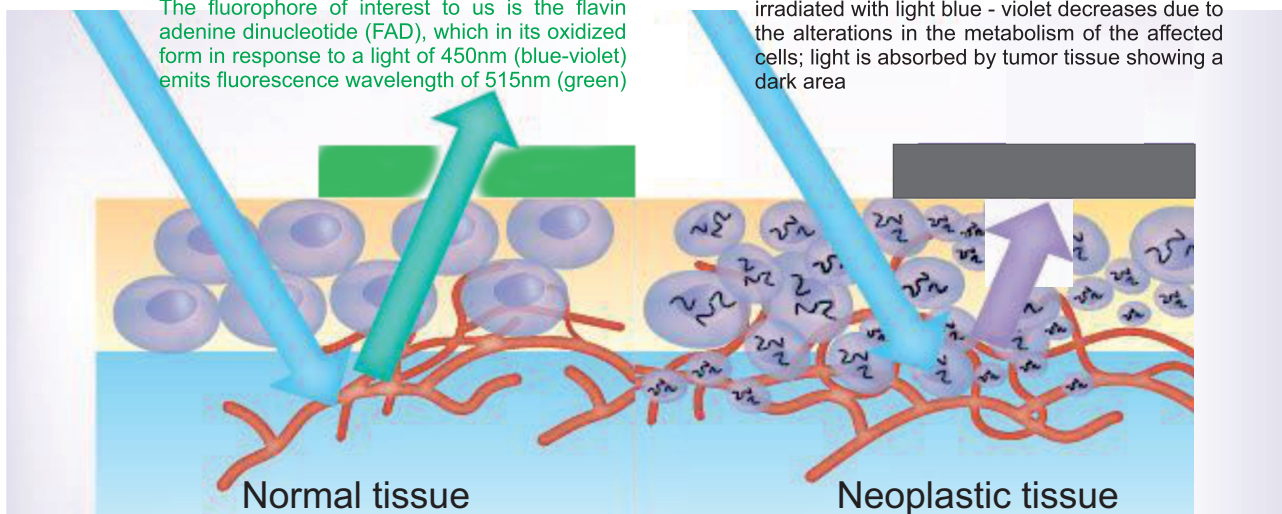
**CURING LIGHT EMISSION 390-500nm** - The lamp should be kept at 20-50cm from the mucosa.

## AUTO-FLUORESCENCE REACTION

The normal mucosa emits a green fluorescence. The fluorophore of interest to us is the flavin adenine dinucleotide (FAD), which in its oxidized form in response to a light of 450nm (blue-violet) emits fluorescence wavelength of 515nm (green).

## NO AUTO-FLUORESCENCE

In tumor tissue fluorescence of the oxidized FAD irradiated with light blue - violet decreases due to the alterations in the metabolism of the affected cells; light is absorbed by tumor tissue showing a dark area.



Why this product was chosen:

Evaluator comments:

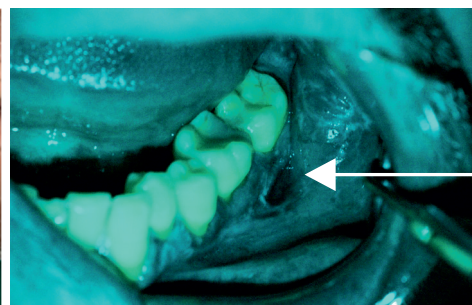
**Simple, yet effective:** no need for any gels, liquids, or contrasting mediums. Simply put the glasses on and visually identify areas of concern using a traditional curing light.

***'Awesome product and easy to use-good illumination'***

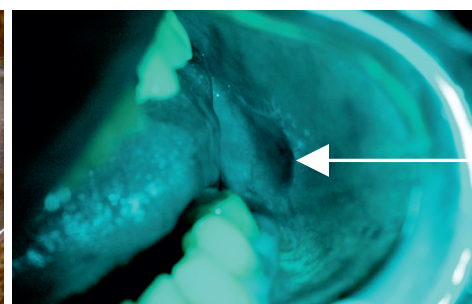
***'Goccles showed lesions much more clearly than other devices I've used'***

Naked eyes vision

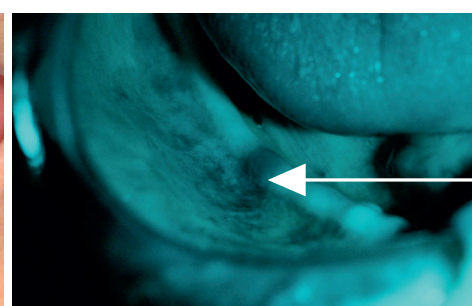
GOCCLES<sup>®</sup> vision



Oral lichen planus



Erythroleukoplakia



New lesion on a patient previously operated



ORAL CANCER SCREENING

**Goccles<sup>®</sup>**  
Pierrel Pharma



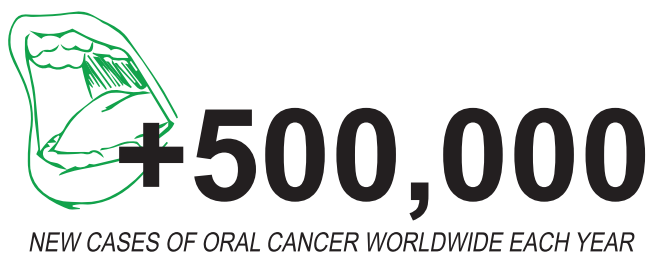
GOCCLES<sup>®</sup> was tested during two studies, one of which was multicentric, on a total of 78 different lesions: from patients in follow-up to oral carcinoma to patients with suspicious lesions presenting for the first time.

GOCCLES<sup>®</sup> helped to observe the phenomenon of loss of autofluorescence in various specific cases (mild, moderate and severe dysplasia, in situ carcinoma, invasive oral cancer). In four cases lesions invisible to the naked eye were observed (including an invasive oral cancer). While in ten cases, the device allowed the complete removal of lesions whose margins were not clearly distinguishable to the naked eye.

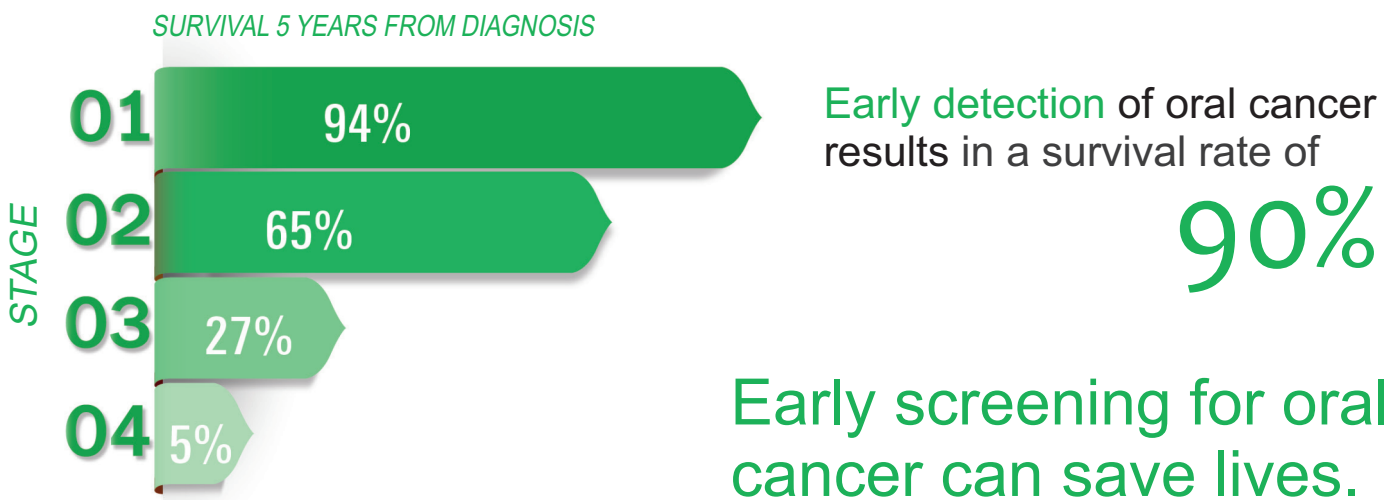
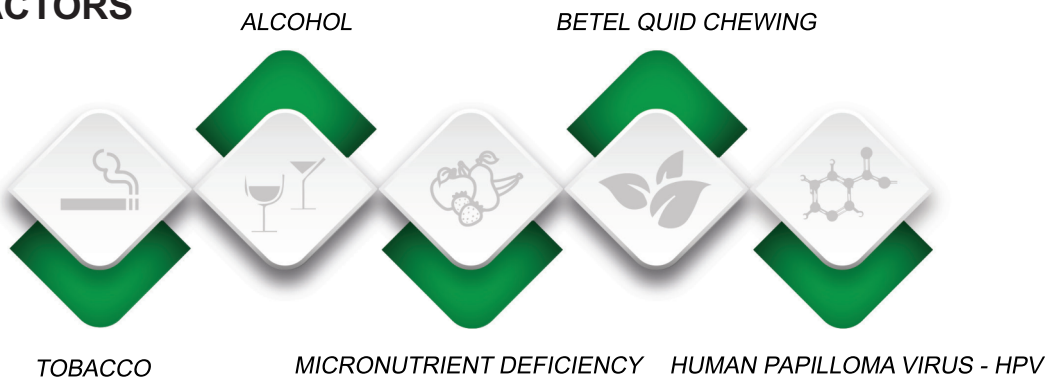


# Prevention and early diagnosis make the difference

Oral cancer is one of the most frequent cancers globally, and unfortunately its late stage detection is a common problem worldwide. Early discovery is the most important step in reducing the death rate: when detected in first stage, patients have an 80 to 90 percent survival rate. Knowing the risk factors and a regular examination, including a screening of the entire mouth, are essential in the early detection of cancerous and precancerous lesions.



## RISK FACTORS



**GOCCLES**<sup>®</sup>  
EYES ON PREVENTION

For further information  
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[goccles@pierrelgroup.com](mailto:goccles@pierrelgroup.com)