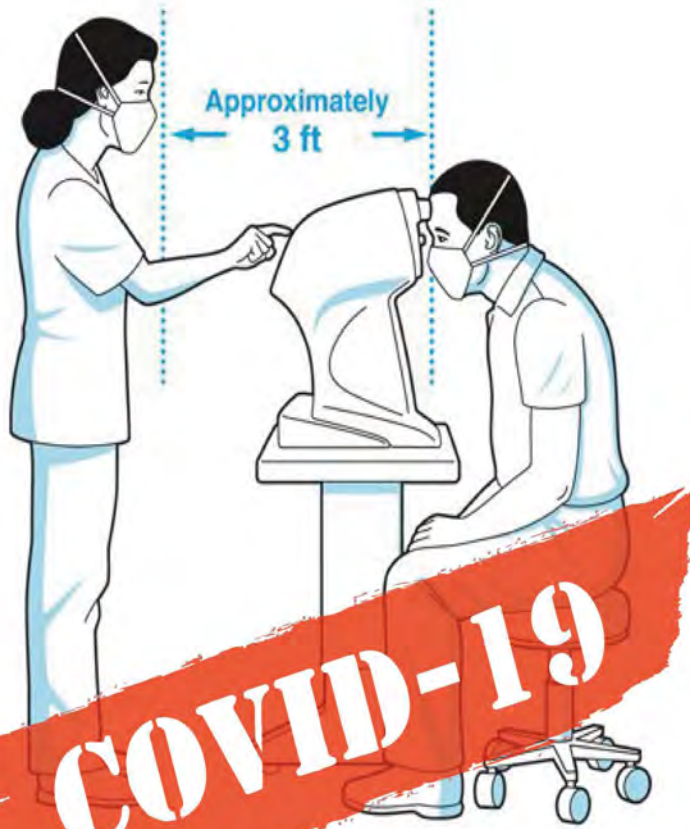


# Dry Eye disease

# Concepts



HOSPITAL PROBLEMATIC

SOCIAL DISTANCING ISSUES

HOW TO MANAGE PATIENTS IN A QUICK A



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## Wearing a face mask can lead to a spike in cases of Dry Eye.

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Wearing a face mask can help slow the spread of COVID-19 and may also lead to a spike in cases of dry eye.

A large population of people can be affected, including elderly individuals who may already have poorer quality tear film.

It also may affect contact lens wearers, and people who work for long periods in air-conditioning and use computers.



# Dry eye disease



## Dry Eye Treatment

**Class II - Home health remedy**

Treatment available to be used at Patient's home, in the Clinic or in the Optical practice.

TREATMENT

DIAGNOSIS

## A new way to diagnose dry eye diseases



### A new Topographer generation

Computerized corneal topography including a module dedicated to the evaluation of the dry eye.



### Integrate your Slit Lamp with dry eye module DEM 100

Switch your Slit Lamp into a complete digital dry eye assessment test. SBM Sistemi is now adapting customized imaging systems solutions on slit lamps and surgical microscopes from different manufacturers.



### Fully automatic device

The new instrument for the individual analysis of tear film that allows to carry out a quick detailed structural research of the tear composition. Analysis of all the layers (Lipid Aqueous, Mucin) and Meibomian.

# THE ONLY COMPLETE SOLUTION



The new instrument for the individual analysis of the tear film that allows to carry out a quick detailed structural research of the tear composition.  
Analysis of all the layers (**Lipid, Aqueous, Mucin**) and **Meibomian Glands**.



 idra

# FULLY AUTOMATIC EXAMINATION



**AUTO  
MODE**



# SAVE SPACE



+





# ALL IN ONE

AUTO INTERFEROMETRY



BLINK QUALITY  
BLEPHARITIS  
OCULAR REDNESS  
CLASSIFICATION

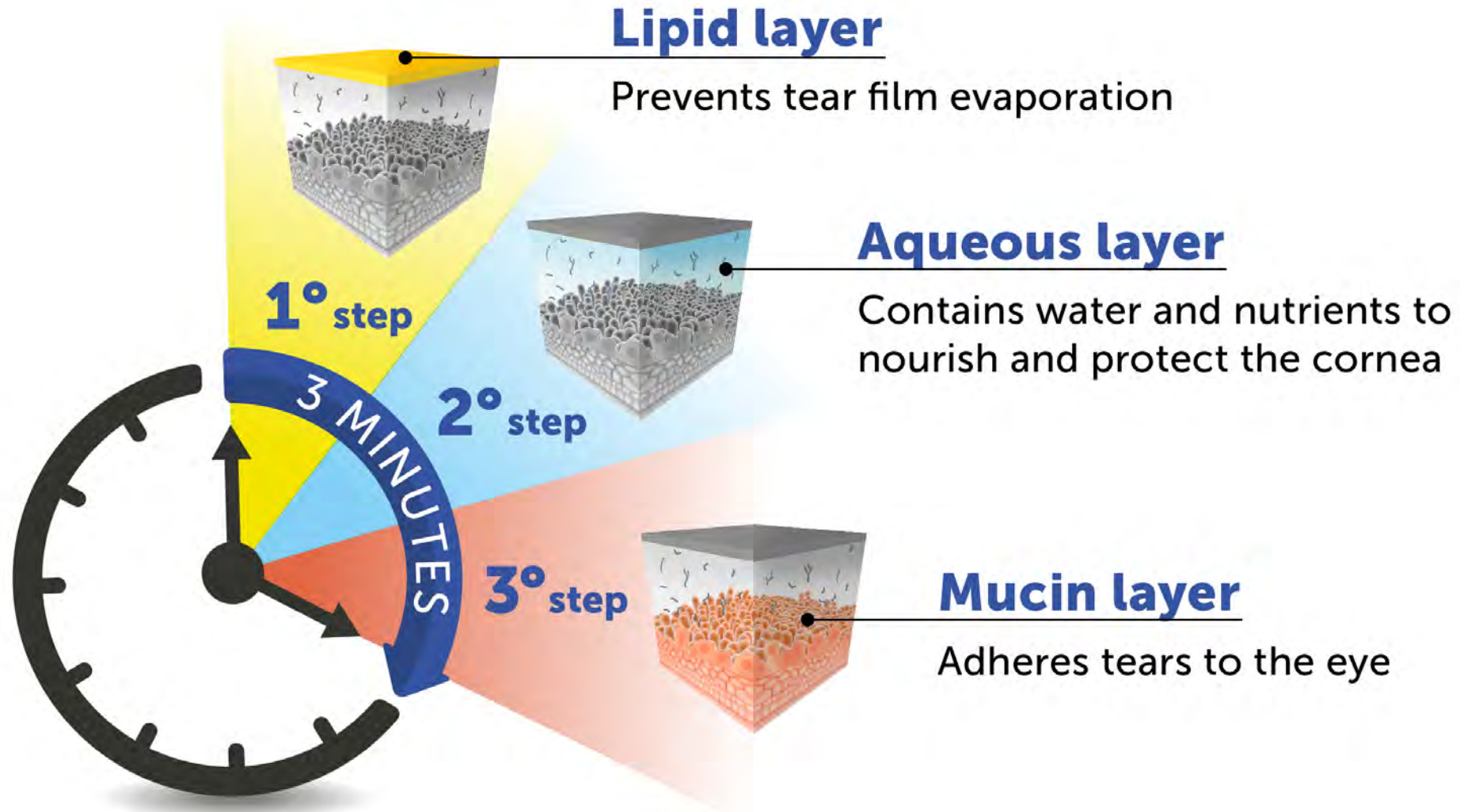


NIBUT  
MEIBOGRAPHY  
TEAR MENISCUS



- AUTO INTERFEROMETRY
- TEAR MENISCUS
- NIBUT WITH MAP AND GRAPH
- MEIBOGRAPHY
- 3D MEIBOGRAPHY
- BLINK QUALITY
- BLEPHARITIS
- OCULAR REDNESS CLASSIFICATION
- PUPILLOMETRY
- WHITE TO WHITE MEASUREMENT
- ANTERIOR SEGMENT IMAGING

# EVALUATION OF ALL TEAR FILM LAYERS



# FULLY AUTOMATIC PROTOCOL

Right eye    Studio clinico eseguito dal dott. Luca Vigo  
Left eye



## TREATMENTS



IPL / Radio frequency treatment recommended



Tear substitutes with alternating fatty acid



Moisturizing eye drops based on hyaluronic acid or high molecular weight carboxymethylcellulose



Use of topical hydrocortisone



Tear gels



Cyclosporine

# Exams description

## **AUTO INTERFEROMETRY**

The IDRA automatically evaluates the quantity and quality of the lipid component on the tear film. The device highlights the lipid layer and the software analyses automatically Lipid Layer Thickness (LLT).

## **TEAR MENISCUS**

The thickness of the tear meniscus that is observed on the eyelid margins provides useful information on the tear volume. The tear meniscus can be examined considering its height, regularity and shape.

## **NIBUT WITH MAP AND GRAPH**

The stability of the mucin layer and the whole tear film is assessed through the study of non-invasive break up time (NIBUT), by using the Placido cone projected onto the cornea.

## **MEIBOGRAPHY**

Meibography is the visualization of the glands through illumination of the eyelid with infrared light. It images the morphology of the glands in order to diagnose any meibomian gland drop out which would lead to tear dysfunction.

## **3D MEIBOGRAPHY**

This new imaging system provides strong evidence to support the choice of a specific therapy (for example IPL treatment) and helps the patient to understand why a certain therapy is being recommended.

## **BLINK QUALITY**

It has been established that efficient blinking plays an important role in ocular surface health during contact lens wear and that it improves contact lens performance and comfort.

## **BLEPHARITIS**

This test helps to visually see blepharitis and presence of Demodex. It can be performed on the outer surface of the eye and eyelids.

## **OCULAR REDNESS CLASSIFICATION**

Once the image of the conjunctiva with its blood vessels is captured, it is possible to compare it with the classification sheets of bulbar and limbal redness degrees.

## **PUPILLOMETRY**

Measurement of the pupil reaction to light with and without glare.  
Measurement mode: SCOTOPIC, MESOPIC, PHOTOPIC

## **WHITE TO WHITE MEASUREMENT**

Evaluation of corneal diameter from limbus to limbus (white-to-white distance, WTW).

## **ANTERIOR SEGMENT IMAGING**

# Dry eye diagnostics can be offered by all opticians

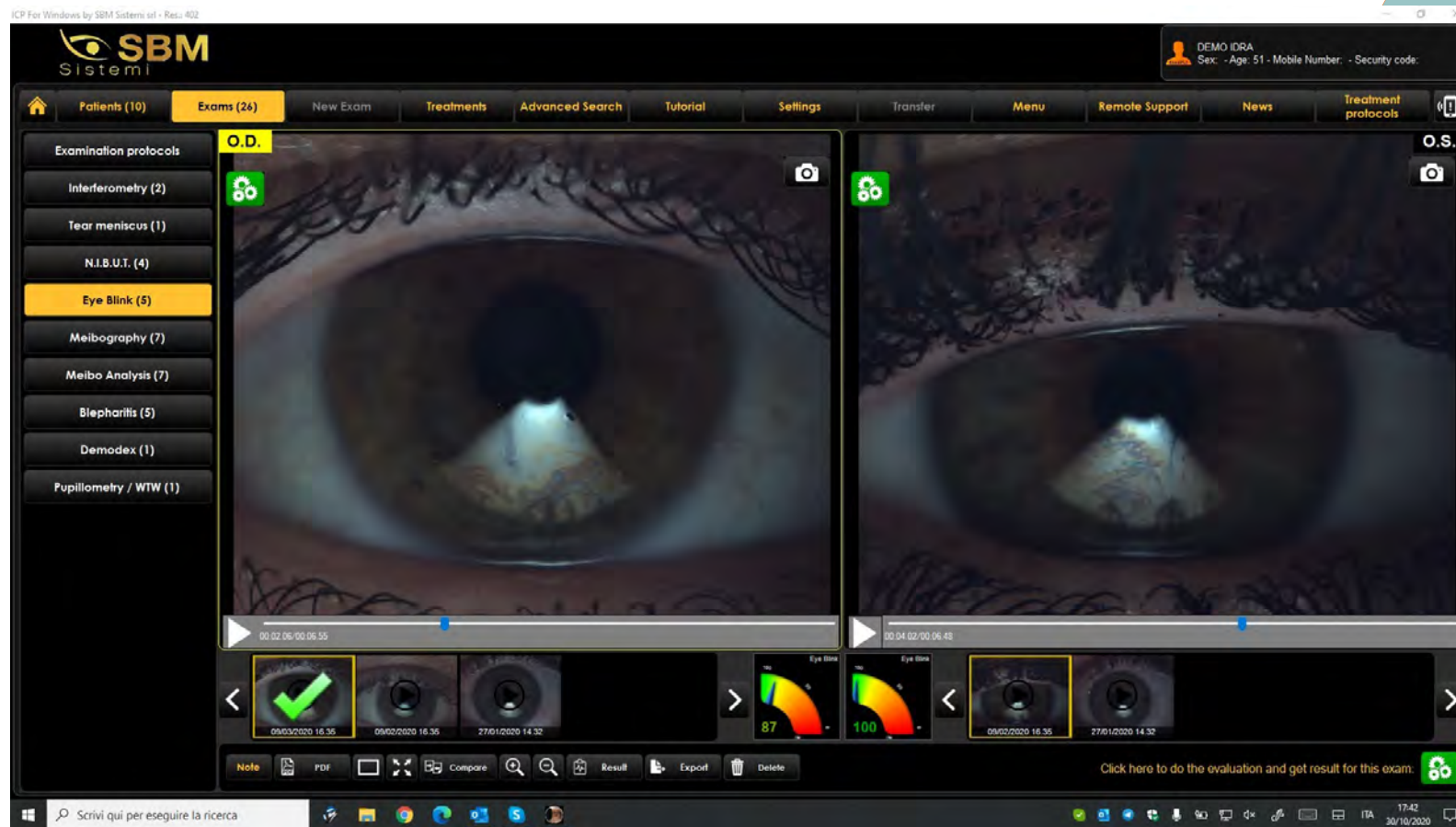
**two different recording  
classes  
Class I and Class II**



# Dry eye diagnostics can be offered by all opticians

|   |  |  |  |  |  |  |  |   |  |
|---|--|---|---|---|---|---|---|--|---|
| <b>INTERFEROMETRY TEST</b><br>Manual evaluation of lipid layer  | ✓  | ✗   | ✓   | ✗   | ✗   | ✗   | ✗   | ✗  | ✗   |
| <b>AUTO INTERFEROMETRY TEST</b><br>Automatic evaluation of lipid layer  | ✓  | ✓   | ✗   | ✗   | ✗   | ✗   | ✗   | ✗  | ✗   |
| <b>TEAR MENISCUS HEIGHT</b><br>Evaluation of the tear film quantity   | ✓ up to 5  | ✗   | ✓ up to 5   | ✓   | ✓ up to 3   | ✗   | ✓   | ✓  | ✗   |
| <b>AUTO NIBUT</b><br>Evaluation of tear film break-up time non-invasive and fully automatic                     | ✓  | ✗   | ✓ basic   | ✓   | ✓   | ✓   | ✓   | <small>The NIBUT examination is measured by horizontal lines, a procedure not supported by any clinical study that prove the validity of the results</small> | ✗   |
| <b>MEIBOGRAPHY</b><br>Auto detection of meibomian glands thanks to infrared leds and percentage of loss area    | ✓ auto   | ✓ manual  | ✓ auto  | ✓ manual  | ✓ manual  | ✗   | ✓ manual  | ✓ manual   | ✓ manual  |
| <b>3D MEIBOGRAPHY</b><br>Auto detection of meibomian glands thanks to infrared leds and percentage of loss area | ✓  | ✗   | ✗   | ✗   | ✗   | ✗   | ✗   | ✓  | ✗   |
| <b>EYE BLINK DETECTION</b>  | ✓  | ✓   | ✗   | ✗   | ✗   | ✗   | ✓/✗   | ✗  | ✗   |
| <b>REPORT</b> Different typologies of reports to print  | ✓  | ✗   | ✓   | ✗   | ✗   | ✗   | ✗   | ✗  | ✗   |
| <b>LIFESTYLE QUESTIONNAIRE</b>  | ✓  | ✗   | ✗   | ✗   | ✗   | ✗   | ✗   | ✗  | ✗   |
| <b>BUT TEST - STAINING TEST</b><br>With use of yellow filter and blue led                                       | ✓  | ✗   | ✓   | ✗   | ✗   | ✗   | ✗   | ✗  | ✗   |
| <b>OSDI</b>   | ✓  | ✗   | ✗   | ✗   | ✗   | ✗   | ✗   | ✓  | ✗   |
| <b>SIMPATOMATOLOGY</b>  | ✓  | ✗   | ✗   | ✗   | ✗   | ✗   | ✗   | ✗  | ✗   |
| <b>PUPILLOMETRY TEST</b>  | ✓  | ✗   | ✓   | ✓   | ✓   | ✓   | ✓   | ✗  | ✗   |
| <b>BULBAR REDNESS</b>   | ✓  | ✗   | ✗   | ✗   | ✓   | ✗   | ✗   | ✓  | ✗   |

# Auto interferometry

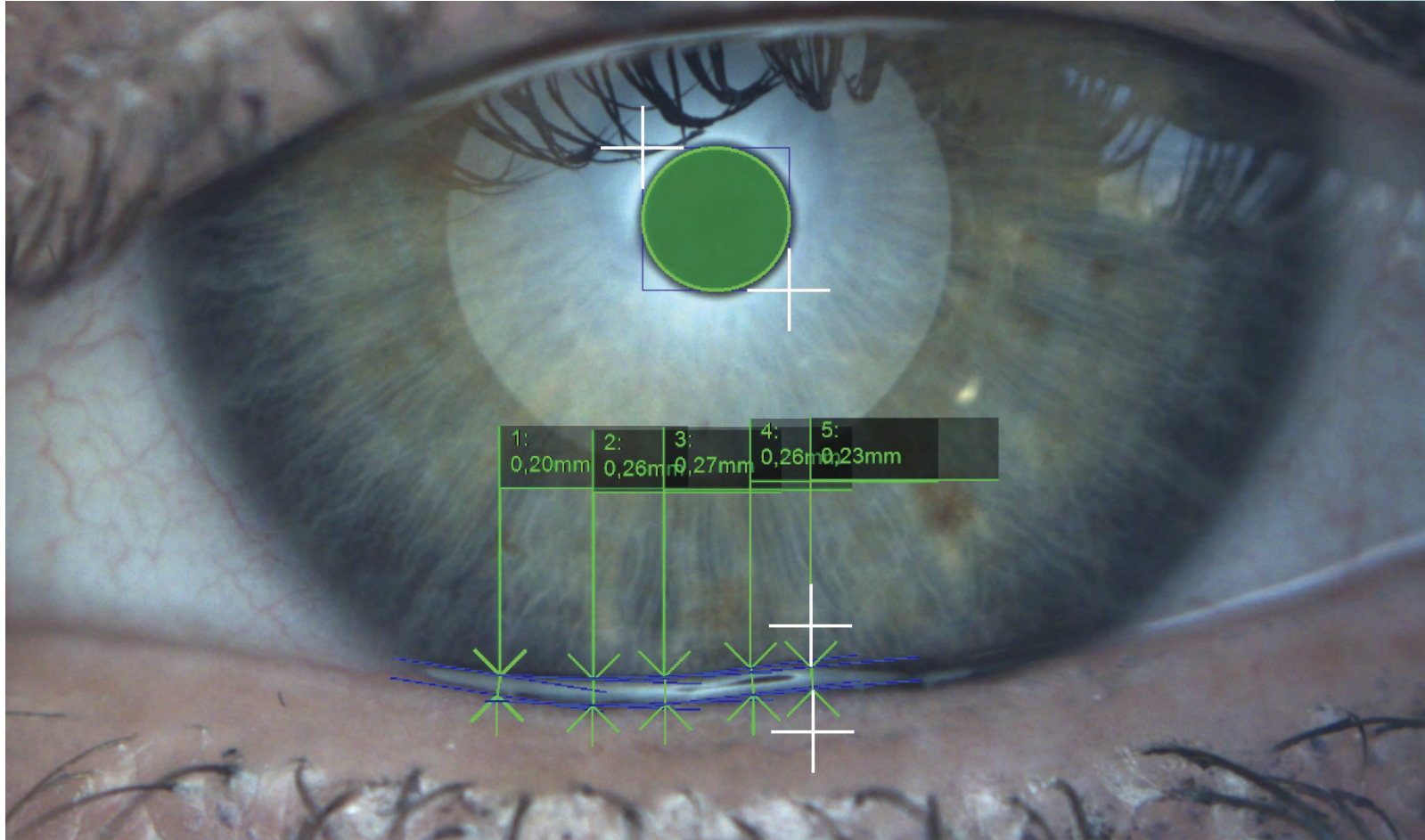


## Auto detection

Using the new SBM Sistemi IDRA, Interferometry gets easy, quick and automatic.

The software automatically detects the colored lipids on the patient's eye and determines lipid layer thickness (LLT). In a few seconds it is possible to get automatically relevant data to understand functionality of Meibomian Glands such as average LLT

# Tear Meniscus height



## Evaluation of the tear film quantity

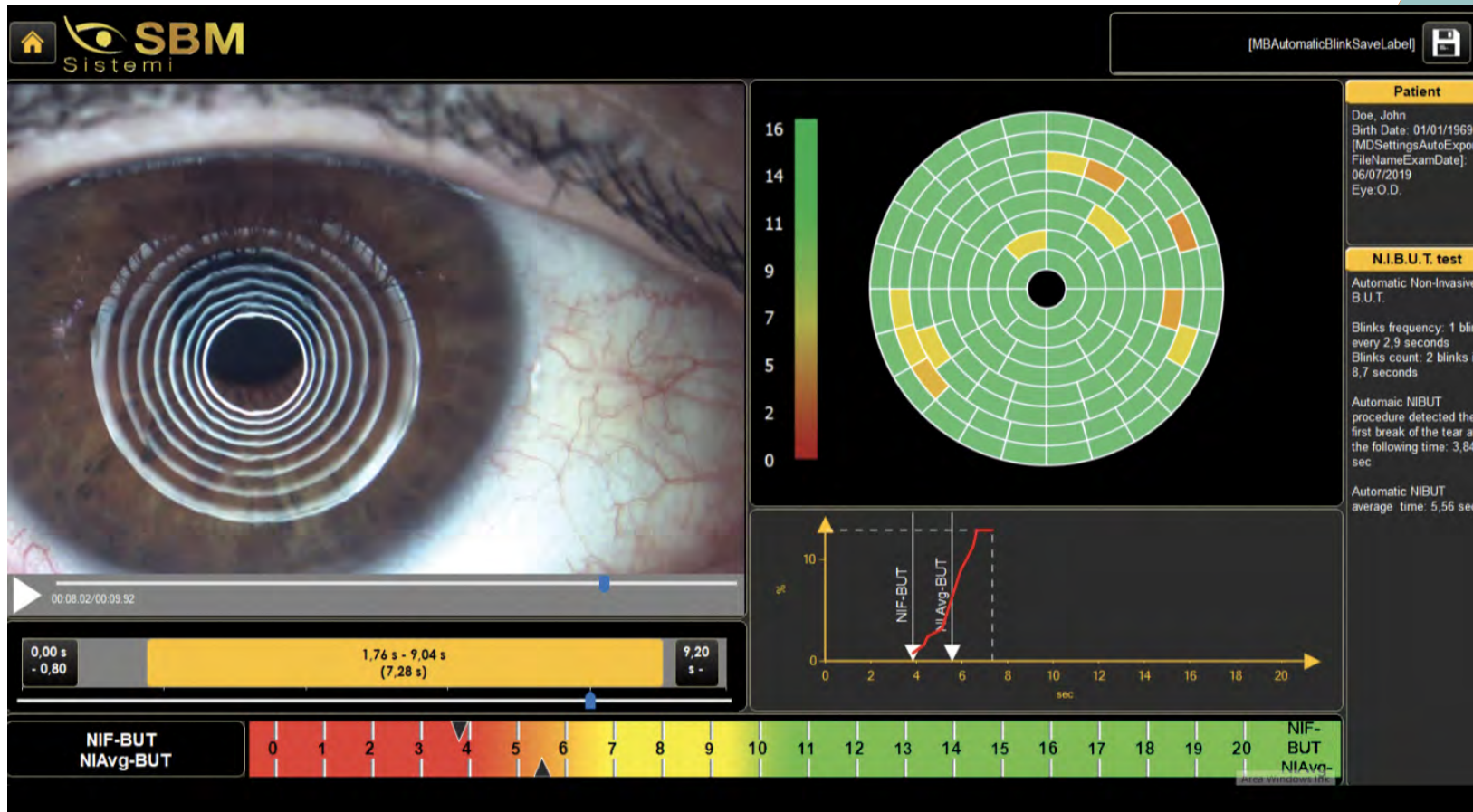
Is an excellent method of screening for dry-eye, to measure the lower tear meniscus in patients with aqueous tear deficiency (ATD) dry eye and to determine the most effective meniscus variables for the diagnosis of dry eye.

With the magnification tool, it is possible to measure the tear meniscus height on the lower eyelid and evaluate its characteristics.

The result of this exam is comparable to the Schirmer's Tear Test 1 (STT1), with the difference that it is not invasive, does not cause reflected tearing and lasts 3 seconds instead of several minutes.



# N.I.B.U.T.



## Auto detection

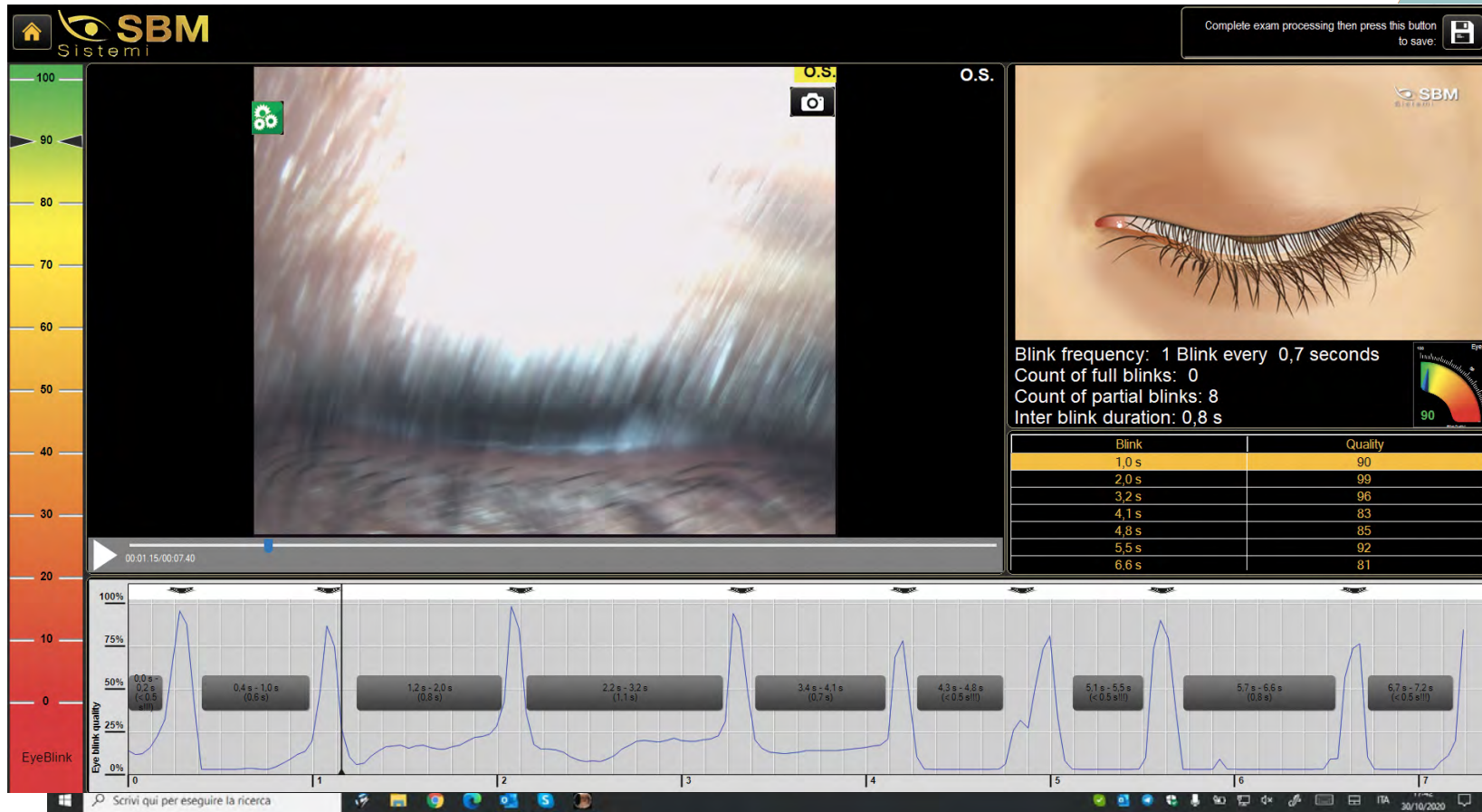
The instrument allows to evaluate tear film stability and regularity, using non-invasive break up time measurement (NIBUT).

This measures the number of seconds between one complete blinking and the appearance of the first discontinuity in the tear film.

With the SBM Device, thanks to one single video, the physician can gain lots of information:

- Automatic NIBUT
- Stability graph to understand the trend of tear film stability during the video
- Tear topography that shows all breaking the tear film during time.

# Blinking quality



## Auto detection

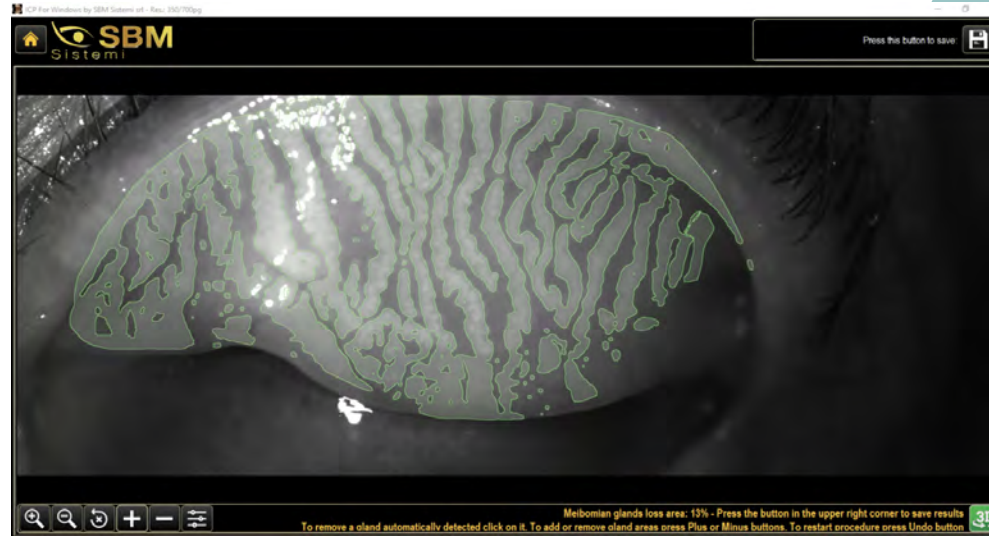
IDRA automatically detects and analyses blinking, determining its quality.

A healthy person should be expected to show periodic blinking, by closing the eyelids briefly.

Most blinks are spontaneous, occurring regularly with no external stimulus. However, a reflex blink can occur in response to external stimuli such as a bright light, a sudden loud noise, or an object approaching towards the eyes.

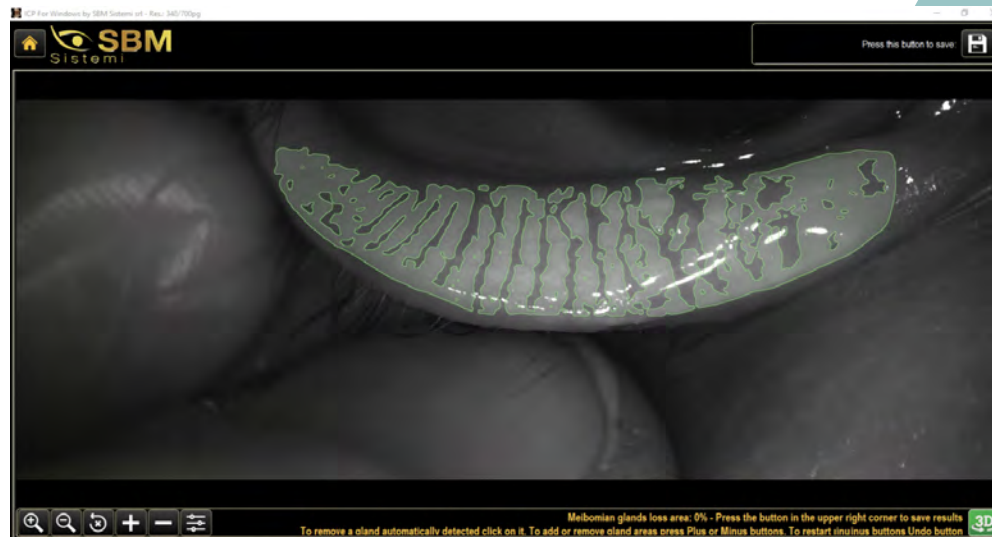
# Meibography

## MEIBOMIAN GLAND AUTO DETECTION ON UPPER AND LOWER EYELIDS



## HOW IT WORKS

IDRA can detect the shape of meibomian glands shown through infrared meibography without requiring any input from the user, the images are then automatically classified.



## AUTOMATIC LID DETECTION

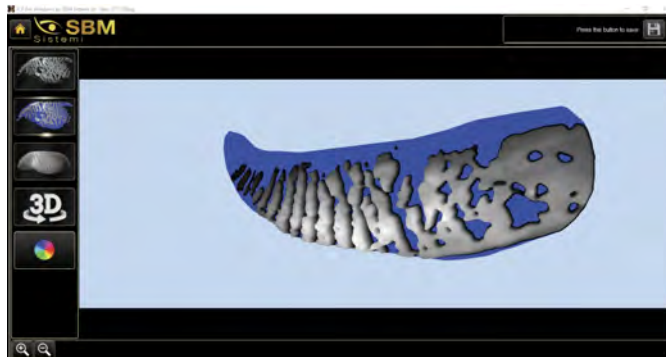
The System automatically analyses the images taken through an infrared sensitive camera (NIR) to locate the Meibomian Glands in a guided way:

- The exam is valid for both upper and lower eyelids
  - Automatic percentage of the extension of MGs in the chosen area
  - Automatic percentage of the Meibomian Gland loss area
- If the operator prefers, it is also possible to manually compare the images taken with three different related grading scales.



## 3D VIEW

The revolutionary introduction of the 3D Meibomian Gland imaging gives two big advantages. Firstly, it enables to confirm the presence of abnormal glands compared to a healthy subject in a 3D view; secondly, it provides a clear image to share with the patients, to help explain the potential reason of their discomfort. Moreover, this new imaging system provides strong evidence to support the choice of a specific therapy (for example IPL treatment) and helps the patient to understand why a certain therapy is being recommended.



# Blepharitis and Cylindrical Dandruff

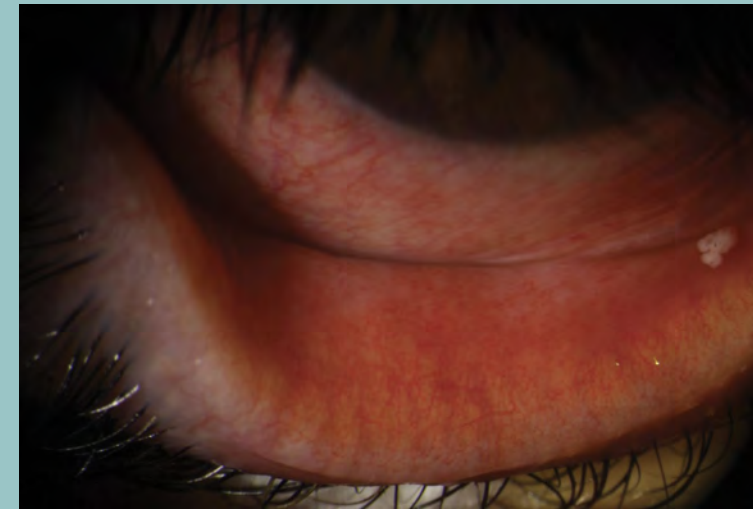
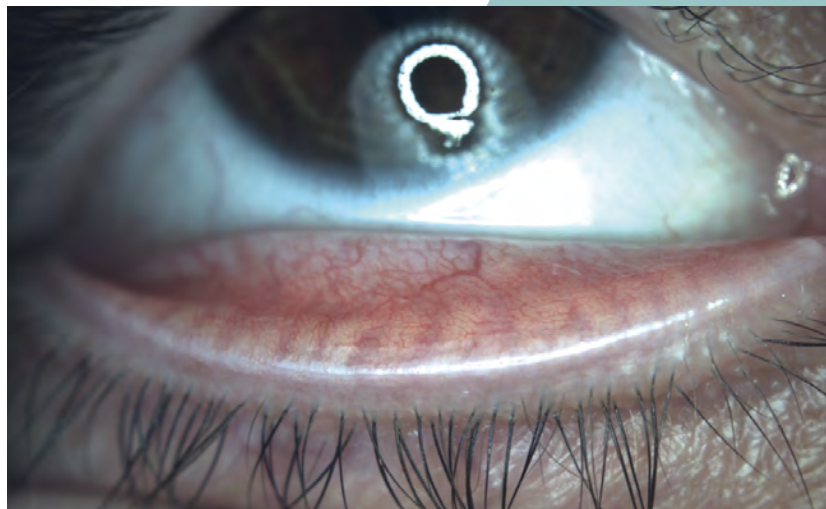
This test helps in the detection of blepharitis.

It can be performed on the outer surface of the eyeball and eyelids.

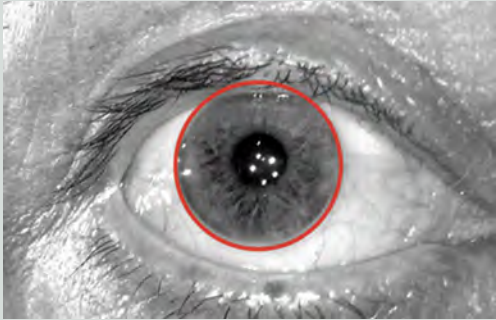
The process includes:

- Analysis of the patient's history.
- Extrinsic detection of the eye structure, skin texture, and appearance of eyelashes.
- Examining the openings of the Meibomian Glands, base of the eyelashes, and eyelid margins using a bright light.
- Checking for abnormalities by evaluating the quantity and quality of tears.

The type of blepharitis can be determined based on the appearance of the eyelid edges. If the symptoms frequently exhibited by the patients are mildly sticking eyelids, thickened lid margins, and missing/misdirected eyelashes, then the type of blepharitis is diagnosed as Staphylococcal.

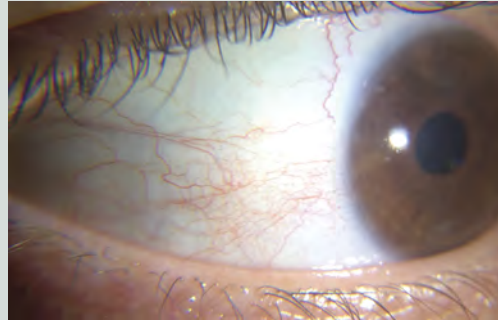


# Other possible examinations



## WHITE TO WHITE MEASUREMENT

Evaluation of corneal diameter from limbus to limbus (white-to-white distance, WTW).



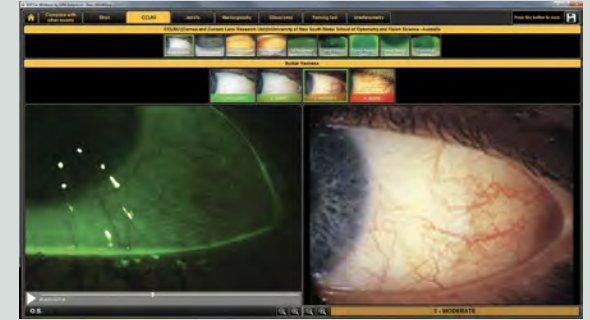
## BULBAR REDNESS CLASSIFICATION

Acquiring an image of the conjunctiva, it will be possible to compare the patient's condition with different international grading scales.



## PUPILLOMETRY

The measurement of the pupil diameter has become increasingly important in the field of refractive surgery. Larger scotopic pupil sizes may be partially responsible for the occurrence of postoperative symptoms such as halos, glare, and monocular diplopia.



## COMPARISON WITH THE MAIN INTERNATIONAL GRADING SCALES

EFRON - CCLRU - JENVIS - GLAUCOMA - FERNING TEST - MEIBOGRAPHY

# Treatment Protocol

SBM Sistemi software provides different solution to **help MD/OD/users to interpretate data.**



**Protocol** (MD L.VIGO Studio Carones Milano) is already provided and **suggest treatment on our KOL experience.**



**All users can customize their own protocol adding treatment procedure** to be chosen automatically right after performing the exams (this makes it possible as well to delegate the diagnosis to an assistant).

# Reports available

## DIFFERENT REPORTS AVAILABLE

The IDRA software is a dedicated platform for dry eye and allows, in addition to helping in the diagnosis and classification of diseases, to print and save various medical reports, offering the most professional and clinical solutions to patients.

For customer satisfaction, it is often advisable to provide technical documentation relating to the exams taken.

Thanks to the various press reports of the SBM device, you will have the possibility to visually explain and simply demonstrate the pathology situation. Furthermore, it's possible to explain how the pathology has changed over time.

