



DEDICATED DRY EYE CLINIC

Integrated diagnostic platform easy to use.



May 2019
ver. 1 - 2019



THE COMPANY

We are an Italian company that operates in European and extra-European markets. The industrial activity of production of medical devices is the DNA of this Italian reality that over the years has been able to follow and anticipate the evolution of the markets, in terms of quality standards and demand for safety products for the medical world.

The managerial, commercial and administrative office manages the distribution of products in all markets promptly and efficiently, through a network of distributors or directly to public or private hospitals

Our vision at SBM Sistemi is to bring new systems to market to ensure that people living without have access to primary healthcare and even more primary eye care. Under such circumstances, villagers have to travel long distances and endure hardships to access basic eye care.



From a clean hospital room to a dirty tent in the desert. Our innovative and experienced team of scientists, physicians, researchers and business leaders have dedicated much of their lives to advancing treatments for eye diseases.

This team has worked together extensively and values having an environment of collaboration, transparency and trust that results in accelerated and needed innovation.

Sbm Sistemi incorporates the research and innovative technologies developed by a team of medical researchers in the fields of diagnostic.

The Sbm Sistemi Medical internal commitment to product quality goes beyond adherence to internationally recognized standards and extends into the attitude of our highly trained production staff and dedicated Quality Team, who are always mindful that the products they manufacture are used to save lives in critical care applications both locally and across the world.

OUR OBJECTIVES

SBM's mission is to overcome the complexity of adaptive optics, to make them practical and easy to use both for those who operate ophthalmic devices and for patients themselves. All SBM Sistemi products offer comfort, fast, easy, use and are 'mobile devices'.

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THE EXAMS DESCRIBED IN THIS CATALOGUE REFER TO THE OSA TOOL, BUT SOME EXAMS ARE ONLY AVAILABLE ON THE OSA PLUS SOFTWARE VERSION



HOW ARE DRY EYES DIAGNOSED?

OCULAR SURFACE WORKUP WITH AUTOMATED NON-INVASIVE MEASUREMENTS FOR THE DIAGNOSIS OF MEIBOMIAN GLAND DYSFUNCTION

Dry eyes can be diagnosed through a comprehensive eye examination. Testing, with emphasis on the evaluation of the quantity and quality of tears produced by the eyes, may include:

- Patient history to determine the patient's symptoms and to note any general health problems, medications or environmental factors that may be contributing to the dry eye problem.
- External examination of the eye, including lid structure and blink dynamics.
- Evaluation of the eyelids and cornea using bright light and magnification.
- Measurement of the quantity and quality of tears for any abnormalities. Special dyes may be put in the eyes to better observe tear flow and to highlight any changes to the outer surface of the eye caused by insufficient tears.



CAUSES

- The natural aging process, especially menopause
- Diseases that affect your ability to make tears, like Sjogren's syndrome, rheumatoid arthritis, and collagen vascular diseases
- Conjunctivitis
- Environmental conditions. Exposure to smoke, wind and dry climates can increase tear evaporation resulting in dry eye symptoms. Failure to blink regularly
- Problems that don't allow your eyelids to close in the right way
- Treatment with Cataract surgery
- Treatment with Medications including antihistamines, decongestants, blood pressure medications and antidepressants, can reduce tear production
- Other factors. Long-term use of contact lenses can be a factor in the development of dry eyes
- Refractive eye surgeries, such as LASIK, can decrease tear production and contribute to dry eyes.



REMEDIES

- Treatment with Artificial tears
- Steroid Eye drops
- Punctual plugs
- Intense Pulsed Light therapy has been used with positive results if there are oil gland problems
- Use of a cool mist humidifier to add moisture to the air
- Drink water throughout the day to stay hydrated
- Warming of the Meibomian Glands
- Specific diets.

From the Journal of Cornea and External Disease

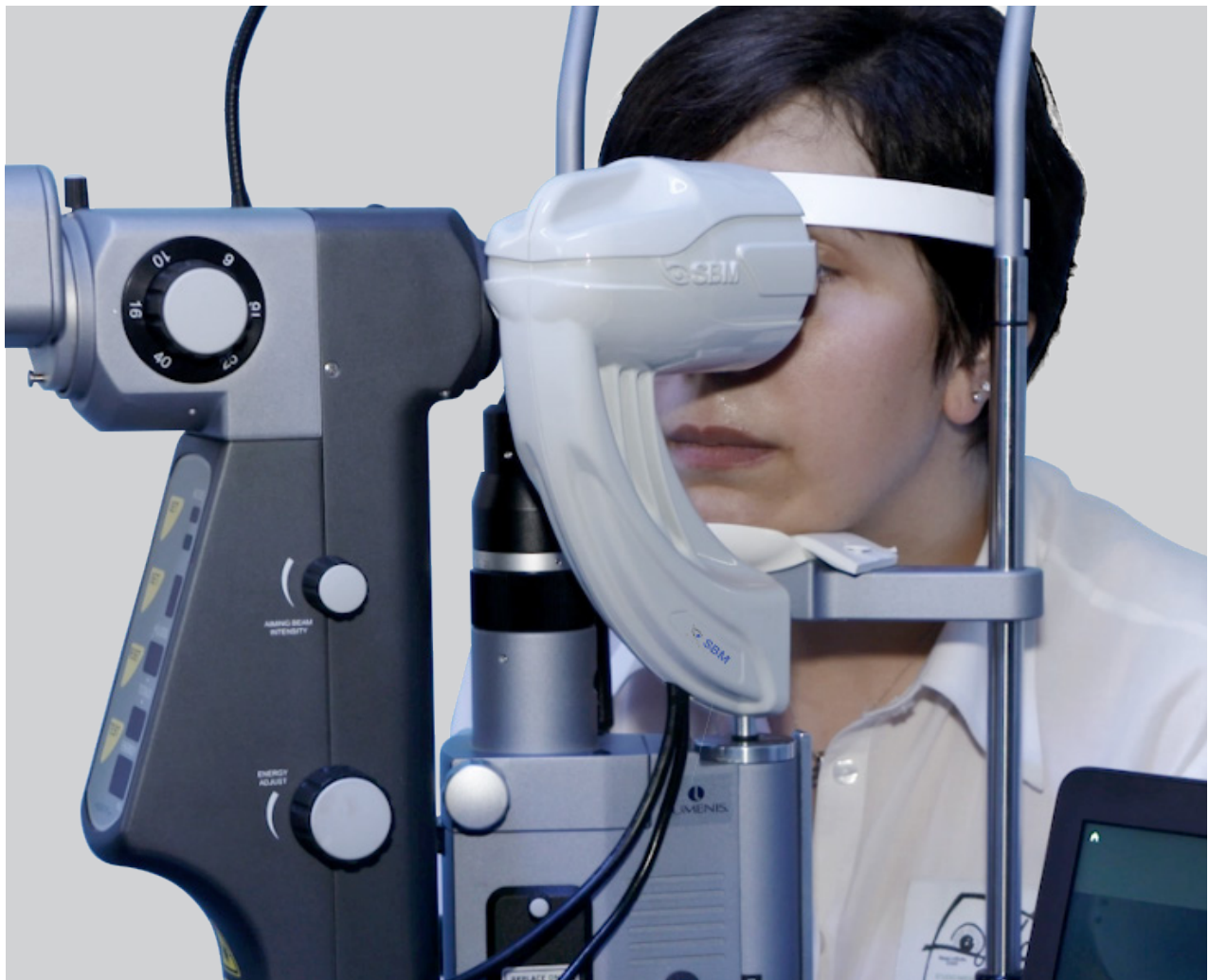
CLINICAL SCIENCE

OCULAR SURFACE WORKUP WITH AUTOMATED NON-INVASIVE MEASUREMENTS FOR THE DIAGNOSIS OF MEIBOMIAN GLAND DYSFUNCTION WITH SBM SISTEMI DEVICE.

INTRODUCTION THERAPEUTIC DIAGNOSTIC

Dry eye disease was recently redefined as a “multifactorial disease of the ocular surface characterized by a loss of homeostasis of the tear film, and accompanied by ocular symptoms, in which tear film instability and hyperosmolarity, ocular surface inflammation and damage, and neurosensory abnormalities play etiological roles.¹” Meibomian gland dysfunction (MGD) represents the leading cause of evaporative dry eye, the most common subtype of dry eye².

MGD is characterized by hyperkeratinization of the meibomian gland ductal epithelium, leading to obstruction and plugging of the gland orifice. Moreover, quantitative and qualitative changes in the meibum lipid composition lead to increased viscosity and reduced gland outflow onto the tear film. The stasis of meibum inside the gland promotes proliferation of bacteria, producing lipases and esterases that increase the viscosity and melting temperature of the meibum, thus setting up a vicious spiral. Hyposecretion of meibomian lipids causes thinning of the tear film lipid layer, with consequent tear film instability, increased evaporation rate, and dry eye onset.

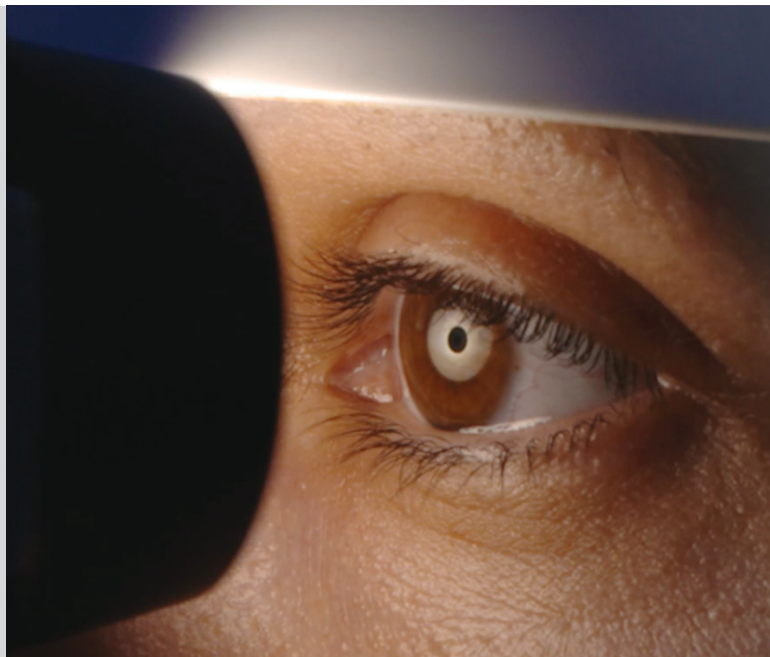




MATERIALS AND METHODS

Study Population

This cross-sectional study was conducted at Carones Ophthalmology Center (Milan, Italy) between September 2016 and July 2017. The study was performed in accordance with the principles of the Declaration of Helsinki and was approved by the local institutional review board. Written informed consent was obtained from all subjects before the examination.



DISCUSSION

The accurate diagnosis and classification of dry eye are complicated by the heterogeneous nature of the disease and the variability of signs and symptoms. Various diagnostic assessments have been proposed to qualitatively and quantitatively characterize the entire ocular surface system. However, to date, no universally accepted diagnostic workup for the diagnosis of MGD has been established. Several tests used routinely in daily practice require direct contact with the eye and/or the use of eye drops. The resulting alteration of the tear film volume and composition may not only influence the measured variable itself but also have disruptive effects on the results of subsequent tests. In addition, some tests require the clinician's judgment to reach a score and, therefore, are open to significant observer bias. Furthermore, measurements obtained using traditional tests are often affected by low values of repeatability and reproducibility. Recently, new automated non-invasive quantitative tests have been developed to

overcome these drawbacks. They include, among others, tear film interferometry, noncontact meibography, and tear osmolarity. In particular, interferometry is a technique that studies the surface reflection pattern and dynamics of the lipid layer of the tear film, thus allowing the measurement of the tear film stability and the thickness of the lipid layer. The measurement of BUT with a non-invasive technique eliminates the disturbance on the tear film caused by instillation of fluorescein dye. Meibography allows in vivo observation of the meibomian gland morphology; the gland structural changes may be graded with different scoring systems. In addition, new digital software allows automated calculation of the total meibomian gland area in the lower and upper eyelids. Tear film osmolarity has been reported as the single best metric to diagnose and grade severity of dry eye. However, some authors questioned its clinical utility because of the high variability of measurements and the lack of correlation with dry eye signs and symptoms.



IN CONCLUSION

The automated non-invasive ocular surface diagnostic workup used in the present study may represent a promising diagnostic tool for MGD diagnosis. Although no single test has proved able to reach the diagnosis with sufficient accuracy, MGD may be strongly suspected when one between NIBUT and meibography combined in parallel is abnormal. Therefore, in case of positivity of either NIBUT or MGL, subsequent qualitative clinical tests should be performed to achieve a reliable diagnosis and a more precise characterization of MGD.

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INTEGRATED SYSTEM FOR THE ANALYSIS OF THE OCULAR SURFACE

The instrument is mounted in the slit lamp tonometer hole. It is designed to do all tear film tests, from the quality of tears to analysis of the meibomian glands using international grading scales.



TECHNICAL DATA

IMAGE RESOLUTION	5 MP
ACQUISITION MODE	Multi shot, video
FOCUS	Autofocus, manual focus
ISO MANAGEMENT	Variable
GRIDS	Placid disc, NIBUT grid
CAMERA	Colored, sensitive to infrared (NIR)
LIGHT SOURCE	Infrared LED – Blue and white LED

MINIMUM HARDWARE REQUIREMENTS

Intel® Pentium® Dual Core 2.00 Ghz

SSD Drive

4 GB RAM

Screen resolution: 1600x900

1 available USB 3.0 port

1 other available USB port

Microsoft® Windows® 8, 10 Professional (Pro) x64 (64 bit)
Considering the high quality of the videos, for optimal video recording and playback we suggest:

Intel® Core™ i7

8GB RAM

DIAGNOSTIC TIME



I.C.P. OSA registration number at the Ministry: 1556084/R

Invented and developed 100% in Italy

Medical instrument in CLASS I registered to the Ministry of Health

Medical electrical equipment CLASS I complies with the norm En. 60601-1.

The technical features of the instrument and its accessories can be improved in any time and without notice.

To obtain an updated description we suggest visiting the website www.sbmsistemi.com

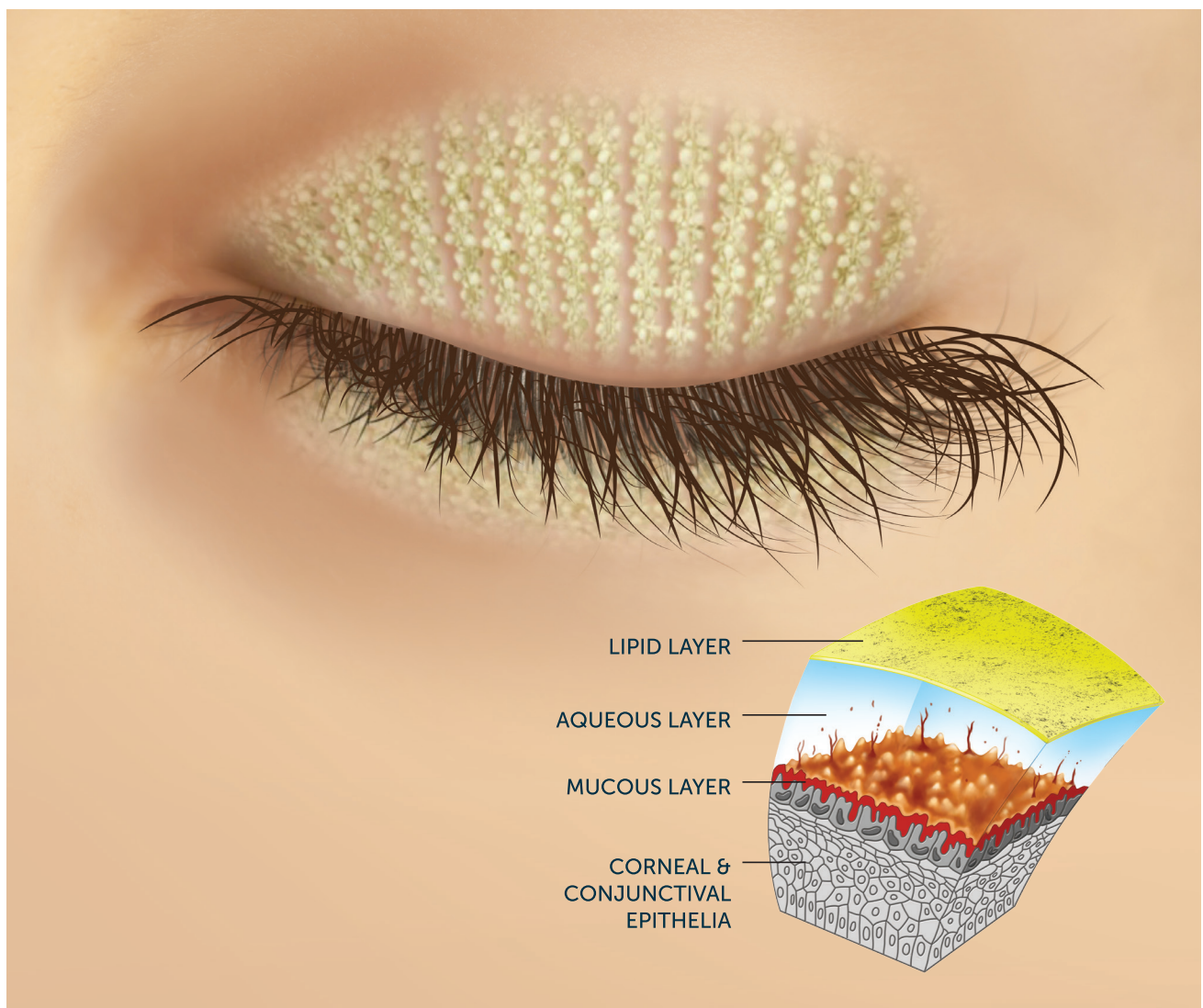
THERAPEUTIC DIAGNOSTIC

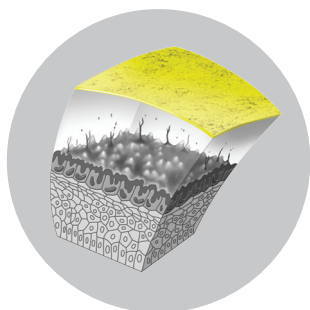
FUNCTIONS

The SBM Device is the new instrument of individual analysis of tear film that allows to do a quick detailed structural research of the tear composition.

Research on all the layers: **Lipid, Aqueous, Mucin and Meibonian Glands.**

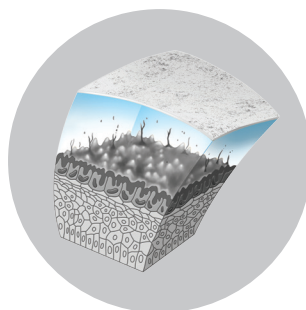
Thanks to the SBM Device it is possible to identify the type of DED (Dry Eye Disease) and determine which layers can be treated with a specific treatment, in relation to the type of deficiency.





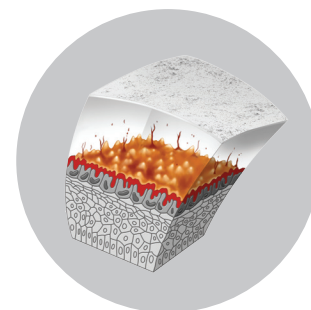
INTERFEROMETRY

IDRA can evaluate the quantity and the quality of the lipid component on the tear film. The device highlights the lipid layer and the pattern defined can be compared with the reference grading scale.



TEAR MENISCUS

The size of the tear meniscus formed on the eyelid borders provides useful information on the volume of produced tears. The tear meniscus can be examined considering its height, regularity and shape.



NIBUT

The stability of the mucin layer and the whole tear film is measured through BUT or NITBUT, by using Placido cone projected onto the cornea. In this way you can evaluate automatically the time when the tear break up occurs.



MEIBOGRAPHY

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



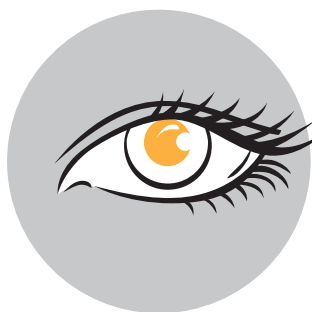
BLEPHARITIS

This test helps in detection of blepharitis and Demodex, which can be performed on the outer surface of the eye and eyelids.



OCULAR REDNESS CLASSIFICATION

Once you have captured the image of the blood vessels of the conjunctiva it will be possible to compare them to the classification sheets of bulbar and limbal redness degree.



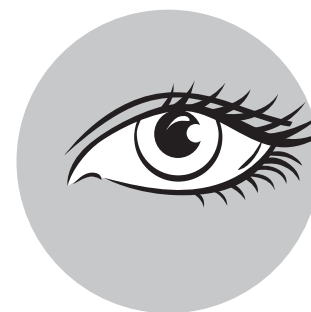
PUPILLOMETRY

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



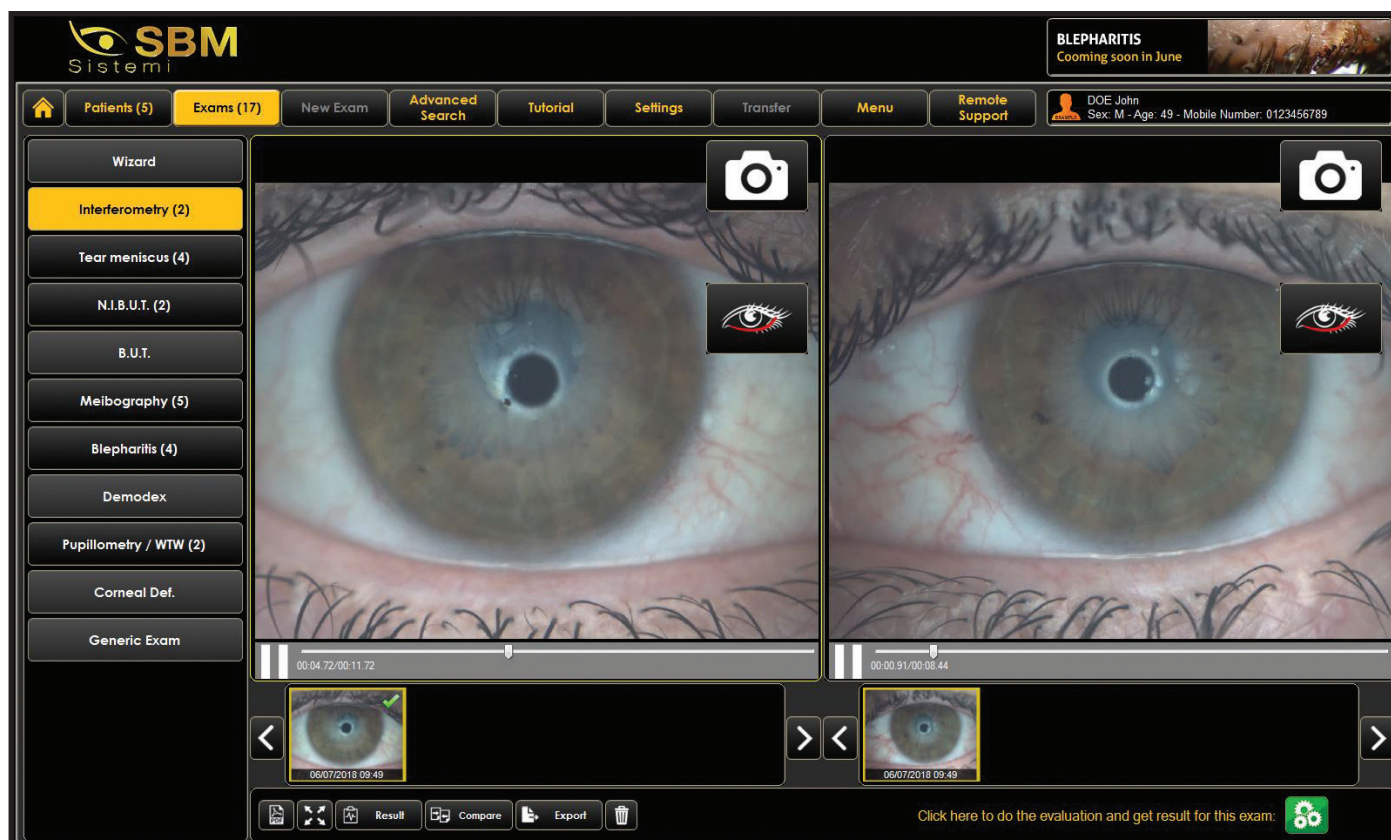
WHITE TO WHITE MEASUREMENT

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



ANTERIOR SEGMENT IMAGING

INTERFEROMETRY



VALUES ARE DISPLAYED ON A USER-FRIENDLY GRADING SCALE THAT CAN BE USED TO EXPLAIN THE PATHOLOGY TO PATIENTS

OSA must be inserted in the support between slit lamp and biomicroscope. Its pin has been built in order to fit perfectly into the hole that you can see when the plate used for the tonometer is removed.

Sit the patient comfortably using the chin holder so the patient is still for the examination. The device must be kept as close to the eye as possible without touching.

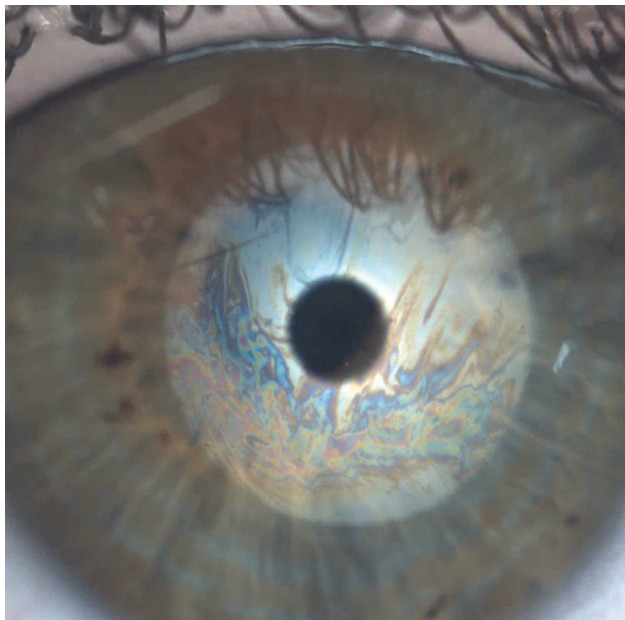
Closer the device is to the eye, broader the area is illuminated by the instrument. The light reflected from the tear film can be observed as a white circular area that almost completely covers the cornea.

Using the device it is possible to do an interferometric analysis of the lipid layer in the tear film. The tear film plane must be focused, while the image of the bright circle must remain blurred.

Depending on its thickness and regularity, the lipid layer may appear like any of the following: amorphous structure, marble appearance, wavy appearance, yellow, brown, blue or reddish interference fringes.

“When the tool shows a matt white pattern, it means that there are no lipids; if it shows a white and quick movement of the image, so the lipid layer is present and in a borderline condition; when the resulting image is full of colors, it means there are many lipids.

This exam is of fundamental importance, because most of the dry eye diseases are caused by an insufficiency of lipid layer quantity. In fact, aqueous layer evaporates without lipids and the eyes are more exposed to the risk of DED.”



The evaluation of the lipid layer is part of your overall Dry Eye Assessment.

Knowing what is causing Dry Eye will help determine the best treatment option.

After your assessment is complete, the Optometrist will discuss your treatment options.

Lipid pattern classification, incidence and clinical interpretation, adapted from Guillon & Guillon description incidence (%) estimated thickness (nm) appearance clinical. Observation of blinking frequency and completeness should also be considered - while listening to history and symptoms can be an ideal time to observe this.

A typical blink pattern can be observed as approximately one blink every five seconds, ie 11 blinks per minute. Incomplete blinking can often be observed in contact lens wearers, and frequent blinking may be a result of an attempt to maintain a relatively thin lipid layer.

LIPID LAYER ANALYSIS

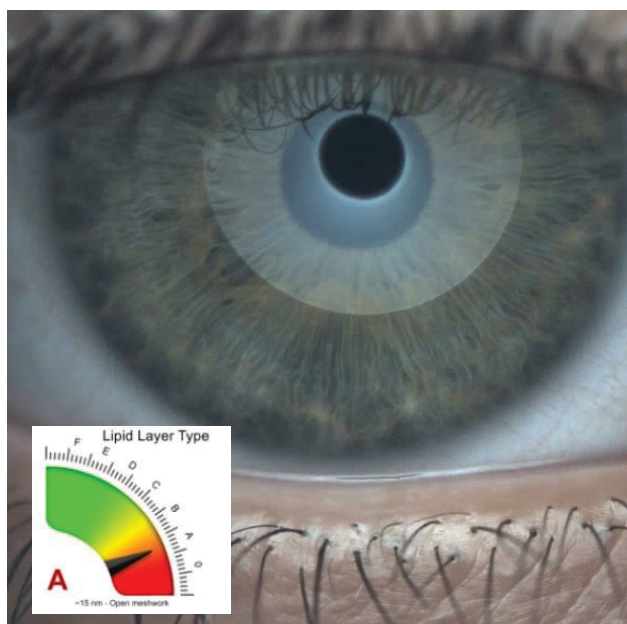
The Lipid analysis was good for OD with values greater than $>80\text{nm}$

The Lipid analysis for OS was $<30\text{nm}$

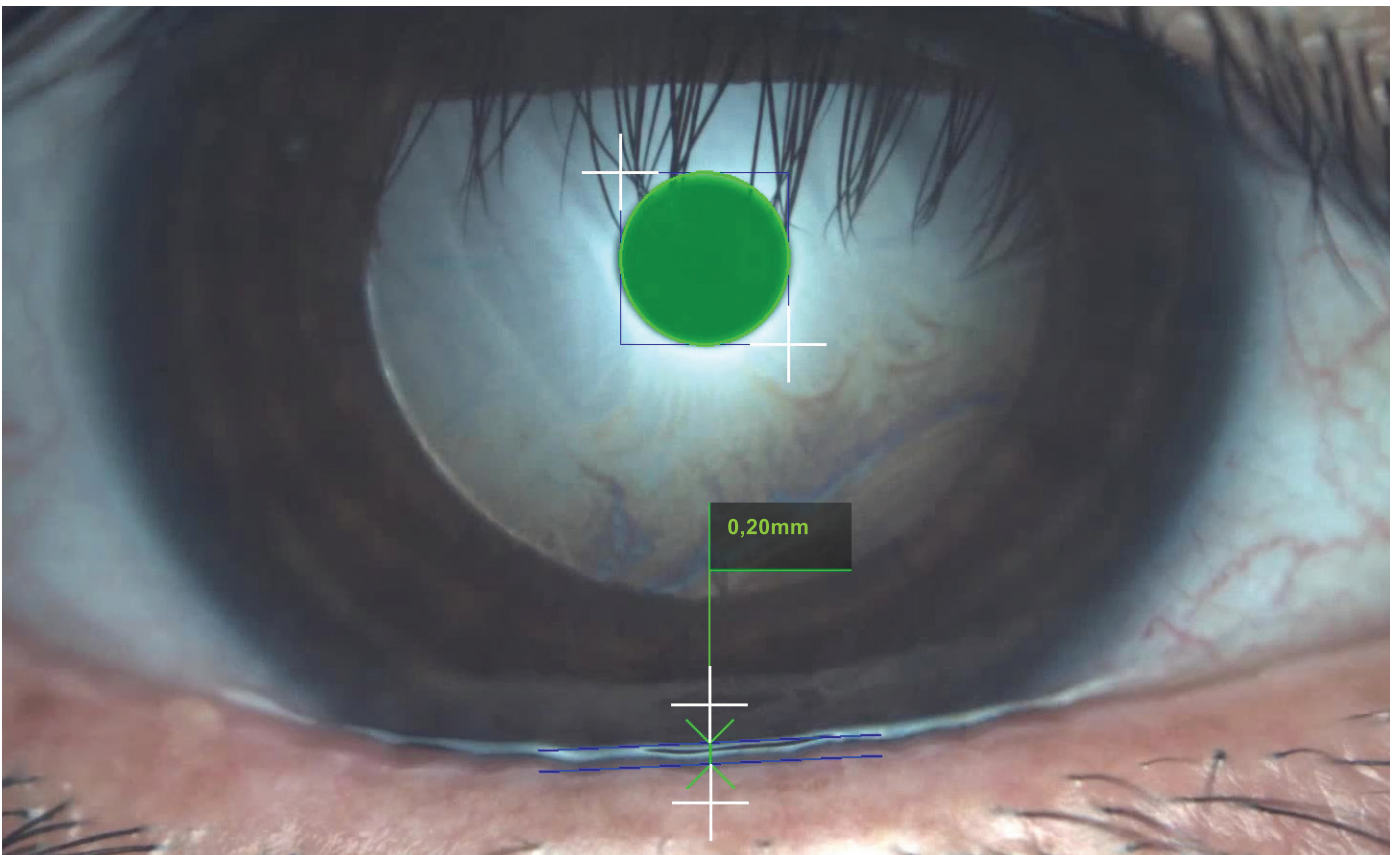
LIPID LAYER THICKNESS

Presents lipid layer thickness measurements in an easy to understand color-coded map.

The identification is done through the international grading scale of Dr. Guillon



TEAR MENISCUS HEIGHT MEASUREMENT



Evaluation of the tear film quantity.

With the various magnification tools you can measure the tear meniscus height and evaluate its characteristics along the lower lid margin. The result of this exam is comparable to the Schirmer's test one, with the difference that it is not invasive and lasts 3 seconds instead of several minutes.

The SBM Device is an excellent method of screening for dry-eye patients, to measure the upper and 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.

Normal tear volume is important for the maintenance of ocular surface physiology and ocular comfort. The total tear volume is composed of the tear meniscus, which contains 75% to 90% of the tears the pre-ocular film; and the cul-de-sac.

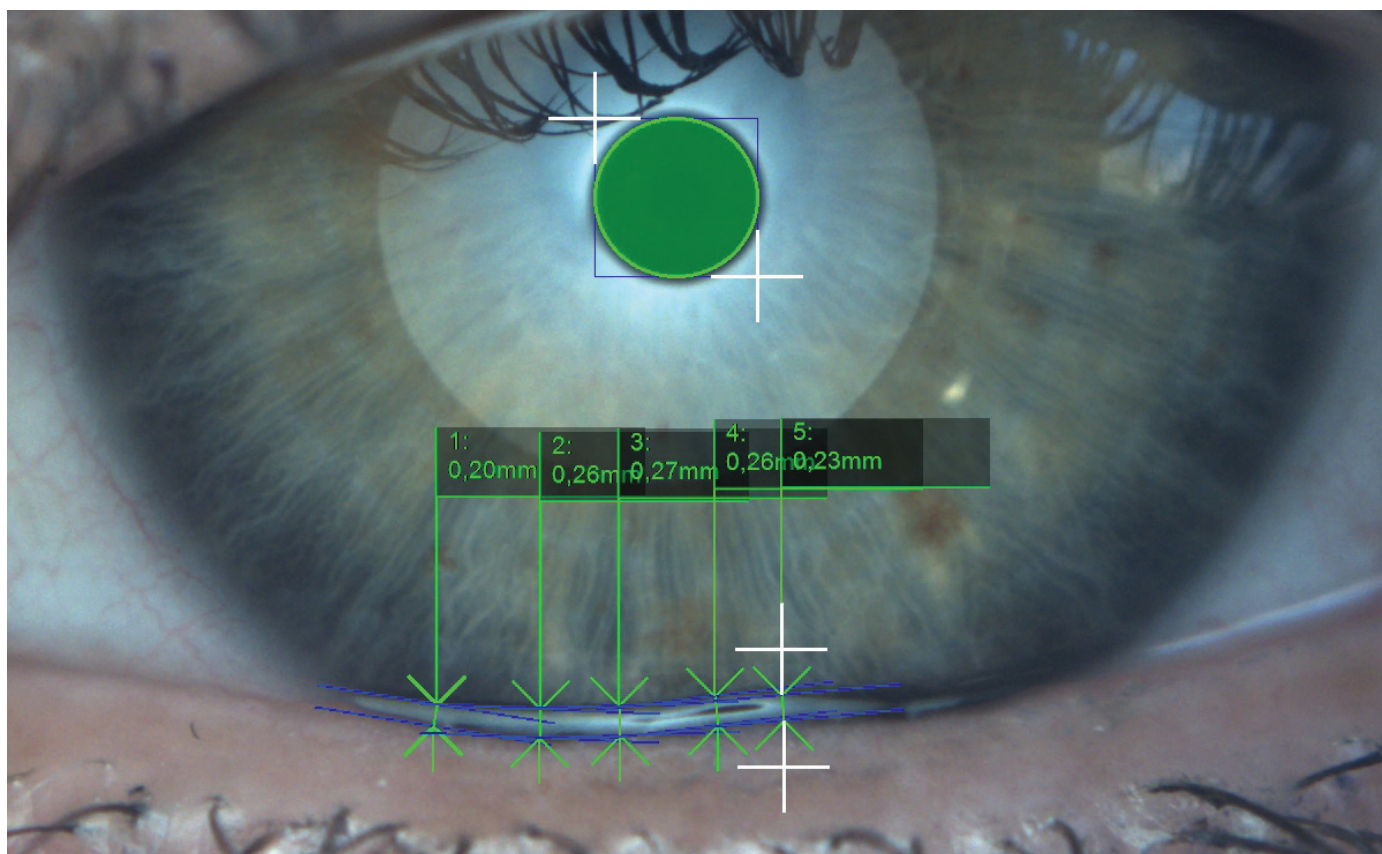
Small tear volumes may result in dry eye symptoms, especially in aqueous tear deficiency (ATD). However, measuring the actual tear volume is difficult because the methods are invasive and irritative.

Reflex tear production can be induced, giving an overestimation of basal tear flow and volume.

The sizes of the tear meniscus are related to the tear secretion rate and tear stability, and they are good indicators of the overall tear volume. Estimates of meniscus size and volume have been attempted by photographic and interferometry methods. These methods allow the simultaneous imaging of both the upper and lower meniscus.

Recent advances and associated software have enabled the simultaneous imaging of both meniscus, and real-time changes have been reported. Derived quantitative measurement of tear meniscus variables enable this non-invasive modality as a potential diagnostic tool of dry eye.

POSSIBILITY TO ACQUIRE UP TO 5 MEASURING POINTS



Small tear volumes may result in dry eye symptoms, especially in aqueous tear deficiency (ATD). However, measuring the actual tear volume is difficult because the methods are invasive and irritative.

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The aqueous layer is evaluated through the non-invasive "Tear Meniscus" test, classifying it in different categories and possible issues related to this. The measurement (in mm) allows the direct evaluation of this layer quantity, and it is comparable to the Schirmer's Test with the difference that "Tear Meniscus" is without invasiveness and it does not take four minutes (only take a photo).

NIBUT

The screenshot displays the SBM Sistemi NIBUT software interface. At the top left is the SBM Sistemi logo. The top right shows patient information: DOE Jain, Sex: M, Age: 50, Mobile Number: 0123456789. Below this is a navigation bar with buttons for Patients (6), Exams (26), New Exam, Advanced Search, Tutorial, Settings, Transfer, Menu, Remote Support, and News. A left sidebar lists various exam types, with N.I.B.U.T. (2) selected. The main area shows two side-by-side video feeds of eyes with Placido ring projections, labeled O.D. and O.S. Below the videos are two NIBUT analysis graphs showing tear stability metrics, with the right graph displaying a value of 7.3. A bottom toolbar includes icons for Note, Compare, Result, and Export. A link at the bottom right says "Click here to do the evaluation and get result for this exam:" with a gear icon.

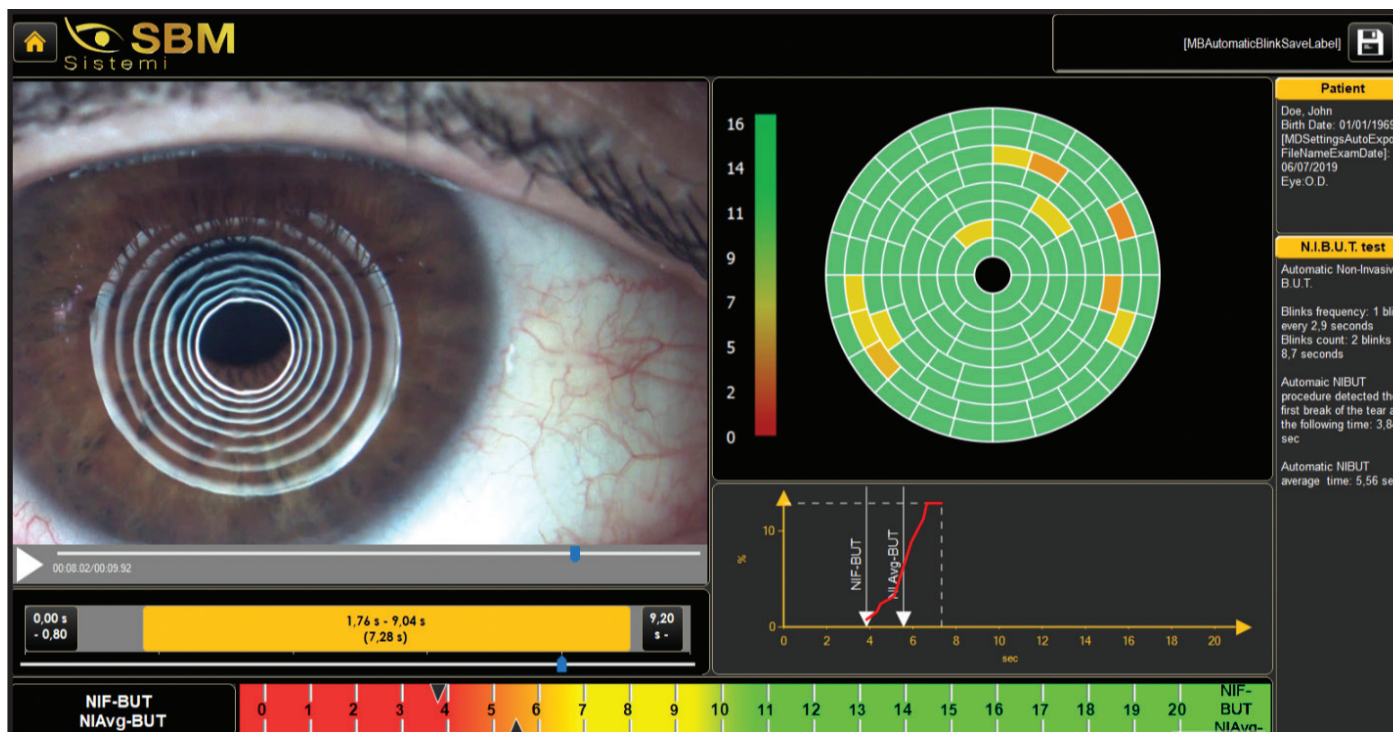
TEAR STABILITY EVALUATION

ICP OSA through a Placido ring projection on patients cornea automatically evaluate tear film stability.

ICP software checks periodically cornea's shape on the discs and detects any deviation and come out with an easy and understandable break up time value.

AVG BUT is provided with normograms and shows after different analysis the trend line for a useful follow up after treat

AUTO-NIBUT



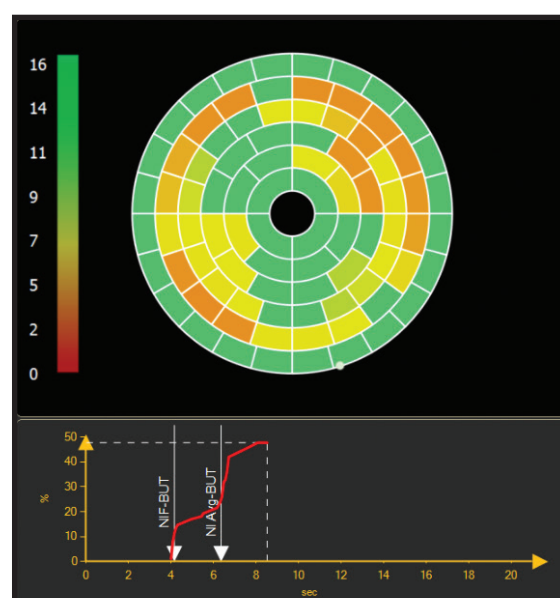
The SBM Device allows to evaluate stability and regularity of the tear film, using non-invasive break up time measurement (NIBUT). The non-invasive break up time is the measurement, in seconds, of the time between the last complete blinking and the appearance of the first discontinuity on the tear film.

With the SBM Device tool, the Doctor can have many information through the acquisition of one only video:

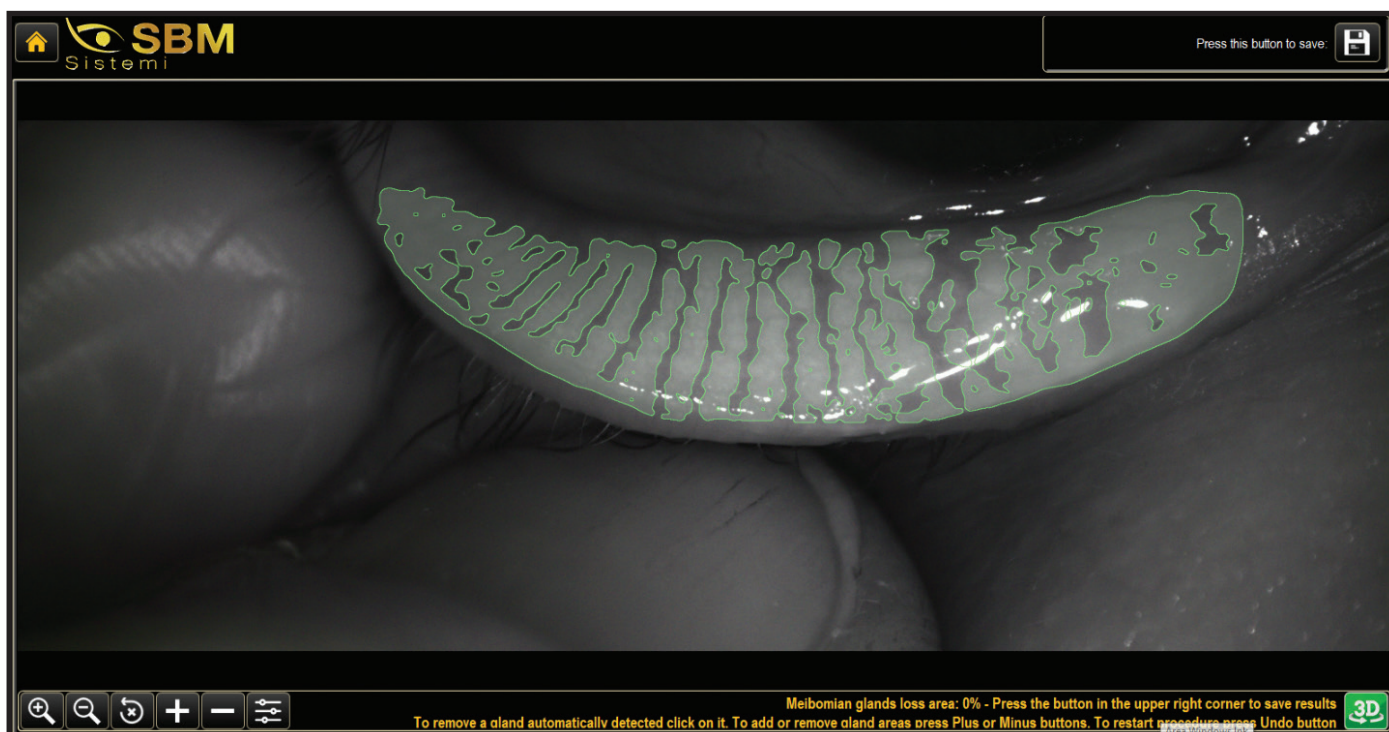
- Automatic NIBUT
- Average of all break
- Graph to understand the trend of tear film stability during the video
- Tear topography that shows all breaks during time..

Through Placido rings, OSA automatically provides:

- First BUT
- Avg BUT
- Stability graph
- Tear topography



MEIBOGRAPHY



MEIBOMIAN GLAND AUTO DETECTION ON BOTH LIDS

Meibomian glands play a significant role in tear production by contributing lipids to the superficial tear film. Dysfunction of the meibomian glands destabilizes tears resulting in evaporative dry eye.

The posterior lamella of the eyelid hosts a fleet of meibomian glands situated between the palpebral conjunctiva and tarsal plate. A normal meibomian gland is approximately linear and 3–4 mm in length, traversing the posterior eyelid perpendicularly from the lid margin to the opposite edge of the tarsus.

Closer inspection of a meibomian gland demonstrates a tubulo-acinar architecture with saccular arrangements of acini and a ductal system that communicates with orifices near the mucocutaneous junction of the eyelid.

Glandular acini contain clusters of modified sebaceous cells called meibocytes.

The functional unit of a meibomian gland is the meibocyte which synthesizes and secretes lipids (meibum) into the precorneal tear film. Meibum permeates the tear surface where it serves several important functions. It prevents tear evaporation and thus desiccation of the ocular surface; it acts as a physical and hydrophobic barrier to the inward movement of environmental and organic agents; and it lubricates the ocular surface to prevent irritation while promoting a clear ocular image. Consequently, tear physiology is dependent upon the proper functioning of the meibomian glands

THE SBM DEVICE CAN, IN A GUIDED WAY, DETECT THE LENGTH AND WIDTH OF MEIBOMIAN GLANDS SHOWN THROUGH TO INFRARED MEIBOGRAPHY WITHOUT REQUIRING ANY INPUT FROM THE USER. THE IMAGES ARE THEN AUTOMATICALLY CLASSIFIED.

AUTOMATIC LID DETECTION

To decrease evaluation time, the software automatically detects the lid for meibo analysis.



HOW DOES IT WORK

System analyses automatically the images made through a sensitive infrared camera (NIR) to locate in a guided way:

- An exam valid both for the upper and the lower eyelid;
- Automatic percentage of the extension of meibomian glands in the chosen area, taken by the operator;
- Automatic percentage of the loss area of meibomian glands.

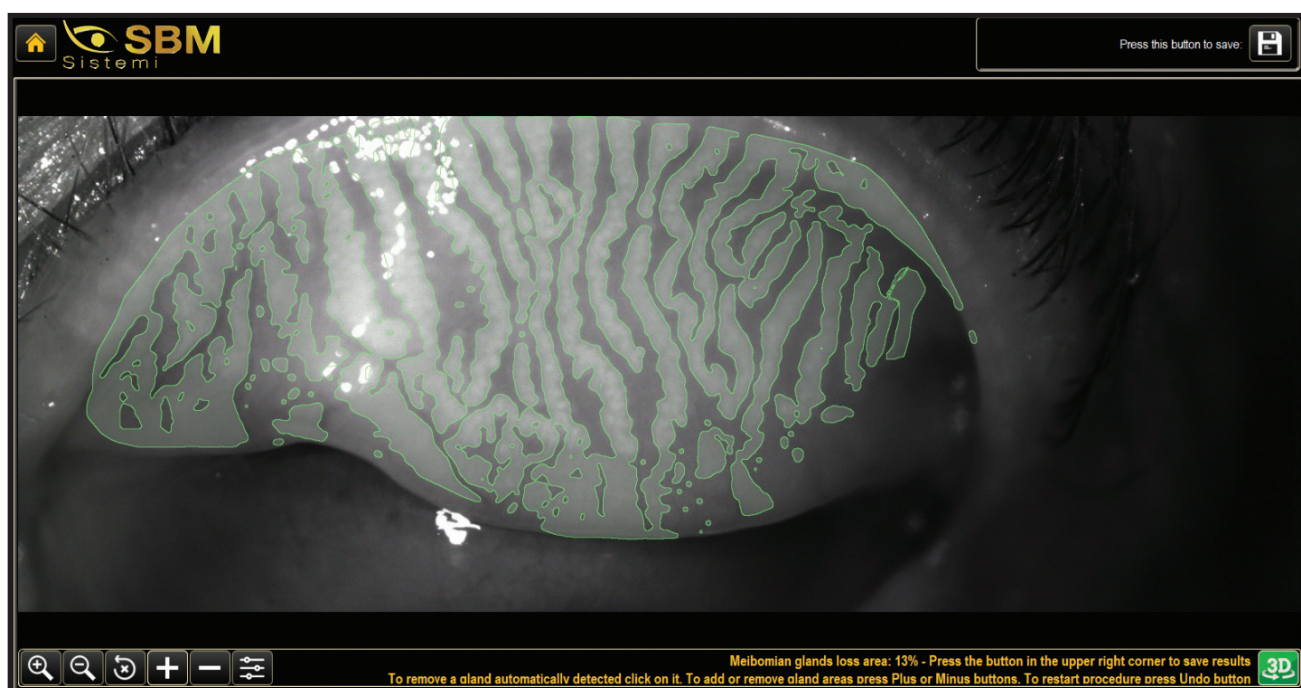
If you prefer, instead of the automation it is possible to classify the exam done in degrees according to three different related grading scales.

Meibomian gland dysfunction (MGD) is characterised by chronic, diffuse abnormalities of the meibomian glands and altered secretion and chemical composition of meibum. MGD leads to increased tear evaporation, increased tear osmolarity and an increased susceptibility to ocular surface inflammation, epithelial damage and discomfort. MGD is the leading cause of dry eye disease and affects.

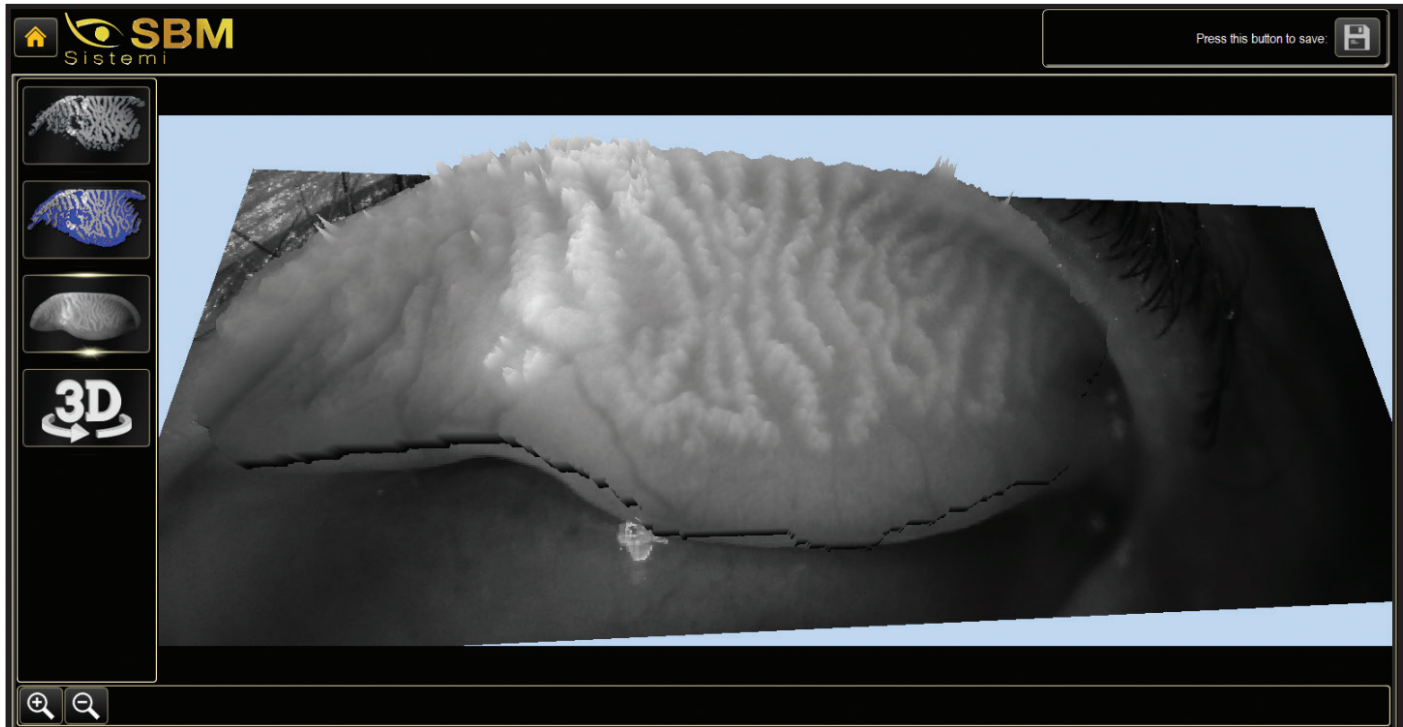
Most of the population Blepharitis is a common eyelid condition that can lead to symptoms ranging from burning, itching, flaking, eyelid discharge, eyelid redness, and the occurrence of frequent "pink eye" like flare ups.

To prescribe treatment therapies such as IPL, different evaluations should be performed relating meibomian glands. SBM Sistemi tools allow an accurate comprehension of the ocular surface and especially the glands. The acquired image is processed and transformed into 3D picture. Using scientific algorithms it is possible to admire it and demonstrate to the patient the absent parts and their thickness.

It will therefore be easier for professionals in the sector to recommend treatment even if more expensive. It will also be possible to evaluate the efficacy of periocular intense pulsed light therapy combined with meibomian gland.



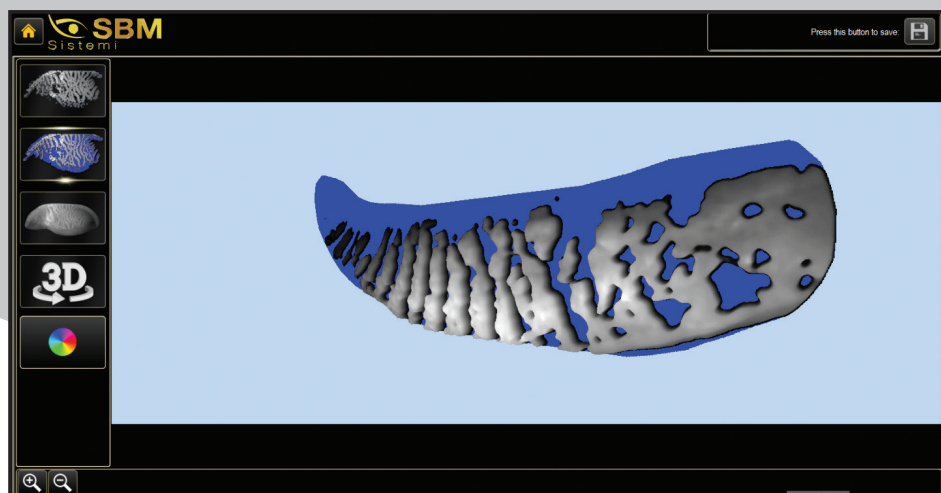
MEIBOGRAPHY 3D



The revolutionary introduction of 3D meibomian gland imaging provides you the clinician with two clear advantages. firstly, it enables you to confirm the presence of abnormal glands vs. that of a healthy individual in a 3D format and secondly, it provides a clear image to share with the patient to help explain the potential cause of their discomfort.

Ultimately this new imaging system provides strong evidence to support your choice of therapy for your patient (for example ipl treatment) and help the patient understand why that therapy is being recommended.

AN OUTSTANDING DIAGNOSTIC EVALUATION IS NEEDED TO DEMONSTRATE TO THE PATIENT THE EFFECTIVENESS OF THE IPL TREATMENT.



BENEFITS FOR THE PATIENT:

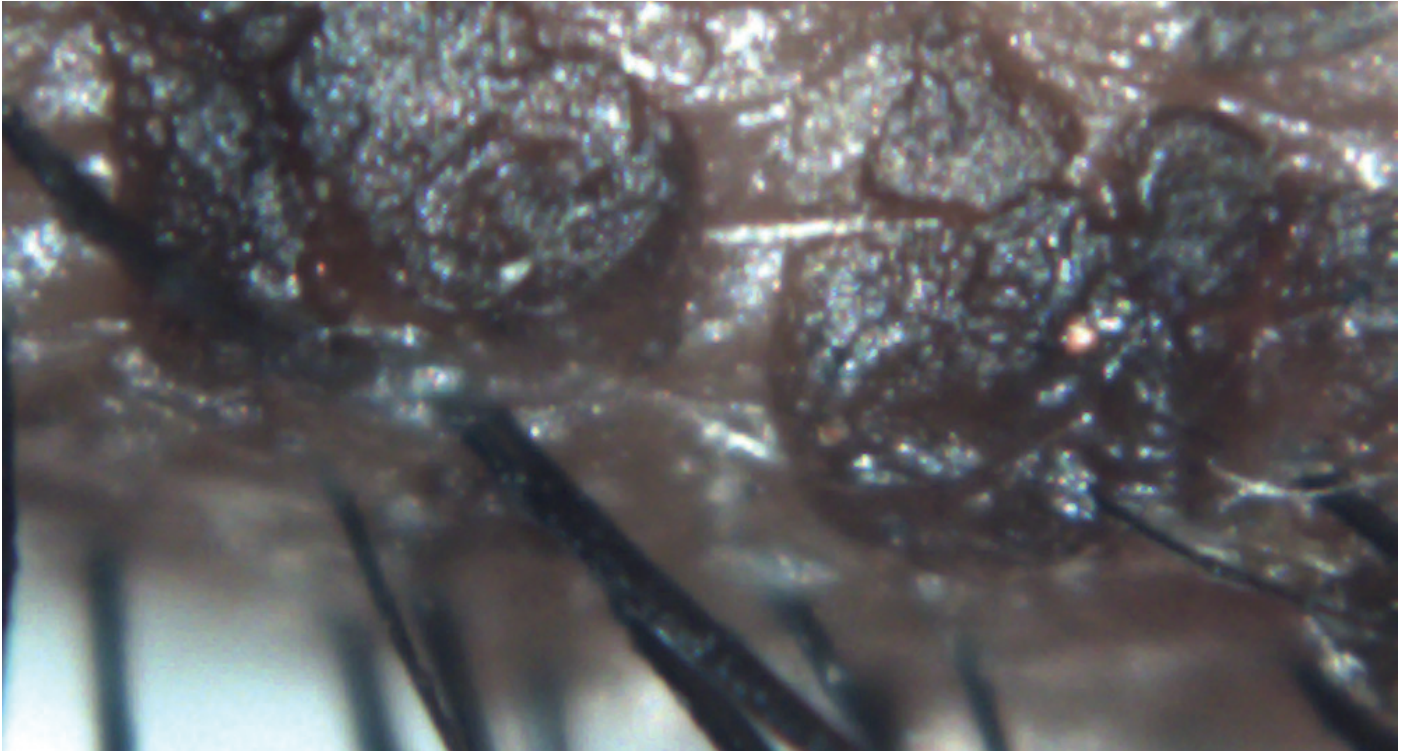
- For the first time a 3D image can help them understand the structure of the eye lid and how their Glands are different from a healthy individual
- See for themselves, with the Doctors explanation, why they are getting eye discomfort and fluctuating vision
- Help them understand why you are recommending a specific therapy
- Peace of mind that their clinician is using the very latest techniques make the correct diagnosis of their eye problem and appropriate treatment.



ADVANTAGES FOR THE DOCTOR:

- Ability to view the presence of abnormal gland structures in a high-resolution 3D image
- Be able to compare a normal patient gland profile with that of your MGD patient
- The option to visualise these problem areas in high definition vs. that of a less clear 2-dimensional image
- The ability to potentially pin point the areas of gland abnormality in detail
- Evidence that supports your diagnosis in the case of evaporative dry eye disease
- Provides you with much more compelling evidence to help the patient visualise what is happening to them
- Provides the reassurance that MGD is a contributory factor and key to your diagnosis of evaporative dry eye disease
- Clearly show the symptomatic dry eye sufferer a comparison of their abnormal glands vs that of a normal healthy patient
- Help to explain and confirm the reasons for your choice of MGD therapy (including IPL)

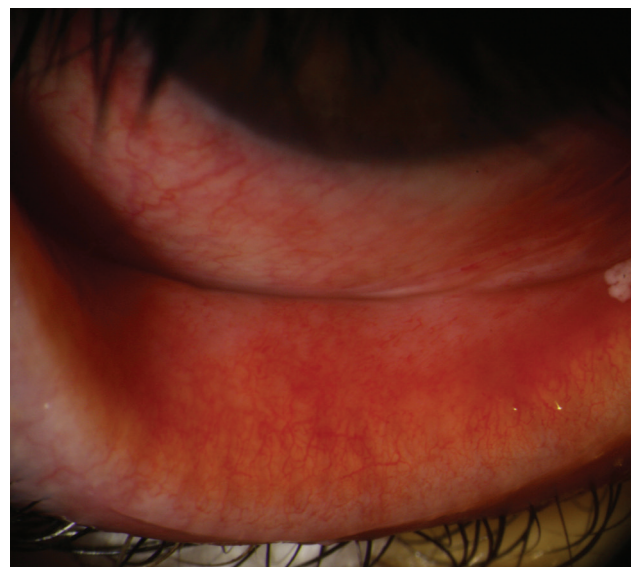
CYLINDRICAL DANDRUFF AND BLEPHARITIS



The human skin surface is known to house millions of bacteria, though some people have more than the average number. Blepharitis is an inflammation caused by some bacteria that lie at the base of eyelashes. They produce dandruff-like flakes in the skin, which lead to infection and inflammation.

Problems with the meibomian oil glands (meibomianitis) in the eyelids can also cause blepharitis. The development of inflammation is also associated with risk factors such as dandruff, dry eyes, acne rosacea, or bacteria. This is a common eye disorder affecting all age groups. The eye must be evaluated using a specialized tool such as a magnifying tool like the SBM Device. This tool checks for inflammation in the eye and the existence of bacteria/fungi/viruses.

If signs of infection are found during close monitoring, the ophthalmologist wipes the eye and collects any fluid oozing from the eyes as sample. This sample is tested under a microscope. Comprehensive Eye Examinations.



BLEPHARITIS AND CYLINDRICAL DANDRUFF

This test helps in detection of blepharitis, which can be performed on the outer surface of the eyeball and eyelids.

This process includes:

- Analysis of the patient history that could contribute to blepharitis.
- Extrinsic detection of the eye structure, skin texture, and appearance of eyelashes.
- Examining the openings of the meibomian gland, base of the eyelashes, and eyelid margins using a bright light.
- Checking for abnormalities by evaluating the quantity and quality of tears.

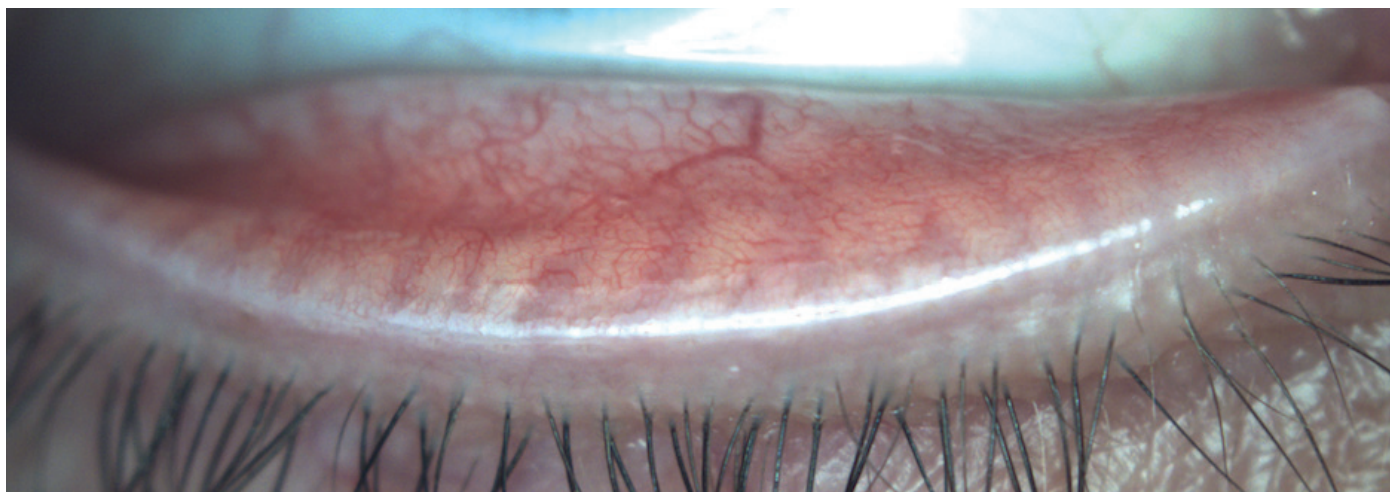
The type of blepharitis can be determined based on the appearance of the eyelid edges. If the symptoms frequently exhibited by the patients are mild sticking eyelids, thickened lid margins, and missing/misdirected eyelashes, then the type of blepharitis is said to be Staphylococcal.

If the patients show mild redness of the eyelids or scales around the base of eyelashes, then it is Seborrheic blepharitis.

When the patient is found with blockage of the oil glands in the eyelids, poor quality of tears, and redness of the lining of the eyelids, the type is Meibomian blepharitis.

If a hard, matted crust is formed on the eyelashes, and while removing these some small sores are formed on the eyelashes that ooze and bleed, it is called Ulcerative blepharitis.

In this case, patients may experience distortion of the front edges of the eyelids, loss of eyelash, and chronic tearing. In severe conditions, the transparent outer portion of the eye that covers the eyeball (cornea) is inflamed.



WHAT IS DEMODEX BREVIS?

Demodex brevis is a kind of mite found on humans. Like its counterpart Demodex folliculorum, brevis is naturally occurring. D. brevis is so small that you can't see the mites with a naked eye.

The average mite causes noticeable reactions and problems in people if it exists in large quantity.

Symptoms of D. brevis usually only surface in cases of large infestations. Signs might include:

- Red skin
- Rough or tough skin
- Scaly or patchy skin

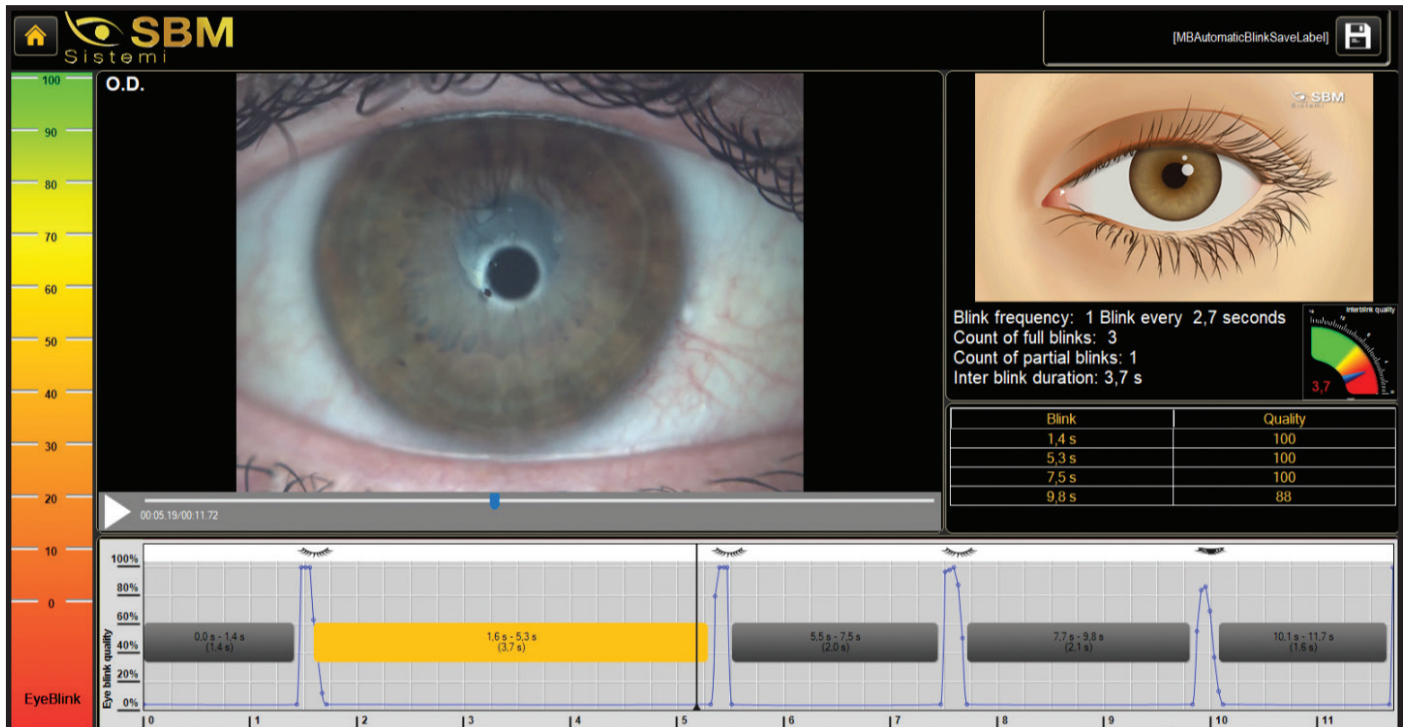
The symptoms of D. brevis are similar to those of D. folliculorum. The key difference is location.

While folliculorum tend to stay on the face, D. brevis can distribute all over the body. The chest and neck are common areas of D. brevis infestation, so you might notice more symptoms there if you have it.

Once in the skin, D. brevis feed off sebum in the oil glands. These glands are attached to hair follicles underneath the skin's surface.

Infestations of D. brevis aren't common in young children, but their numbers naturally grow with age. The mites may also be spread between humans.

BLINKING QUALITY



A healthy human would be expected to show periodic blinks, making a brief closure of the eyelids. 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 toward the eyes.

A voluntary or forced blink is another type of blink in which the person deliberately closes the eyes and the lower eyelid raises to meet the upper eyelid.

A complete blink, in which the upper eyelid touches the lower eyelid, contributes to the health of ocular surface by providing a fresh layer of tears as well as maintaining optical integrity by providing a smooth tear film over the cornea.

The rate of blinking and its completeness vary depending on the task undertaken during blink assessment, the direction of gaze, the emotional state of the subjects and the method under which the blink was measured.

It is also well known that wearing contact lenses (both rigid and soft lenses) can induce significant changes in blink rate and completeness.

It is been established that efficient blinking plays an important role in ocular surface health during contact lens wear and for improving contact lens performance and comfort.

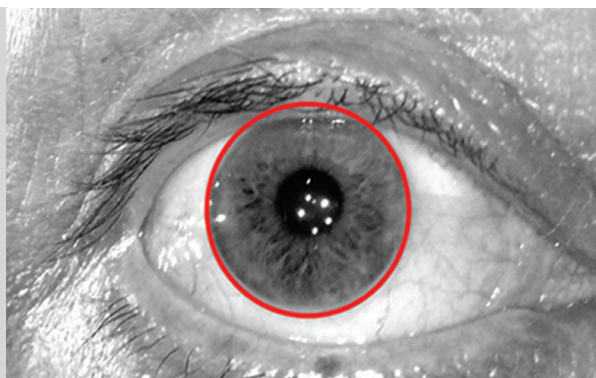
Inefficient blinking during contact lens wear may be related to a low blink rate or incomplete blinking and can often be a reason for dry eye symptoms or ocular surface staining.

OSA automatically detect and analyzes blinking and determinate the quality.

OTHER POSSIBLE EXAMINATIONS

WHITE TO WHITE MEASUREMENT

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

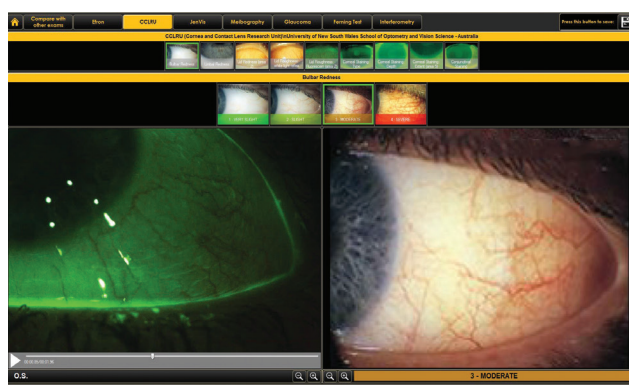


PUPILLOMETRY

The measurement of 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.^{1,2} Refractive surgeons also need an accurate scotopic pupil measurement to determine appropriate treatment zones for excimer laser, corneal, and intraocular surgery.

BULBAR REDNESS CLASSIFICATION

Detected the fluidity of the blood vessels of the conjunctiva, evaluating the degree of redness, the degree of redness of bulbar and limbal.



COMPARISON WITH THE MAIN INTERNATIONAL GRADING SCALES

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

MD. VIGO TREATMENT SUGGESTION



DATA RESULTS VIEW

Complete and dry eye focused database allows to understand and properly diagnose dry eye patient.

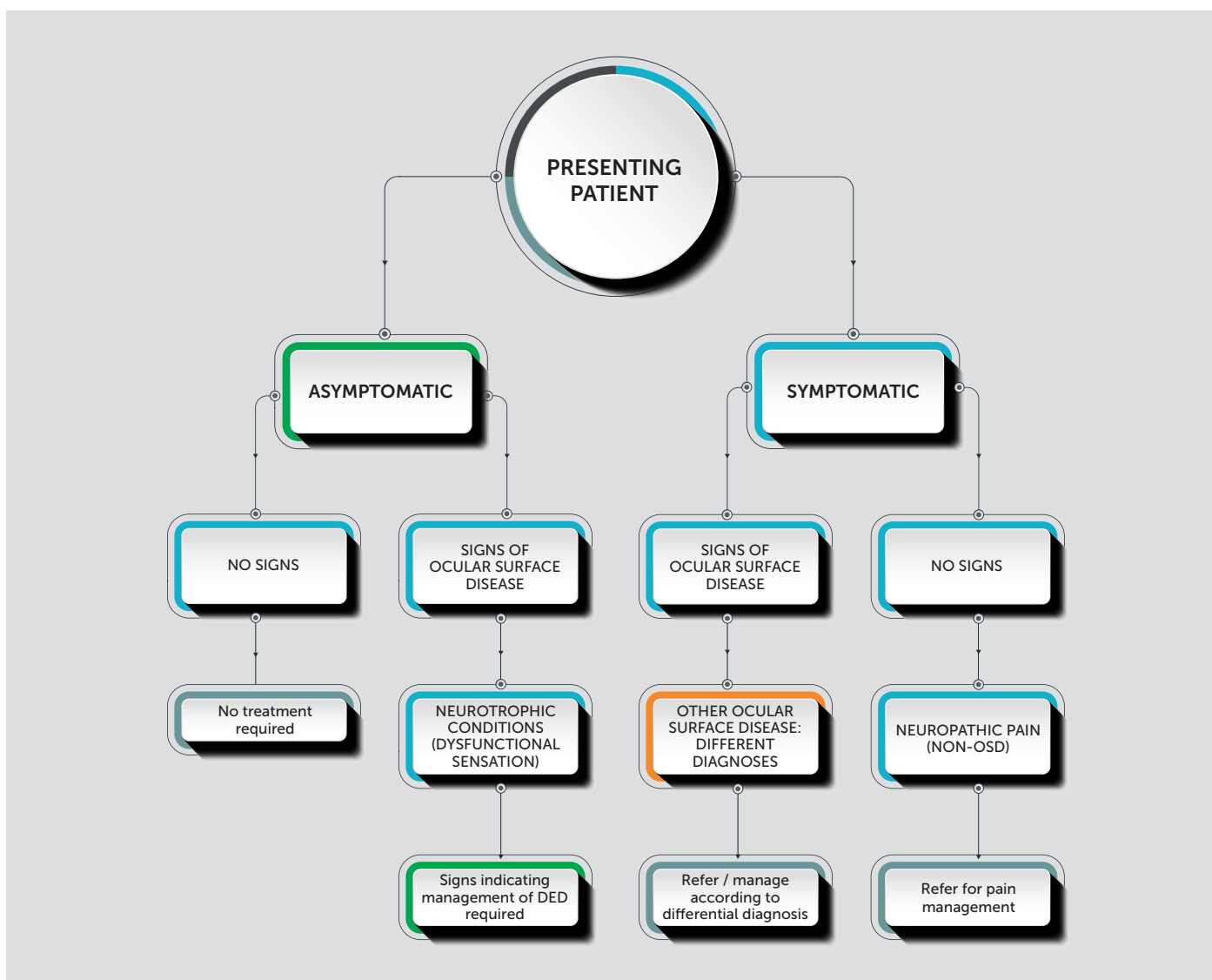
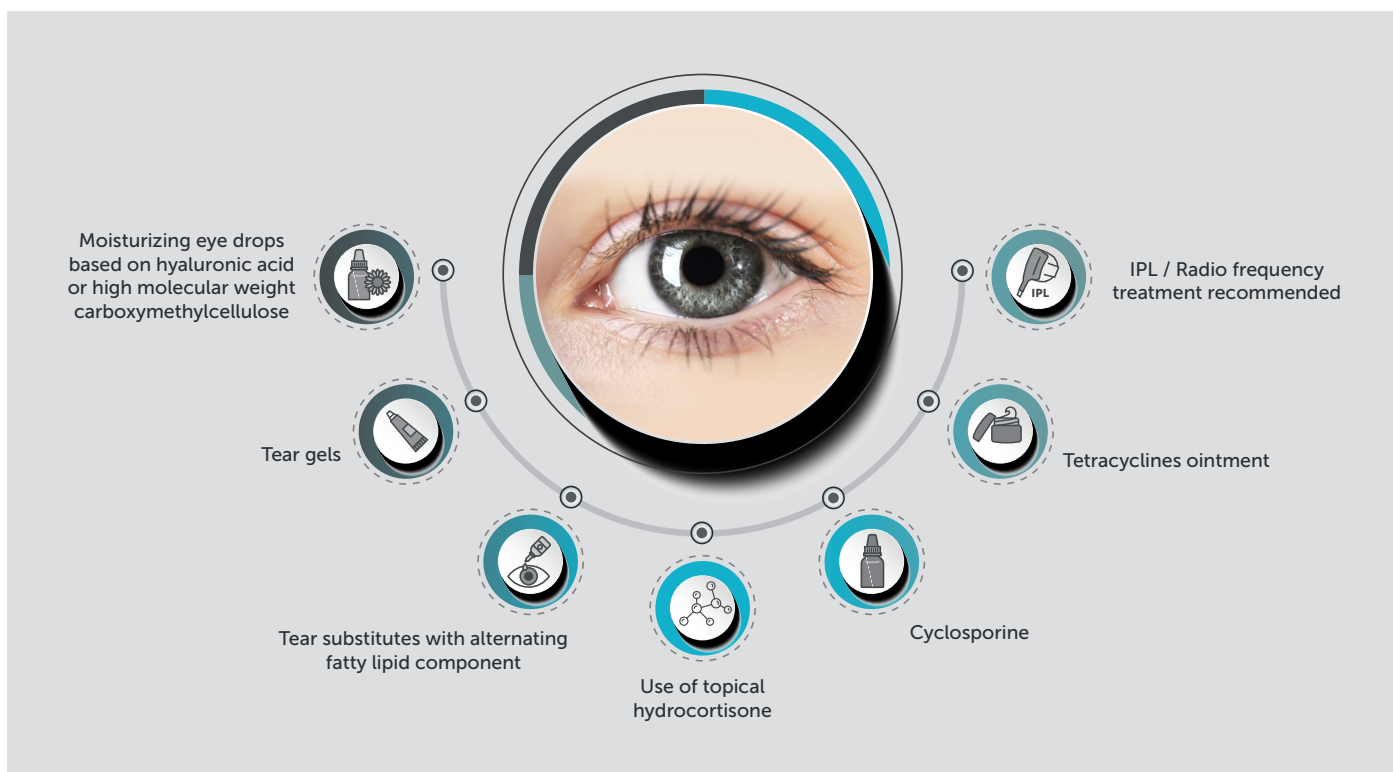
With the useful data result tab, doctor can check the complete tear film assessment, determining all deficiencies that cause the pathology and in the mean time understanding which treatment is needed to approach each case.

DIAGNOSIS SUGGESTION

Ocular surface data and pathology classification

Thanks to Studio Medico Carones with MD. Luca Vigo's experience, OSA includes a suggestion algorithm able to share a possible treatment approach for each patient.

All suggestions can be edited instead your experience and your treatment protocol.



REPORT

The screenshot displays the SBM Sistemi software interface. At the top, there are navigation tabs: Patients (24), Exams (139), New Exam, Advanced Search, Tutorial, Settings, Transfer, Menu, and Remote Support. Below these are several diagnostic charts including NIBUT, Eye Blink, B.U.T., Lipid Layer Type, MGD Lower, MGD Upper, T. Meniscus, O.S.D.I. Result, Osmolarity, Schirmer, and Redness. A central pop-up window titled 'Click on the report type to choose the print option:' offers several report types: 'Create all reports' (with sub-options for 'Single date' and 'From - To date'), 'Report by date', 'Exam report', 'Protocol report', 'Report of a single value', and 'Binocular report'. The 'Create all reports' section includes a table for selecting report components:

Report by date	DX	SX	Graph
NIBUT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BLINK	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BUT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lipid L.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meniscus	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MGD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OSDI	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Osmol.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Below the table, there are options for 'Print all reports in one single file' and 'Save PDF'. The bottom left shows a table of patient data:

Eye	Date	Valt
O.D.	09/02/2019 11:35:56	8,6
O.D.	01/02/2019 15:44:05	7,2
O.D.	31/01/2019 10:42:15	6,0
O.D.	31/01/2019 10:40:53	9,0
O.D.	31/01/2019 10:40:38	8,5
O.D.	31/01/2019 10:40:00	7,0
O.D.	31/01/2019 09:53:32	14,2 sec
O.D.	28/11/2018 12:20:06	5,8 sec

The bottom right features a large graph showing 'Secol' values over time from 09/12/2018 to 03/02/2019, with a prominent peak around 03/02/2019. A smaller graph shows a value of 8,6.

MANY DIFFERENT REPORTS AVAILABLE

OSA software is a dedicated platform for dry eye and allows over the classification and diagnosis, to print and save various medical reports, giving the most professional and clinical solutions to your patient.

COMPLETE REPORT

Complete report with all results and pictures used to explain to the patient dry eye category.



AUTOMATED DIAGNOSIS

Ocular surface data and pathology classification

RIGHT EYE



LEFT EYE



DRY EYE DIAGNOSIS

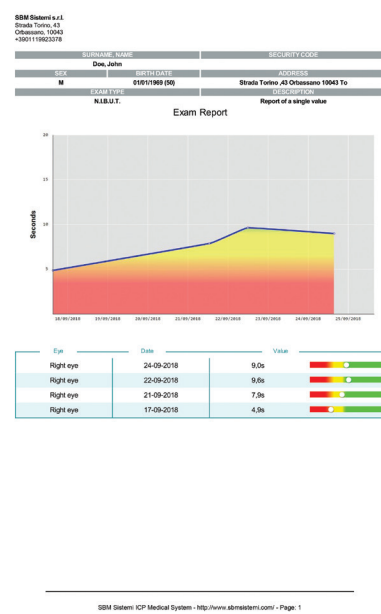


TREATMENT REPORT

Patient oriented report explaining causes of pathology and recommended treatments.

FOLLOW UP REPORT

For each value is possible to show trend line before/during/after the treatment.



PACKAGE CONTENTS

- OSA
- GRIDS TO EVALUATE NIBUT
- BRIEFCASE



OTHER AVAILABLE ACCESSORIES



COMPLETE HOLDER



FOOT PEDAL USB

USB connection



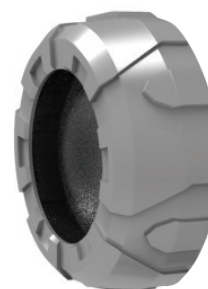
TABLE



TABLE HOLDER



LENS FOR CYLINDRICAL DANDRUFF IMAGING



DRY EYE DISEASE

Dry Eye Syndrome and the follow disease commonly occur together.
Patients may have irksome symptoms, but not associate them with dry eye syndrome.



- Glaucoma
- Contact lens
- Cataract and refractive surgery
- Diabetes
- Prevalence of Dry Eye Disease in Rheumatoid Arthritis Patients
- Blepharitis

DEALER

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uni en iso 9001:2015 Nr. 8631/0
uni cei en iso 13485:2012 Nr. 8632/0

