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# North Toronto Eye Care

# **DRY EYE CLINIC**

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## Welcome to the North Toronto Eye Care DRY EYE CLINIC

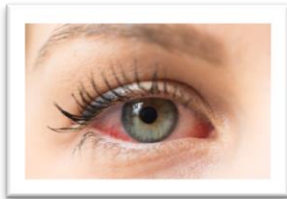
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We appreciate you joining us today for your ocular surface consultation at the Dry Eye Clinic of North Toronto Eye Care. Please take a moment to review the information provided in this package to gain a deeper understanding of your condition and the available treatment options.

During your visit, our technicians will assist you in undergoing tests aimed at providing the doctor with comprehensive insights into the condition of your ocular surface. Following the completion of these tests, the doctor will discuss the results with you and customize a treatment plan tailored to address your specific eye concerns and symptoms.

We thank you for entrusting our team with the opportunity to assist you in addressing your ocular surface issues.

### What is Dry Eye?



Dry eye, also known as dry eye syndrome or keratoconjunctivitis sicca, is a common condition that occurs when the eyes do not produce enough tears or when the tears evaporate too quickly. Tears are essential for maintaining the health and lubrication of the eyes, as they provide moisture, nutrients, and protection against infection.

Dry eye can result in a range of symptoms, including:

1. **Dryness:** A sensation of dryness or grittiness in the eyes.
2. **Irritation:** Eyes may feel irritated, burning, or itchy.
3. **Redness:** The eyes may appear red or bloodshot.
4. **Sensitivity to light:** Increased sensitivity to light, known as photophobia, can occur.
5. **Blurred vision:** Vision may become temporarily blurred, particularly during periods of prolonged visual tasks.

Several factors can contribute to dry eye, including aging, hormonal changes, environmental factors (such as dry air or wind), certain medications, prolonged screen time, and medical conditions like autoimmune diseases or hormonal imbalances.

Management of dry eye typically involves using artificial tears or lubricating eye drops to relieve symptoms, practicing good eyelid hygiene, using humidifiers to increase moisture in the air, and avoiding factors that exacerbate dry eye symptoms.

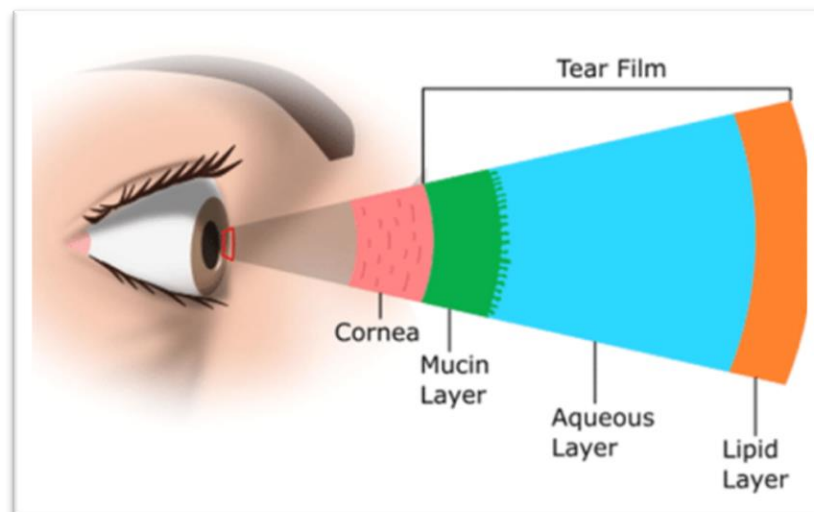
In some cases, advanced treatments such as prescription medications, punctal plugs, or in-office procedures like LipiFlow® or IPL therapy may be recommended by your eye care professional to address underlying causes and provide long-term relief.

## What is tear film?

To grasp the root cause of your dry eye condition, it's crucial to comprehend the functioning of the tear film components.

Tears consist of three layers:

1. **Lipid (Oil) Layer:** Situated outermost, this oily lipid layer serves to lubricate the eyes and prevent rapid evaporation of tears while the eyes are open.
2. **Aqueous (Water) Layer:** Occupying the middle position, the aqueous layer is primarily comprised of water and essential nutrients. It acts as a lubricant and a source of nourishment for the cornea.
3. **Mucin:** The innermost layer consists of mucus, known as mucin, which forms a coating over the corneal surface. This layer facilitates the adherence of tears to the cornea and ensures their uniform spread across the surface.



## What are the different types of Dry Eye Disease?

Dry eye disease encompasses a range of conditions characterized by insufficient moisture and lubrication on the surface of the eye. Some of the different types of dry eye diseases include:

1. **Evaporative Dry Eye Syndrome:** This type of dry eye occurs when there is an imbalance in the tear film, leading to excessive evaporation of tears. It is often associated with Meibomian Gland Dysfunction (MGD), where the Meibomian glands in the eyelids do not produce enough oil to maintain tear film stability.

2. **Aqueous Deficient Dry Eye Syndrome:** This type of dry eye results from decreased tear production by the lacrimal glands, which produce the watery component of tears. It can be caused by various factors, including aging, autoimmune diseases (such as Sjögren's syndrome), certain medications, hormonal changes, or damage to the lacrimal glands.
3. **Mixed Dry Eye Syndrome:** Some individuals may experience a combination of evaporative dry eye and aqueous deficient dry eye, known as mixed dry eye syndrome. This type of dry eye can present with a combination of symptoms and may require a multifaceted treatment approach.
4. **Ocular Surface Disease:** Dry eye disease can also be associated with other ocular surface conditions, such as blepharitis (inflammation of the eyelids), conjunctivitis (inflammation of the conjunctiva), or corneal abnormalities. These conditions can further exacerbate dry eye symptoms and complicate treatment.



5. **Contact Lens-Induced Dry Eye:** Wearing contact lenses can exacerbate dry eye symptoms in some individuals by disrupting the tear film and reducing oxygen flow to the cornea. Contact lens-induced dry eye may require modifications to contact lens wear or alternative treatment strategies.

6. **Environmental Dry Eye:** Dry eye symptoms can be exacerbated by environmental factors such as dry air, wind, dust, smoke, or exposure to air conditioning or heating. Managing environmental triggers can help alleviate dry eye symptoms in affected individuals.

It's essential for patients experiencing dry eye symptoms to undergo a comprehensive eye examination by an eye care professional to determine the underlying cause of their condition and develop an appropriate treatment plan tailored to their specific needs.

## How do I know if I have dry eye disease and the severity?

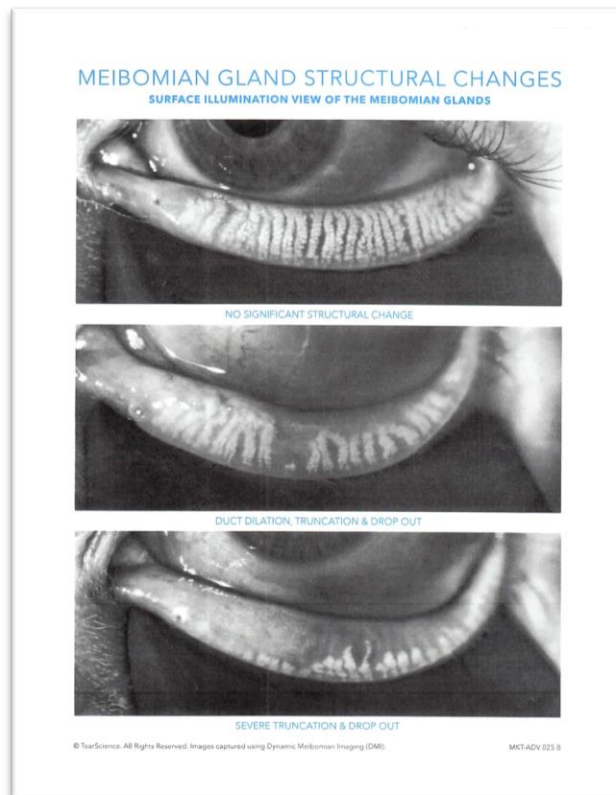
An ocular surface assessment encompasses various diagnostic procedures aimed at evaluating the health and functionality of the eye's surface components, including the cornea, conjunctiva, and tear film. These examinations are vital for the North Toronto Eye Care team in diagnosing and tracking various ocular surface disorders, such as dry eye disease.

Common ocular surface assessments performed at North Toronto Eye Care include:

1. A dry eye questionnaire is a tool used by healthcare professionals to assess and evaluate symptoms related to dry eye disease. It typically consists of a series of questions designed to gather information about various symptoms experienced by the PATIENT. By collecting this information, Your Dry Eye Team can better understand the patient's symptoms, their impact on daily activities, and their overall quality of life. This helps in making an accurate diagnosis and developing an appropriate treatment plan tailored to the patient's individual's needs.
2. Evaluation of Tear Film: These tests gauge tear production, tear osmolarity (salt concentration), tear break-up time (TBUT), and tear volume to determine the quality and

quantity of tears, crucial for ocular surface health. HD Analyzer Technology: This provides an objective and non-invasive analysis of tear film behavior over a 20-second interval, offering insights into blink efficiency in restoring tear function, particularly beneficial when combined with Tear Osmo.

3. Corneal and Conjunctival Staining: Special dyes like fluorescein and lissamine green reveal abnormalities or damage to the cornea and conjunctiva, aiding in the identification of dryness, inflammation, abrasions, or irregularities on the ocular surface.
4. Meibomian Gland Assessment: Measuring the structure and function of Meibomian glands, crucial for tear film's oily layer, using tests such as meibography and meibomian gland expression, essential for conditions like Meibomian Gland Dysfunction (MGD) and evaporative dry eye. LipiScan Imaging: This non-invasive imaging device captures high-resolution images of Meibomian glands, providing detailed information about their health, structure, and any abnormalities, aiding in diagnosing and managing MGD and related ocular surface issues.
5. Inflammatory Biomarker Analysis: Tests like InflammDry detect elevated levels of matrix metalloproteinase-9 (MMP-9) in tears, indicating ocular surface inflammation associated with conditions like dry eye disease or ocular surface disorders.
6. Osmolarity Testing: This diagnostic procedure measures the salt concentration in tears, helping assess tear film stability and quality, crucial for maintaining ocular surface health and diagnosing dry eye disease and related disorders.



In summary, ocular surface assessments are vital for diagnosing, monitoring, and managing ocular surface conditions, aiding in treatment decisions, and improving patient outcomes.

## What treatments are available for my dry eye?

Once your Dry Eye Team reviews your testing and completed a thorough exam of your ocular health, you will be recommended a treatment plan specific to your eyes and condition. Below are some of the essential, intermediate, and advanced therapies available at North Toronto Eye Care.

### Essential Therapies:

- Adjustments to Lifestyle:
  - Engage in regular breaks, especially during visually demanding activities like reading, using electronic devices, or sewing, to ensure frequent blinking.
  - Maintain proper hydration by increasing water intake to prevent eye dryness associated with dehydration.
  - Utilize humidifiers both at home and in the workplace to add moisture to the air.
  - Wear properly fitted sunglasses when outdoors to shield your eyes from wind and sunlight, which can exacerbate dryness.
- Lubricating Eye Drops: Opt for preservative-free eye drops containing hyaluronic acid to enhance hydration and complement natural tear production. Avoid drops with preservatives, as they may worsen ocular surface irritation.
- Warm Compresses: Apply a warm washcloth or a microwaveable eye mask to your eyes for one to two sessions daily to replenish moisture and facilitate the proper functioning of meibomian glands.
- Eyelid Hygiene: Cleanse your eyelids and eyelashes with lid wipes once or twice daily to remove debris and makeup, promoting ocular surface cleanliness and health.
- Omega-3 Fatty Acid Supplements: Incorporate omega-3 supplements in their natural triglyceride form to reduce ocular surface inflammation and improve meibomian gland function.



**Intermediate Therapies:** In addition to Essential Therapies, your doctor may prescribe topical or oral medications to alleviate symptoms further. These medications could include anti-inflammatory and/or anti-bacterial agents.

**Advanced Therapies:** Building upon Essential and Intermediate Therapies, treatments targeting specific types of dry eye may be recommended:

For Aqueous Deficient Dry Eye:

- Prescription eye drops like Restasis or Xiidra to mitigate inflammation and stimulate tear production.
- Punctal plugs, inserted into the eyelid puncta by your doctor, to prevent excessive tear drainage.

For Evaporative Dry Eye:

- Specialized eyelid cleansers, such as lid wipes, to eliminate debris and bacteria from eyelashes and lid margins, aiding in maintaining meibomian gland health.
- Intense Pulsed Light (IPL) Therapy: A non-invasive procedure involving pulses of light energy to improve meibomian gland function, reduce inflammation, and control bacterial growth. Note: IPL therapy is suitable for certain skin types only.
- Thermal Pulsation Therapy: A 12-minute in-office treatment utilizing thermal heat and pulsation to clear clogged meibomian glands and restore healthy oil production.





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**YOUR NORTH TORONTO EYE CARE DRY EYE CLINIC**

**DRY EYE TREATMENT PLAN**

Name Date DOB

**SPEED QUESTIONNAIRE**

*For the Standardized Patient Evaluation of Eye Dryness (SPEED) Questionnaire, please answer the following questions by checking the box that best represents your answer. Select only one answer per question.*

Report the type of **SYMPTOMS** you experience and when they occur:

Symptom	At this visit		Within the past 72 hours		Within the past 3 months	
	YES	NO	YES	NO	YES	NOT
Dryness, Grittiness or Scratchiness						
Soreness or Irritation						
Burning or Watering						
Eye Fatigue						



Report the **FREQUENCY** of your symptoms using the rating list below:

Symptoms	0	1	2	3
Dryness, Grittiness or Scratchiness				
Soreness or Irritation				
Burning or Watering				
Eye Fatigue				

0 = Never    1 = Sometimes    2 = Often    3 = Constant

Report the **SEVERITY** of your symptoms using the rating list below:

Symptoms	0	1	2	3	4
Dryness, Grittiness or Scratchiness					
Soreness or Irritation					
Burning or Watering					
Eye Fatigue					

0 = No Problems

1 = Tolerable - not perfect, but not uncomfortable

2 = Uncomfortable - irritating, but does not interfere with my day

3 = Bothersome - irritating and interferes with my day

4 = Intolerable - unable to perform my daily tasks

Do you use eye drops for lubrication? (Circle)

YES	NO	If YES, please indicate drop and frequency of use.
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<b>FOR OFFICE USE ONLY</b>	Total SPEED score (Frequency + Severity) = ____/28
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**CUSTOMIZED TREATMENT PLAN:**

<p><b>ESSENTIAL THERAPIES</b></p>	<ul style="list-style-type: none"> <li>✓ Lifestyle Modification</li> <li>✓ Lubricating eye drops: _____ times per day &amp; as needed.</li> <li>✓ Hot compresses: _____ times per day for _____ minutes / time</li> <li>✓ Lid wipes: _____ times per day.</li> <li>✓ Omega 3 supplements _____ capsules / day</li> <li>✓ Other:</li> </ul>			
<p><b>INTERMEDIATE THERAPIES +BASIC</b></p>	<p>Additional medication: (if drops, use 1 drop each time)</p> <p>_____ times per day x _____ weeks</p> <p>_____ times per day x _____ weeks</p> <p>_____ times per day x _____ weeks</p> <p>_____ Zest Treatment</p>			
<p><b>ADVANCED THERAPIES + BASIC + INTERMEDIATE</b></p>	<p><b>AQUEOUS DEFICIENT DRY EYE</b></p>	<p><b>EVAPORATIVE DRY EYE</b></p>		
	<ul style="list-style-type: none"> <li>○ Restasis or Xiidra</li> <li>○ Punctal plugs.</li> <li>○ Autologous serum eye drop.</li> </ul>	<p><b>Eyelid Inflammation</b></p>	<p><b>Meibomian Gland Obstruction</b></p>	<p><b>Significant Obstruction &amp; Inflammation</b></p>
		<p>IPL Therapy*</p>	<p>Thermal Pulsation</p>	<p>IPL Therapy* + Thermal Pulsation</p>

\*IPL is only suitable for certain skin types

