

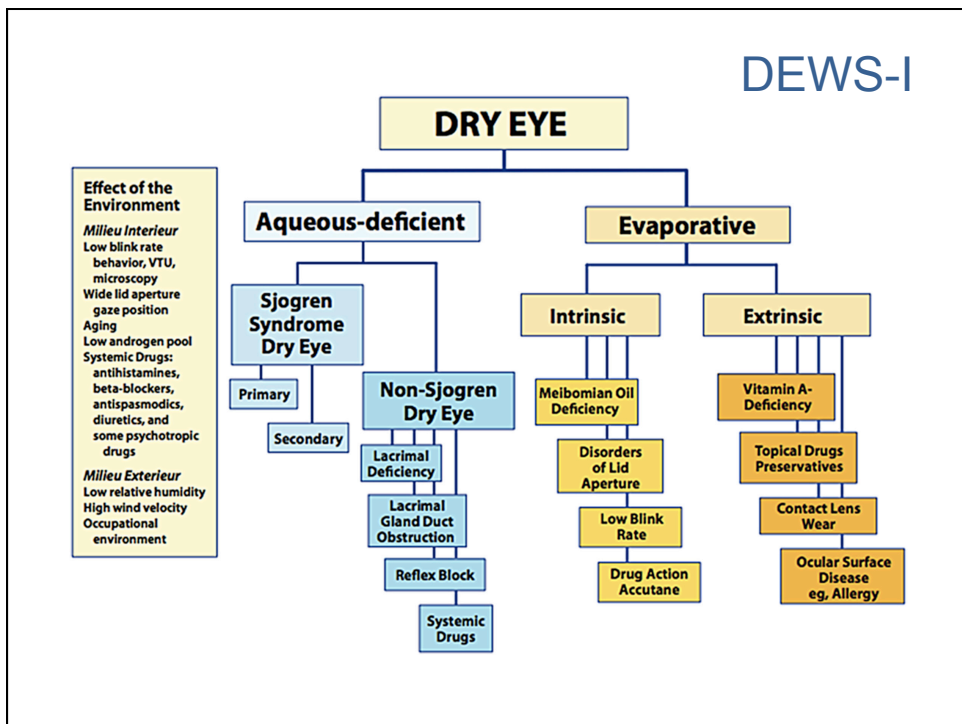
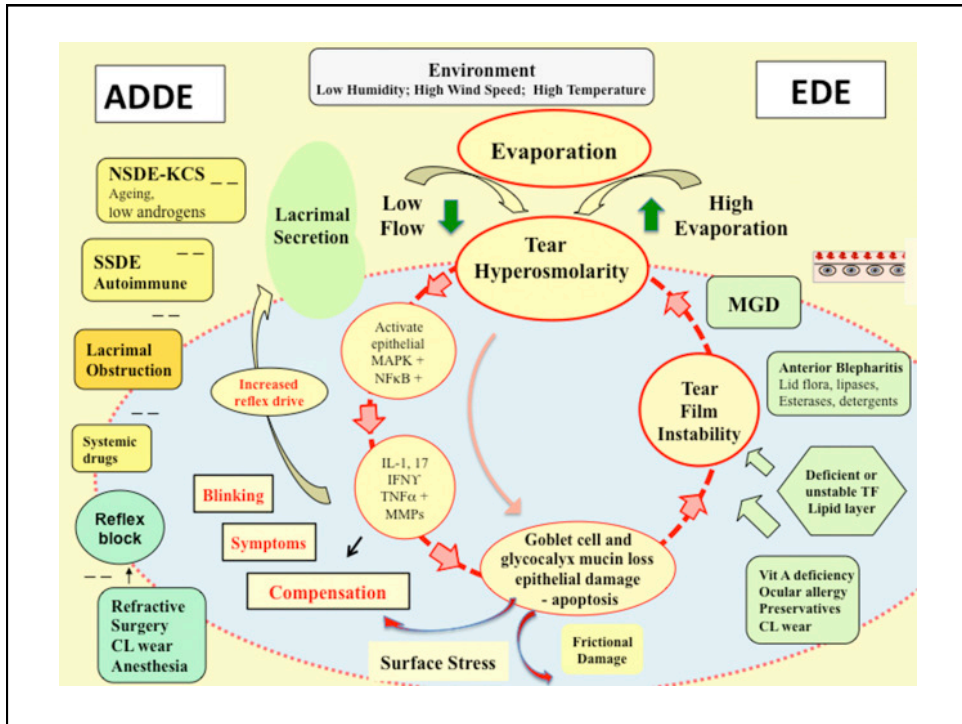


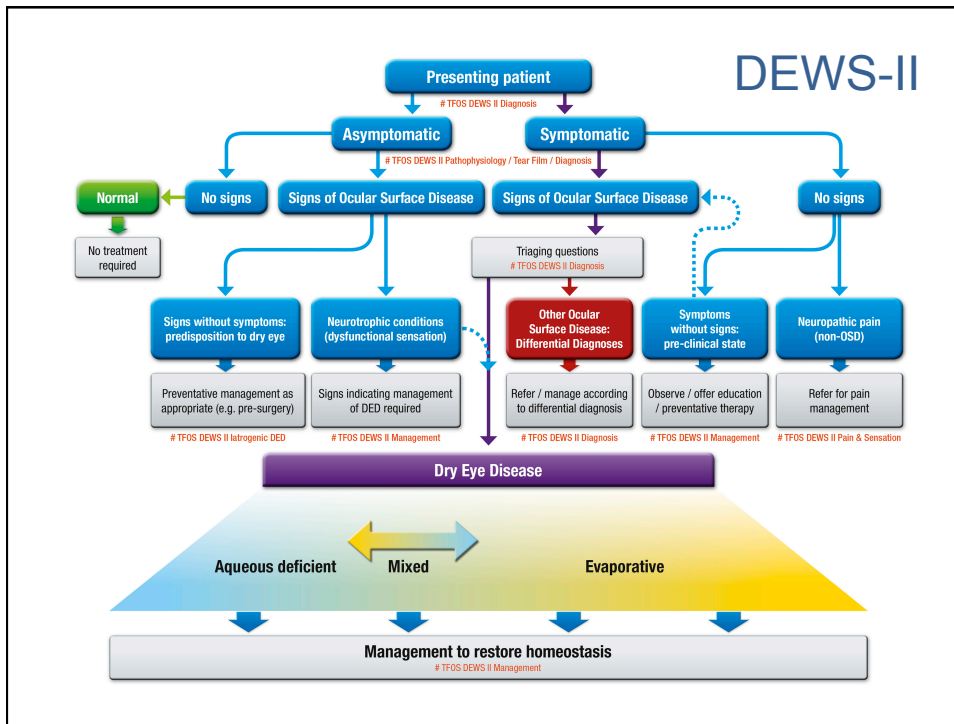
DEFINICIÓN DE OJO SECO

*“El ojo seco es una alteración de la **película lagrimal** debida a la **deficiencia de lágrima** o a su **excesiva evaporación** que causa **daño** de la superficie ocular interpalpebral y es asociada con síntomas de **discomfort ocular**.”*
NEI / Industry Working Group (1997)

*“El ojo seco es una **enfermedad multifactorial** de las lágrimas y de la **superficie ocular** que resulta en síntomas de discomfort, **alteraciones visuales** e **inestabilidad de la película lagrimal** con potencial daño de la superficie ocular. Es acompañada de **hiperosmolaridad** de la película lagrimal e **inflamación** de la superficie ocular.”*
DEWS I (2007)

*“El ojo seco es una enfermedad multifactorial de la superficie ocular que se caracteriza por una pérdida de la **homeostasis de la película lagrimal**, y se acompaña de síntomas oculares, entre los que la **inestabilidad** del film lagrimal, **hiperosmolaridad**, **inflamación** y daño ocular, y las **anormalidades neurosensoriales**, juegan un **papel etiológico**.”*
DEWS II (2017)

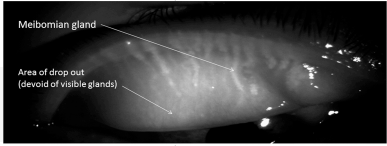
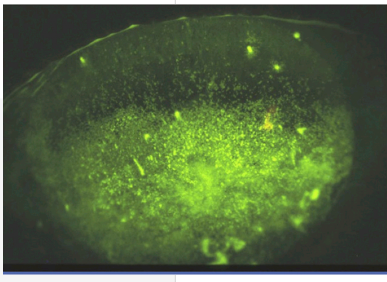





Sources of dry eye symptoms.

- Visual Symptoms – (occurring in the interblink interval)**
 - Tear film instability and breakup
 - Epithelial roughness in regions of tear breakup
- Symptoms of Discomfort**
 - Tear Hyperosmolarity
 - General – affecting all tear compartments
 - Local – tear breakup related, local hotspots of hyperosmolarity
- Friction - Reduced lubrication - (Related to blinking and eye movements)**
 - Low tear volume in ADDE
 - Loss of goblet cells; mucin
 - Loss of mature glycocalyx, loss of lubricin
 - Rough epithelium; punctate epithelial keratitis
 - Filamentary keratitis
 - SLK
 - LIPCOF - conjunctivochalasis
 - LWE
- Inflammatory mediators**
 - Algesic mediators increasing sensory excitability
 - Prostanoids
 - Cytokines
 - Neurokinins
- Neurosensory and central factors**
 - Trigeminal hypersensitivity;
 - Neuropathic firing
 - Cognitive aspects of dry eye symptoms

Ocular targets of dry eye disease.

<p>i. The Lacrimal Gland. Inflammatory cell infiltration of ducts and acini</p>	
<p>ii. The Meibomian Glands Terminal duct obstruction; duct dilatation and gland loss</p>	
<p>iii. The Cornea Punctate epithelial keratopathy. Filamentary keratitis Superior Limbic Keratoconjunctivitis (SLK)</p>	
<p>iv. The Conjunctiva.</p> <p>a. General changes Punctate epitheliopathy Glycocalyx changes Goblet cell loss</p> <p>b. Bulbar changes Lid parallel conjunctival folds (LIPCOF) SLK</p> <p>c. Tarsal changes The lid margins changes Marx's line migration Lid wiper epitheliopathy.</p>	
<p>v. Both Cornea and Conjunctiva. Increased epithelial shedding</p>	

Causes of dry eye disease.

<p>AQUEOUS-DEFICIENT DRY EYE (ADDE)</p>	
<p><u>Sjögren Syndrome Dry Eye (SSDE)</u></p> <ul style="list-style-type: none"> - associated systemic diseases <ul style="list-style-type: none"> Rheumatoid arthritis Polyarteritis nodosa Systemic lupus erythematosus Wegener granulomatosis Systemic sclerosis Primary biliary cirrhosis Mixed connective tissue disease 	<p><u>Lacrimal Gland Obstruction</u></p> <ul style="list-style-type: none"> Cicatricial Conjunctivitis GVHD Stevens-Johnson Syndrome/TEN Mucous Membrane Pemphigoid Cicatricial pemphigoid Pemphigus Trachoma Chemical injury
<p><u>Non- Sjögren Syndrome Dry Eye (NSDE)</u></p> <ul style="list-style-type: none"> Intrinsic Lacrimal Gland Deficiency <ul style="list-style-type: none"> Lacrimal gland ablation Congenital alacrima Triple A syndrome Age-related ADDE dry eye Inflammatory and Other Lacrimal Gland infiltration <ul style="list-style-type: none"> Sarcoidosis Lymphoma Viral Infection Radiation Injury 	<p><u>Hyposecretory States – Failure of the Lacrimal Functional Unit</u></p> <ul style="list-style-type: none"> Reflex Afferent Block <ul style="list-style-type: none"> Topical anesthesia Trigeminal nerve injury Refractive surgery Neurotrophic keratitis Secretomotor Block <ul style="list-style-type: none"> Parasympathetic damage Pharmacological inhibition Combined Afferent and Efferent Block <ul style="list-style-type: none"> Familial dysautonomia

EVAPORATIVE DRY EYE

Meibomian Gland Dysfunction (MGD)

Primary

- Meibomian seborrhea
- Obstructive MGD
- Cicatricial/non-cicatricial

Secondary to Local Disease

- Anterior blepharitis
- Ocular surface inflammation
- Contact lens wear

Secondary to Systemic Dermatoses

- Rosacea
- Seborrheic dermatitis
- Atopic dermatitis
- Ichthyosis
- Psoriasis

Secondary to Chemical Exposure

- 13-cis retinoic acid
- Polychlorinated biphenols
- Antiandrogens

Genetically Determined Meibomian Gland Diseases

- Meibomian Agensis and Dystichiasis
- Anhydrotic Ectodermal Dysplasia
- Ectrodactyly Syndrome
- Epidermolysis Bullosa
- Ichthyosis Follicularis
- Turner Syndrome;

Ocular Surface-Related Evaporative Dry Eye

- Allergic Eye Disease
- Vitamin A Deficiency
- Short Breakup Time Dry Eye
- Iatrogenic Disease

Classification of iatrogenic dry eye.

- I. Drug-induced
 - A. Systemic
 - B. Topical
- II. Contact lens-induced
- III. Ophthalmic surgery
 - A. Refractive surgery
 - B. Keratoplasty (PK, LK and EK)
 - C. Cataract surgery
 - D. Lid surgery
 - E. Other surgeries
 - 1. Conjunctival surgery
 - 2. Glaucoma surgery
 - 3. Vitreoretinal surgery
 - 4. Strabismus surgery
 - 5. Intrastromal corneal ring segment implantation
 - 6. Others
- IV. Non-surgical ophthalmic procedures
 - A. Botulinum toxin
 - B. Crosslinking (CXL)
 - C. Cosmetic procedures
 - D. Others
- V. Non-ophthalmic conditions
 - A. Graft-versus-host disease (GVHD)
 - B. Others

