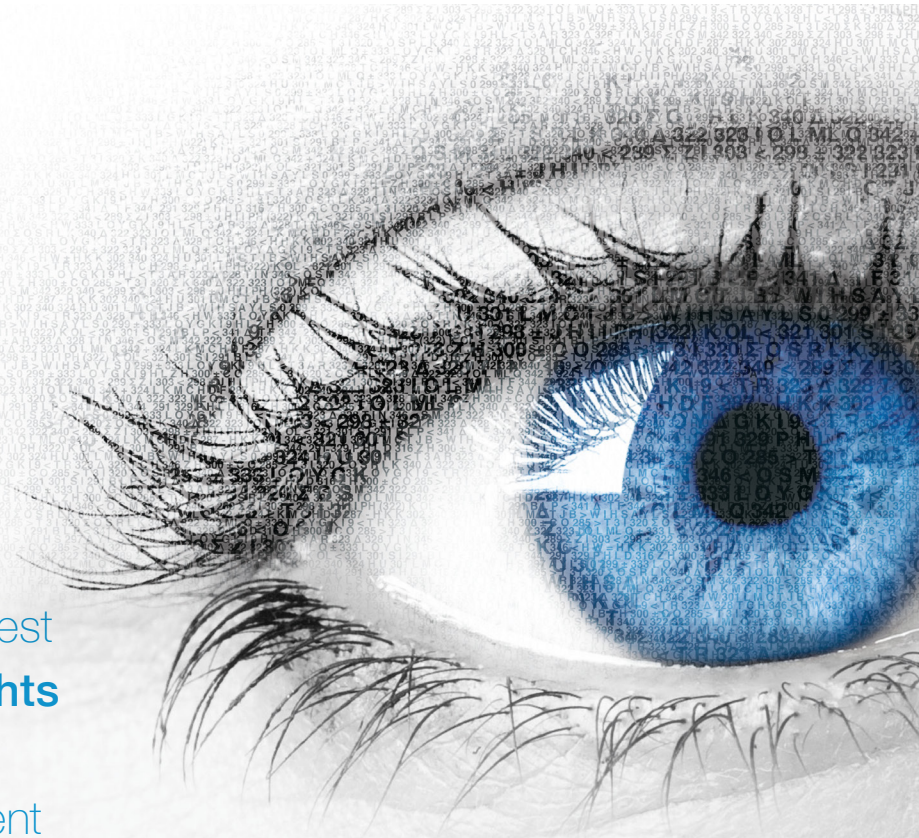
TearLab® Diagnostic Test



Add data to your insights.

The TearLab Diagnostic Test provides **objective insights** to **better inform** your diagnosis and management of the ocular surface.

Quantitative Data for Your Ocular Surface Assessment

- A healthy ocular surface is essential for good vision.
- Since 70% of the total refractive power occurs at the tear film surface[1], it is essential to evaluate the tear film when managing ocular surface disease.
- Tear osmolarity is an important biomarker of ocular surface health.

"Dry eye is 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."[2]

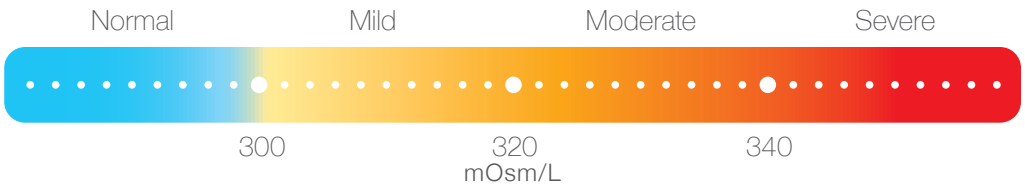
- TFOS DEWS II

Diagnose

Test the osmolarity of both eyes.

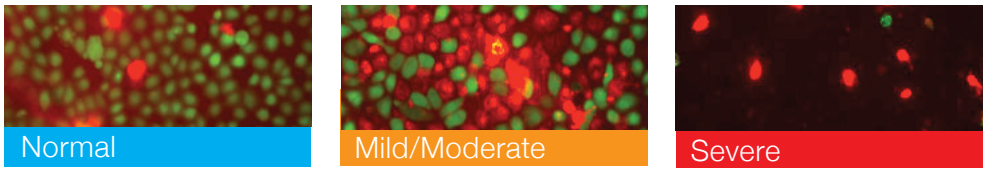
ABNORMAL OSMOLARITY IS DEFINED BY:

- An elevated reading, >300 mOsm/L, indicating loss of homeostasis.[3]
- OR, When the inter-eye difference is >8 mOsm/L, indicating instability of the tear film.[3]



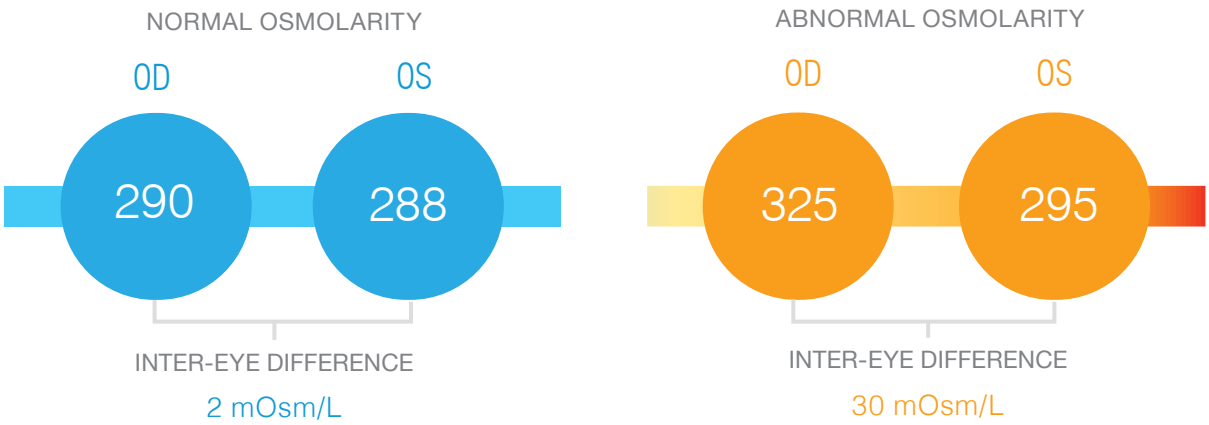
Relationship between osmolarity and ocular surface health

EPITHELIAL CELL HEALTH



- Abnormal osmolarity indicates an unhealthy tear film, which can potentially damage the ocular surface and cornea.[4]
- Left undiagnosed and untreated, epithelial cell death and visual fluctuations can occur.[4]

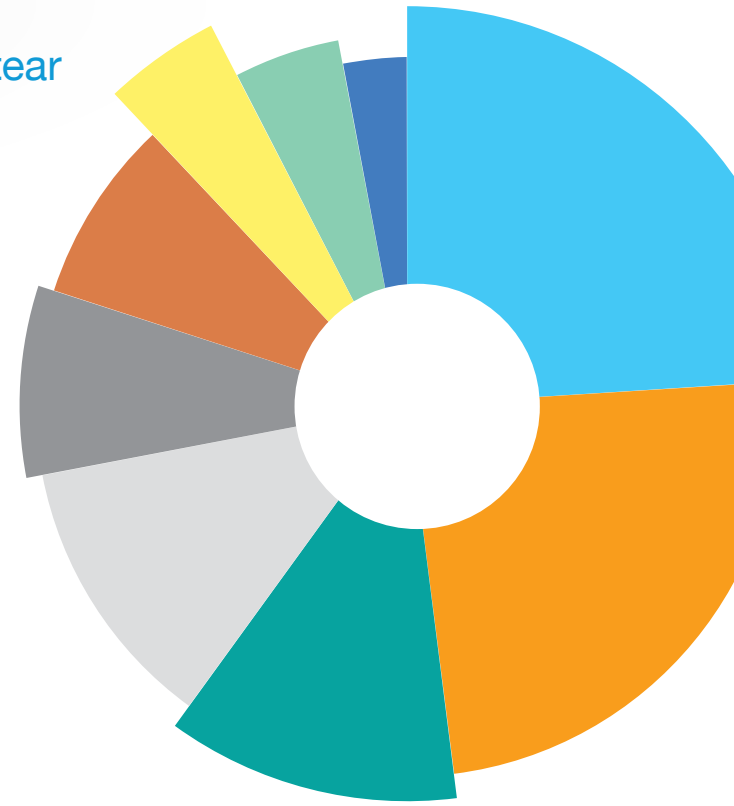
Tear osmolarity is informative when the results are abnormal or normal.



A symptomatic patient with normal tear osmolarity may not have dry eye.

In a prospective observational study[5] of 50 symptomatic patients with normal tear osmolarity, the most frequent diagnoses included:

- Allergic conjunctivitis (24%)
- Anterior blepharitis (24%)
- EBMD (12%)
- Keratoneuralgia (12%)
- Contact lens intolerance (8%)
- Conjunctivochalasis (8%)
- Computer vision syndrome (6%)
- Trichiasis (6%)
- Dry eye disease with effective therapy (4%)



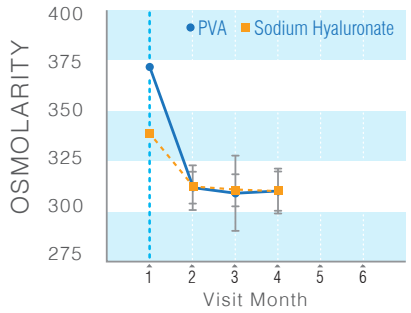
Eleven patients (22%) had more than 1 diagnosis present, hence why percentages do not add to 100%

Manage

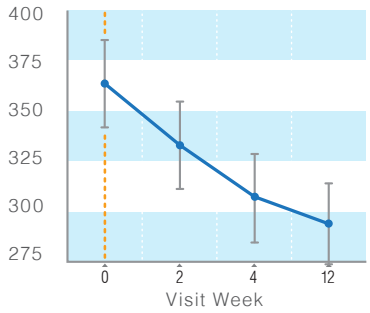
Use TearLab osmolarity data to better inform your treatment plan based on disease severity and manage patient progress by evaluating therapeutic effectiveness.[6-8]

Abnormal osmolarity decreases with effective treatment.

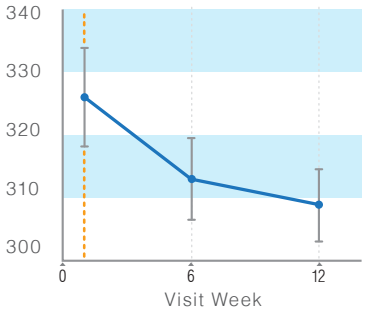
HA/PVA TREATMENT



HP GUAR TREATMENT



OMEGA-3 TREATMENT



TearLab® Diagnostic Test

The point-of-care TearLab Diagnostic Test provides precise and predictive quantitative information.

PRECISE:

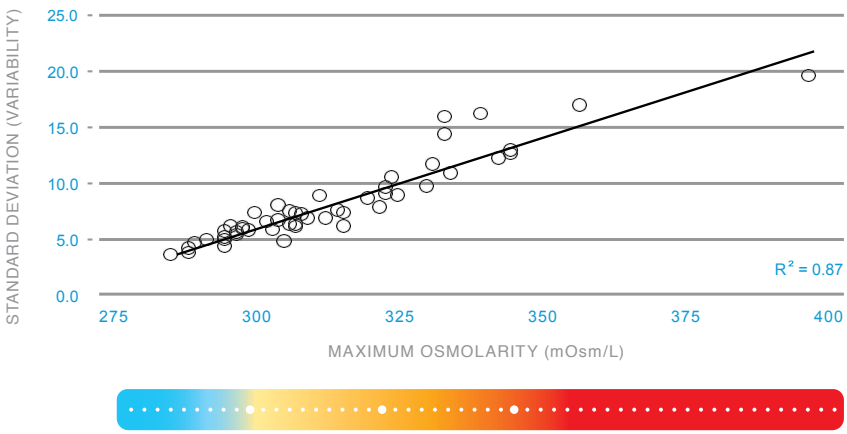
More precise than other universally accepted point-of-care tests such as cholesterol and glucose.[9-11]

Clinical Test	CV
Osmolarity	**< 1.5%**
Glucose	≥ 5.0%
Cholesterol	> 4.0%

PREDICTIVE:

89%
predictive of dry eye[12]

Variability is a hallmark of the disease.[13]



The greater the osmolarity, the greater the variability.

Add data to your insights.
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1. Dawson D, Watsky M, Geoski D, Edelhauser H. Cornea and Sclera. Duanes Ophthalmology. New York. 2. http://www.tearfilm.org/dettnews-tfos_dews_ii_report_announced/101_16/eng/ 3. Lemp MA, et al. Tear osmolarity in the diagnosis and management of dry eye disease. *Am J Ophthalmol.* 2011; 151: 792-798. 4. Kam W, et al. *Invest Opthalmol Vis Sci.* 2016; 57:E-abstract 6181. 5. Brissette A, Bohm K, Starr C. The utility of a normal tear osmolarity test in symptomatic patients. Poster session presented at: 8th International Conference of The Tear Film & Ocular Surface Society; 2016 Sept 7-10; Montpellier, France. 6. Sullivan BD, Crews LA, Sönmez B, et al. Clinical utility of objective tests for dry eye disease: variability over time and implications for clinical trials and disease management. *Cornea.* Sept 2012;31 (9): 1000-1008. 7. Cömez AT, et al. Effects of lubricating agents with different osmolalities on tear osmolarity and other tear function tests in patients with dry eye. *Curr Eye Res.* Nov 2013; 38 (11): 1095-1103. 8. Epitropoulos A, Donnenfeld E, et al. Effect of oral re-esterified Omega-3 nutritional supplementation on dry eyes. *Cornea.* Sept 2016; 35 (0): 1185-1191. 9. FDA K083184 Within Run CV@316mOsm/L. 10. Kimberly MM, et al. Variability among five over-the-counter blood glucose monitors. *Clinica Chim Acta.* 2006; 364: 292-297. 11. Volles DF, et al. Analytic and clinical performance of two compact cholesterol-testing devices. *Pharmacotherapy.* 1998; 18:1. 12. Tomlinson A. Tear film osmolarity: determination of a referent for dry eye diagnosis, *Invest Ophthalmol Vis Sci.* 2006 Oct; 47 (10); 4309-15. 13. Keech A, Senchyn M, Jones, L. Impact of time between collection and collection method on human tear fluid osmolarity. *Current Eye Research,* Early Online, 1-9, 2013.

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