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 surface¹, 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

<table>
<thead>
<tr>
<th>OSMOLARITY</th>
<th>300</th>
<th>320 mOsm/L</th>
<th>340</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>•</td>
<td>• • •</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>• •</td>
<td>• • •</td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>• •</td>
<td>• • •</td>
<td>•</td>
</tr>
</tbody>
</table>

**Relationship between osmolarity and ocular surface 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.

**NORMAL OSMOLARITY**

<table>
<thead>
<tr>
<th>OD</th>
<th>OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>290</td>
<td>288</td>
</tr>
</tbody>
</table>

**INTER-EYE DIFFERENCE**

- 2 mOsm/L

**ABNORMAL OSMOLARITY**

<table>
<thead>
<tr>
<th>OD</th>
<th>OS</th>
</tr>
</thead>
<tbody>
<tr>
<td>325</td>
<td>295</td>
</tr>
</tbody>
</table>

**INTER-EYE DIFFERENCE**

- 30 mOsm/L

³ Adapted from [Reference 3].
⁴ Adapted from [Reference 4].
A symptomatic patient with normal tear osmolarity may not have dry eye.

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

- Allergic conjunctivitis (24%)
- Anterior blepharitis (24%)
- EBMD (24%)
- Keratoneuralgia (12%)
- Contact lens intolerance (12%)
- Conunctivochalasis (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.

Abnormal osmolarity decreases with effective 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

<table>
<thead>
<tr>
<th>Clinical Test</th>
<th>CV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osmolarity</td>
<td>&lt; 1.5%</td>
</tr>
<tr>
<td>Glucose</td>
<td>≥ 5.0%</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>&gt; 4.0%</td>
</tr>
</tbody>
</table>

**PREDICTIVE:**
89% predictive of dry eye12

Variability is a hallmark of the disease.13

The greater the osmolarity, the greater the variability.

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References