

## DEMODEX BLEPHARITIS:

# Clinical AR Experience

Exploration of disease  
pathogenesis and burden



Begin Experience



Onboarding Guide



**DEMODEX BLEPHARITIS:**

# Clinical AR Experience

Exploration of disease  
pathogenesis and burden

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Blepharitis



Pathogenesis



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## About Demodex Blepharitis



### An introduction to blepharitis and Demodex mites

Blepharitis is the inflammation of the eyelids, causing irritation and redness.<sup>1</sup>

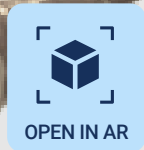
69% of blepharitis cases are due to Demodex mite infestation, resulting in Demodex blepharitis.<sup>2</sup>

In a retrospective study of 1032 patients across 6 eye care clinics throughout the United States, approximately 60% of patients were diagnosed with Demodex blepharitis. This is similar to the proportion of patients diagnosed with dry eye disease (58%). Demodex blepharitis is often misdiagnosed due to symptoms that are similar to other ocular conditions.<sup>2,3</sup>

Demodex folliculorum and Demodex brevis are the two species of Demodex mite found in humans. They have a life span of approximately 14 to 18 days.<sup>4</sup>



The section below is enhanced with AR content. Look for the button with the icon on the left to begin the AR experience.



☐ **Labels**

Focus on the *D. folliculorum* mite, which is characterized by its scaly body and four pairs of claws that enable it to anchor itself in hair follicles and cause epithelial micro-abrasions.<sup>5,6</sup>

## Pathogenesis



## Pathogenesis



### How the Demodex mite contributes to disease

#### Collarettes are a pathognomonic sign of Demodex blepharitis.<sup>3,7,8</sup>

Collarettes are translucent, solidified exudative excretions that form a cylindrical collar that cuffs around the base of the eyelash follicle causing irritation.<sup>3,5,7</sup>

Collarettes are composed of regurgitated undigested mite waste products combined with epithelial cells, keratin, mite eggs, and secreted proteases and lipases.<sup>3,5,7</sup>

#### Demodex mites impact the eyelids in three different ways:

- **Mechanical:** by attaching to eyelash follicles and leaving claw abrasions that cause lash distension<sup>3,6,11</sup>
- **Bacterial:** by carrying bacteria on their exterior surface, which may elicit immune responses<sup>11,12</sup>
- **Chemical:** by plugging meibomian glands to alter meibum composition, potentially leading to the degeneration of conjunctival tissue<sup>6,8</sup>



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#### Collarettes

In this frontal view, focus on the composition and location of collarettes, at the base of the eyelash follicle.

#### Cross-section of eyelash

In this cross section, focus on the D. folliculorum mites burrowing into the epithelial cell lining, leading to inflammation at the base of the eyelash follicle.

## Symptoms



## Symptoms



### Identifying common clinical features of Demodex blepharitis

**Common symptoms of Demodex blepharitis include:**<sup>10,11</sup>

- Itchy eyes
- Dry eyes
- Watery eyes
- Missing or misdirected eyelashes
- Lid margin inflammation
- Lid erythema

In an observational study of 311 patients across 24 ophthalmic and optometric centers throughout the United States, over 50% of patients experienced symptoms of Demodex blepharitis for at least 4 years.<sup>11</sup>



The section below is enhanced with AR content. Look for the button with the icon on the left to begin the AR experience.



**Can you spot the common symptoms of Demodex blepharitis?**

Open in AR for a closer look. Zoom in on the model or move your device closer to see the symptoms located around the eye.

## Diagnosis



## Diagnosis



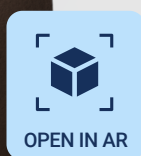
### Identifying Demodex blepharitis through slit lamp examination

Demodex blepharitis can be diagnosed during a standard slit lamp exam, as collarettes are visible when the patient looks down, exposing the base of lashes on the upper lid.<sup>12</sup>

Collarettes may be missed during a slit lamp exam even with a lid lift if a patient is looking straight ahead.<sup>14</sup>



The section below is enhanced with AR content. Look for the button with the icon on the left to begin the AR experience.



Labels

#### Can you spot the collarettes?

Open in AR for a closer look. Zoom in on the model or move your device closer to see the collarettes located at the base of the lashes. Note that collarettes are much clearer when the patient is asked to look down during a slit lamp exam.

## Patient Impact

## Patient Impact



### Demodex blepharitis negatively impacts daily quality of life

**Patients with Demodex blepharitis experience both symptoms and an impact on daily activities.**

In an observational study of 311 patients throughout 24 ophthalmic and optometric centers across the United States, approximately half of patients reported itchy eyes and dry eyes as frequently bothersome symptoms.<sup>13</sup> Furthermore, approximately one quarter of patients worried that Demodex blepharitis caused their eyes or eyelids to have a negative appearance to others.<sup>13</sup>

There are no FDA-approved prescription treatments for Demodex blepharitis. There is an unmet need to help treat this condition.<sup>4,14</sup>



## Summary



## Summary



In this module, you have learned about the prevalence and pathological features of Demodex blepharitis, as well as how to diagnose this condition during a routine eye exam.

**The AR exploration experience also helped you understand:**

- The importance of patients looking down during a slit lamp exam to identify collarettes and diagnose Demodex blepharitis
- The high prevalence of Demodex blepharitis patients that come into eyecare clinics



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