What does the term **Entropion** mean?
What does the term **Entropion** mean? It means the eyelid margin is turning inward.
What does the term **Entropion** mean?
It means the eyelid margin is turning **inward**

What does the term **Ectropion** mean?

![Image of an eye](www.EyePlastics.com)
What does the term **Entropion** mean?
It means the eyelid margin is turning **inward**

What does the term **Ectropion** mean?
It means the eyelid margin is turning **outward**
The Plastics book identifies six general causes of entropion and/or ectropion. What are they? (Note that while most apply to both entropion and ectropion, a few apply only to one or the other.)

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**Categories**

- Congenital
- Involutional
- Paralytic
- Cicatricial
- Mechanical
- Acute Spastic
Q

Of the six, which can result in entropion?

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*Of the six, which can result in ectropion?*
Let's drill down on cicatricial changes
In a nutshell, what is the pathogenesis of…
--Cicatrical ectropion?
In a nutshell, what is the pathogenesis of…
--Cicatricial ectropion? Scarring of the lid's anterior lamella causes it (the anterior lamella) to shorten, which in turn causes the lid margin to turn outward.
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Note this subtle-but-crucial difference!
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This one too!
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‘Anterior lamella’? ‘Posterior lamella’? How many layers does an eyelid have?
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‘*Anterior lamella*’? ‘*Posterior lamella*’? How many layers does an eyelid have? Well, the lids have a number of layers (the precise count depends on whether it’s an upper vs lower lid, as well as the distance from the margin at which one does the counting).
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Anterior:
Skin and orbicularis muscle

Posterior:
Tarsal plate and conjunctiva

Cicatricial E_{n}ctropion
‘Anterior lamella’? ‘Posterior lamella’? How many layers does an eyelid have?

Well, the lids have a number of layers (the precise count depends on whether it’s an upper vs lower lid, as well as the distance from the margin at which one does the counting). However, from a surgical perspective, at the level of the tarsal plates it’s useful to think of them as having two—an anterior lamella, and a posterior lamella.
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What structures comprise each lamella?
Anterior: ?
Posterior: 
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What structures comprise each lamella?
Anterior: Skin and orbicularis muscle
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Cicatricial Ectropion

Eyelid lamellae
What about beyond the tarsal plates, ie, above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations?

**Anterior lamella**
- Skin
- orbicularis muscle

**Posterior lamella**
- Tarsal plate
- conjunctiva

What is the pathogenesis of Cicatricial Ectropion?
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**Three: Anterior, middle and posterior**

What structures comprise each lamella?
- **Anterior:** Skin and orbicularis muscle
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What about beyond the tarsal plates, ie, above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations? Three: Anterior, middle and posterior.

**Cicatricial Ectropion**

- **Anterior lamella**: Skin and orbicularis muscle
- **Posterior lamella**: Tarsal plate and conjunctiva

Middle lamella

---

**What structures comprise each lamella?**

- **Anterior**: Skin and orbicularis muscle
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**at the level of the tarsal plates**
What about beyond the tarsal plates, ie, above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations?
Three: Anterior, middle and posterior

What structures comprise each of these three lamellae beyond the tarsal plates?
--The anterior lamella...
-- middle lamella
-- posterior lamella

Start here

Anterior lamella

Middle lamella

Posterior lamella

Cicatricial Ectropion

Cicatricial Ectropion

What structures comprise each lamella?
Anterior: Skin and orbicularis muscle?
Posterior: Tarsal plate and conjunctiva

What about beyond the tarsal plates, ie, above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations?

Middle lamella

Beyond the location of the tarsal plate, the plate itself isn't part of the posterior lamella (duh), so in these areas the posterior lamella consists only of the conjunctiva.
What about beyond the tarsal plates, i.e., above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations? Three: Anterior, middle and posterior.

What structures comprise each of these three lamellae beyond the tarsal plates?

- The anterior lamella...doesn’t change; it’s still skin and orbicularis

- The newly-arisen middle lamella is composed of the eyelid retractors and orbital septum, as well (in the lower lid) of the eyelid fat pads

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Anterior: Skin and orbicularis muscle!
Posterior: Tarsal plate and conjunctiva?
What about beyond the tarsal plates, i.e., above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations?
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Finally! What does an eyelid have?
As well as the distance from the margin at which one does the counting. However, from a surgical perspective, at the level of the tarsal plates, it’s useful to think of them as having two--an anterior lamella, and a posterior lamella.

Cicatricial Ectropion

Scarring of the lid’s anterior lamella causes it (the anterior lid margin) to turn outward.
Scarring of the lid’s posterior lamella causes it (the posterior lid margin) to turn inward.

Middle lamella: ?
Q/A

What about beyond the tarsal plates, ie, above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations?
Three: Anterior, middle and posterior

What structures comprise each of these three lamellae beyond the tarsal plates?
--The anterior lamella...doesn’t change; it’s still skin and orbicularis
--As for the newly-arisen middle lamella...it is composed of the

---two words--- and ---two diff words---

--Beyond the location of the tarsal plate, the plate itself isn’t part of the posterior lamella (duh), so in these areas the posterior lamella...consists only of the conj

Cicatricial Ectropion

What about beyond the tarsal plates?
---at the level of the tarsal plates---

Anterior: Skin and orbicularis muscle!
Posterior: Tarsal plate and conjunctiva!

Middle lamella: ?
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What structures comprise each lamella? Anterior: Skin and orbicularis muscle! Posterior: Tarsal plate and conjunctiva!

Cicatricial Ectropion

Middle lamella: Eyelid retractors, orbital septum
What about beyond the tarsal plates, ie, above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations? Three: Anterior, middle and posterior.

What structures comprise each of these three lamellae beyond the tarsal plates?

- The **anterior lamella**…doesn’t change; it’s still skin and orbicularis muscle!
- As for the newly-arisen **middle lamella**…it is composed of the eyelid retractors and orbital septum, as well as (in the lower lid) the eyelid fat pads.
- Beyond the location of the tarsal plate, the plate itself isn’t part of the posterior lamella (duh), so in these areas the **posterior lamella**… consists only of the conjunctiva.

---

### Cicatricial Ectropion

Cicatricial ectropion occurs when scarring occurs on the anterior lamella, causing it to shorten which makes the lid margin to turn outward.

Cicatricial entropion occurs when scarring occurs on the posterior lamella, causing it to shorten which makes the lid margin to turn inward.

What does an eyelid have?
- It’s important to note that the number of layers depends on whether it’s an upper vs lower lid, as well as the distance from the margin at which one does the counting. However, from a surgical perspective, it’s useful to think of them as having two—an anterior lamella, and a posterior lamella.

---

**Middle lamella:** Eyelid retractors, orbital septum

**Posterior lamella:** Tarsal plate and conjunctiva!
What about beyond the tarsal plates, ie, above it in the upper lid, and below it in the lower? How many lamella are conceptualized in these locations? Three: Anterior, middle and posterior.

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What structures comprise each lamella?

**Anterior**: Skin and orbicularis muscle!
**Posterior**: Tarsal plate and conjunctiva!

Cicatricial Ectropion

Cicatricial Ectropion

Cicatricial Entropion
Cicatricial Ectropion

Eyelid lamellae below the tarsal plate in the lower lid
Let's look at cicatricial ectropion in more detail.
Common causes of cicatricial ectropion:
Cicatricial Ectropion

Common causes of cicatricial ectropion:
- Trauma
- Burn
- Iatrogenic
- Actinic skin changes
- Inflammatory disease
- Rosacea
Cicatricial Ectropion

Cicatricial ectropion
Managing cicatricial ectropion of the lower lid involves three steps:

1) **Release/relax**… *(finish the thought)*
2)
3)
Managing cicatricial ectropion of the lower lid involves three steps:

1) **Release/relax**... the traction caused by the cicatrix
2) 
3)
Managing cicatricial ectropion of the lower lid involves three steps:
1) **Release/relax** … the traction caused by the cicatrix
2) **Lengthen** … *ditto*
3)
Managing cicatricial ectropion of the lower lid involves three steps:

1) **Release/relax**…the traction caused by the cicatrix
2) **Lengthen**…the lid *vertically* (with a FTSG) *(full-thickness skin graft)*
Managing cicatricial ectropion of the lower lid involves three steps:

1) **Release/relax**...the traction caused by the cicatrix
2) **Lengthen**...the lid *vertically* (with a FTSG)
3) **Shorten**...(ditto)
Managing cicatricial ectropion of the lower lid involves three steps:

1) **Release/relax**...the traction caused by the cicatrix
2) **Lengthen**...the lid *vertically* (with a FTSG)
3) **Shorten**...the lid *horizontally* (with a lateral tarsal strip)
Cicatricial Ectropion

Cicatricial ectropion: Pre- and post-repair
Managing cicatricial ectropion of the lower lid involves three steps:
1) **Release/relax** …the traction caused by the cicatrix
2) **Lengthen** …the lid ***vertically*** (with a FTSG)
3) **Shorten** …the lid ***horizontally*** (with a lateral tarsal strip)

**Q**

Which of these steps are involved in repair of **UPPER lid cicatricial ectropion**?
Managing cicatricial ectropion of the lower lid involves three steps:

1) Release/relax…the traction caused by the cicatrix
2) Lengthen…the lid vertically (with a FTSG)
3) Shorten…the lid horizontally (with a lateral tarsal strip)

Which of these steps are involved in repair of UPPER lid cicatricial ectropion? 1 and 2, but not 3: The upper lid generally does not suffer horizontal laxity, so tightening is not required.
Now let's look at cicatricial entropion
In another nutshell, what is the pathogenesis of cicatricial entropion?
In another nutshell, what is the pathogenesis of cicatricial entropion?

Cicatricial Entropion

Vertical tarsoconjunctival contracture → in-rotation of the lid margin

Q/A

Start with this one

three words

two-words of the two words
In another nutshell, what is the pathogenesis of cicatricial entropion? Vertical tarsconjunctival contracture → of the
In another nutshell, what is the pathogenesis of cicatricial entropion?

Vertical tarsoconjunctival contracture → in-rotation of the

two words

finally
In another nutshell, what is the pathogenesis of cicatricial entropion? 

Vertical tarsocconjunctival contracture → in-rotation of the lid margin
In another nutshell, what is the pathogenesis of cicatricial entropion? **How does this lead to cornea problems?**

- **Vertical tarsal conjunctival contracture** → **in-rotation of the lid margin** → **cornea problems**

*answer these simultaneously*
In another nutshell, what is the pathogenesis of cicatricial entropion? How does this lead to cornea problems?

Vertical tarsal conjunctival contracture $\rightarrow$ in-rotation of the lid margin $\rightarrow$ in-rotation of the eyelashes $\rightarrow$ cornea problems
In another nutshell, what is the pathogenesis of cicatricial entropion? How does this lead to cornea problems?

Vertical tarsalconjunctival contracture $\rightarrow$ in-rotation of the lid margin $\rightarrow$ in-rotation of the eyelashes $\rightarrow$ cornea problems

‘In-rotation of the eyelashes’? Why not just say ‘trichiasis’?
In another nutshell, what is the pathogenesis of cicatricial entropion? How does this lead to cornea problems?

Vertical tarsal conjunctival contracture → in-rotation of the lid margin → in-rotation of the eyelashes → cornea problems

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Huh? But the lashes are touching the cornea--isn’t that the definition of trichiasis?
In another nutshell, what is the pathogenesis of cicatricial entropion? How does this lead to cornea problems?

**Vertical tarsalconjunctival contracture → in-rotation of the lid margin → in-rotation of the eyelashes → cornea problems**

‘In-rotation of the eyelashes’? Why not just say ‘trichiasis’?
Because trichiasis is not present

_Huh? But the lashes are touching the cornea--isn’t that the definition of trichiasis? No, it isn’t. Trichiasis is defined as the inward-directing of lashes that originate from a normally-positioned lid margin._
In another nutshell, what is the pathogenesis of cicatricial entropion? How does this lead to cornea problems?

Vertical tarsocconjunctival contracture → in-rotation of the lid margin → in-rotation of the eyelashes → cornea problems

‘In-rotation of the eyelashes’? Why not just say ‘trichiasis’? Because trichiasis is not present.

Huh? But the lashes are touching the cornea--isn’t that the definition of trichiasis? No, it isn’t. Trichiasis is defined as the inward-directing of lashes that originate from a normally-positioned lid margin. In any form of entropion (ie, not just cicatricial), the position of the lid margin is rotated inward, and therefore not normal. Thus, the term trichiasis, while often employed, is technically incorrect.
In another nutshell, what is the pathogenesis of cicatricial entropion? How does this lead to cornea problems?

Vertical tarsal conjunctival contracture → in-rotation of the lid margin → in-rotation of the eyelashes → cornea problems

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Technically incorrect, sure. But in fairness, many clinicians aren’t this persnickety about the term *trichiasis*--and neither are the BCSC books. So this is not the hill you want to die on when taking the Boards.
Q

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How does distichiasis differ from trichiasis?
In trichiasis, the lashes are growing from their usual location (albeit in an abnormal direction), whereas in distichiasis, lashes are growing from meibomian gland orifices.

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Cicatricial Entropion

Distichiasis: Lashes arising from MG orifices
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Is distichiasis congenital, or acquired?

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Is distichiasis congenital, or acquired?
It can be either.

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When evaluating cicatricial entropion, for what crucial question must an adequate answer be determined?
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When evaluating cicatricial entropion, for what crucial question must an adequate answer be determined?
That question is: What is the underlying etiology of the cicatrix—that is, what caused the scarring in the first place?
In another nutshell, what is the pathogenesis of *cicatricial entropion*? How does this lead to cornea problems?

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*When evaluating cicatricial entropion, for what crucial question must an adequate answer be determined?*

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*What is the DDx for cicatricial entropion?*
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*What is the DDx for cicatricial entropion?* Glad you asked…
• Common causes of cicatricial entropion:
  
  - OCP
  - SJS
  - Trachoma
  - Trauma
  - Sarcoid
  - Iatrogenic (e.g., post Fasanella-Servat)
Cicatricial Entropion

- Common causes of cicatricial entropion:
  - Ocular cicatricial pemphigoid (OCP)
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Cicatricial entropion
Cicatricial entropion in OCP
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If the cause is inflammatory, make sure that process is completely quiescent before attempting repair!
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What is the causative organism in trachoma? C trachomatis serotypes A, B, C

Where does trachoma rank as a cause of blindness worldwide?
It is the most common cause of infectious blindness

Where in the world is trachoma prevalent?
The Middle East, South Asia, Africa

Is trachoma primarily a follicular, or papillary conjunctivitis?
Follicular

Where do the follicles tend to occur?
On the superior palpebral conjunctiva, and the superior limbal region
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The cornea—it is scarred, and covered by a pannus.
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When limbal follicles scar, what classic eponymous exam finding results? 
Herbert’s pits

Where do the follicles tend to occur? 
On the superior palpebral conj, and the **superior limbal region**
Cicatricial Entropion

Trachoma: Herbert’s pits
Cicatricial Entropion

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Herbert’s pits

When upper-lid tarsal follicles scar, what classic eponymous exam finding results?

Where do the follicles tend to occur?
On the superior palpebral conjunctiva and the superior limbal region
Common causes of cicatrical entropion:

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- Stevens-Johnson syndrome (SJS)
- Trachoma
- Trauma
- Sarcoid
- Iatrogenic

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- *C. trachomatis* serotypes A,B,C

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When limbal follicles scar, what classic eponymous exam finding results?
- Herbert’s pits

When upper-lid tarsal follicles scar, what classic eponymous exam finding results?
- Arlt’s line

Where do the follicles tend to occur?
- On the superior palpebral conjunctiva and the superior limbal region
Cicatricial Entropion

Trachoma: Arlt’s line
How would you correct cicatricial entropion in cases of:

- **Mild disease:**
- **Moderate disease:**
- **Severe disease:**
How would you correct cicatricial entropion in cases of:

- **Mild disease**: *Anterior lamellar resection*
- **Moderate disease**: 
- **Severe disease**: 
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- **Mild disease**: Anterior lamellar resection
- **Moderate disease**: Tarsal fracture procedure
- **Severe disease**: Excise/replace scarred tissues
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