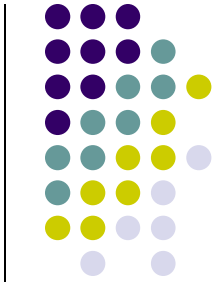
Q

Entropion *vs* **Ectropion**



What does the term

Entropion *mean?*

Ectropion

A

Entropion *vs* Ectropion

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

Ectropion

Q

Entropion *vs* **Ectropion**

What does the term ***Entropion*** *mean?*

It means the eyelid margin is turning **inward**

What does the term ***Ectropion*** *mean?*

A

Entropion *vs* **Ectropion**

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**

Q

Entropion *vs* **Ectropion**

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.)*

Entropion	Categories	Ectropion
	?	
	?	
	?	
	?	
	?	
	?	

A

Entropion *vs* Ectropion

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.)*

Entropion *Categories* Ectropion

Congenital

Involutional

Paralytic

Cicatricial

Mechanical

Acute Spastic

Q

Entropion *vs* Ectropion

Of the six, which can result in entropion?

Entropion	Categories	Ectropion
?	Congenital	
?	Involutional	
?	Paralytic	
?	Cicatricial	
?	Mechanical	
?	Acute Spastic	

A

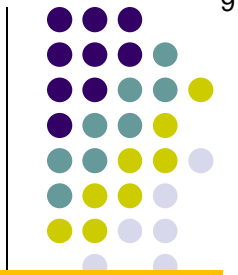
Entropion *vs* Ectropion

Of the six, which can result in entropion?

Entropion	*Categories*	*Ectropion*
Congenital	Congenital	
Involutional	Involutional	
	Paralytic	
Cicatricial	Cicatricial	
	Mechanical	
Acute Spastic	Acute Spastic	

Q

Entropion *vs* Ectropion

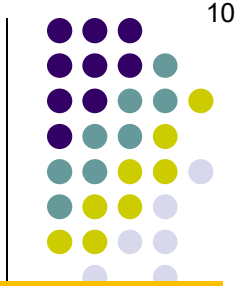


Of the six, which can result in ectropion*?*

Entropion	*Categories*	*Ectropion*
Congenital	Congenital	***?***
Involutional	Involutional	***?***
	Paralytic	***?***
Cicatricial	Cicatricial	***?***
	Mechanical	***?***
Acute Spastic	Acute Spastic	***?***

A

Entropion *vs* Ectropion



Of the six, which can result in ectropion*?*

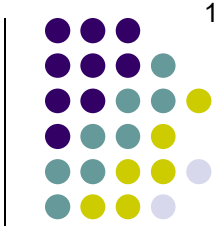
Entropion	*Categories*	*Ectropion*
Congenital	Congenital	Congenital
Involutional	Involutional	Involutional
	Paralytic	Paralytic
Cicatricial	Cicatricial	Cicatricial
	Mechanical	Mechanical
Acute Spastic	Acute Spastic	

Entropion *vs* Ectropion

Entropion	*Categories*	*Ectropion*
Congenital	Congenital	Congenital
Involutional	Involutional	**Involutional**
Cicatricial	Cicatricial	Cicatricial
	Mechanical	Mechanical
Acute Spastic	Acute Spastic	

Let's take a closer look at involutional entropion vs involutional ectropion…

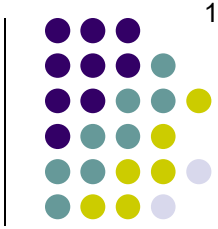
Involutional Entropion
vs
Involutional Ectropion



- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:

Q

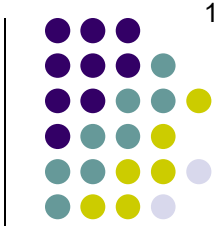
Involutional Entropion
vs
Involutional Ectropion



- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity

A

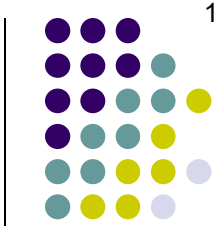
Involutional Entropion
vs
Involutional Ectropion



- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***

Q

Involutional Entropion
vs
Involutional Ectropion



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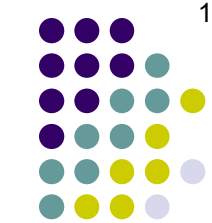
  - **Horizontal lid laxity** *BOTH*

How can you assess for horizontal laxity of the lower lid?

Q/A

Involutional Entropion
vs
Involutional Ectropion

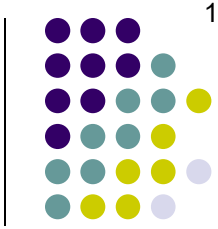


- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - **Horizontal lid laxity** *BOTH*

How can you assess for horizontal laxity of the lower lid?
Very simply: By pulling it away from the globe, ie, by [redacted] it.

A

Involutional Entropion
vs
Involutional Ectropion



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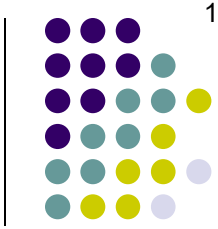
How can you assess for horizontal laxity of the lower lid?
Very simply: By pulling it away from the globe, ie, by *distracting* it.

Q

Involutional Entropion
vs
Involutional Ectropion



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How can you assess for horizontal laxity of the lower lid?
Very simply: By pulling it away from the globe, ie, by *distracting* it.
This allows assessment of lid tautness via two tests:
1) the _____ test

2) the _____ test

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
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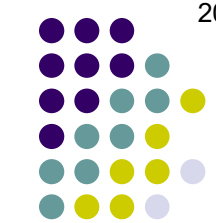
1) the **snapback** test

2) the **distraction** test

Q

Involutional Entropion
vs
Involutional Ectropion



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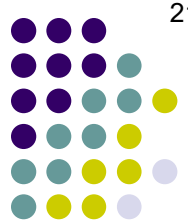
2) the **distraction** test

A

Involutional Entropion
vs
Involutional Ectropion



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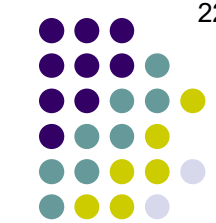
2) the **distraction** test

A

Involutional Entropion
vs
Involutional Ectropion



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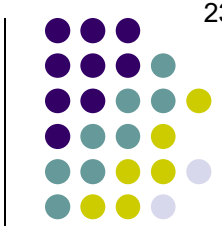
2) the **distraction** test

Q

Involutional Entropion
vs
Involutional Ectropion



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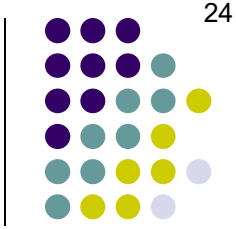
2) the **distraction** test:

Q/A

Involutional Entropion
vs
Involutional Ectropion



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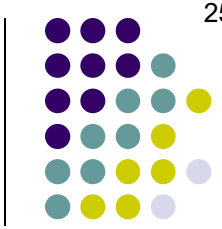
1) the **snapback** test, which is based on the fact that…A taut lower lid will re-appose the globe quickly when released, like a rubber band snapping back into place. (Try it on yourself.) If clinically significant laxity is present, the lid will re-appose the surface in a much less brisk manner.
2) the **distraction** test: If the lid can be distracted more than distance from the ocular surface, it is lax to a clinically significant degree.

A

Involutional Entropion
vs
Involutional Ectropion



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Very simply: By pulling it away from the globe, ie, by *distracting* it.
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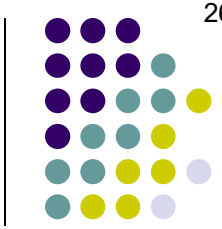
1) the **snapback** test, which is based on the fact that…A taut lower lid will re-appose the globe quickly when released, like a rubber band snapping back into place. (Try it on yourself.) If clinically significant laxity is present, the lid will re-appose the surface in a much less brisk manner.
2) the **distraction** test: If the lid can be distracted more than 6 mm from the ocular surface, it is lax to a clinically significant degree.

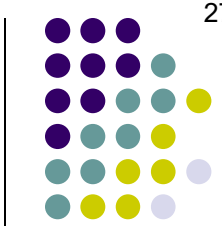
Q

Involutional Entropion
vs
Involutional Ectropion



- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors

Involutional Entropion *vs* Involutional Ectropion



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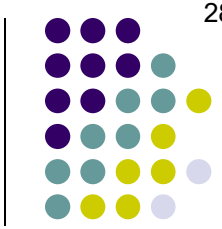
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors

Time out—before we answer this question, let's take a minute to review the anatomy of the lid retractors

Involutional Entropion *vs* Involutional Ectropion



- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Let's start with the upper lid, as its anatomy is likely more familiar.

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

[redacted] m.

Let's start with the upper lid, as its anatomy is likely more familiar.

What is the name of the muscle that is the prime retractor (elevator) of the upper lid?

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

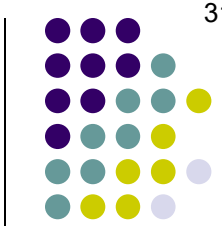
Let's start with the upper lid, as its anatomy is likely more familiar.

What is the name of the muscle that is the prime retractor (elevator) of the upper lid?

The **levator palpebrae superioris** (levator for short)

Q

Involutional Entropion
vs
Involutional Ectropion



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  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

???

Let's start with the upper lid, as its anatomy is likely more familiar.

What is the name of the muscle that is the prime retractor (elevator) of the upper lid?

The **levator palpebrae superioris** (levator for short)

What structural component of the lid is the primary recipient of the force exerted by the levator, the result of which is elevation of the lid margin?

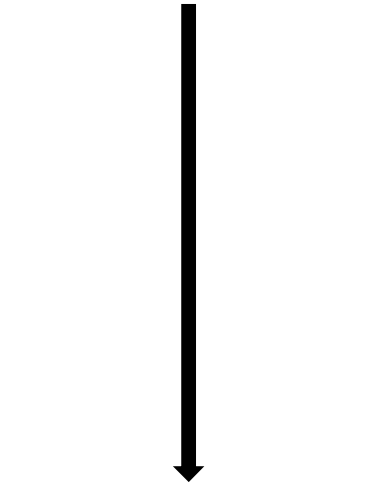
A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



Superior tarsal plate

Let's start with the upper lid, as its anatomy is likely more familiar.

What is the name of the muscle that is the prime retractor (elevator) of the upper lid?

The **levator palpebrae superioris** (levator for short)

What structural component of the lid is the primary recipient of the force exerted by the levator, the result of which is elevation of the lid margin?

The **superior tarsal plate**

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

***Levator palpebrae superioris* m.**

We know the levator will insert at (or near) the superior tarsal plate…

Superior tarsal plate

Let's start with the upper lid, as its anatomy is likely more familiar.

What is the name of the muscle that is the prime retractor (elevator) of the upper lid?

The **levator palpebrae superioris** (levator for short)

What structural component of the lid is the primary recipient of the force exerted by the levator, the result of which is elevation of the lid margin?

The **superior tarsal plate**

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

***Levator palpebrae superioris* m.**

…but from where does it originate*?*

We know the levator will insert at (or near) the superior tarsal plate…

Superior tarsal plate

Let's start with the upper lid, as its anatomy is likely more familiar.
What is the name of the muscle that is the prime retractor (elevator) of the upper lid?
The **levator palpebrae superioris** (levator for short)

What structural component of the lid is the primary recipient of the force exerted by the levator, the result of which is elevation of the lid margin?
The **superior tarsal plate**

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

***Levator palpebrae superioris* m.**

…but from where does it originate?
From the apex of the orbit

We know the levator will insert at (or near) the superior tarsal plate…

Superior tarsal plate

Let's start with the upper lid, as its anatomy is likely more familiar.
What is the name of the muscle that is the prime retractor (elevator) of the upper lid?
The **levator palpebrae superioris** (levator for short)

What structural component of the lid is the primary recipient of the force exerted by the levator, the result of which is elevation of the lid margin?
The **superior tarsal plate**

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

***Levator palpebrae superioris* m.**

…but from where does it origin
From **the apex of the orbit**

We know the levator will insert
(or near) the superior tarsal pla

Superior tarsal plate

Let's start with the upper lid, as its anatomy is likely
more familiar

There is a well-known ring-shaped structure at the apex which is related to muscle origins. What is the eponymous name of this structure?

short)

result of which is elevation of the lid margin?
The **superior tarsal plate**

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

***Levator palpebrae superioris* m.**

…but from where does it origin
From **the apex of the orbit**

We know the levator will insert
(or near) the superior tarsal pla

Superior tarsal plate

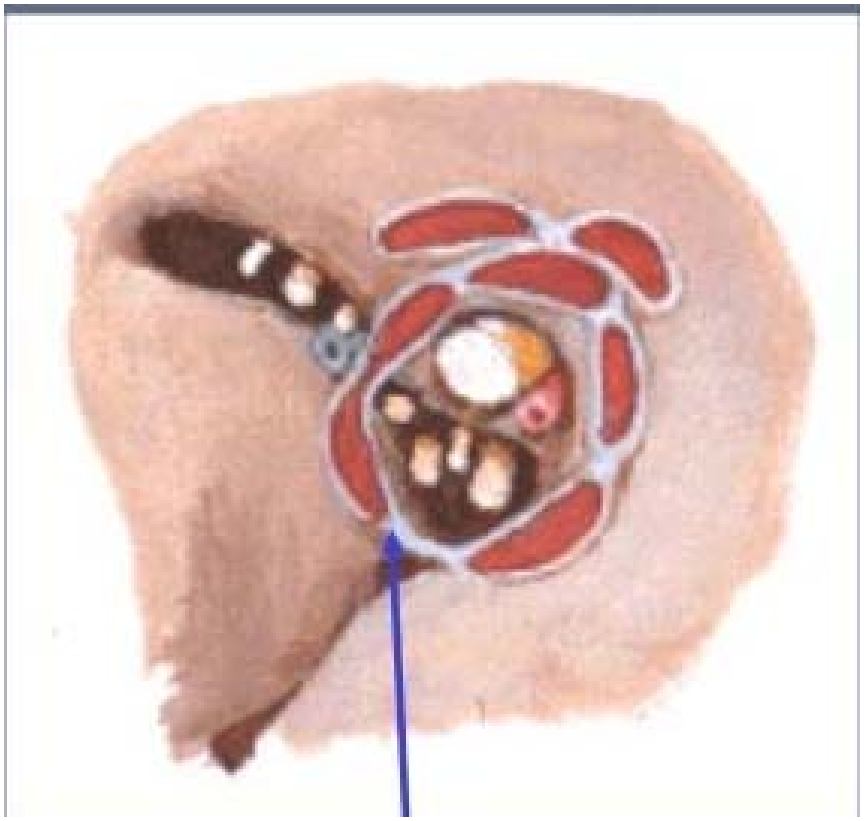
Let's start with the upper lid, as its anatomy is likely
more familiar

There is a well-known ring-shaped structure at the apex which is related to muscle origins. What is the eponymous name of this structure?
The annulus of Zinn

short)

result of which is elevation of the lid margin?
The **superior tarsal plate**

Involutional Entropion *vs* Involutional Ectropion



Annulus of Zinn

The annulus of Zinn

Q

Involutional Entropion
vs
Involutional Ectropion

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The **superior tarsal plate**

Q/A

Involutional Entropion
vs
Involutional Ectropion

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No, the levator originates from just above v below the annulus

result of which is elevation of the lid margin?
The **superior tarsal plate**

A

Involutional Entropion *vs* Involutional Ectropion

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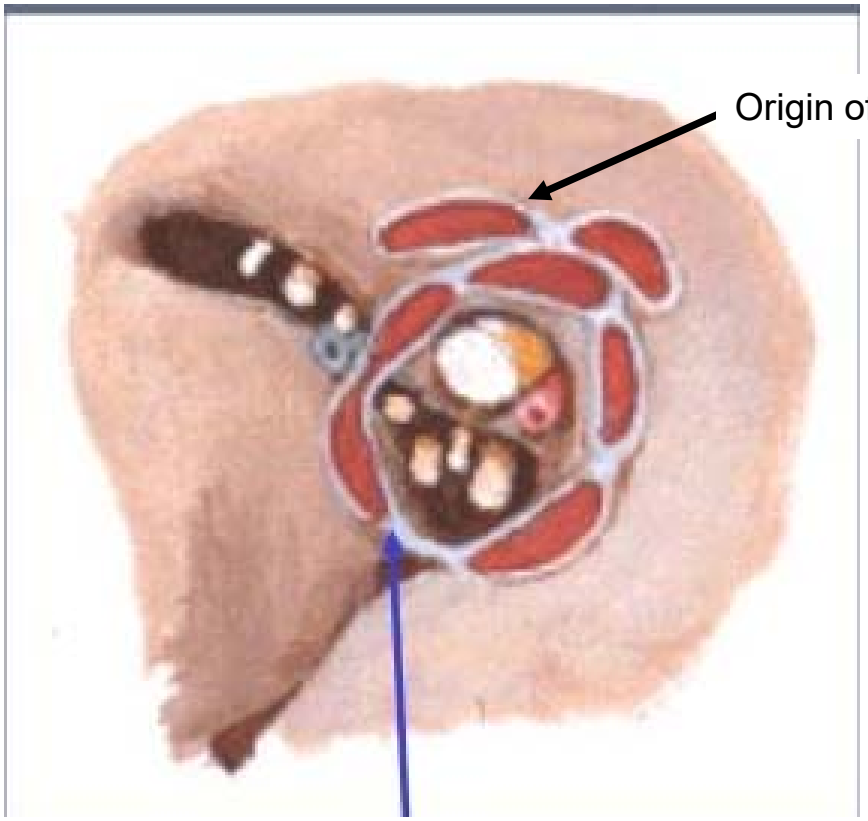
No, the levator originates from just above the annulus

result of which is elevation of the lid margin?
The **superior tarsal plate**

Involutional Entropion *vs* Involutional Ectropion



The annulus of Zinn

Q

Involutional Entropion
vs
Involutional Ectropion

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Upper-lid Retraction

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…but from where does it origin
From **the apex of the orbit**

We know the levator will insert
(or near) the superior tarsal pla

Superior tarsal plate

*OK, if not the levator, which muscles **do** give rise to the annulus of Zinn?*

There is a
apex which is related to muscle origins. What is the
eponymous name of this structure?
The annulus of Zinn

Is the levator's origin a component of the annulus of Zinn?
No, the levator originates from just above the annulus

result of which is elevation of the lid margin?
The **superior tarsal plate**

A

Involutional Entropion *vs* Involutional Ectropion

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  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

***Levator palpebrae superioris* m.**

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Superior tarsal plate

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eponymous name of this structure?
The annulus of Zinn

Is the levator's origin a component of the annulus of Zinn?
No, the levator originates from just above the annulus

*OK, if not the levator, which muscles **do** give rise to the annulus of Zinn?*
The origins of the four recti muscles comprise the annulus

Le… likely
m…
…e
…short)
…ary
result of which is elevation of the lid margin?
The **superior tarsal plate**

Q

Involutional Entropion
vs
Involutional Ectropion

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  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

The annulus encircles all or part of two foramina at the orbital apex. Which two?

…but from where does it origin
From **the apex of the orbit**

We know the levator will insert
(or near) the superior tarsal pla

Superior tarsal plate

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give
rise to the annulus of Zinn?
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result of which is elevation of the lid margin?
The **superior tarsal plate**

A

Involutional Entropion *vs* Involutional Ectropion

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  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

The annulus encircles all or part of two foramina at the orbital apex. Which two?
A portion of the superior orbital fissure, and the optic foramen (encircled in its entirety)

…but from where does it origin
From **the apex of the orbit**

We know the levator will insert
(or near) the superior tarsal pla

Superior tarsal plate

There is a
apex which is related to muscle origins. What is the
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No, the levator originates from just above the annulus

give
rise to the annulus of Zinn?
The origins of the four recti muscles comprise the annulus

result of which is elevation of the lid margin?
The **superior tarsal plate**

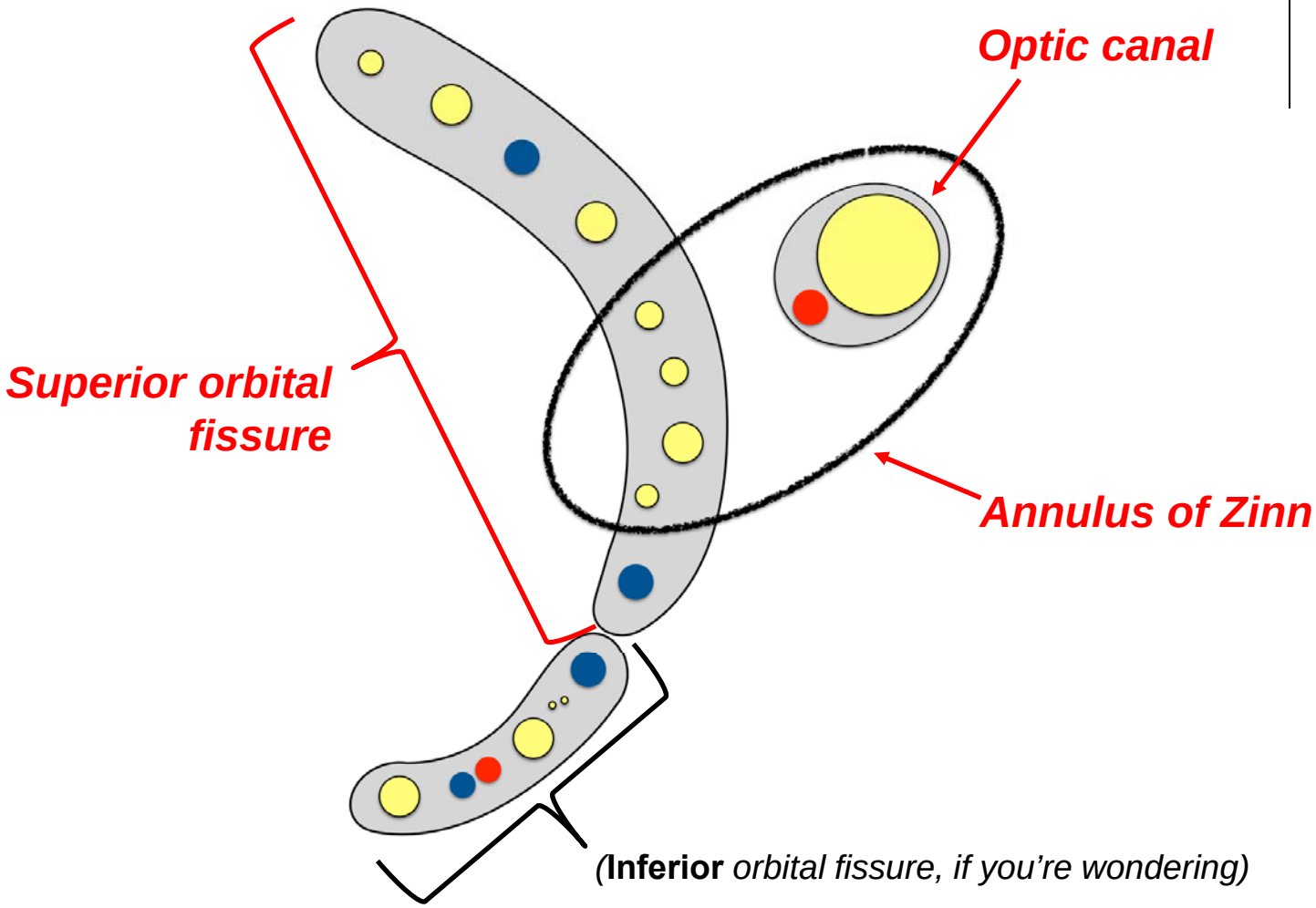
likely

e

short)

ary

Involutional Entropion
vs
Involutional Ectropion



The superior orbital fissure and the optic canal

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the patho…*opion*, lower-lid
  - Horizon…
  - Disinser…

Upper-lid

Five key ophthalmic structures pass through these foramina—and the annulus—into the orbit. What are they?

--
--
--
--
--

Enter orbit via the optic canal

Enter orbit via the superior orbital fissure

The annulus encircles all or part of ***two foramina*** *at the orbital apex. Which two?*
A portion of the superior orbital fissure, and the optic foramen (encircled in its entirety)

…but from where does it origin…
From **the apex of the orbit**

We know the levator will insert (or near) the superior tarsal pla…

Superior tarsal plate

There is a… apex which is related to muscle origins. What is the eponymous name of this structure?
The annulus of Zinn

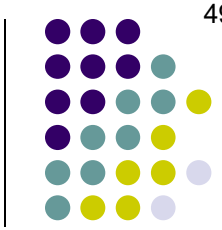
Is the levator's origin a component of the annulus of Zinn?
No, the levator originates from just above the annulus

…give rise to the annulus of Zinn?
The origins of the four recti muscles comprise the annulus

…result of which is elevation of the lid margin?
The **superior tarsal plate**

Q/A

Involutional Entropion
vs
Involutional Ectropion



- For each of the following, state whether it plays a role in the patho…*opion*, lower-lid
  - Horizon…
  - Disinser…

Five key ophthalmic structures pass through these foramina—and the annulus—into the orbit. What are they?

--The optic nerve
--The [redacted] artery
--CN3
--CN6
--The [redacted] nerve

Enter orbit via the optic canal

Enter orbit via the superior orbital fissure

Upper-lid…

The annulus encircles all or part of ***two foramina*** *at the orbital apex. Which two?*
A portion of the superior orbital fissure, and the optic foramen (encircled in its entirety)

…but from where does it origin…
From **the apex of the orbit**

We know the levator will insert …(or near) the superior tarsal pla…

Superior tarsal plate

There is a… apex which is related to muscle origins. What is the eponymous name of this structure?
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The **superior tarsal plate**

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Involutional Entropion *vs* Involutional Ectropion

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Five key ophthalmic structures pass through these foramina—and the annulus—into the orbit. What are they?

--The optic nerve
--The ophthalmic artery
--CN3
--CN6
--The nasociliary nerve

Enter orbit via the optic canal

Enter orbit via the superior orbital fissure

Upper-lid

The annulus encircles all or part of ***two foramina*** *at the orbital apex. Which two?*
A portion of the superior orbital fissure, and the optic foramen (encircled in its entirety)

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The **superior tarsal plate**

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Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the patho…opion, lower-lid
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Five key ophthalmic structures pass through these foramina—and the annulus—into the orbit. What are they?
--The optic nerve
--The ophthalmic artery
--CN3
--CN6
--The nasociliary nerve (a branch of the cranial n. nerve)

Upper-lid

*The annulus encircles all or part of **two foramina** at the orbital apex. Which two?*
A portion of the superior orbital fissure, and the optic foramen (encircled in its entirety)

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--CN6
--The nasociliary nerve (a branch of the trigeminal nerve)

Upper-lid

The annulus encircles all or part of ***two foramina*** *at the orbital apex. Which two?*
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Superior tarsal plate

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The **superior tarsal plate**

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Involutional Entropion
vs
Involutional Ectropion

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--CN3
--CN6
--The nasociliary nerve (a branch of the trigeminal nerve)
(specifically, a branch of #, aka the [redacted] division)

Upper-lid

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Involutional Entropion *vs* Involutional Ectropion

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--The optic nerve
--The ophthalmic artery
--CN3
--CN6
--The nasociliary nerve (a branch of the trigeminal nerve) (specifically, a branch of V1 , aka the ophthalmic division)

Upper-lid

The annulus encircles all or part of ***two foramina*** *at the orbital apex. Which two?*
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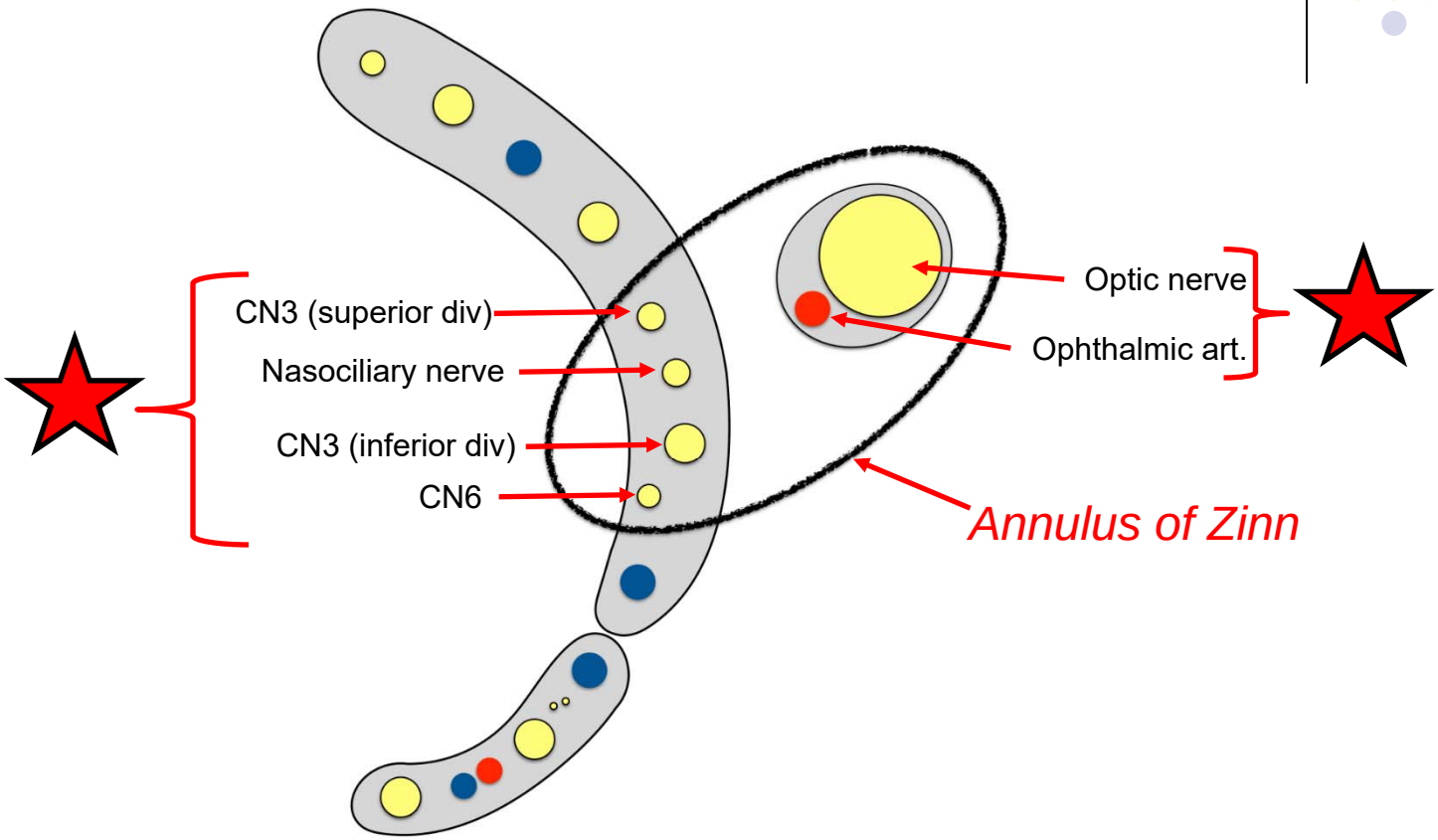
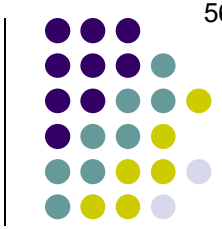
The **superior tarsal plate**

Involutional Entropion *vs* Involutional Ectropion



Key structures passing through the annulus of Zinn

Involutional Entropion *vs* Involutional Ectropion



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--CN3
--CN6
--The nasociliary nerve (a branch of the trigeminal nerve) (specifically, a branch of V1, aka the ophthalmic division)

For more on the anatomy of the orbital apex, see slide-set N19

A portion of the superior orbital fissure, and the optic foramen (encircled in its entirety)

…but from where does it origin…
From **the apex of the orbit**

We know the levator will insert (or near) the superior tarsal pla…

Superior tarsal plate

There is a… apex which is related to muscle origins. What is the eponymous name of this structure?
The annulus of Zinn

Is the levator's origin a component of the annulus of Zinn?
No, the levator originates from just above the annulus

…rise to the annulus of Zinn?
The origins of the four recti muscles comprise the annulus

…result of which is elevation of the lid margin?
The **superior tarsal plate**

Q

Involutional Entropion
vs
Involutional Ectropion

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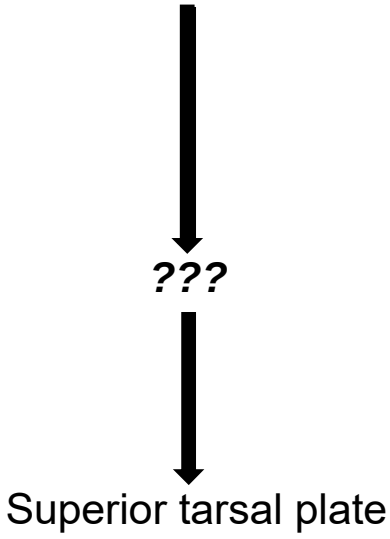
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



The levator itself doesn't attach to the tarsal plate, rather, its 'tendon' does. What is the name of this tendinous structure?

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
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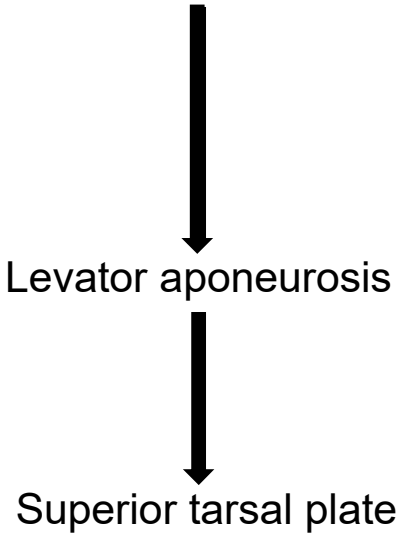
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



The levator itself doesn't attach to the tarsal plate, rather, its 'tendon' does. What is the name of this tendinous structure?
The **levator aponeurosis**

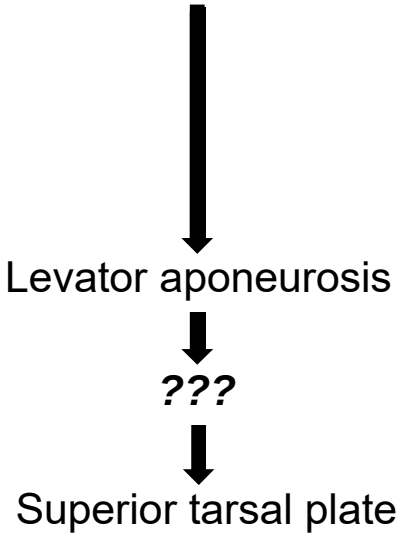
Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



The levator itself doesn't attach to the tarsal plate, rather, its 'tendon' does. What is the name of this tendinous structure?
The **levator aponeurosis**

While it is the primary upper-lid retractor, the levator is not the only one. What other muscle also retracts the upper lid?

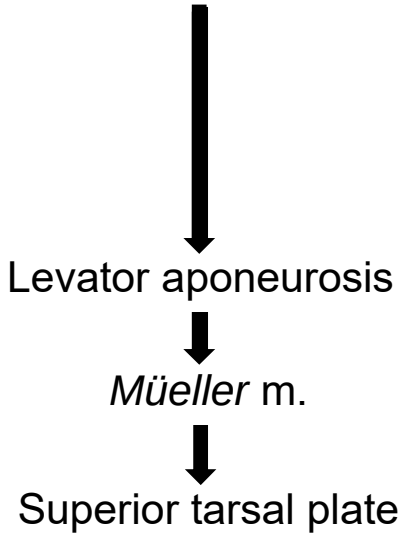
A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



The levator itself doesn't attach to the tarsal plate, rather, its 'tendon' does. What is the name of this tendinous structure?
The **levator aponeurosis**

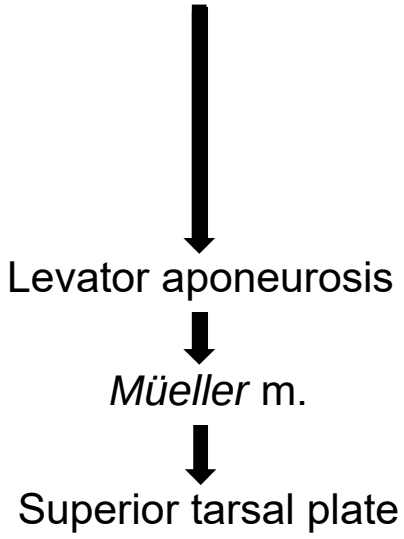
While it is the primary upper-lid retractor, the levator is not the only one. What other muscle also retracts the upper lid?
Müller's muscle

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



Note: This diagram is misleading in that it suggests the levator connects to the aponeurosis, which in turn connects to Müeller's muscle, which then connects to the tarsal plate.

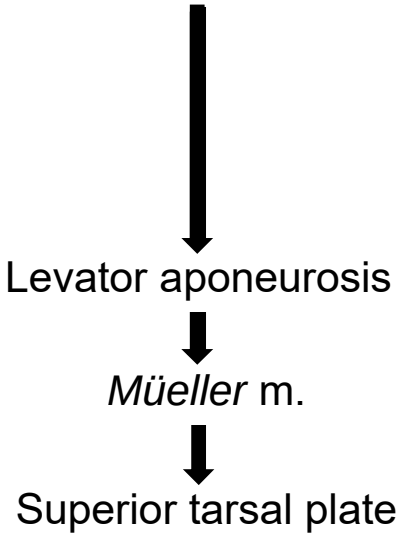
Müller's muscle

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

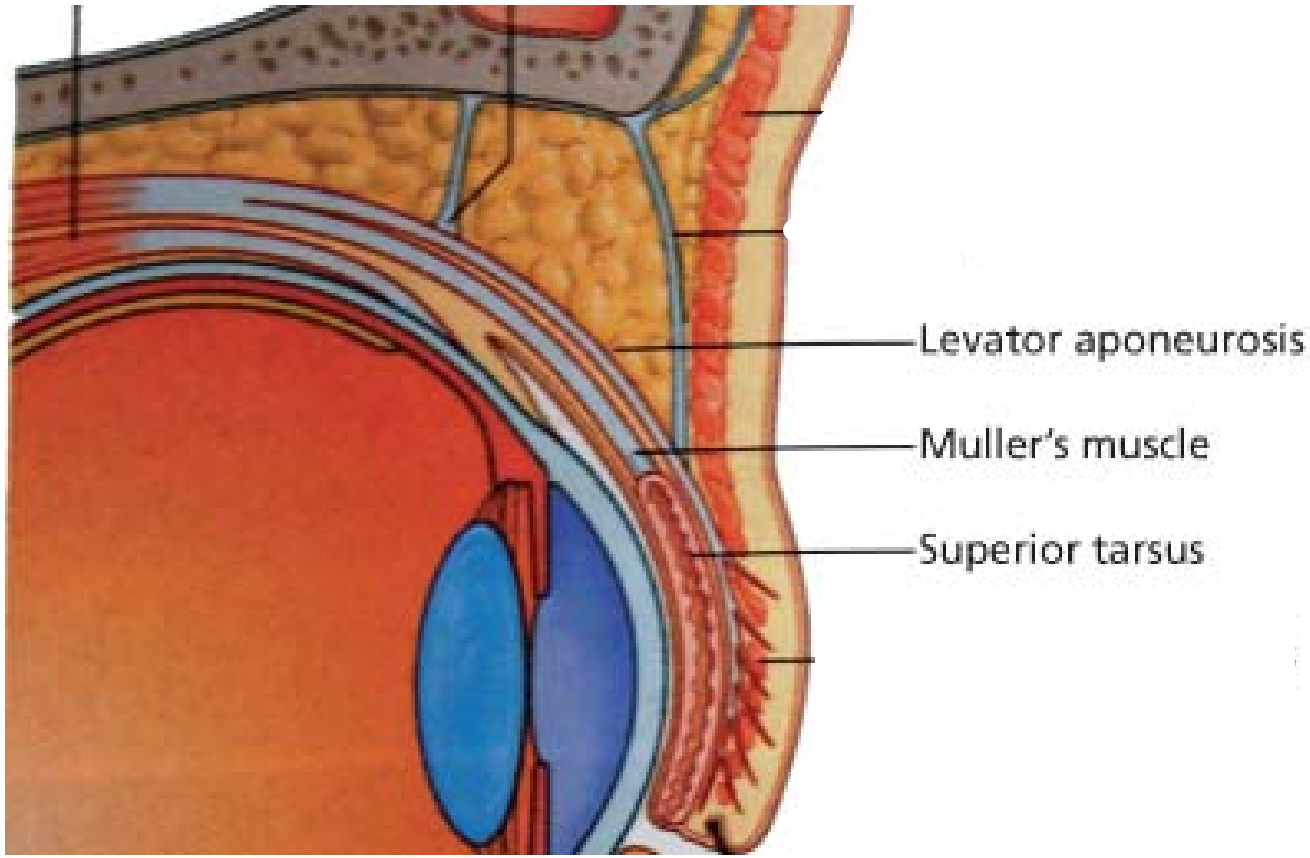
Levator palpebrae superioris m.



Note: This diagram is misleading in that it suggests the levator connects to the aponeurosis, which in turn connects to Müeller's muscle, which then connects to the tarsal plate. To be clear: At the point where the levator transitions to become aponeurosis, Müeller's arises from its undersurface, and both continue on to the tarsus *in parallel* to one another.

Müller's muscle

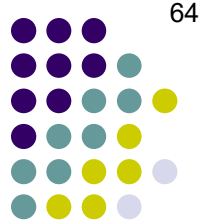
Involutional Entropion *vs* Involutional Ectropion



Müller's muscle, and the aponeurosis

Q

Involutional Entropion
vs
Involutional Ectropion



- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

↓

Levator aponeurosis

↓

Müeller m.

↓

Superior tarsal plate

Where does Müller's muscle originate?

also retracts the upper lid?

Müller's muscle

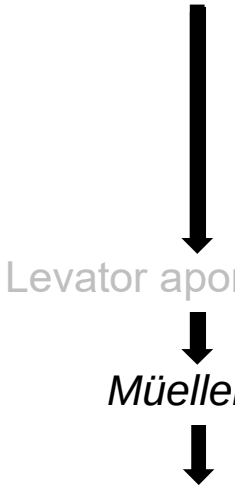
A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — ***BOTH***
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



Levator aponeurosis

Müeller m.

Superior tarsal plate

Where does Müller's muscle originate?
Deep to the distal tendon of the levator, as mentioned

also retracts the upper lid?
Müller's muscle

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — ***BOTH***
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

↓

Levator aponeurosis

↓

Müeller m.

↓

Superior tarsal plate

Where does Müller's muscle originate? Where does it insert? Deep to the distal tendon of the levator, as mentioned.

also retracts the upper lid?

Müller's muscle

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

↓

Levator aponeurosis

↓

Müeller m.

↓

Superior tarsal plate

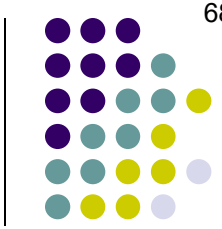
Where does Müller's muscle originate? Where does it insert? Deep to the distal tendon of the levator, as mentioned. It inserts at the superior border of the tarsal plate.

also retracts the upper lid?

Müller's muscle

Q

Involutional Entropion
vs
Involutional Ectropion



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Upper-lid Retraction

Levator palpebrae superioris m.

↓

Levator aponeurosis

↓

Müeller m.

↓

Superior tarsal plate

Where does Müller's muscle originate? Where does it insert? Deep to the distal tendon of the levator, as mentioned. It inserts at the superior border of the tarsal plate.

Are the fibers in Müller's muscle striated, or smooth?

also retracts the upper lid?

Müller's muscle

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — ***BOTH***
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Upper-lid Retraction

Levator palpebrae superioris m.

↓

Levator aponeurosis

↓

Müeller m.

↓

Superior tarsal plate

Where does Müller's muscle originate? Where does it insert? Deep to the distal tendon of the levator, as mentioned. It inserts at the superior border of the tarsal plate.

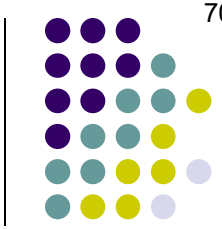
Are the fibers in Müller's muscle striated, or smooth? Smooth

also retracts the upper lid?

Müller's muscle

Q

Involutional Entropion
vs
Involutional Ectropion



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  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

↓

Levator aponeurosis

↓

Müeller m.

↓

Superior tarsal plate

Where does Müller's muscle originate? Where does it insert? Deep to the distal tendon of the levator, as mentioned. It inserts at the superior border of the tarsal plate.

Are the fibers in Müller's muscle striated, or smooth? Smooth

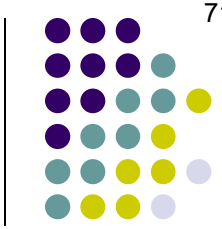
Smooth muscle fibers…What does this indicate about the innervation of Müller's muscle?

also retracts the upper lid?

Müller's muscle

Q/A

Involutional Entropion
vs
Involutional Ectropion



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  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

↓

Levator aponeurosis

↓

Müeller m.

↓

Superior tarsal plate

Where does Müller's muscle originate? Where does it insert?
Deep to the distal tendon of the levator, as mentioned. It inserts at the superior border of the tarsal plate.

Are the fibers in Müller's muscle striated, or smooth?
Smooth

Smooth muscle fibers…What does this indicate about the innervation of Müller's muscle?
It indicates its innervation is via the three words

also retracts the upper lid?
Müller's muscle

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Levator aponeurosis

Müeller m.

Superior tarsal plate

Where does Müller's muscle originate? Where does it insert?
Deep to the distal tendon of the levator, as mentioned. It inserts at the superior border of the tarsal plate.

Are the fibers in Müller's muscle striated, or smooth?
Smooth

Smooth muscle fibers…What does this indicate about the innervation of Müller's muscle?
It indicates its innervation is via the autonomic nervous system

also retracts the upper lid?

Müller's muscle

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
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Upper-lid Retraction

Levator palpebrae superioris m.

↓

Levator aponeurosis

↓

Müeller m.

↓

Superior tarsal plate

Where does Müller's muscle originate? Where does it insert?
Deep to the distal tendon of the levator, as mentioned. It inserts at the superior border of the tarsal plate.

Are the fibers in Müller's muscle striated, or smooth?
Smooth

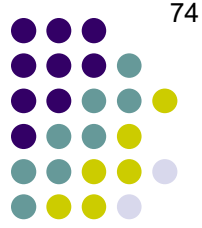
Smooth muscle fibers…What does this indicate about the innervation of Müller's muscle?
It indicates its innervation is via the autonomic nervous system (specifically in this case, by the [redacted] branch)

also retracts the upper lid?

Müller's muscle

QA

Involutional Entropion
vs
Involutional Ectropion



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  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

↓

Levator aponeurosis

↓

Müeller m.

↓

Superior tarsal plate

Where does Müller's muscle originate? Where does it insert?
Deep to the distal tendon of the levator, as mentioned. It inserts at the superior border of the tarsal plate.

Are the fibers in Müller's muscle striated, or smooth?
Smooth

Smooth muscle fibers…What does this indicate about the innervation of Müller's muscle?
It indicates its innervation is via the autonomic nervous system (specifically in this case, by the sympathetic branch)

also retracts the upper lid?

Müller's muscle

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

↓

Levator aponeurosis

↓

Müeller m.

↓

Superior tarsal plate

Hold the phone. Given that it originates at the orbital apex, how is it the levator elevates *the upper lid?*

(Rhetorical question—advance to next slide)

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — ***BOTH***
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

↓

Levator aponeurosis

↓

Müeller m.

↓

Superior tarsal plate

Hold the phone. Given that it originates at the orbital apex, how is it the levator elevates *the upper lid? That is, why doesn't contraction of the levator pull the upper lid margin* ***back****, ie, into the orbit?*

(OK, now answer)

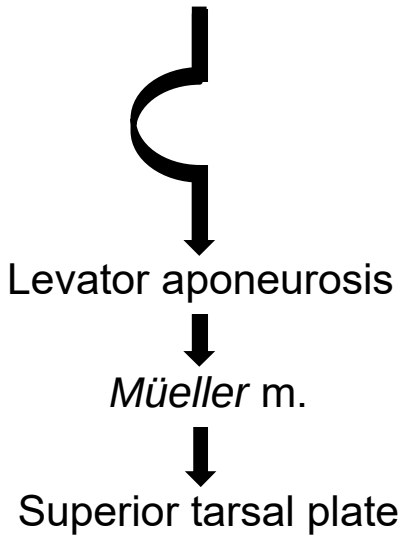
A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



Hold the phone. Given that it originates at the orbital apex, how is it the levator elevates *the upper lid? That is, why doesn't contraction of the levator pull the upper lid margin* ***back****, ie, into the orbit?*

It's because, on its way to the tarsal plate, the levator complex interacts with an orbital structure which acts as a fulcrum to change the direction of the force-vector of the levator from anterior-posterior to superior-inferior.

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
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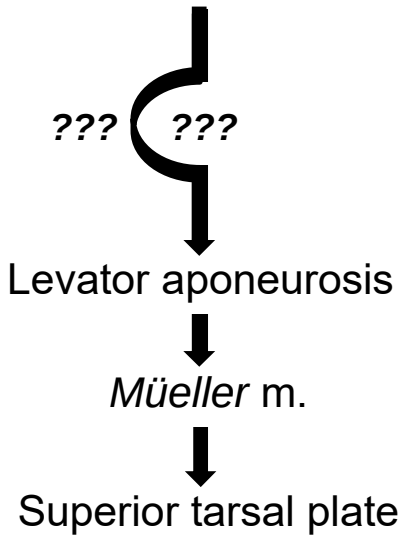
Upper-lid Retraction

Levator palpebrae superioris m.



Hold the phone. Given that it originates at the orbital apex, how is it the levator elevates *the upper lid? That is, why doesn't contraction of the levator pull the upper lid margin* ***back****, ie, into the orbit?*
It's because, on its way to the tarsal plate, the levator complex interacts with an orbital structure which acts as a fulcrum to change the direction of the force-vector of the levator from anterior-posterior to superior-inferior.

What is the eponymous name of this structure?

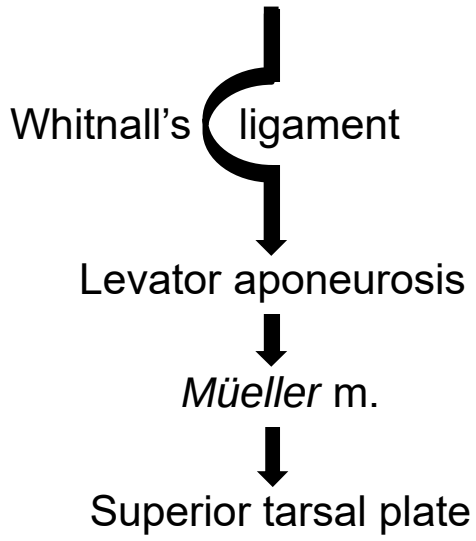
A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



Hold the phone. Given that it originates at the orbital apex, how is it the levator elevates *the upper lid? That is, why doesn't contraction of the levator pull the upper lid margin* ***back****, ie, into the orbit?*
It's because, on its way to the tarsal plate, the levator complex interacts with an orbital structure which acts as a fulcrum to change the direction of the force-vector of the levator from anterior-posterior to superior-inferior.

What is the eponymous name of this structure?
Whitnall's ligament

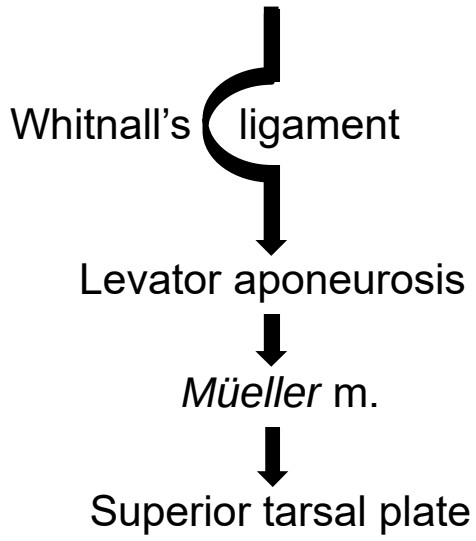
Q

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — ***BOTH***
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



Hold the phone. Given that it originates at the orbital apex, how is it the levator elevates *the upper lid? That is, why doesn't contraction of the levator pull the upper lid margin* ***back****, ie, into the orbit?*

At what point in its forward 'journey' does the levator complex encounter Whitnall's ligament?

What is the eponymous name of this structure?

Whitnall's ligament

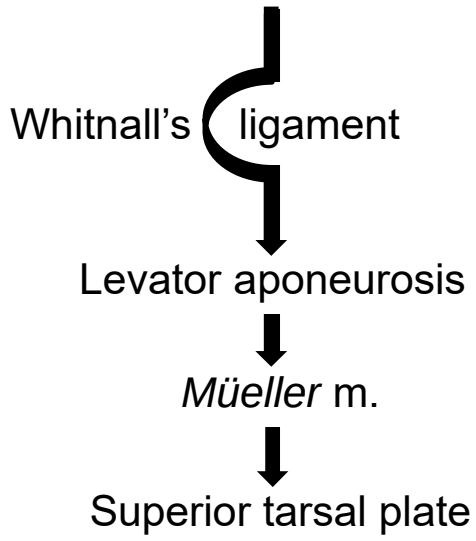
A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

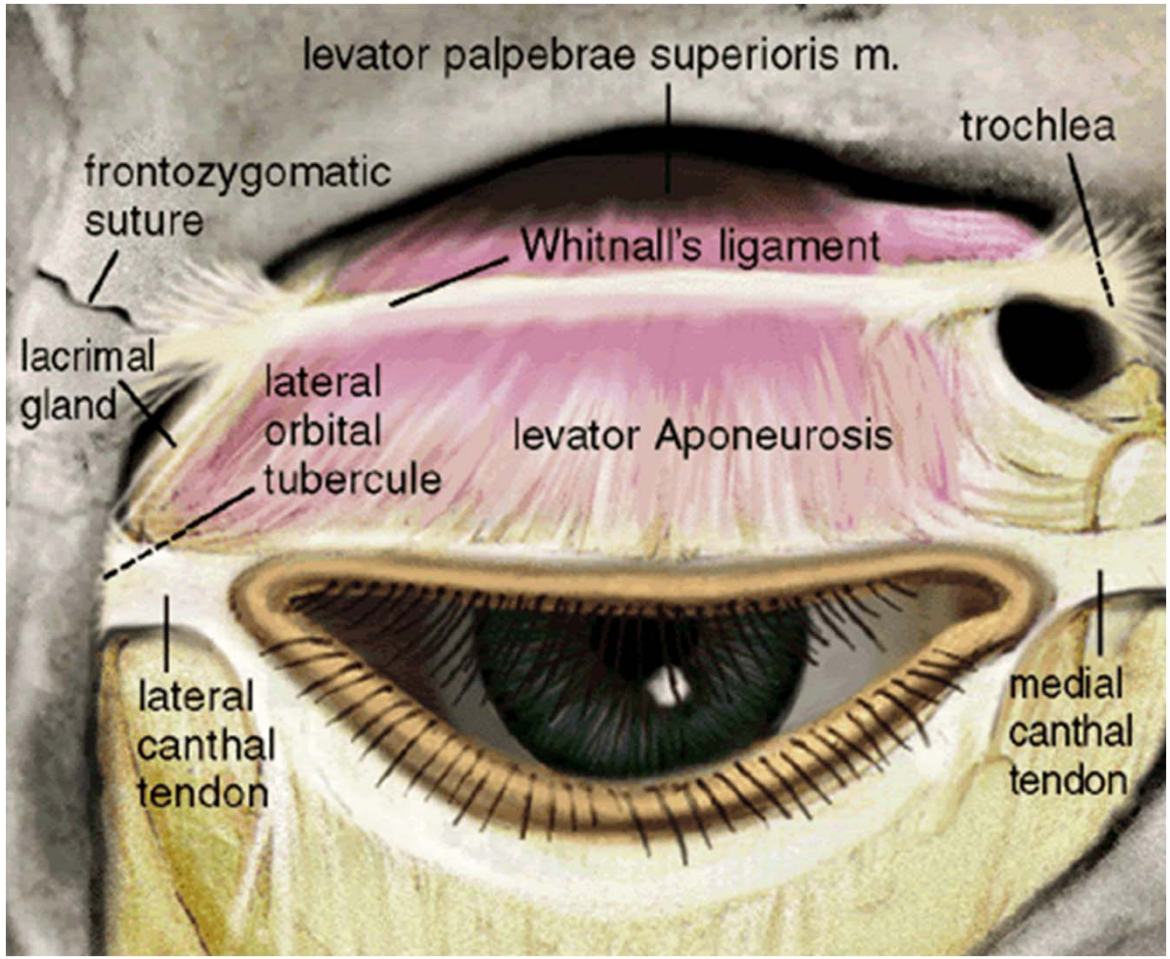


Hold the phone. Given that it originates at the orbital apex, how is it the levator elevates *the upper lid? That is, why doesn't contraction of the levator pull the upper lid margin* ***back****, ie, into the orbit?*

At what point in its forward 'journey' does the levator complex encounter Whitnall's ligament?
At the point where the complex splits into its anterior aponeurotic component and its posterior Müeller-muscle component

What is the eponymous name of this structure?
Whitnall's ligament

Involutional Entropion
vs
Involutional Ectropion



Whitnall's ligament. Note the relationship to the levator muscle, as well as to the levator aponeurosis

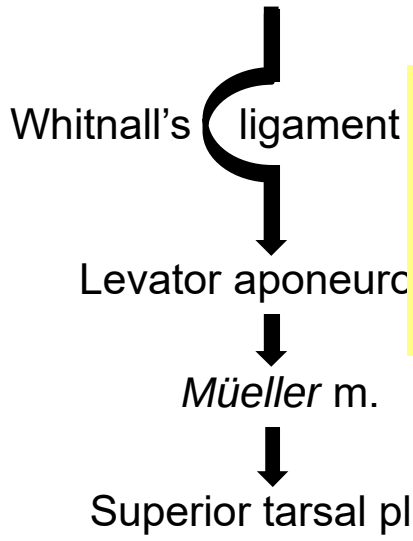
Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — ***BOTH***
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



Hold the phone. Given that it originates at the orbital apex, how is it the levator elevates *the upper lid? That is, why*

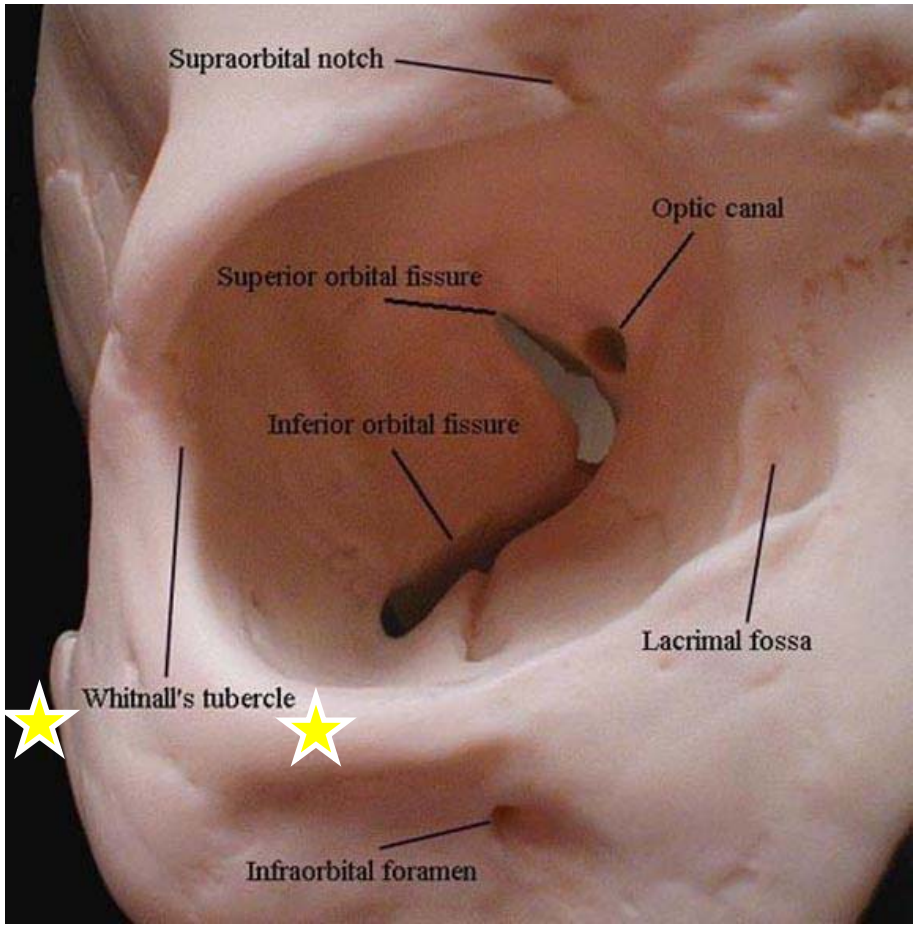
Located on the lateral wall of the orbit is a protuberance known as the lateral orbital tubercle of Whitnall.

(No question yet—keep going)

What is the eponymous name of this structure?

Whitnall's ligament

Involutional Entropion *vs* Involutional Ectropion



Whitnall's tubercle

Q/A

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — ***BOTH***
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Hold the phone. Given that it originates at the orbital apex, how is it the levator elevates *the upper lid? That is, why*

Whitnall's ligament

Located on the lateral wall of the orbit is a protuberance known as the lateral orbital tubercle of Whitnall. *Is it safe to assume that Whitnall's ligament attaches to Whitnall's tubercle?*

Levator aponeuro

Müeller m.

What is the eponymous name of this structure?

Whitnall's ligament

Superior tarsal plate

Q/A

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeuro

Müeller m.

Superior tarsal plate

Hold the phone. Given that it originates at the orbital apex, how is it the levator elevates the upper lid? That is, why

Located on the lateral wall of the orbit is a protuberance known as the lateral orbital tubercle of Whitnall. *Is it safe to assume that Whitnall's ligament attaches to Whitnall's tubercle?*
You'd think so, but no. The lateral aspect of Whitnall's ligament passes through the lacrimal gland to insert on the lateral orbital wall a mm or two above? below? behind? Whitnall's tubercle.

What is the eponymous name of this structure?
Whitnall's ligament

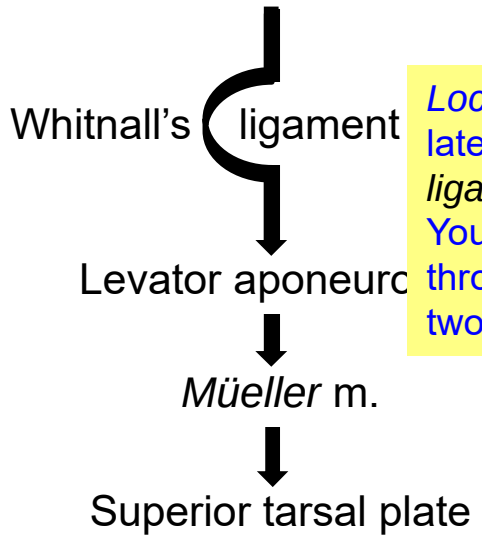
A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — ***BOTH***
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



Hold the phone. Given that it originates at the orbital apex, how is it the levator elevates *the upper lid? That is, why*

Located on the lateral wall of the orbit is a protuberance known as the lateral orbital tubercle of Whitnall. *Is it safe to assume that Whitnall's ligament attaches to Whitnall's tubercle?*
You'd think so, but no. The lateral aspect of Whitnall's ligament passes through the lacrimal gland to insert on the lateral orbital wall a mm or two **above** Whitnall's tubercle.

What is the eponymous name of this structure?
Whitnall's ligament

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

OK then—if not Whitnall's ligament, what does *attach to the lateral orbital tubercle of Whitnall?*

e phone. Given that it originates at the orbital apex, t the levator elevates *the upper lid? That is, why*

ral wall of the orbit is a protuberance known as the cle of Whitnall. *Is it safe to assume that Whitnall's ligament attaches to Whitnall's tubercle?*

You'd think so, but no. The lateral aspect of Whitnall's ligament passes through the lacrimal gland to insert on the lateral orbital wall a mm or two **above** Whitnall's tubercle.

Levator aponeuro

Müeller m.

Superior tarsal plate

What is the eponymous name of this structure?

Whitnall's ligament

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

OK then—if not Whitnall's ligament, what does *attach to the lateral orbital tubercle of Whitnall?*
The attachments are the '**4 Ls**':
--
--
--
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…e phone. Given that it originates at the orbital apex, …t the levator elevates *the upper lid? That is, why …ral wall of the orbit is a protuberance known as the …cle of Whitnall. Is it safe to assume that Whitnall's ligament attaches to Whitnall's tubercle?*
You'd think so, but no. The lateral aspect of Whitnall's ligament passes through the lacrimal gland to insert on the lateral orbital wall a mm or two **above** Whitnall's tubercle.

Levator aponeuro
↓
Müeller m.
↓
Superior tarsal plate

What is the eponymous name of this structure?
Whitnall's ligament

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

OK then—if not Whitnall's ligament, what does *attach to the lateral orbital tubercle of Whitnall?*
The attachments are the '**4 Ls**':
--The **L**ateral horn of the **L**evator aponeurosis
--The **L**ateral canthal tendon
--The check **L**igament of the **L**ateral rectus muscle
--And one more **L** we will get to shortly…

Levator aponeuro
↓
Müeller m.
↓
Superior tarsal plate

e phone. Given that it originates at the orbital apex, t the levator elevates *the upper lid? That is, why*

ral wall of the orbit is a protuberance known as the cle of Whitnall. *Is it safe to assume that Whitnall's ligament attaches to Whitnall's tubercle?*
You'd think so, but no. The lateral aspect of Whitnall's ligament passes through the lacrimal gland to insert on the lateral orbital wall a mm or two **above** Whitnall's tubercle.

What is the eponymous name of this structure?
Whitnall's ligament

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

OK then—if not Whitnall's ligament, what does *attach to the lateral orbital tubercle of Whitnall?*
The attachments
--The **L**ateral hor
--The **L**ateral car
--The check **L**iga
--And one more **L** we will get to shortly…

Speaking of the lacrimal gland…It is divided into palpebral and orbital lobes by a ligamentous structure. Is that structure the lateral aspect of Whitnall's ligament?

apex,
why
as the
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What is the eponymous name of this structure?
Whitnall's ligament

Levator aponeuro
↓
Müeller m.
↓
Superior tarsal plate

Q/A

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
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Whitnall's ligament

Levator aponeuro
↓
Müeller m.
↓
Superior tarsal plate

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
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  - Disinsertion of the **eyelid retractors**

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The attachments
--The **L**ateral hor
--The **L**ateral car
--The check **L**iga
--And one more **L** we will get to shortly…

Speaking of the lacrimal gland…It is divided into palpebral and orbital lobes by a ligamentous structure. Is that structure the lateral aspect of Whitnall's ligament?
No, the ligamentous structure that divides the lac gland into lobes is the lateral horn of the levator aponeurosis

apex,
why
as the
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two **above** Whitnall's tubercle.

Levator aponeurosis
↓
Müeller m.
↓
Superior tarsal plate

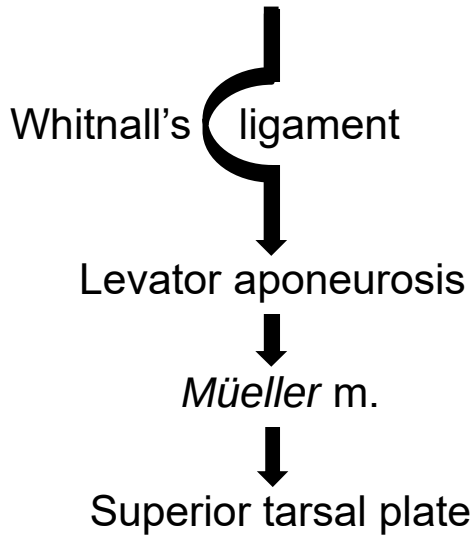
What is the eponymous name of this structure?
Whitnall's ligament

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.



Now that we've reviewed upper-lid retraction, let's turn our attention to the less-familiar anatomy of lower-*lid retraction*

Lower-lid Retraction

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller m.

Superior tarsal plate

?

What lower-lid structure is analogous to the superior tarsal plate?

Lower-lid Retraction

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller m.

Superior tarsal plate

Inferior tarsal plate

What lower-lid structure is analogous to the superior tarsal plate?
Hurr durr, the **inferior** tarsal plate

Lower-lid Retraction

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller m.

Superior tarsal plate

How does the inferior tarsal plate compare to the superior in terms of size?

Inferior tarsal plate

analogous

Hurr durr, the **inferior** tarsal plate

Lower-lid Retraction

Q/A

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller m.

Superior tarsal plate

Inferior tarsal plate

How does the inferior tarsal plate compare to the superior in terms of size?
Like the superior, the inferior is about # mm long, and about # mm thick

Lockwood's ligament

Hurr durr, the **inferior** tarsal plate

Lower-lid Retraction

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller m.

Superior tarsal plate

Inferior tarsal plate

How does the inferior tarsal plate compare to the superior in terms of size?
Like the superior, the inferior is about 30 mm long, and about 1 mm thick

Lockwood's ligament

Hurr durr, the **inferior** tarsal plate

Lower-lid Retraction

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional *entropion*, lower-lid involutional *ectropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitna

How does the inferior tarsal plate compare to the superior in terms of size?
Like the superior, the inferior is about 30 mm long, and about 1 mm thick.
However, the inferior is only about % as tall as the superior (# vs # mm)

alogous

Levator aponeurosis

Hurr durr, the **inferior** tarsal plate

Müeller m.

Superior tarsal plate

Inferior tarsal plate

Lower-lid Retraction

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitna

Inferior tarsal plate

How does the inferior tarsal plate compare to the superior in terms of size?
Like the superior, the inferior is about 30 mm long, and about 1 mm thick.
However, the inferior is only about 1/3 as tall as the superior (4 vs 12 mm)

alogous

Levator aponeurosis

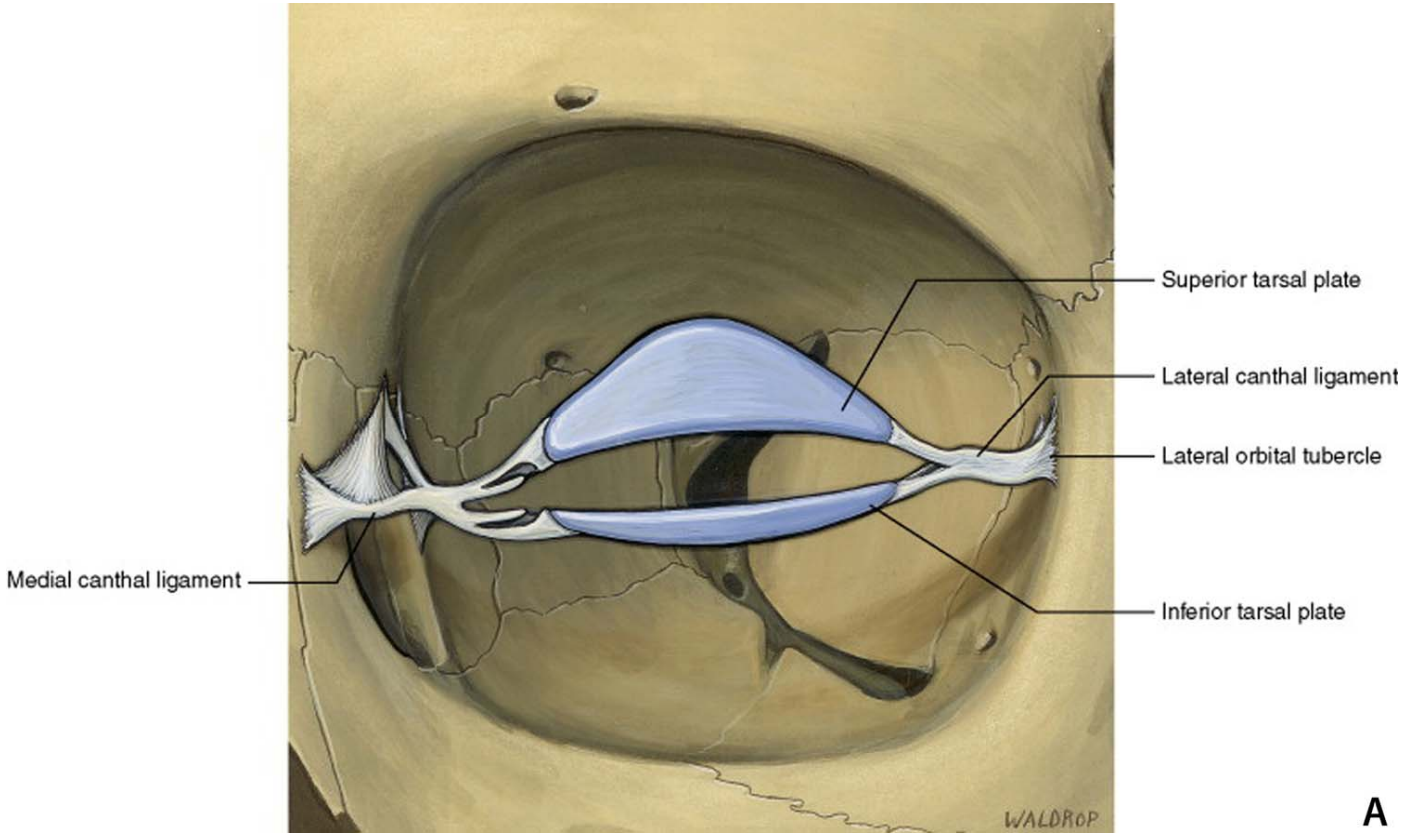
Hurr durr, the **inferior** tarsal plate

Müeller m.

Superior tarsal plate

Lower-lid Retraction

Involutional Entropion *vs* Involutional Ectropion



Tarsal plates

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Superior tarsal plate

Inferior tarsal plate

What lower-lid structure is analogous to the levator palpebrae superioris*?*

???

Lower-lid Retraction

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — ***BOTH***
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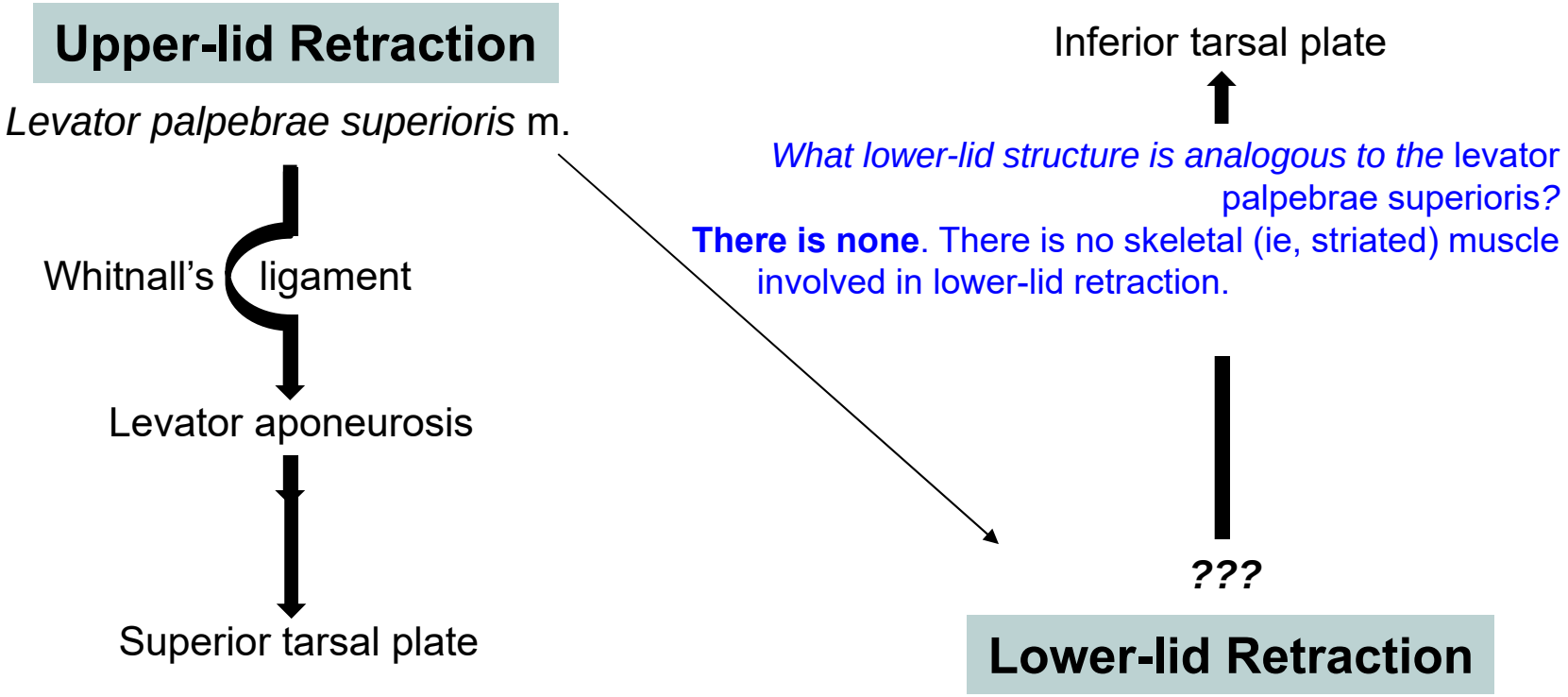


A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Superior tarsal plate

Inferior tarsal plate

What lower-lid structure is analogous to the levator palpebrae superioris*?*

There is none. There is no skeletal (ie, striated) muscle involved in lower-lid retraction. Further, the lower-lid retraction complex doesn't originate with a muscle.

???

Lower-lid Retraction

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Superior tarsal plate

Inferior tarsal plate

What lower-lid structure is analogous to the levator palpebrae superioris*?*
There is none. There is no skeletal (ie, striated) muscle involved in lower-lid retraction. Further, **the lower-lid retraction complex doesn't originate with a muscle.**

If not a muscle, from what does the lower-lid retractor complex originate?

???

Lower-lid Retraction

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Superior tarsal plate

Inferior tarsal plate

What lower-lid structure is analogous to the levator palpebrae superioris*?*

There is none. There is no skeletal (ie, striated) muscle involved in lower-lid retraction. Further, **the lower-lid retraction complex doesn't originate with a muscle.**

If not a muscle, from what does the lower-lid retractor complex originate?

From the **capsulopalpebral head**

Capsulopalpebral head

Lower-lid Retraction

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller muscle

Superior tarsal plate

Inferior tarsal plate

Is there a lower-lid equivalent of Müeller's muscle?

???

Capsulopalpebral head

Lower-lid Retraction

Q/A

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — BOTH
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller muscle

Superior tarsal plate

Inferior tarsal plate

Is there a lower-lid equivalent of Müeller's muscle?
There is. The two words muscle is a collection of smooth-muscle fibers innervated by sympathetics. (It is not nearly as well developed as Müeller's, however.)

???

Capsulopalpebral head

Lower-lid Retraction

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller muscle

Superior tarsal plate

Lower-lid Retraction

Inferior tarsal plate

Is there a lower-lid equivalent of Müeller's muscle?
There is. The **inferior tarsus** muscle is a collection of smooth-muscle fibers innervated by sympathetics. (It is not nearly as well developed as Müeller's, however.)

Inferior tarsal muscle

Capsulopalpebral head

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller m.

Superior tarsal plate

What is the lower-lid analogue for the levator aponeurosis?

Inferior tarsal plate

???

Inferior tarsal muscle

Capsulopalpebral head

Lower-lid Retraction

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — ***BOTH***
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller m.

Superior tarsal plate

What is the lower-lid analogue for the levator aponeurosis?
It is called the capsulopalpebral fascia (not to be confused with the capsulopalpebral **head** with which it is associated)

Inferior tarsal plate

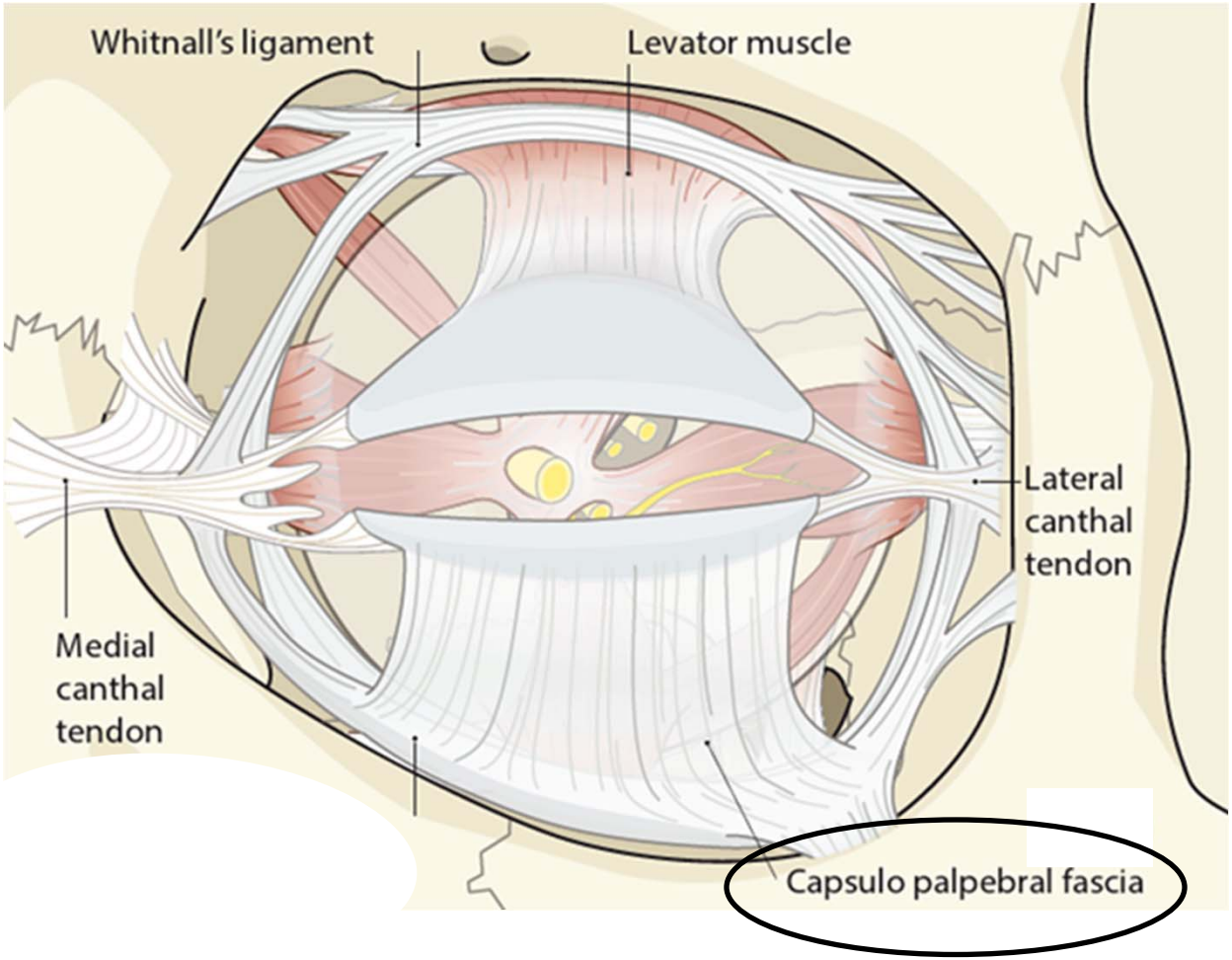
Capsulopalpebral fascia

Inferior tarsal muscle

Capsulopalpebral head

Lower-lid Retraction

Involutional Entropion
vs
Involutional Ectropion



Capsulopalpebral fascia

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — **BOTH**
  - Disinsertion of the **eyelid retractors**

pick up

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller m.

Superior tarsal plate

And as was the case in the upper lid, is there an orbital structure that redirects the force-vector of the lower-lid retractors from A-P to superior-inferior, ie, is there a lower-lid analogue to Whitnall's ligament?

Inferior tarsal plate

Capsulopalpebral fascia

?

Inferior tarsal muscle

Capsulopalpebral head

Lower-lid Retraction

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — ***BOTH*** — pick up
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller m.

Superior tarsal plate

And as was the case in the upper lid, is there an orbital structure that redirects the force-vector of the lower-lid retractors from A-P to superior-inferior, ie, is there a lower-lid analogue to Whitnall's ligament?

!

Indeed there is!

Inferior tarsal plate

Capsulopalpebral fascia

Inferior tarsal muscle

Capsulopalpebral head

Lower-lid Retraction

Q

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller m.

Superior tarsal plate

What is the name of this structure?

Inferior tarsal plate

Capsulopalpebral fascia

??? *???*

Inferior tarsal muscle

Capsulopalpebral head

Lower-lid Retraction

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — ***BOTH***
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller m.

Superior tarsal plate

What is the name of this structure? **Lockwood's ligament**

Inferior tarsal plate

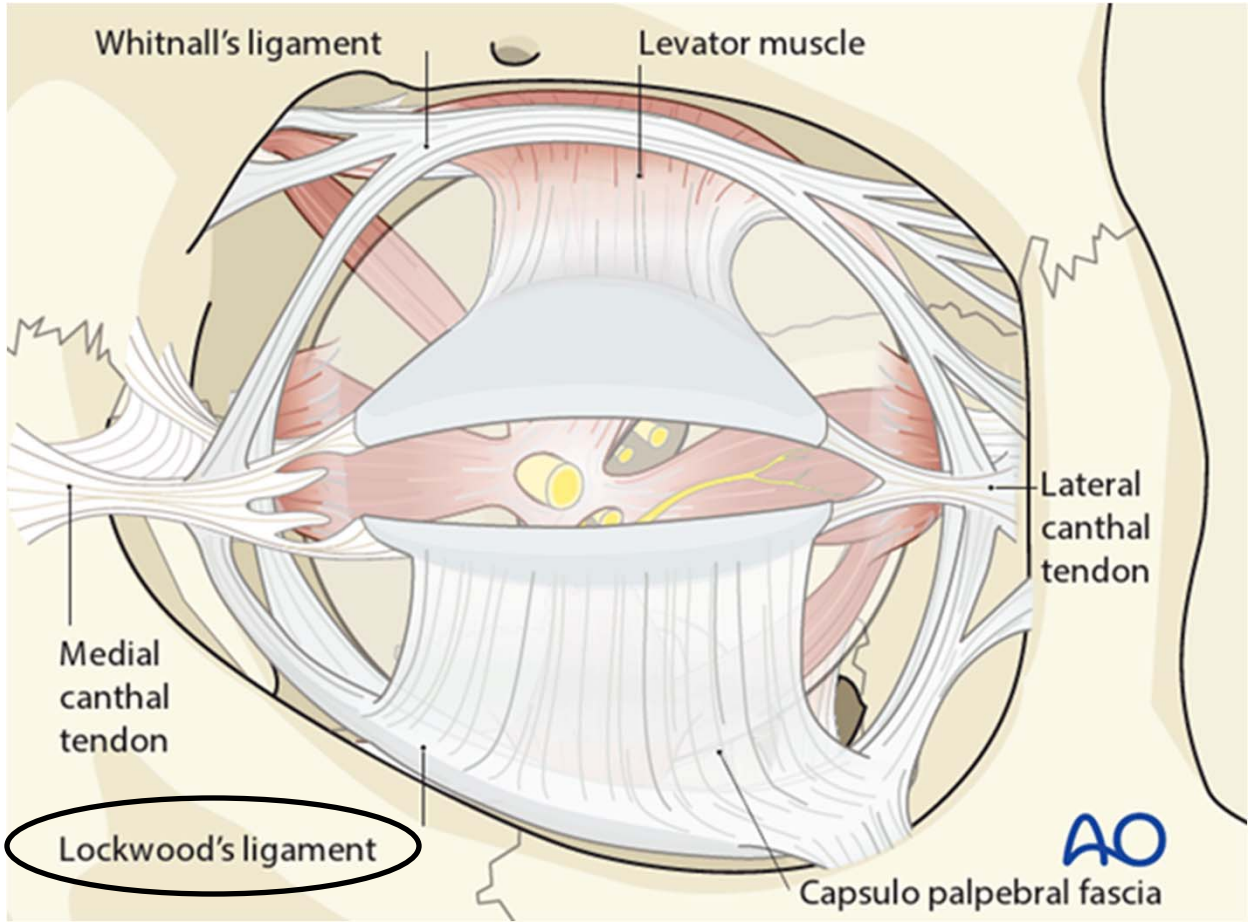
Capsulopalpebral fascia

Inferior tarsal muscle

Capsulopalpebral head

Lower-lid Retraction

Involutional Entropion
vs
Involutional Ectropion



Lockwood's ligament

Q

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeu

Müeller m.

Superior tarsal plate

Inferior tarsal plate

Capsulopalpebral fascia

Lockwood's ligament

e

Capsulopalpebral head

Lower-lid Retraction

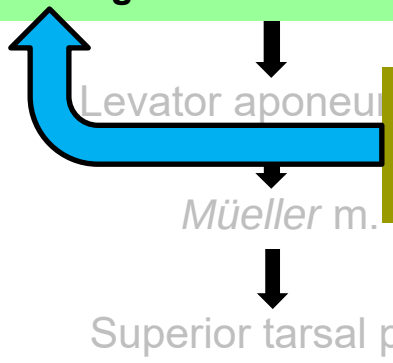
To what does Lockwood's ligament attach in the lateral orbit? (You think you don't know, but you do.)

A

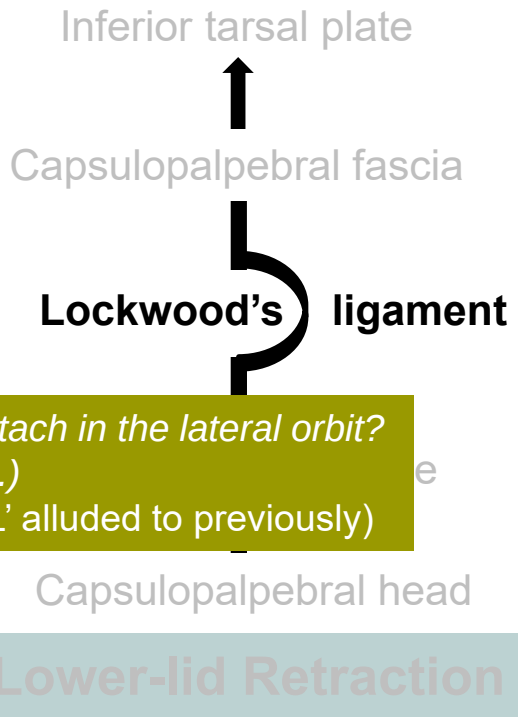
Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the **eyelid retractors**

OK then—if not Whitnall's ligament, what does *attach to the lateral orbital tubercle of Whitnall?*
The attachments are the '**4 Ls**':
--The **L**ateral horn of the **L**evator aponeurosis
--The **L**ateral canthal tendon
--The check **L**igament of the **L**ateral rectus muscle
--**Lockwood's ligament**



To what does Lockwood's ligament attach in the lateral orbit? (You think you don't know, but you do.)
To Whitnall's tubercle (it's the fourth 'L' alluded to previously)



Lower-lid Retraction

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity — *BOTH*
  - Disinsertion of the **eyelid retractors**

Upper-lid Retraction

Levator palpebrae superioris m.

Whitnall's ligament

Levator aponeurosis

Müeller m.

Superior tarsal plate

Review slide—no question

Inferior tarsal plate

Capsulopalpebral fascia

Lockwood's ligament

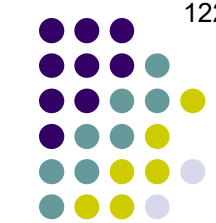
Inferior tarsal muscle

Capsulopalpebral head

Lower-lid Retraction

Q

Involutional Entropion
vs
Involutional Ectropion



- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors

(OK, now we're ready to answer this question)

A

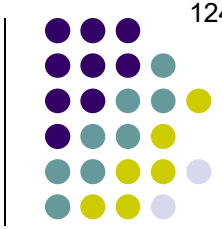
Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***

(OK, now we're ready to answer this question)

Q

Involutional Entropion
vs
Involutional Ectropion



- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - **Disinsertion** of the eyelid retractors ***BOTH***

Other than entropion or ectropion, what signs might be present that would suggest the lower-lid retractors have disinserted?

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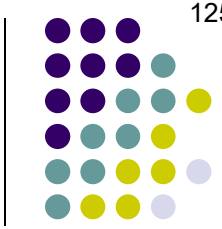
Q/A

Involutional Entropion
vs
Involutional Ectropion



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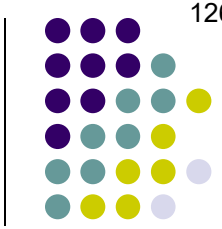
  - Horizontal lid laxity ***BOTH***
  - **Disinsertion** of the eyelid retractors ***BOTH***

Other than entropion or ectropion, what signs might be present that would suggest the lower-lid retractors have disinserted?
--The lower-lid margin might be riding high (aka two words)
--
--

A

Involutional Entropion *vs* Involutional Ectropion



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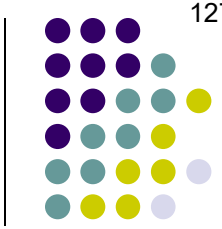
  - Horizontal lid laxity ***BOTH***
  - **Disinsertion** of the eyelid retractors ***BOTH***

Other than entropion or ectropion, what signs might be present that would suggest the lower-lid retractors have disinserted?
--The lower-lid margin might be riding high (aka *reverse ptosis*)
--
--

Q

Involutional Entropion *vs* Involutional Ectropion



- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - **Disinsertion** of the eyelid retractors ***BOTH***

Other than entropion or ectropion, what signs might be present that would suggest the lower-lid retractors have disinserted?
--The lower-lid margin might be riding high (aka *reverse ptosis*)
--The failure of the lower lid to retract during one word
--

A

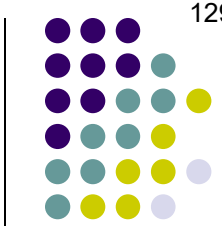
Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - **Disinsertion** of the eyelid retractors ***BOTH***

Other than entropion or ectropion, what signs might be present that would suggest the lower-lid retractors have disinserted?
--The lower-lid margin might be riding high (aka *reverse ptosis*)
--The failure of the lower lid to retract during downgaze
--

Q

Involutional Entropion *vs* Involutional Ectropion



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  - Horizontal lid laxity ***BOTH***
  - **Disinsertion** of the eyelid retractors ***BOTH***

Other than entropion or ectropion, what signs might be present that would suggest the lower-lid retractors have disinserted?
--The lower-lid margin might be riding high (aka *reverse ptosis*)
--The failure of the lower lid to retract during downgaze
--The presence of a two words beneath the conj a mm or two below the inferior border of the tarsal plate

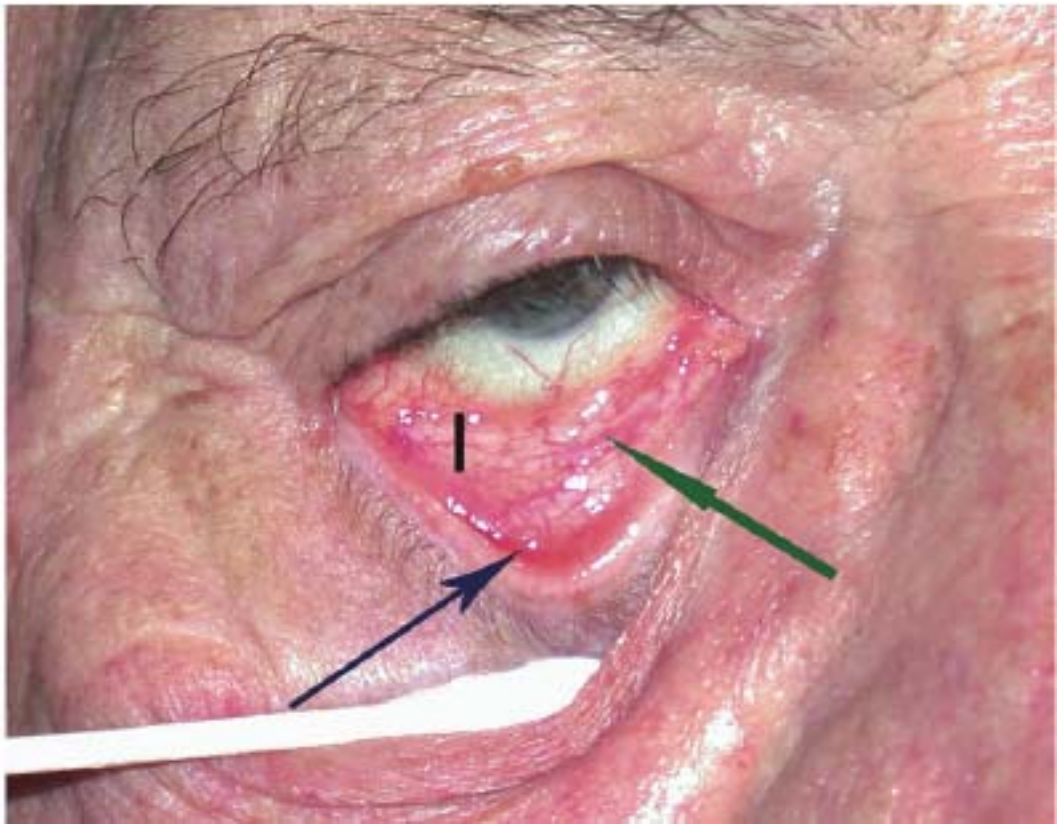
A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - **Disinsertion** of the eyelid retractors ***BOTH***

Other than entropion or ectropion, what signs might be present that would suggest the lower-lid retractors have disinserted?
--The lower-lid margin might be riding high (aka *reverse ptosis*)
--The failure of the lower lid to retract during downgaze
--The presence of a white line beneath the conj a mm or two below the inferior border of the tarsal plate

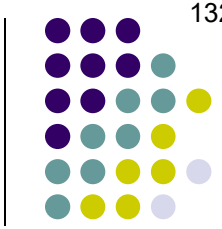
Involutional Entropion *vs* Involutional Ectropion



Patient with entropion of the right lower eyelid. Green arrow demonstrates the “white line.”

Q

Involutional Entropion *vs* Involutional Ectropion



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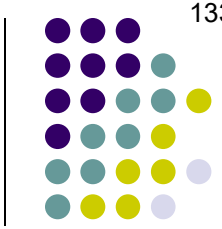
  - Horizontal lid laxity ***BOTH***
  - **Disinsertion** of the eyelid retractors ***BOTH***

Other than entropion or ectropion, what signs might be present that would suggest the lower-lid retractors have disinserted?
--The lower-lid margin might be riding high (aka *reverse ptosis*)
--The failure of the lower lid to retract during downgaze
--The presence of a white line beneath the conj a mm or two below the inferior border of the tarsal plate; this line is in fact the

lotsa words

A

Involutional Entropion *vs* Involutional Ectropion



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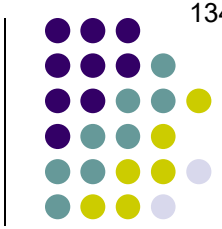
  - **Disinsertion** of the eyelid retractors ***BOTH***

Other than entropion or ectropion, what signs might be present that would suggest the lower-lid retractors have disinserted?
--The lower-lid margin might be riding high (aka *reverse ptosis*)
--The failure of the lower lid to retract during downgaze
--The presence of a white line beneath the conj a mm or two below the inferior border of the tarsal plate; this line is in fact the leading edge of the detached retractors

Q

Involutional Entropion
vs
Involutional Ectropion



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  - Horizontal lid laxity ***BOTH***
  - **Disinsertion** of the eyelid retractors ***BOTH***

Other than entropion or ectropion, what signs might be present that would suggest the lower-lid retractors have disinserted?

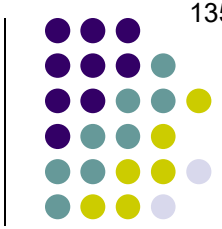
--The lower-lid margin might be riding high (aka ***reverse ptosis***)

--The failure of the lower lid to retract during downgaze

I see how disinsertion of the retractors would lead to elevation of the lower-lid margin, but how might it contribute to rotation *of the margin?*

A

Involutional Entropion *vs* Involutional Ectropion



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  - Horizontal lid laxity ***BOTH***
  - **Disinsertion** of the eyelid retractors ***BOTH***

Other than entropion or ectropion, what signs might be present that would suggest the lower-lid retractors have disinserted?

--The lower-lid margin might be riding high (aka ***reverse ptosis***)

--The failure of the lower lid to retract during [illegible]

I see how disinsertion of the retractors would lead to elevation of the lower-lid margin, but how might it contribute to rotation *of the margin?*

In this regard, it's important to note that, like the levator aponeurosis in the upper lid, the capsulopalpebral fascia does not insert solely onto the tarsal plate; rather, it sends tendrils to the skin and orbicularis *overlying* the plate. Thus, in addition to keeping the inferior tarsal plate from riding **up**, the retractor also keeps it from riding **out**, ie, away from the globe.

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - **Disinsertion** of the eyelid retractors ***BOTH***

Other than entropion or ectropion, what signs might be present that would suggest the lower-lid retractors have disinserted?

--The lower-lid margin might be riding high (aka ***reverse ptosis***)

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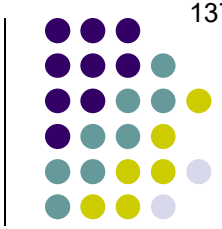
In this regard, it's important to note that, like the levator aponeurosis in the upper lid, the capsulopalpebral fascia does not insert solely onto the tarsal plate; rather, it sends tendrils to the skin and orbicularis *overlying* the plate. Thus, in addition to keeping the inferior tarsal plate from riding **up**, the retractor also keeps it from riding **out**, ie, away from the globe. You can imagine how, when coupled with horizontal lid laxity, allowing the inferior margin of the tarsal plate to drift away from the globe would let its *upper* margin rotate in (or out).

Q

Involutional Entropion
vs
Involutional Ectropion



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  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process

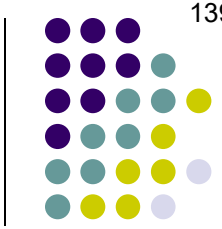
A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process ***BOTH***

Q

Involutional Entropion
vs
Involutional Ectropion



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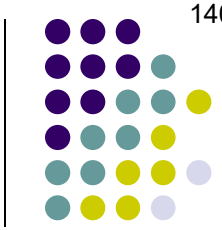
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - **Enophthalmos** due to loss of orbital fat as part of the normal aging process ***BOTH***

How does enophthalmos contribute to lower-lid malpositioning?

A

Involutional Entropion *vs* Involutional Ectropion



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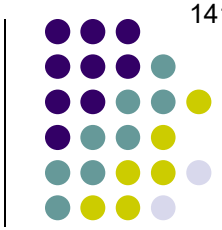
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - **Enophthalmos** due to loss of orbital fat as part of the normal aging process ***BOTH***

How does enophthalmos contribute to lower-lid malpositioning?
It's pretty straightforward. If the globe is sitting deeper in the orbit, it follows that its apposition against the lid will be less robust, which will in turn increase 'slack' in the lid.

A

Involutional Entropion *vs* Involutional Ectropion



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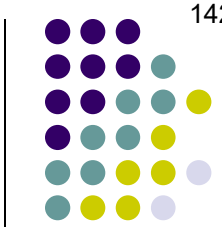
  - Disinsertion of the eyelid retractors ***BOTH***
  - **Enophthalmos** due to loss of orbital fat as part of the normal aging process ***BOTH***

How does enophthalmos contribute to lower-lid malpositioning? It's pretty straightforward. If the globe is sitting deeper in the orbit, it follows that its apposition against the lid will be less robust, which will in turn increase 'slack' in the lid. And anything that contributes to lid laxity increases the likelihood that lid-margin malpositioning will occur.

Q

Involutional Entropion
vs
Involutional Ectropion



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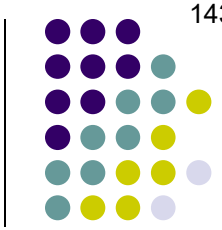
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process ***BOTH***
  - Override of the preseptal orbicularis

Involutional Entropion *vs* Involutional Ectropion



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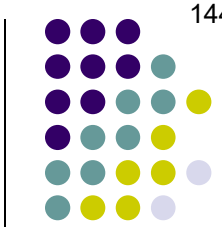
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process ***BOTH***
  - Override of the preseptal **orbicularis**

Before we answer *this* question, let's review the anatomy of the orbicularis muscle

Q

Involutional Entropion
vs
Involutional Ectropion



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  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process ***BOTH***
  - Override of the preseptal **orbicularis**

What is the basic arrangement of the fibers of the orbicularis?

A

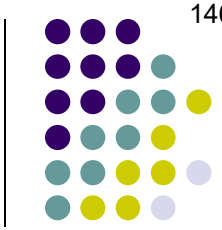
Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process ***BOTH***
  - Override of the preseptal **orbicularis**

What is the basic arrangement of the fibers of the orbicularis?
As multiple concentric bands encircling all or part of the orbital aperture

Q

Involutional Entropion
vs
Involutional Ectropion



- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process ***BOTH***
  - Override of the preseptal **orbicularis**

What is the basic arrangement of the fibers of the orbicularis?
As multiple concentric bands encircling all or part of the orbital aperture

The 'multiple bands' are organized into two basic portions—what are they?

--?
--?

A

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process ***BOTH***
  - Override of the preseptal **orbicularis**

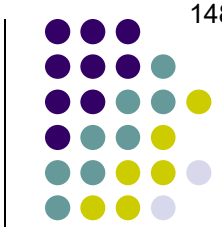
What is the basic arrangement of the fibers of the orbicularis?
As multiple concentric bands encircling all or part of the orbital aperture

The 'multiple bands' are organized into two basic portions—what are they?

--Orbital
--Palpebral

Q

Involutional Entropion
vs
Involutional Ectropion



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  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process ***BOTH***
  - Override of the preseptal **orbicularis**

What is the basic arrangement of the fibers of the orbicularis?
As multiple concentric bands encircling all or part of the orbital aperture

The 'multiple bands' are organized into two basic portions—what are they?

--Orbital
--Palpebral

There's a fundamental functional *distinction between the orbital and palpebral portions. What is it?*

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process ***BOTH***
  - Override of the preseptal **orbicularis**

What is the basic arrangement of the fibers of the orbicularis?
As multiple concentric bands encircling all or part of the orbital aperture

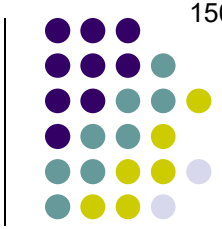
The 'multiple bands' are organized into two basic portions—what are they?

--Orbital
--Palpebral

There's a fundamental functional *distinction between the orbital and palpebral portions. What is it?*
The palpebral portion is responsible for normal blinking, whereas the orbital portion comes into play only during effortful/voluntary eye closure

Q

Involutional Entropion
vs
Involutional Ectropion



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  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process ***BOTH***
  - Override of the preseptal **orbicularis**

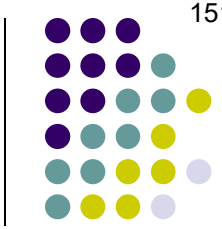
What is the basic arrangement of the fibers of the orbicularis?
As multiple concentric bands encircling all or part of the orbital aperture

The 'multiple bands' are organized into two basic portions—what are they?
How are they defined?

--Orbital: ***?***
--Palpebral: ***?***

A

Involutional Entropion *vs* Involutional Ectropion



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  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process ***BOTH***
  - Override of the preseptal **orbicularis**

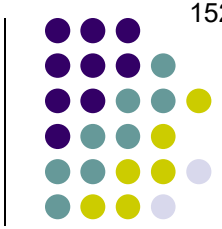
What is the basic arrangement of the fibers of the orbicularis?
As multiple concentric bands encircling all or part of the orbital aperture

The 'multiple bands' are organized into two basic portions—what are they? How are they defined?

--Orbital: The portion overlying orbital bone
--Palpebral: The portion overlying the lids

Q

Involutional Entropion
vs
Involutional Ectropion



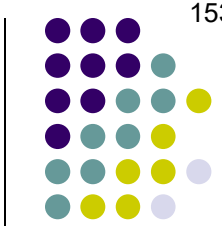
- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity ***BOTH***
  - Disinsertion of the eyelid retractors ***BOTH***
  - Enophthalmos due to loss of orbital fat as part of the normal aging process ***BOTH***
  - Override of the preseptal **orbicularis**

What is the basic arrangement of the fibers of the orbicularis?
As multiple concentric bands encircling all or part of the orbital aperture

The 'multiple bands' are organized into two basic portions—what are they?
How are they defined? *The palpebral portion is further subdivided into two parts—what are* they*?*
--Orbital: The portion overlying orbital bone
--Palpebral: The portion overlying the lids
----***?***
----***?***

A

Involutional Entropion
vs
Involutional Ectropion



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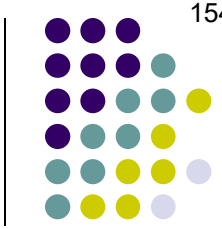
----Preseptal
----Pretarsal

Q

Involutional Entropion
vs
Involutional Ectropion



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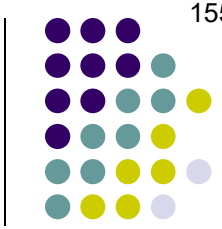
--Orbital: The portion overlying orbital bone
--Palpebral: The portion overlying the lids
----Preseptal: ***?***
----Pretarsal: ***?***

A

Involutional Entropion *vs* Involutional Ectropion



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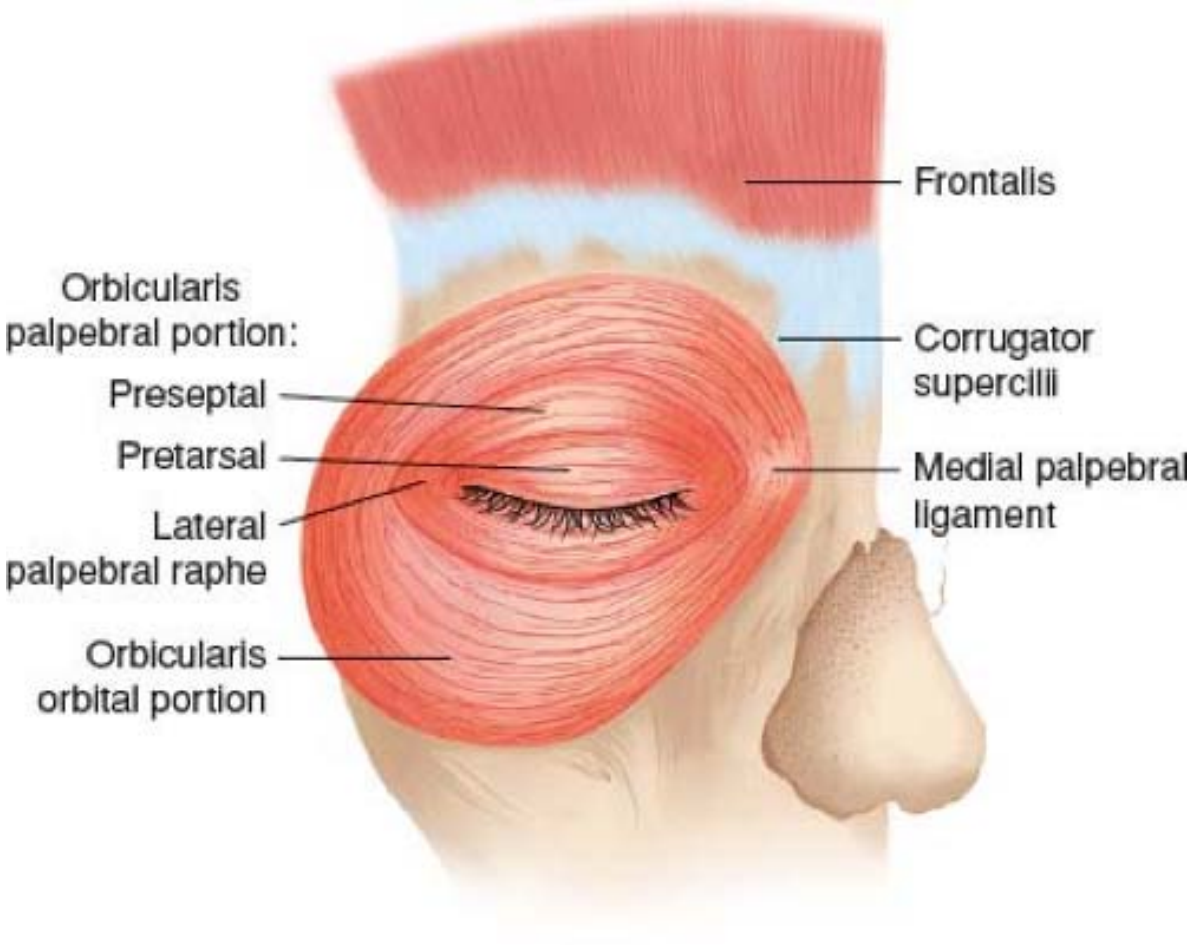
----Preseptal: The part overlying the orbital septum
----Pretarsal: The part overlying the tarsal plates

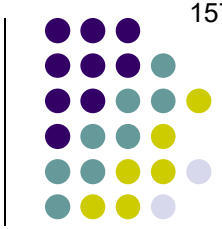
Involutional Entropion *vs* Involutional Ectropion



Orbicularis oculi

Q

Involutional Entropion
vs
Involutional Ectropion



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What is the basic arrangement of the fibers of the orbicularis?
As multiple concentric bands encircling all or part of the orbital aperture

There is a special slip of pretarsal orbicularis that is located at the surface of the lid margin. What is the eponymous name?

are they?
into two parts—

----Preseptal: The part overlying the orbital septum
----**Pretarsal**: The part overlying the tarsal plates

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - Horizontal lid laxity **BOTH**
  - Disinsertion of the eyelid retractors **BOTH**
  - Enophthalmos due to loss of orbital fat as part of the normal aging process **BOTH**
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The muscle of Riolan

are they?
into two parts—

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Q

Involutional Entropion
vs
Involutional Ectropion

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The muscle of Riolan

What is its appearance-based, non-eponymous name?

are they?
into two parts—

----Preseptal: The part overlying the orbital septum
----**Pretarsal**: The part overlying the tarsal plates

A

Involutional Entropion *vs* Involutional Ectropion

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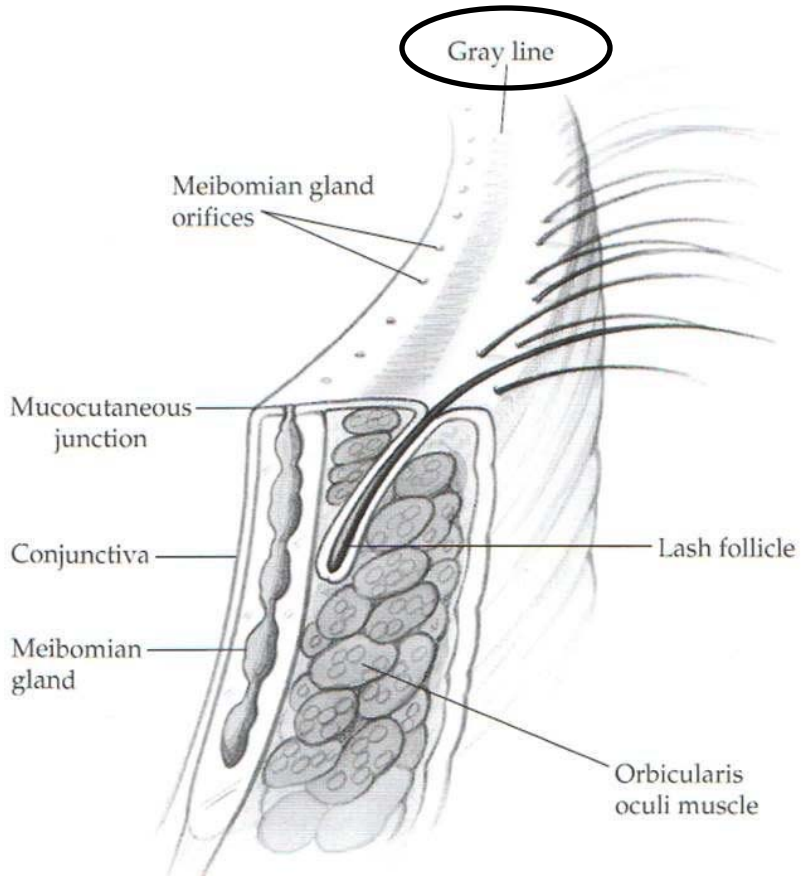
The muscle of Riolan

What is its appearance-based, non-eponymous name?
The **gray line**

are they?
into two parts—

----Preseptal: The part overlying the orbital septum
----**Pretarsal**: The part overlying the tarsal plates

Involutional Entropion *vs* Involutional Ectropion



Muscle of Riolan
(aka the *gray line*)

Q

Involutional Entropion
vs
Involutional Ectropion

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(OK, now we're ready to answer it)

A

Involutional Entropion *vs* Involutional Ectropion

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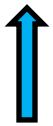

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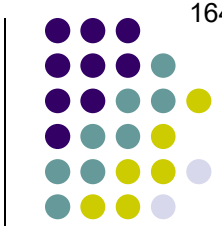
Q

Involutional Entropion
vs
Involutional Ectropion



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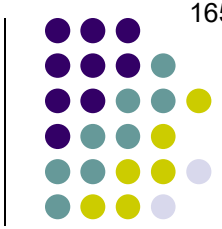
Let's unpack this, because it's really important. What does it mean to say the preseptal orbicularis 'overrides'? Overrides what?

A

Involutional Entropion *vs* Involutional Ectropion



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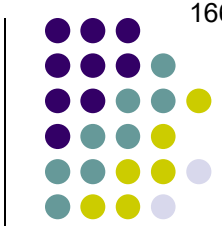
Let's unpack this, because it's really important. What does it mean to say the preseptal orbicularis 'overrides'? Overrides what?

It overrides the pre**tarsal** orbicularis, ie, it slips up from its normal anatomic location below (inferior to) the pretarsal portion to lie atop or even above it

Q

Involutional Entropion
vs
Involutional Ectropion



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OK, but how does override lead to entropion?

A

Involutional Entropion *vs* Involutional Ectropion

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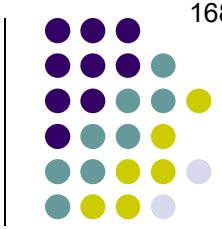
OK, but how does override lead to entropion?
Recall that these fibers are adherent to the preseptal skin overlying them. Thus, when these fibers ride up and over the tarsal plate, they bring with them tissue that belongs below the plate.

A

Involutional Entropion *vs* Involutional Ectropion



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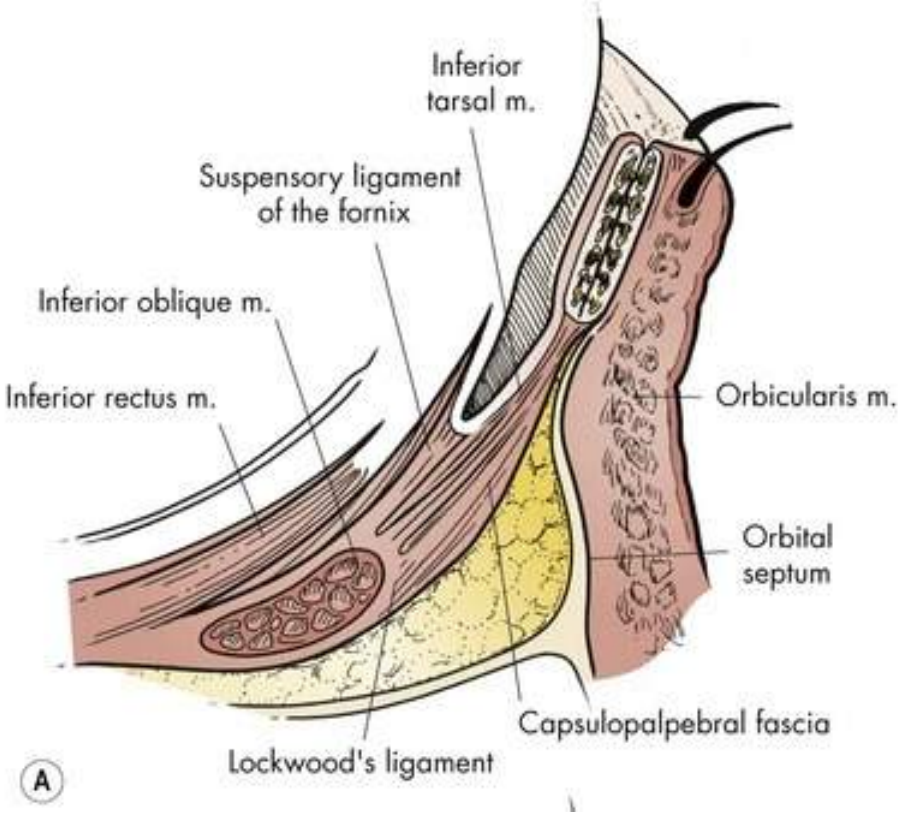
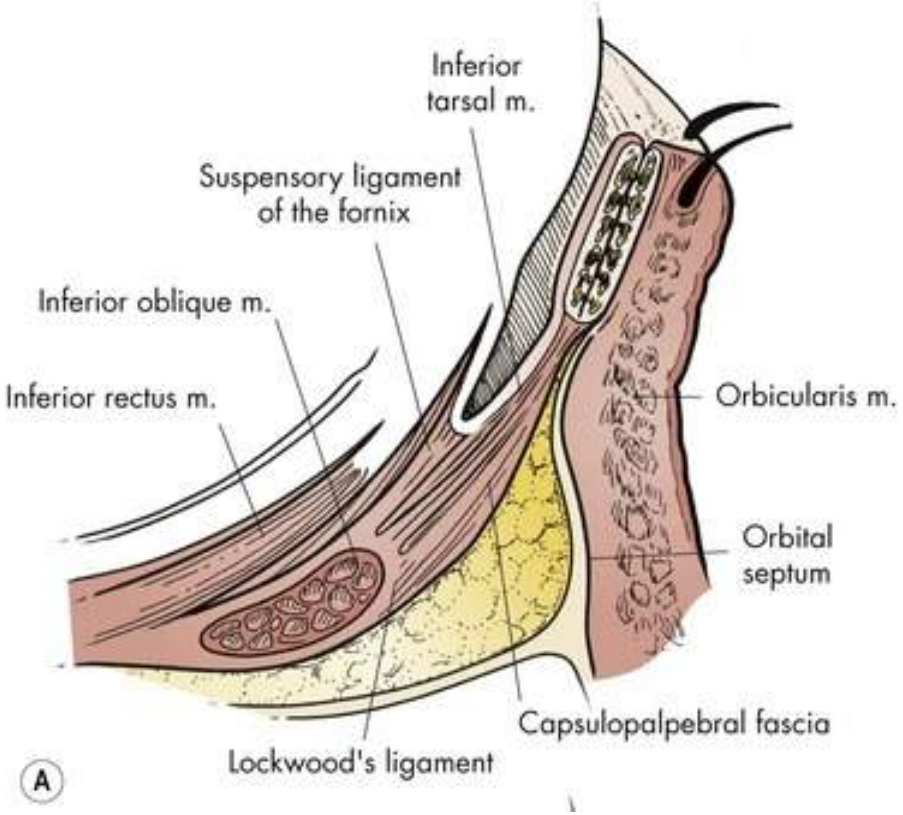
OK, but how does override lead to entropion?
Recall that these fibers are adherent to the preseptal skin overlying them. Thus, when these fibers ride up and over the tarsal plate, they bring with them tissue that belongs below the plate. This leads to the inferior border of the tarsal plate rotating **out**, and causes the superior border to rotate **in**.

Involutional Entropion *vs* Involutional Ectropion



(**A**) Normal lower eyelid anatomy. The retractors pull the lower margin of the tarsus inferiorly and posteriorly, stabilizing the eyelid.

Involutional Entropion *vs* Involutional Ectropion



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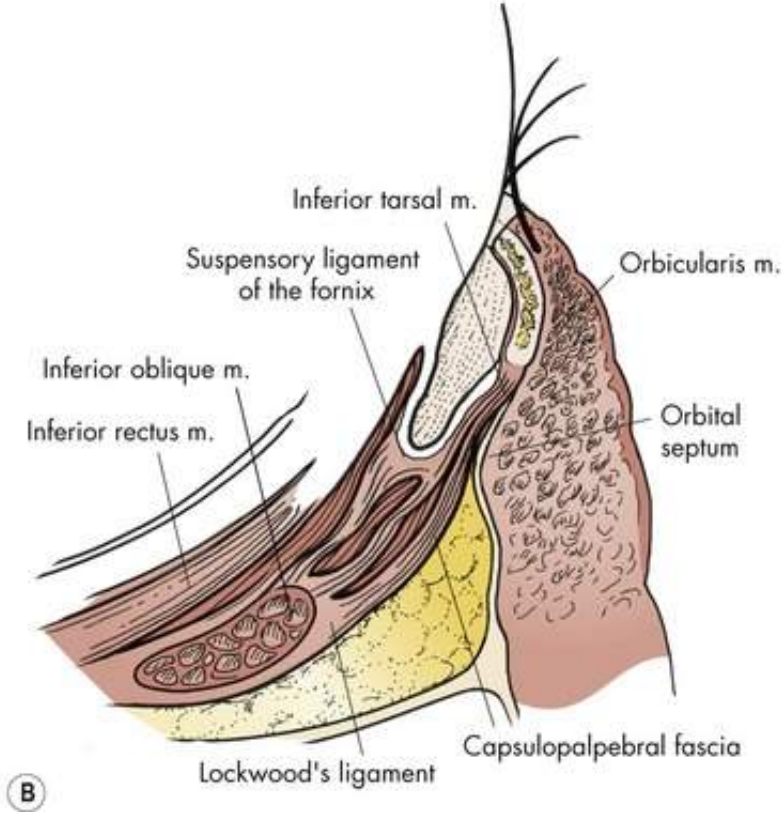
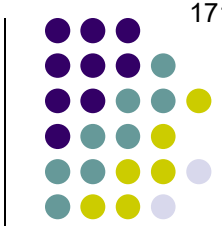


(**B**) Involutional entropion. Note that the retractors are detached from the tarsus. The preseptal orbicularis is riding up and over the pretarsal portion, in the process inverting the lid margin.

Involutional Entropion *vs* Involutional Ectropion

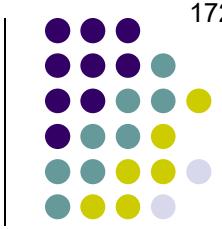


- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - **Horizontal lid laxity**
  - **Disinsertion of the eyelid retractors**
  - **Enophthalmos due to loss of orbital fat as part of the normal aging process**

BOTH

The takeaway point: Involutional entropion and ectropion of the lower lid have very similar pathogeneses.

Involutional Entropion *vs* Involutional Ectropion



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  - **Disinsertion of the eyelid retractors**
  - **Enophthalmos due to loss of orbital fat as part of the normal aging process**
  - *Override of the preseptal orbicularis?*

BOTH

The takeaway point: Involutional entropion and ectropion of the lower lid have very similar pathogeneses. *The determining factor re whether an individual will develop one vs the other is* ***the status of the preseptal orbicularis.***

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - **Horizontal lid laxity**
  - **Disinsertion of the eyelid retractors**
  - **Enophthalmos due to loss of orbital fat as part of the normal aging process**
  - *Override of the preseptal orbicularis?* **NO**

→ ***BOTH***

→ ***ECTROPION***

The takeaway point: Involutional entropion and ectropion of the lower lid have very similar pathogeneses. *The determining factor re whether an individual will develop one vs the other is* ***the status of the preseptal orbicularis.*** *If it doesn't override the lid margin, the lid will flop outward, and the pt will have* ***ec****tropion.*

Involutional Entropion *vs* Involutional Ectropion

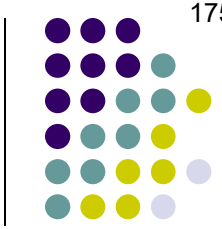
- For each of the following, state whether it plays a role in the pathogenesis of lower-lid involutional ***en****tropion*, lower-lid involutional ***ec****tropion*, or *both*:
  - **Horizontal lid laxity**
  - **Disinsertion of the eyelid retractors**
  - **Enophthalmos due to loss of orbital fat as part of the normal aging process**

    → ***BOTH***
  - *Override of the preseptal orbicularis?* **YES** → ***ENTROPION***

The takeaway point: Involutional entropion and ectropion of the lower lid have very similar pathogeneses. *The determining factor re whether an individual will develop one vs the other is* ***the status of the preseptal orbicularis.*** *If it doesn't override the lid margin, the lid will flop outward, and the pt will have* **ec***tropion. But if the preseptal orbicularis* **does** *override the lid margin, the margin will turn inward, resulting in* **entropion**.

Q

Involutional Entropion
vs
Involutional Ectropion



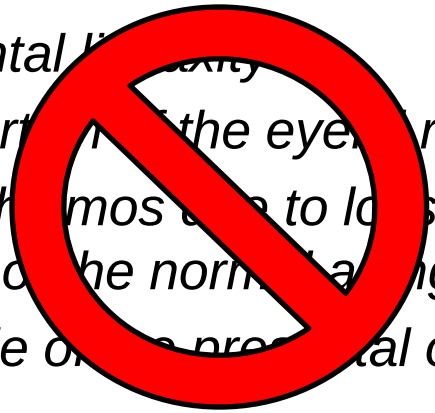
- For each of the following, state whether it plays a role in the pathogenesis of ~~lower-~~ upper- lid involutional ***en****tropion*, ~~lower-~~ upper- lid involutional ***ec****tropion*, or *both*:
  - *Horizontal lid laxity?*
  - *Disinsertion of the eyelid retractors?*
  - *Enophthalmos due to loss of orbital fat as part of the normal aging process?*
  - *Override of the preseptal orbicularis?*

Which of these play a role in the pathogenesis of **upper***-lid involutional entropion/ectropion?*

A

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of ~~lower-~~ upper- lid involutional ***en****tropion*, ~~lower-~~ upper- lid involutional ***ec****tropion*, or *both*:
  - *Horizontal l[illegible]axity*
  - *Disinsert[illegible] the eye[illegible] retractors?*
  - *Enophth[illegible]mos[illegible] to lo[illegible]s of orbital fat as part o[illegible]he norm[illegible]a[illegible]g process?*
  - *Override o[illegible] pre[illegible]tal orbicularis?*

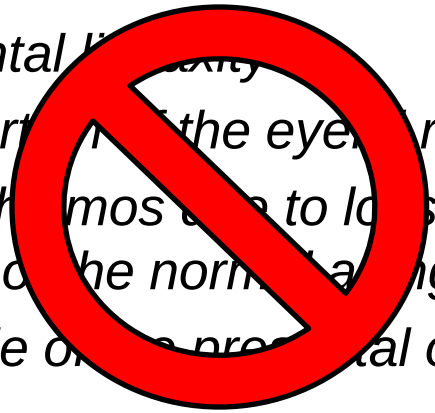


Which of these play a role in the pathogenesis of **upper***-lid involutional entropion/ectropion?*
Trick question. The upper lid is generally not subject to involutional changes of the sort that alter the configuration of the lid margin.

A

Involutional Entropion
vs
Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of ~~lower-~~ upper- lid involutional ***en****tropion*, ~~lower-~~ upper- lid involutional ***ec****tropion*, or *both*:
  - *Horizontal l[illegible]axity*
  - *Disinsert[illegible] the eye[illegible] retractors?*
  - *Enophth[illegible]mos[illegible]e to lo[illegible]s of orbital fat as part o[illegible]he norm[illegible]a[illegible]g process?*
  - *Override o[illegible] pre[illegible]tal orbicularis?*



Which of these play a role in the pathogenesis of **upper***-lid involutional entropion/ectropion?*
Trick question. The upper lid is generally not subject to involutional changes of the sort that alter the configuration of the lid margin.

TL;DR **People don't get upper-lid *involutional* entropion or ectropion**

A

Involutional Entropion *vs* Involutional Ectropion

- For each of the following, state whether it plays a role in the pathogenesis of ~~lower~~ *upper*-lid involutional ***en****tropion*, ~~lower~~ *upper*-lid involutional ***ec****tropion*, or *both*:
  - *Horizontal lid laxity*
  - *Disinsertion of the eyelid retractors?*
  - *Enophthalmos due to loss of orbital fat as part of the normal aging process?*
  - *Override of the preseptal orbicularis?*

Which of these play a role in the pathogenesis of **upper***-lid involutional entropion/ectropion?* **Trick question.** The upper lid is generally not subject to involutional changes of the sort that alter the configuration of the lid margin.

TL;DR **People don't get upper-lid *involutional* entropion or ectropion**

But to be clear, entropion and ectropion 2ndry to **other** mechanisms **can** occur in the upper lid

Q

Involutional Entropion
vs
Involutional Ectropion

- An elderly patient presents with what you diagnose as involutional entropion. What should you do for the patient *today*?

1)

2)

A

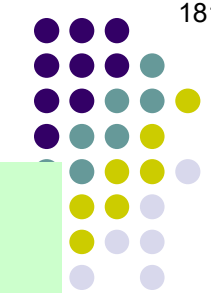
Involutional Entropion
vs
Involutional Ectropion

- An elderly patient presents with what you diagnose as involutional entropion. What should you do for the patient *today*?

1) Quickert sutures as a temporizing measure
2) Schedule ‘em for definitive surgery

Q

Involutional Entropion
vs
Involutional Ectropion



- *What are* Quickert *(aka* Quickert-Rathbun) sutures*?*

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A

Involutional Entropion *vs* Involutional Ectropion

What are Quickert *(aka* Quickert-Rathbun) sutures*?*
A suturing technique that everts an entropic lid

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Involutional Entropion *vs* Involutional Ectropion

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  The pass starts just below the lash line traveling down and posterior, passing in front of and then below the tarsal plate. It comes out on the conj surface shortly before the inferior fornix.

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Involutional Entropion *vs* Involutional Ectropion

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  How many throws are placed?

1) **Quickert sutures** as a temporizing measure
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Involutional Entropion *vs* Involutional Ectropion

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  How many throws are placed?
  Usually three

1) **Quickert sutures** as a temporizing measure
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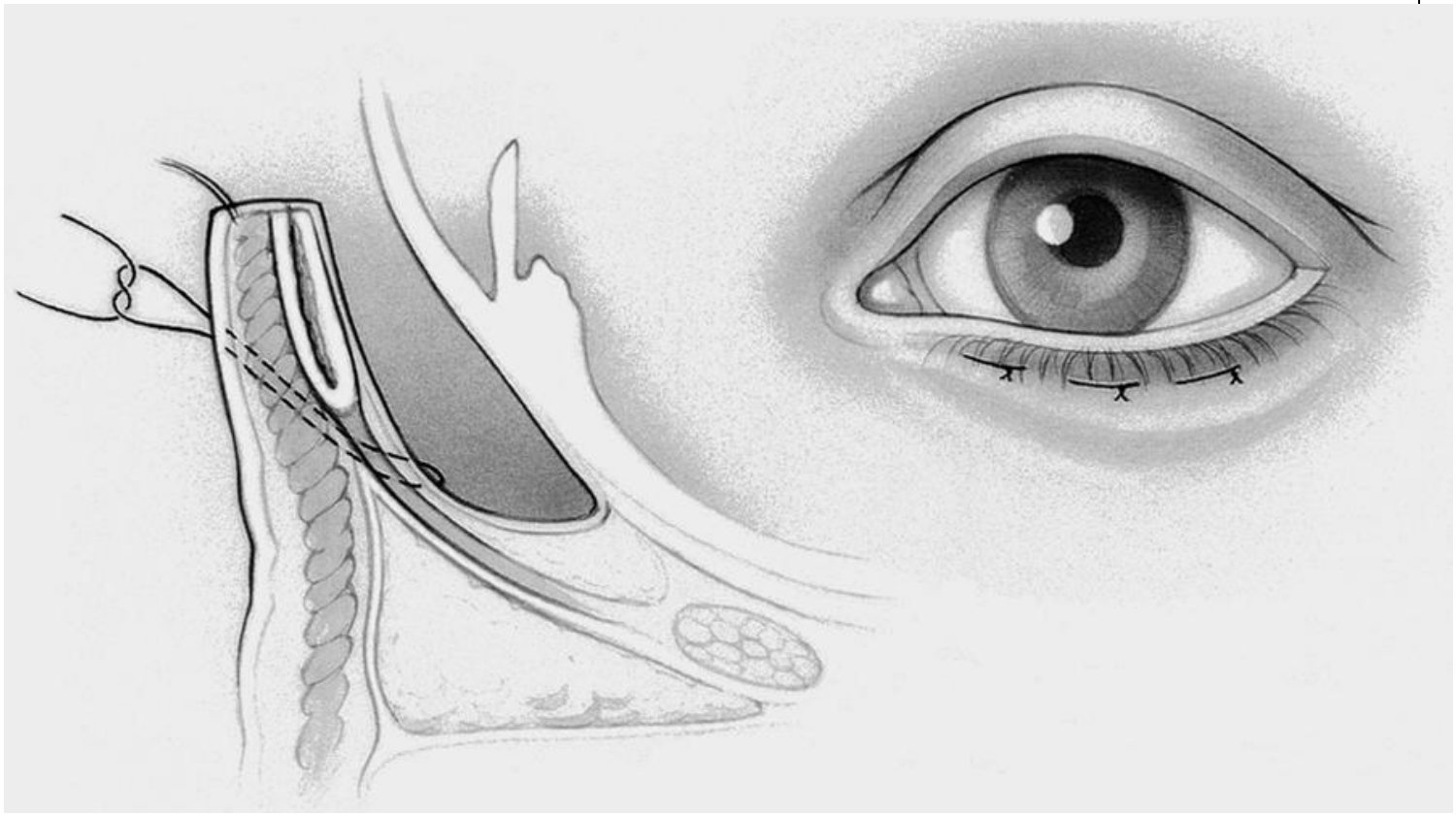
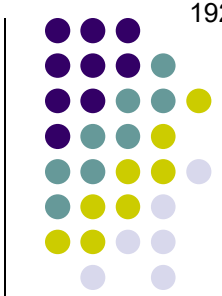
Involutional Entropion *vs* Involutional Ectropion



Quickert sutures

Q

Involutional Entropion
vs
Involutional Ectropion



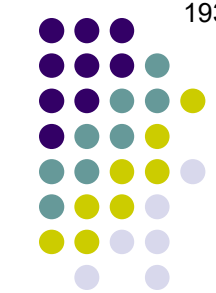
- Many surgical approaches to involutional entropion have been developed. However, the most effective approaches address the same two therapeutic goals:

  1)

  2)

Q/A

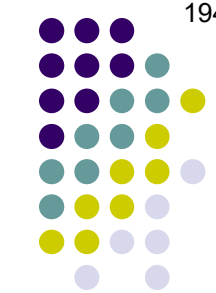
Involutional Entropion
vs
Involutional Ectropion



- Many surgical approaches to involutional entropion have been developed. However, the most effective approaches address the same two therapeutic goals:
  1) surgical maneuver to address laxity
  2)

A

Involutional Entropion
vs
Involutional Ectropion



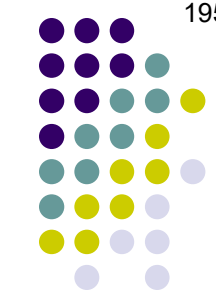
- Many surgical approaches to involutional entropion have been developed. However, the most effective approaches address the same two therapeutic goals:

  1) Horizontal lid tightening to address laxity

  2)

Q

Involutional Entropion
vs
Involutional Ectropion



- Many surgical approaches to involutional entropion have been developed. However, the most effective approaches address the same two therapeutic goals:

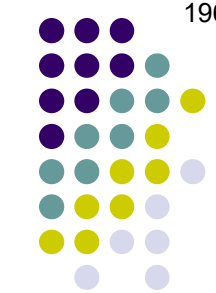
1) Horizontal lid tightening to address laxity

2)

This is usually accomplished with a three words procedure

A

Involutional Entropion *vs* Involutional Ectropion



- Many surgical approaches to involutional entropion have been developed. However, the most effective approaches address the same two therapeutic goals:

1) Horizontal lid tightening to address laxity

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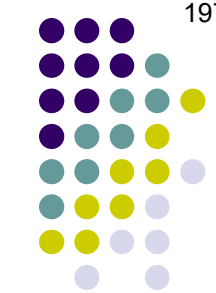
This is usually accomplished with a *lateral tarsal strip* procedure

Q

Involutional Entropion
vs
Involutional Ectropion



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1
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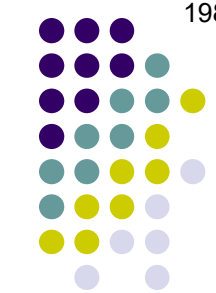
Briefly, how is the lateral tarsal strip procedure performed?

This is usually accomplished with a ***lateral tarsal strip*** **procedure**

A

Involutional Entropion
vs
Involutional Ectropion



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Briefly, how is the lateral tarsal strip procedure performed?
A lateral canthotomy/inferior cantholysis is performed, and the lateral aspect of the tarsus is exposed by removing from it the anterior and posterior lid lamellae, as well as the mucocutaneous junction at the lid margin.

This is usually accomplished with a ***lateral tarsal strip*** **procedure**

A

Involutional Entropion
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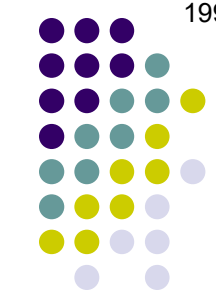
Involutional Ectropion



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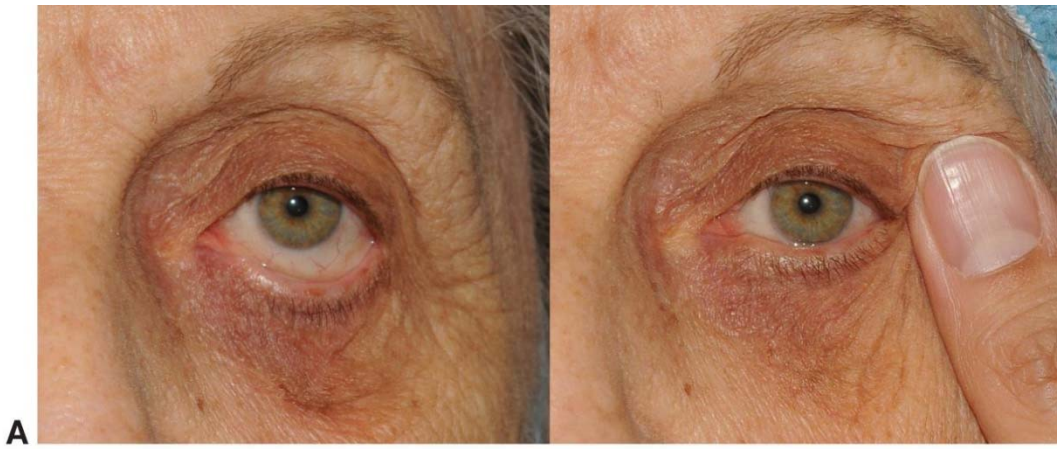
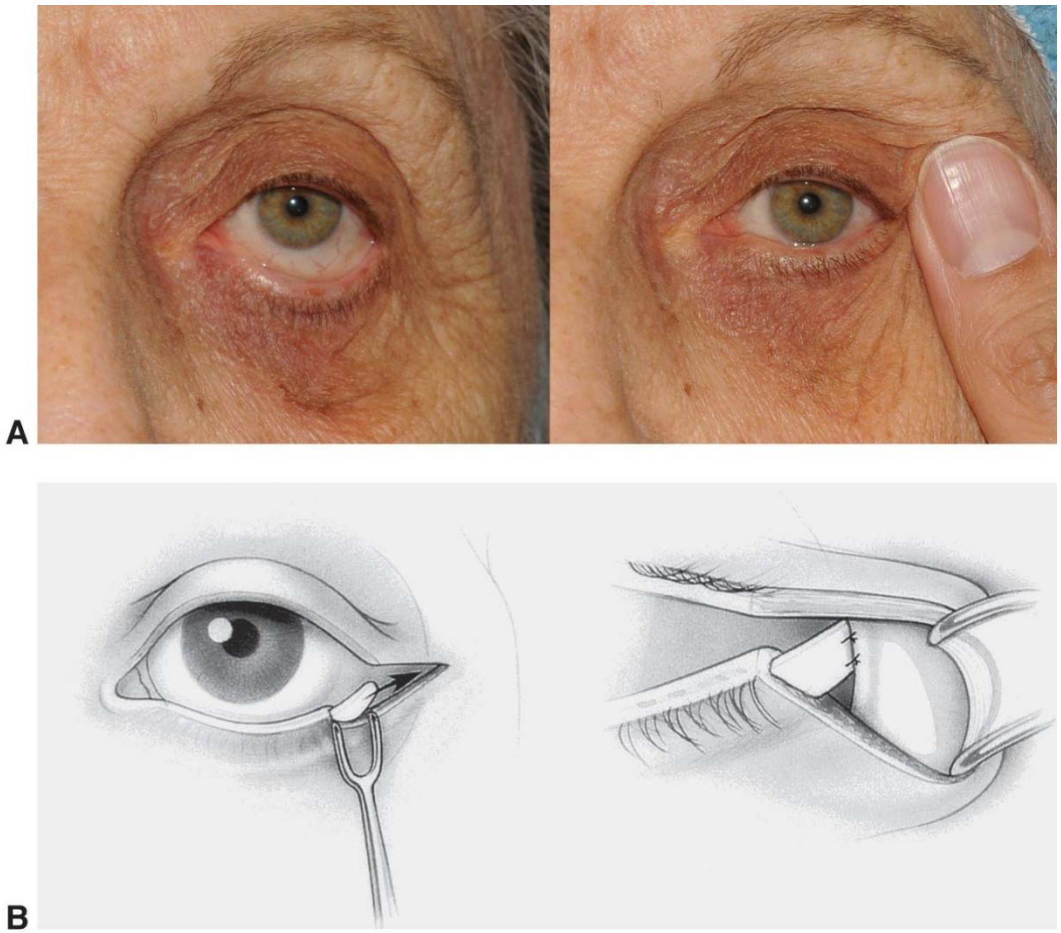
This is usually accomplished with a ***lateral tarsal strip*** **procedure**

Involutional Entropion *vs* Involutional Ectropion



Lateral tarsal strip procedure. **A**, Lateral stretching of the eyelid demonstrates the potential of lower lid tightening. (Note: The is pt has *ectropion*, not entropion.)

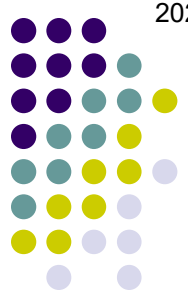
Involutional Entropion *vs* Involutional Ectropion



Lateral tarsal strip procedure. **A**, Lateral stretching of the eyelid demonstrates the potential of lower lid tightening. (Note: The is pt has *ectropion*, not entropion.) **B**, Lateral tarsal strip procedure: anchoring of tarsal strip to periosteum inside the lateral orbital rim.

Q

Involutional Entropion
vs
Involutional Ectropion



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This is a concept we haven't addressed previously. What's with the idea of 'lid lamellae'?

A

Involutional Entropion
vs
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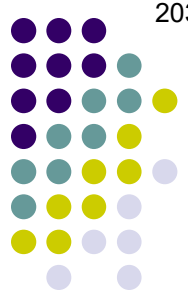

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Newsflash: Eyelids are anatomically complex. The 'lamella' notion greatly simplifies their anatomy by conceptualizing the lids as being composed of only two parts—an anterior lamella, and a posterior one.

Q

Involutional Entropion
vs
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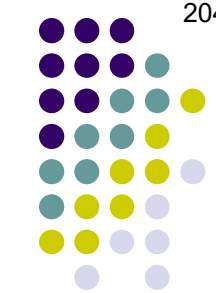

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What structures comprise each lamella?
Anterior:
Posterior:

A

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Posterior:

Q

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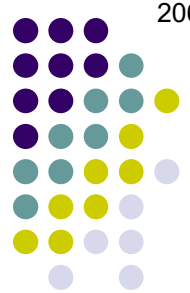

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Involutional Entropion
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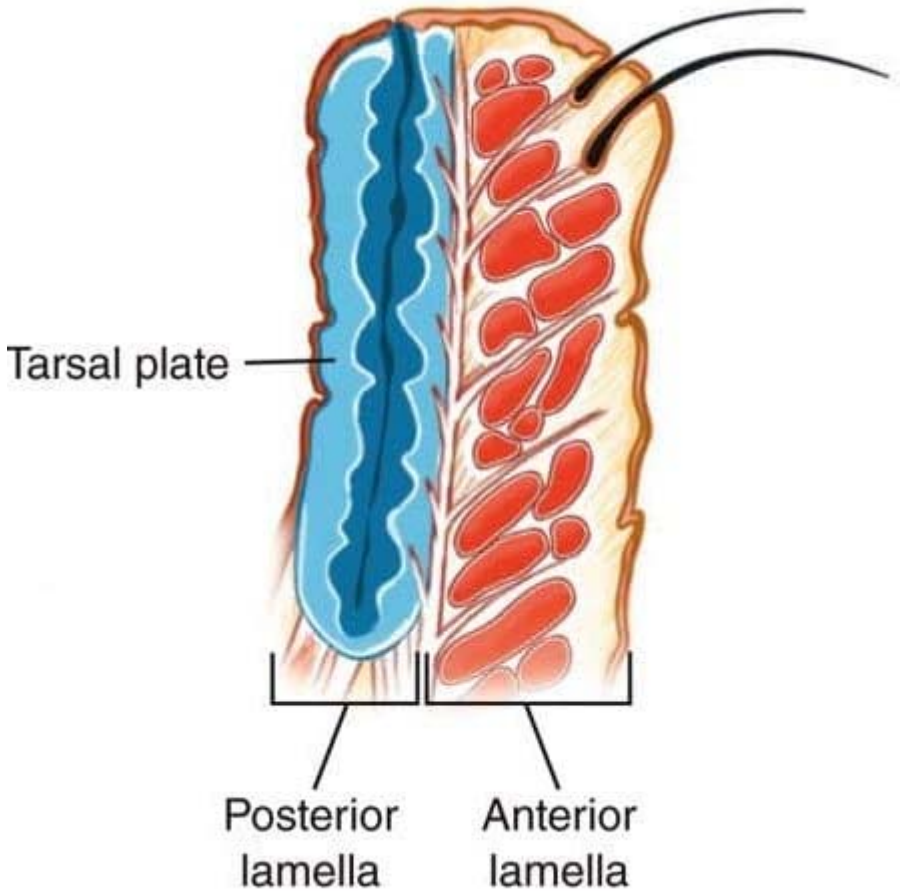
Involutional Ectropion



Eyelid lamellae

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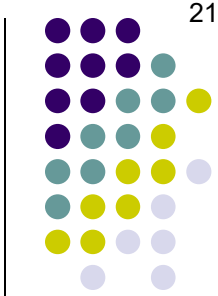
What comprises the dividing line between the two lamellae?

A

Involutional Entropion *vs* Involutional Ectropion



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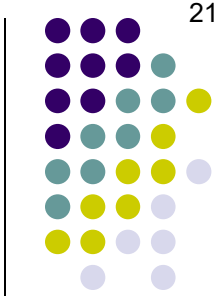
What comprises the dividing line between the two lamellae?
The muscle of Riolan/gray line

Q

Involutional Entropion *vs* Involutional Ectropion



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Briefly, how is the lateral tarsal strip procedure performed?

Does the eyelid possess a middle *lamella?*

Middle lamella?

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

What comprises the dividing line between the two lamellae?
The muscle of Riolan/gray line

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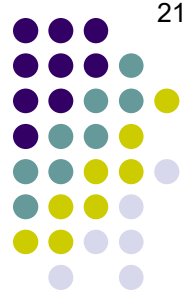

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Briefly, how is the lateral tarsal strip procedure performed?

Does the eyelid possess a middle *lamella?*
Yes--both upper and lower lids are conceptualized as possessing a middle lamella

Middle lamella!

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

What comprises the dividing line between the two lamellae?
The muscle of Riolan/gray line

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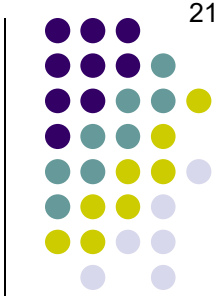

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Does the eyelid possess a middle *lamella?*
Yes--both upper and lower lids are conceptualized as possessing a middle lamella. However, the middle lamellae are composed of structures only found beyond the non-marginal edge of the tarsal plate (ie, superior to the upper plate, and inferior to the lower).

Middle lamella!

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

What comprises the dividing line between the two lamellae?
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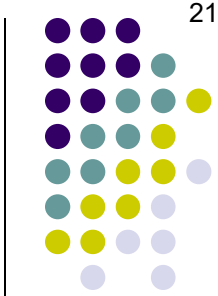
A

Involutional Entropion *vs* Involutional Ectropion



- Many surgical approaches to involutional entropion have been developed. However, the most effective approaches address the

Briefly, how is the lateral tarsal strip procedure performed?

Does the eyelid possess a middle *lamella?*
Yes--both upper and lower lids are conceptualized as possessing a middle lamella. However, the middle lamellae are composed of structures only found beyond the non-marginal edge of the tarsal plate (ie, superior to the upper plate, and inferior to the lower). Thus, ***at the location of the tarsal plate*** (as discussed here), there is no middle lamella.

Middle lamella!

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

What comprises the dividing line between the two lamellae?
The muscle of Riolan/gray line

Q

Involutional Entropion
vs
Involutional Ectropion

- Many surgical approaches to involutional entropion have been developed. However, the most effective approaches address the same two therapeutic goals:

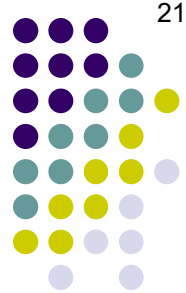
1) Horizontal lid tightening to address laxity, **and**
2) surgical maneuver of the lower-lid retractors

This is usually accomplished with a *lateral tarsal strip* procedure

Next Q

A

Involutional Entropion
vs
Involutional Ectropion



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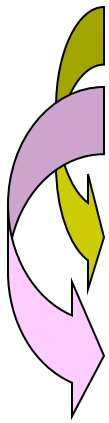

This is usually accomplished with a *lateral tarsal strip* procedure

This can be done via a skin *or* a conjunctival incision

(No question—advance when ready)

Q

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vs
Involutional Ectropion

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This can be done via a skin *or* a conjunctival incision; **both have advantages**.
--The chief advantage of the **conj** approach is…*(?)*

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Involutional Entropion
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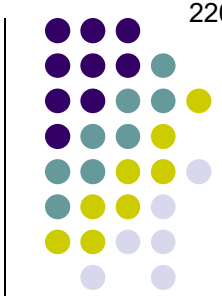

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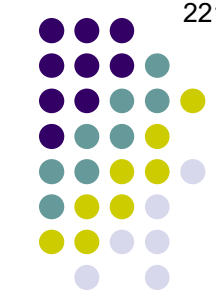

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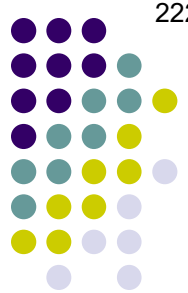
This can be done via a skin *or* a conjunctival incision; **both have advantages.**
--The chief advantage of the **conj** approach is…the **incision scar is hidden**
--The advantage of the **skin** approach is…the **incision scar acts to prevent recurrent orbicularis override**, thereby reducing the risk of surgical failure.

Q

Involutional Entropion
vs
Involutional Ectropion



- As an aside: While lower-lid entropion is usually involutional, ***upper***-lid entropion is <u>always</u> not involutional

A

Involutional Entropion
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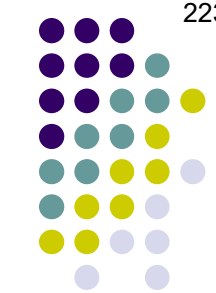

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Q

Involutional Entropion
vs
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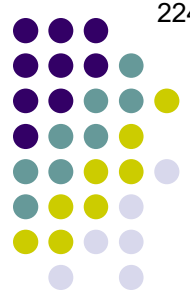

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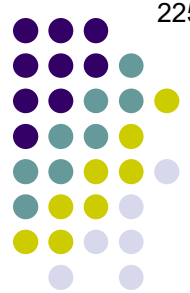
When you hear 'upper-lid cicatricial entropion,' a specific condition—one of the most common causes of blindness worldwide—should come instantly to mind. What is it?

A

Involutional Entropion
vs
Involutional Ectropion



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Trachoma

Q

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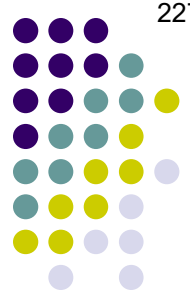
When you h... ...ne of the most co... ...ntly to mind. Wh...

Trachoma

What is the causative organism in trachoma?

Q/A

Involutional Entropion
vs
Involutional Ectropion



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What is the causative organism in trachoma?
C trachomatis serotypes

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Trachoma

A

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Q

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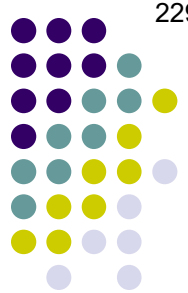

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Where does trachoma rank as a cause of blindness worldwide?

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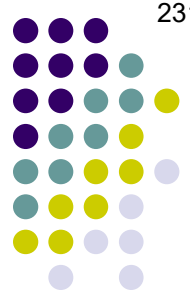

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Where in the world is trachoma prevalent?

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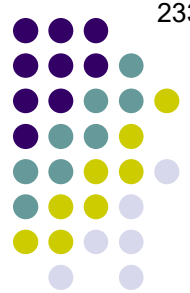

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Is trachoma primarily a follicular, or papillary conjunctivitis?

A

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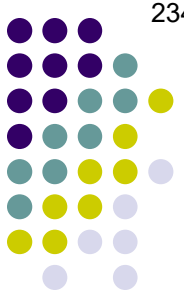

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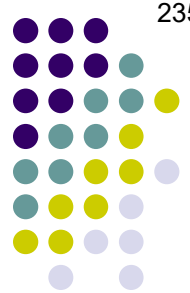

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Where do the follicles tend to occur?

A

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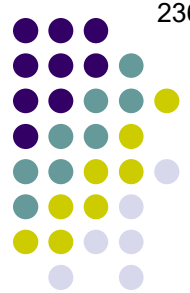

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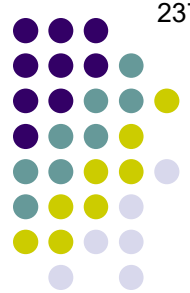
Where do the follicles tend to occur?
On the superior palpebral conj, and the superior limbal region

Q

Involutional Entropion
vs
Involutional Ectropion



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When you h *ne of*
the most co *Where does trachoma rank as a cause of blindness worldwide?* *ntly*
to mind. Wh It is the most common cause of infectious **blindness**

Trachoma

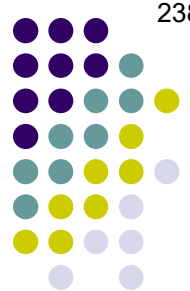
Wh *Why are they blind, ie, what ocular structure is responsible?*
Th

Is t
Fo

Wh
On the superior palpebral conj, and the superior limbal region

A

Involutional Entropion
vs
Involutional Ectropion



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What is the causative organism in trachoma?
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Where does trachoma rank as a cause of blindness worldwide?
It is the most common cause of infectious **blindness**

Why are they blind, ie, what ocular structure is responsible?
The cornea—it is scarred, and covered by a pannus

On the superior palpebral conj, and the superior limbal region

Involutional Entropion
vs
Involutional Ectropion

Trachoma: End stage

Q

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In a nutshell, what sequence of events leads to corneal opacification?

On the superior palpebral conj, and the superior limbal region

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Repeated infections produce scarification of the superior palpebral conj

Q

Involutional Entropion
vs
Involutional Ectropion

Trachoma: Scarring of tarsal conj (the depicted classic sign is called two words)

A

Involutional Entropion
vs
Involutional Ectropion

Trachoma: Scarring of tarsal conj (the depicted classic sign is called *Arlt's line*)

A

Involutional Entropion
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In a nutshell, what sequence of events leads to corneal opacification?
Repeated infections produce scarification of the superior palpebral conj, and the subsequent cicatricial entropion leads to severe trichiasis which decimates the corneal surface

Involutional Entropion
vs
Involutional Ectropion

Trachoma: Cicatricial entropion

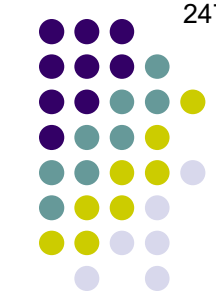
Q

Involutional Entropion
vs
Involutional Ectropion

- As an aside: While lower-lid entropion is usually involutional, ***upper***-lid entropion is always *cicatricial*
  - *How can you quickly differentiate between involutional and cicatricial entropion?*

A

Involutional Entropion
vs
Involutional Ectropion



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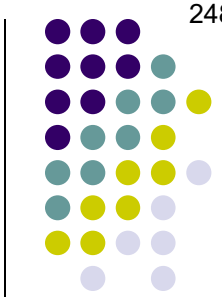
    Via attempted **digital eversion** (ie, 'unrolling') of the entropion

Q

Involutional Entropion
vs
Involutional Ectropion



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Involutional Entropion
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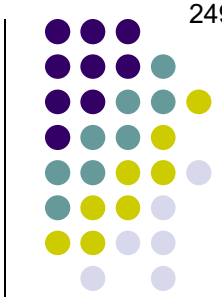

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  - *How can you quickly differentiate between involutional and cicatricial entropion?*
    Via attempted **digital eversion** (ie, 'unrolling') of the entropion
  - *How does this differentiate between the two?*
    If you can't roll it out, it's cicatricial. If you *can* roll it out, ask the patient to squeeze their eyelids shut. If it's involutional, the lid will roll back up.

Q

Involutional Entropion
vs
Involutional Ectropion

- An elderly patient presents with what you diagnose as involutional ***ec***tropion. What should you do for the patient **today**?

1)

2)

A

Involutional Entropion
vs
Involutional Ectropion

- An elderly patient presents with what you diagnose as involutional ***ec***tropion. What should you do for the patient **today**?

1) ***Reverse*** Quickert sutures as a temporizing measure

2) Schedule ‘em for definitive surgery

Q

Involutional Entropion
vs
Involutional Ectropion

How are reverse Quickert sutures like regular Quickert sutures, and how are they different?

Reverse Quickert sutures are **like** regular Quickerts in that both work by temporarily…

- A
  d
  s

1) ***Reverse*** Quickert sutures as a temporizing measure

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A

Involutional Entropion
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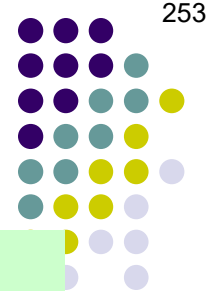

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- A
  d
  s

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Involutional Entropion
vs
Involutional Ectropion

How are reverse Quickert sutures like regular Quickert sutures, and how are they different?

Reverse Quickert sutures are **like** regular Quickerts in that both work by temporarily…re-inserting the lid retractors to the tarsal plate.

The two **differ** in that…

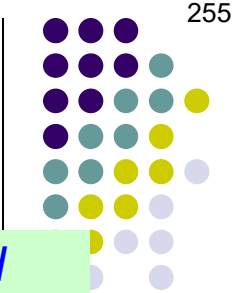
1) Reverse Quickerts are used to manage ectropion, whereas regular Quickerts are used to manage [redacted]; and
2)

- A
  d
  s

1) ***Reverse*** Quickert sutures as a temporizing measure
2) Schedule 'em for definitive surgery

A

Involutional Entropion
vs
Involutional Ectropion



How are reverse Quickert sutures like regular Quickert sutures, and how are they different?

Reverse Quickert sutures are **like** regular Quickerts in that both work by temporarily…re-inserting the lid retractors to the tarsal plate.

The two **differ** in that…

1) Reverse Quickerts are used to manage ectropion, whereas regular Quickerts are used to manage entropion ; and
2)

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1) ***Reverse*** Quickert sutures as a temporizing measure
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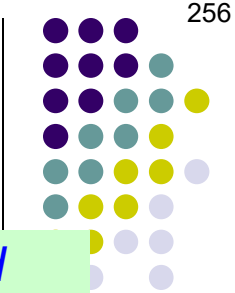
Q

Involutional Entropion
vs
Involutional Ectropion



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Reverse Quickert sutures are **like** regular Quickerts in that both work by temporarily…re-inserting the lid retractors to the tarsal plate.

The two **differ** in that…

1) Reverse Quickerts are used to manage ectropion, whereas regular Quickerts are used to manage entropion ; and
2) regular Quickerts are usually thrown on the conj vs skin side of the lid, whereas reverse Quickerts are thrown on the conj vs skin side.

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1) ***Reverse*** Quickert sutures as a temporizing measure

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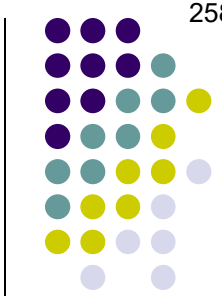
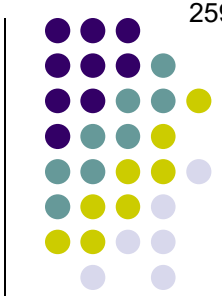
Involutional Entropion
vs
Involutional Ectropion



- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a surgery (two words) *procedure*

A

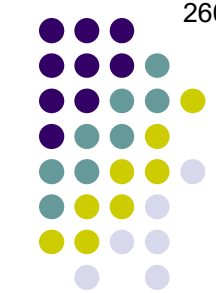
Involutional Entropion
vs
Involutional Ectropion



- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a *medial spindle procedure*

Q

Involutional Entropion
vs
Involutional Ectropion

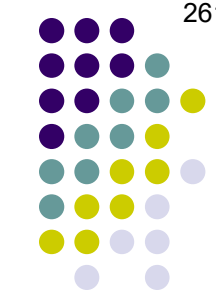


- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a ***medial spindle procedure***

Briefly, how is the medial spindle procedure performed?

A

Involutional Entropion
vs
Involutional Ectropion

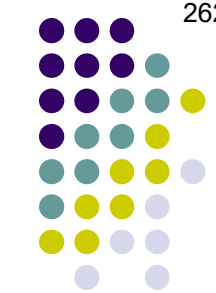


- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a ***medial spindle procedure***

Briefly, how is the medial spindle procedure performed?
A small 'diamond' of conj and underlying tissue is excised about 4 mm below the puncta. The resulting gap is then closed vertically, ie, the uppermost point of the diamond is apposed to the point directly below it.

A

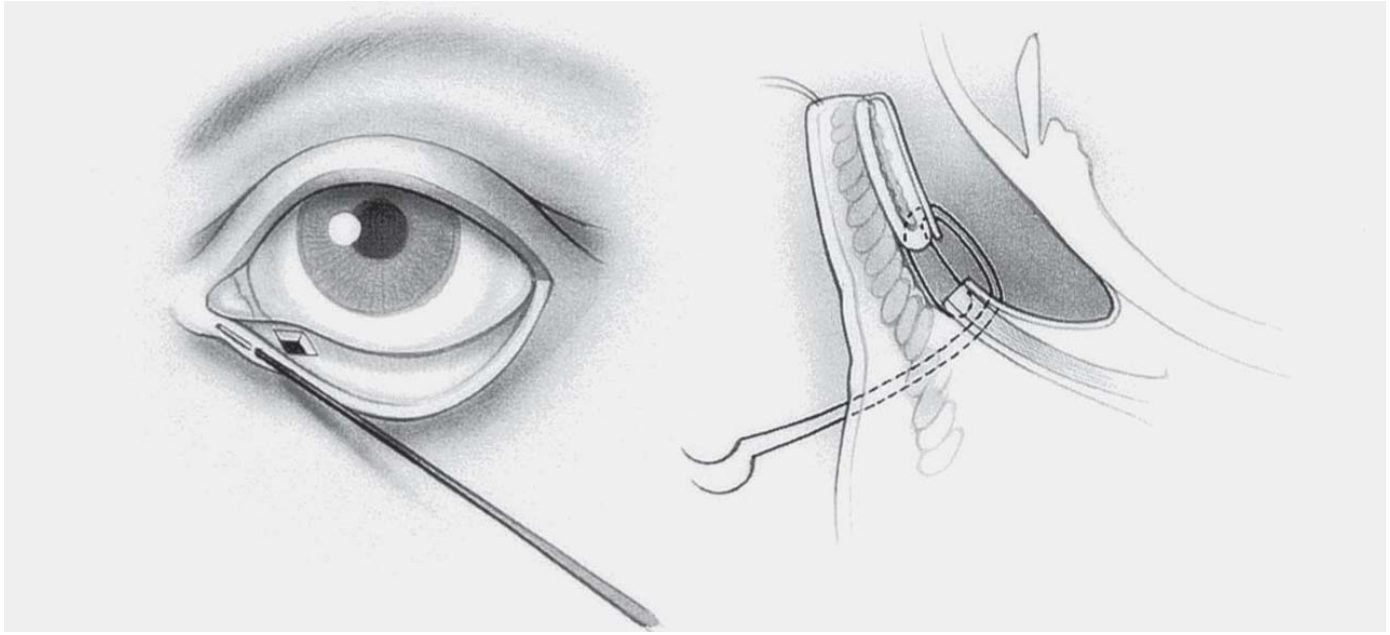
Involutional Entropion
vs
Involutional Ectropion



- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a ***medial spindle procedure***

Briefly, how is the medial spindle procedure performed?
A small 'diamond' of conj and underlying tissue is excised about 4 mm below the puncta. The resulting gap is then closed vertically, ie, the uppermost point of the diamond is apposed to the point directly below it. This closure causes the ectropic lid margin superior to the surgical site to roll inward.

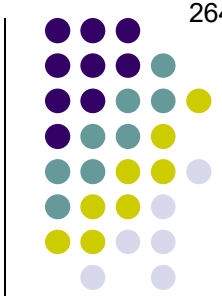
Involutional Entropion *vs* Involutional Ectropion



Medial spindle procedure: Outline of excision of conjunctiva and retractors

Q

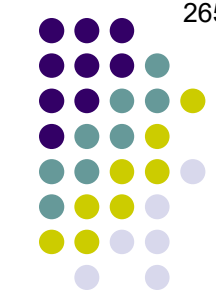
Involutional Entropion
vs
Involutional Ectropion



- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a *medial spindle procedure*
  - More severe disease requires a surgery (three words)

A

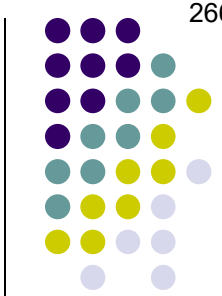
Involutional Entropion
vs
Involutional Ectropion



- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a *medial spindle procedure*
  - More severe disease requires a *lateral tarsal strip*

Q

Involutional Entropion
vs
Involutional Ectropion



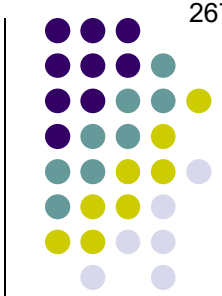
- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a *medial spindle procedure*
  - More severe disease requires a *lateral tarsal strip*
  - You should consider

specific surgical maneuver

(cont)

A

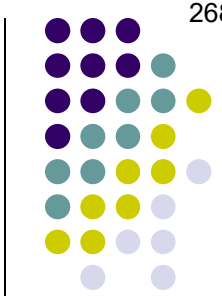
Involutional Entropion
vs
Involutional Ectropion



- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a *medial spindle procedure*
  - More severe disease requires a *lateral tarsal strip*
  - You should consider re-insertion of the lower-lid retractors

Q

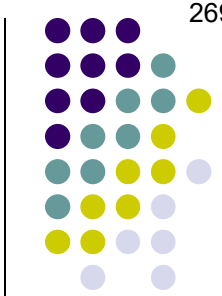
Involutional Entropion
vs
Involutional Ectropion



- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a *medial spindle procedure*
  - More severe disease requires a *lateral tarsal strip*
  - You should consider re-insertion of the lower-lid retractors
  - Chronic ectropion often produces bad sequelae (cont)

A

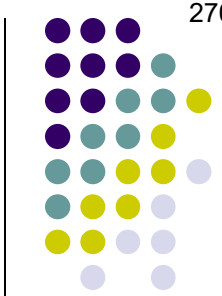
Involutional Entropion
vs
Involutional Ectropion



- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a *medial spindle procedure*
  - More severe disease requires a *lateral tarsal strip*
  - You should consider re-insertion of the lower-lid retractors
  - Chronic ectropion often produces anterior lamellar contraction

Q

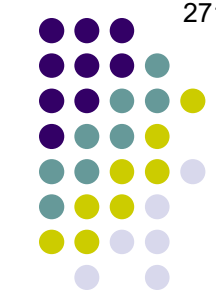
Involutional Entropion
vs
Involutional Ectropion



- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a *medial spindle procedure*
  - More severe disease requires a *lateral tarsal strip*
  - You should consider re-insertion of the lower-lid retractors
  - Chronic ectropion often produces anterior lamellar contraction, which may require a specific surgical maneuver (cont) to release contracture-induced skin tension

A

Involutional Entropion
vs
Involutional Ectropion



- Managing ***involutional*** ectropion:
  - Mild medial punctal eversion can be successfully treated with a *medial spindle procedure*
  - More severe disease requires a *lateral tarsal strip*
  - You should consider re-insertion of the lower-lid retractors
  - Chronic ectropion often produces anterior lamellar contraction, which may require a full-thickness skin graft (FTSG) to release contracture-induced skin tension