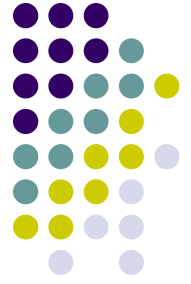
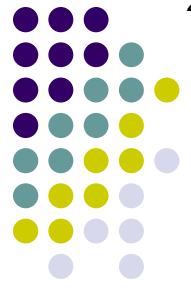


Q

What does the term
Entropion mean?

Ectropion





A

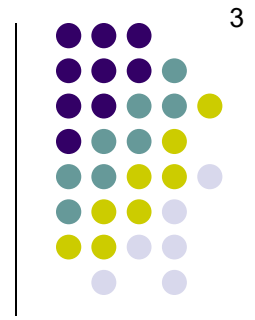
What does the term **Entropion** mean?
It means the eyelid margin is turning **inward**

Ectropion



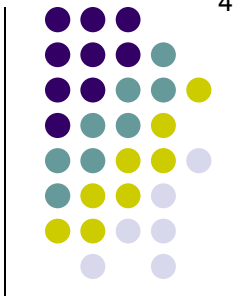
Q

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3

What does the term
Ectropion mean?



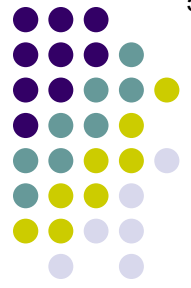
A

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

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*

?

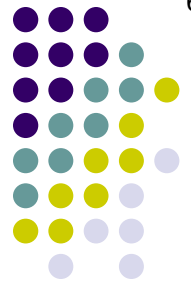
?

?

?

?

?



A

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

Of the six, which can result in entropion?

Entropion

?

?

?

?

?

?

Categories

Congenital

Involutional

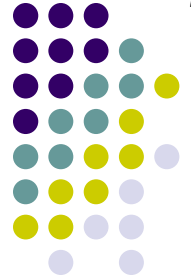
Paralytic

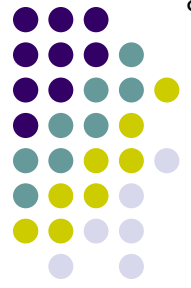
Cicatricial

Mechanical

Acute Spastic

Ectropion





A

Of the six, which can result in entropion?

Entropion

Congenital

Involucional

Cicatricial

Acute Spastic

Categories

Congenital

Involucional

Paralytic

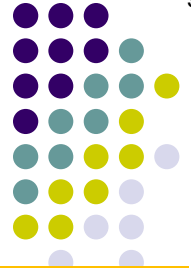
Cicatricial

Mechanical

Acute Spastic

Ectropion

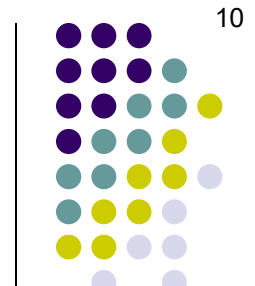
Q



Of the six, which can result in ectropion?

<i>Entropion</i>	<i>Categories</i>	<i>Ectropion</i>
Congenital	Congenital	?
Involutional	Involutional	?
	Paralytic	?
Cicatricial	Cicatricial	?
	Mechanical	?
Acute Spastic	Acute Spastic	?

A



Of the six, which can result in ectropion?

Entropion

Congenital

Involucional

Cicatricial

Acute Spastic

Categories

Congenital

Involucional

Paralytic

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Ectropion

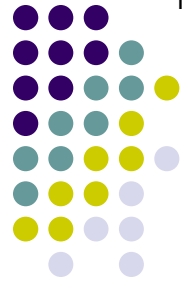
Congenital

Involucional

Paralytic

Cicatricial

Mechanical



Entropion

Congenital

Involucional

Categories

Congenital

Involucional

Ectropion

Congenital

Involucional

Let's look at paralytic ectropion in more detail...

Paralytic

Cicatricial

Cicatricial

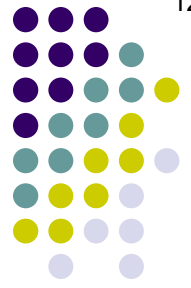
Cicatricial

Mechanical

Mechanical

Acute Spastic

Acute Spastic



Paralytic Ectropion

Q

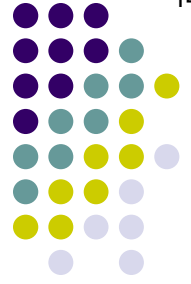
What is the typical setting/cause of paralytic ectropion?



A

Paralytic Ectropion

What is the typical setting/cause of paralytic ectropion?
A facial nerve (CN7) palsy



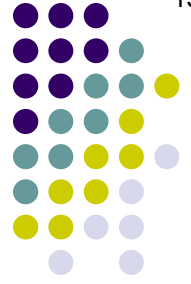
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Paralytic Ectropion

What is the typical setting/cause of paralytic ectropion?

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Upon leaving the skull, CN7 immediately enters the substance of a large gland. Which one?



A

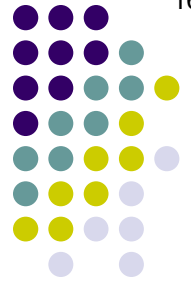
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The parotid



Q

Paralytic Ectropion

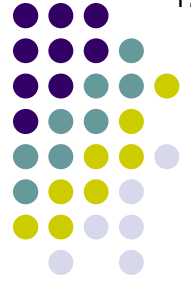
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While in the parotid gland, CN7 splits into branches. How many branches does it (usually) have?



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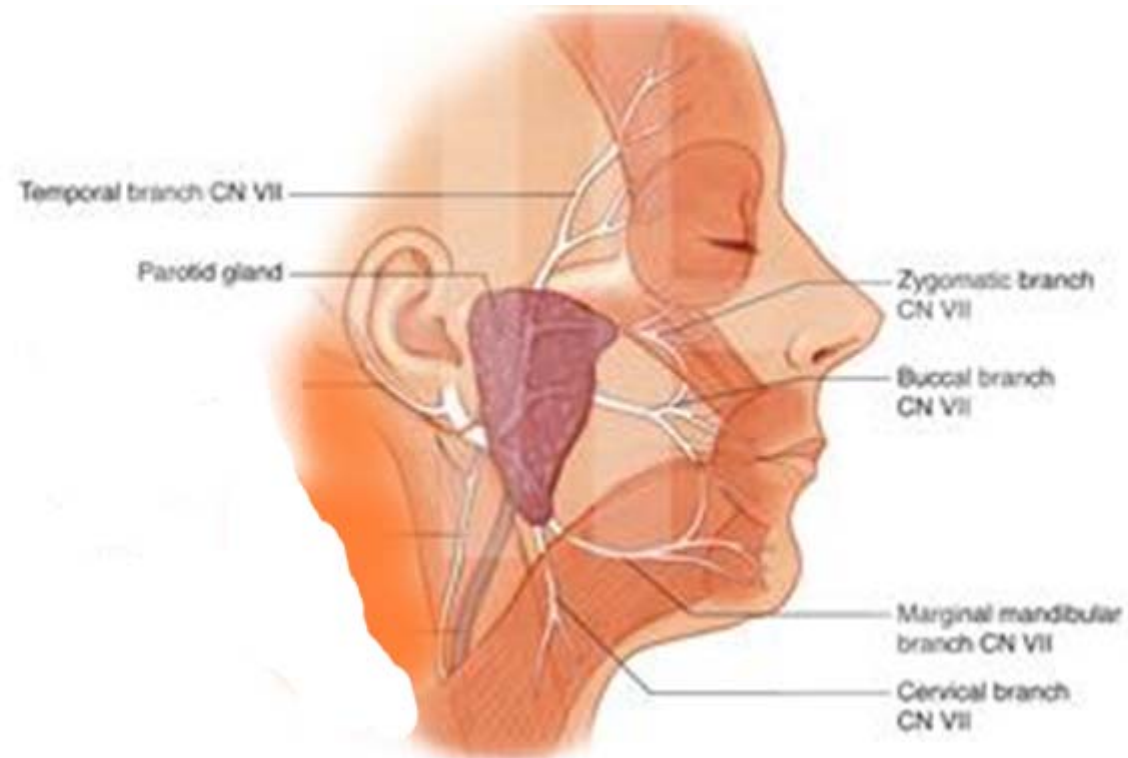
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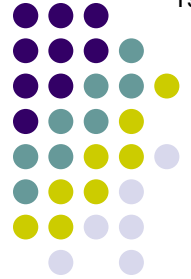
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Five

Paralytic Ectropion



Facial nerve branching within the parotid gland



Q

Paralytic Ectropion

What is the typical setting/cause of paralytic ectropion?

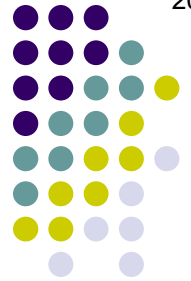
A **facial nerve (CN7)** palsy

*Upon leaving the
substance of a la*

The parotid

*While in the paro
How many bran
Five*

Because of their anatomic relationship, inflammation involving the parotid gland can produce CN7 palsy. Speaking of, there is a classic syndrome involving parotitis and CN7 palsy (along with uveitis and fever). What is the eponymous name of this syndrome?



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Heerfordt syndrome



Q

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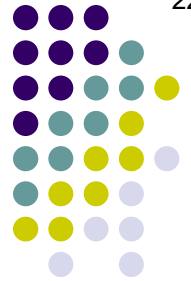
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Heerfordt syndrome

What is the underlying cause of inflammation in Heerfordt syndrome?



A

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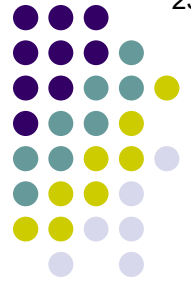
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Sarcoidosis



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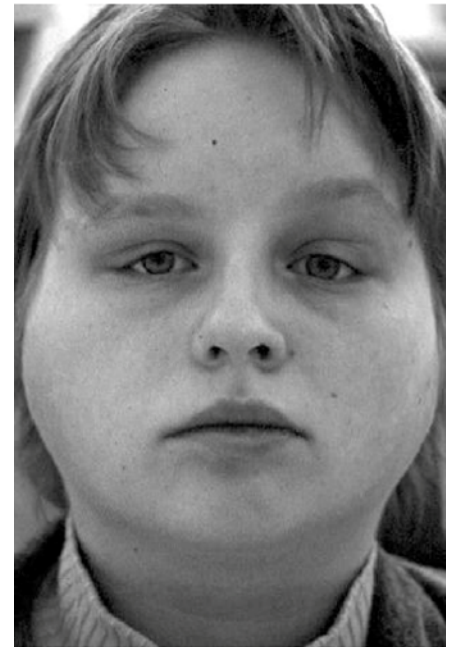
Sarcoidosis

In case you're wondering, this is not useless trivia! You may well see Heerfordt syndrome on the hoof (I have), and it's definitely in play on the OKAPs, WQEs and Boards.

In the back of your mind, file an image of someone with chipmunk-looking cheeks (that's the parotitis), facial palsy and uveitis under the headings 'Heerfordt' and 'sarcoidosis.' Trust me on this one.



Paralytic Ectropion



Heerfordt syndrome



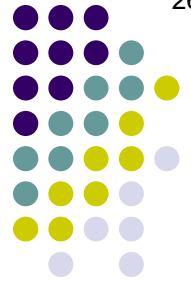
Q

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Paralysis of what facial muscle leads to ectropion?



A

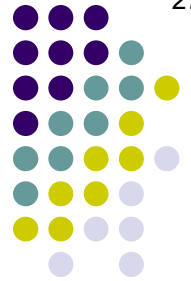
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The orbicularis oculi



Paralytic Ectropion

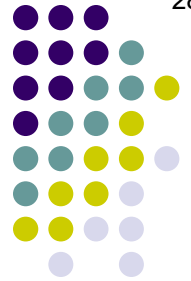
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The **orbicularis oculi**

Let's take a moment to review the anatomy of the orbicularis muscle



Q

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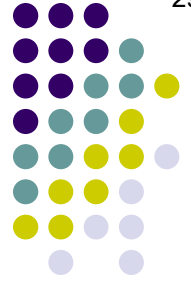
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As multiple concentric bands encircling all or part of the orbital aperture

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

--?

--?



A

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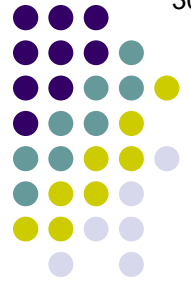
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--Palpebral



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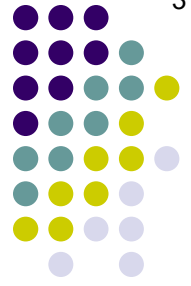
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There's a fundamental functional distinction between the orbital and palpebral portions. What is it?



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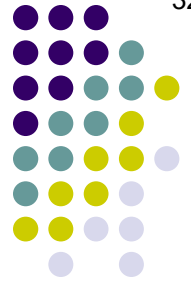
The 'multiple bands' are organized into two basic portions—what are they?

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The palpebral portion is responsible for normal blinking, whereas the orbital portion comes into play only during effortful/voluntary eye closure



Q

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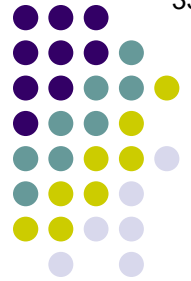
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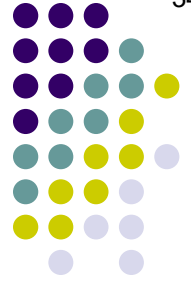
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--Palpebral: The portion overlying the lids



Q

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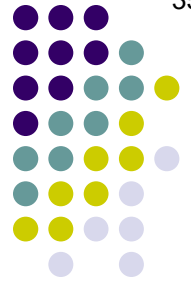
How are they defined? The palpebral portion is further subdivided into two parts—what are they?

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----?



A

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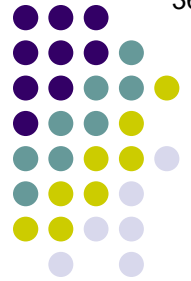
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----Preseptal

----Pretarsal



Q

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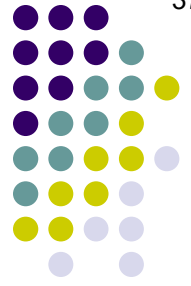
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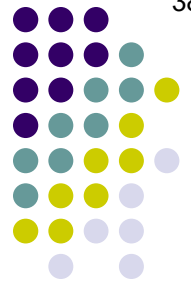
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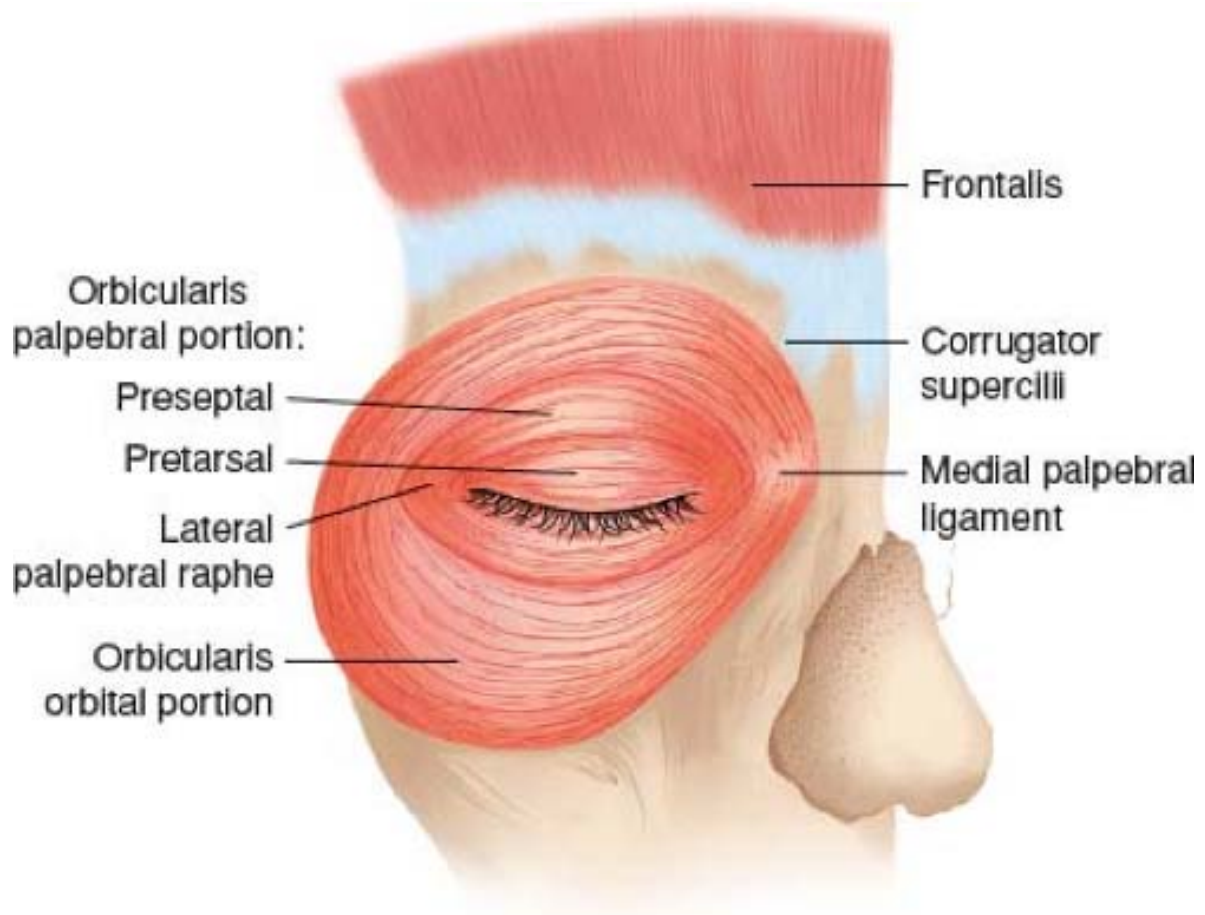
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----Preseptal: The part overlying the orbital septum

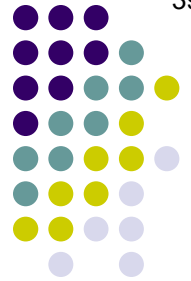
----Pretarsal: The part overlying the tarsal plates



Paralytic Ectropion



Orbicularis oculi



Q

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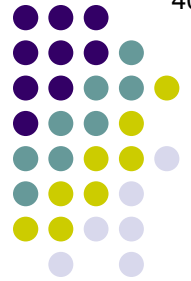
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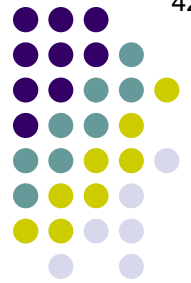
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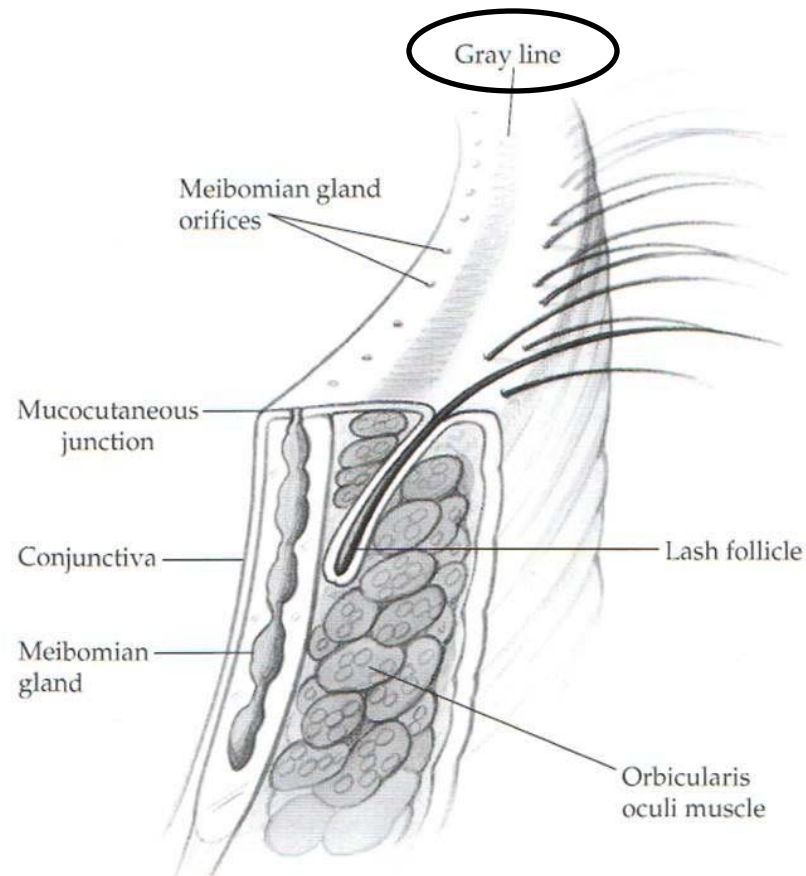
What is its appearance-based, non-eponymous name?

The **gray line**

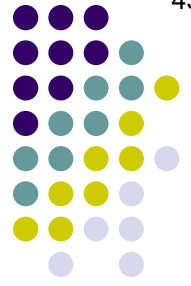
----Preseptal: The part overlying the orbital septum

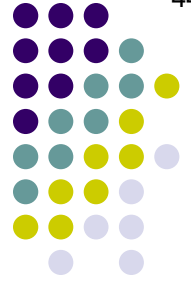
----Pretarsal: The part overlying the tarsal plates

Paralytic Ectropion



Muscle of Riolan
(aka the *gray line*)





Q

Paralytic Ectropion

What is the typical setting/cause of paralytic ectropion?
A facial nerve (CN7) palsy

Paralysis of what facial r *Of its five, which two branches of CN7 (usually)*
The **orbicularis oculi** *innervate the orbicularis muscle?*



A

Paralytic Ectropion

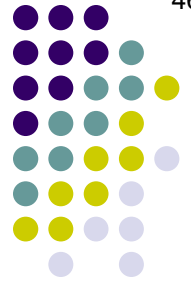
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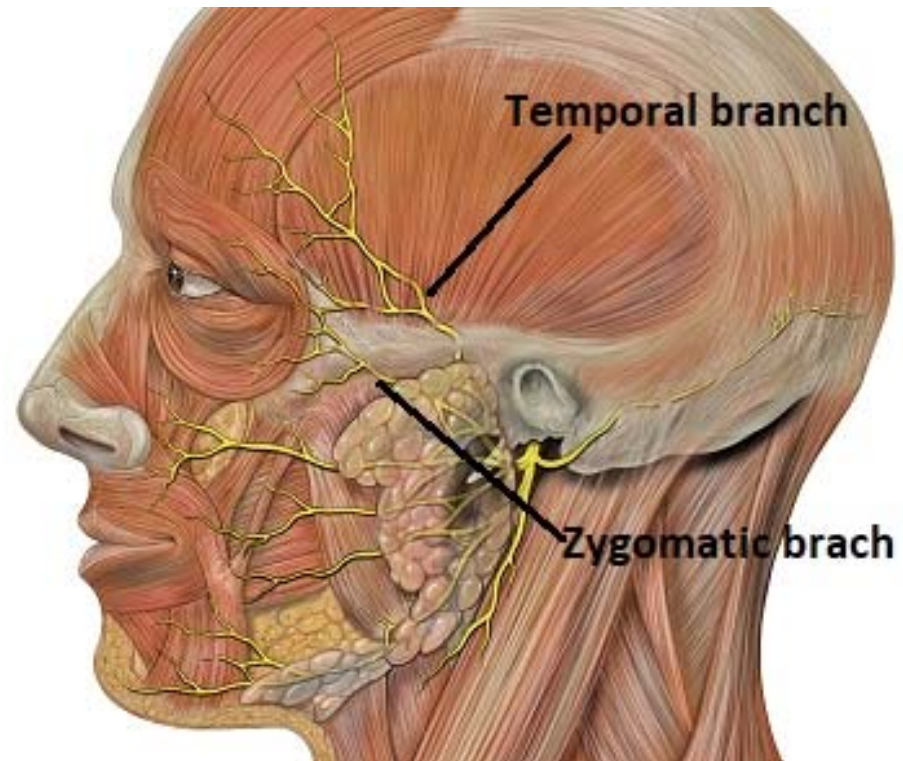
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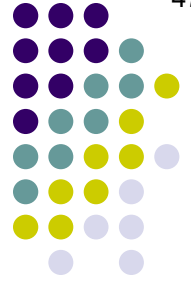
The **temporal** and **zygomatic**



Paralytic Ectropion



Orbicularis muscle innervation



Q

Paralytic Ectropion

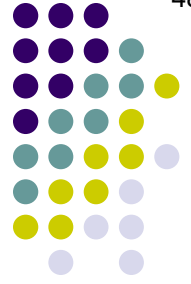
What is the typical setting/cause of paralytic ectropion?

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Paralysis of what facial muscle leads to ectropion?

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Does the ectropion involve the lower lid, the upper, or both?



A

Paralytic Ectropion

What is the typical setting/cause of paralytic ectropion?

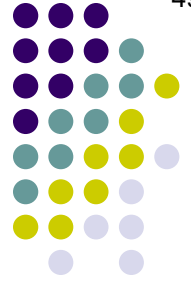
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The lower only (ectropion is not how orbicularis paralysis manifests in the upper lid)



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Paralytic Ectropion

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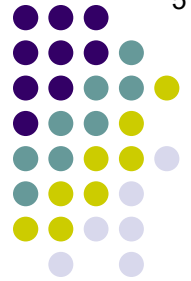
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As **lagophthalmos**



Q

Paralytic Ectropion

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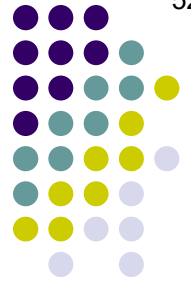
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As **lagophthalmos**

What is lagophthalmos?



A

Paralytic Ectropion

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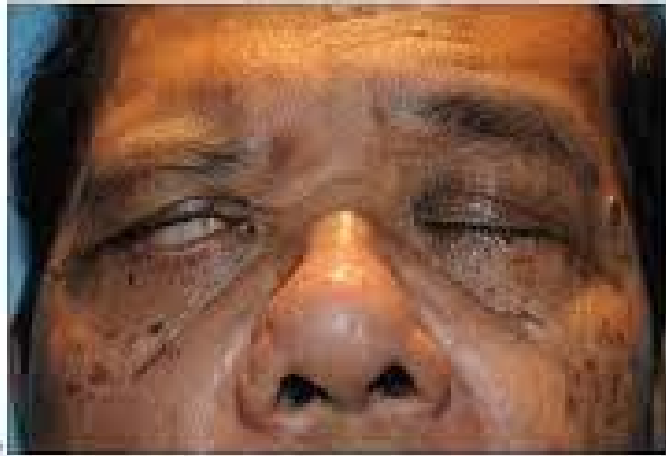
As **lagophthalmos**

What is lagophthalmos?

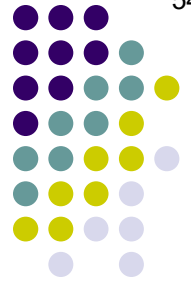
The inability to completely close the eyelids



Paralytic Ectropion



Paralytic lagophthalmos

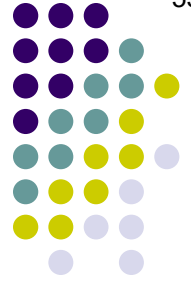


Q

Paralytic Ectropion

- As for managing paralytic ectropion:

The overarching treatment goal is...



A

Paralytic Ectropion

- As for managing paralytic ectropion:

The overarching treatment goal is...protect the cornea from exposure damage



Q

Paralytic Ectropion

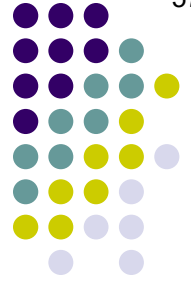
- As for managing paralytic ectropion:

The overarching treatment goal is...protect the cornea from exposure damage

?

← Two basic levels of
paralysis severity →

?



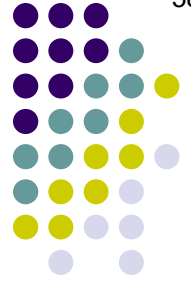
A

Paralytic Ectropion

- As for managing paralytic ectropion:

The overarching treatment goal is...protect the cornea from exposure damage

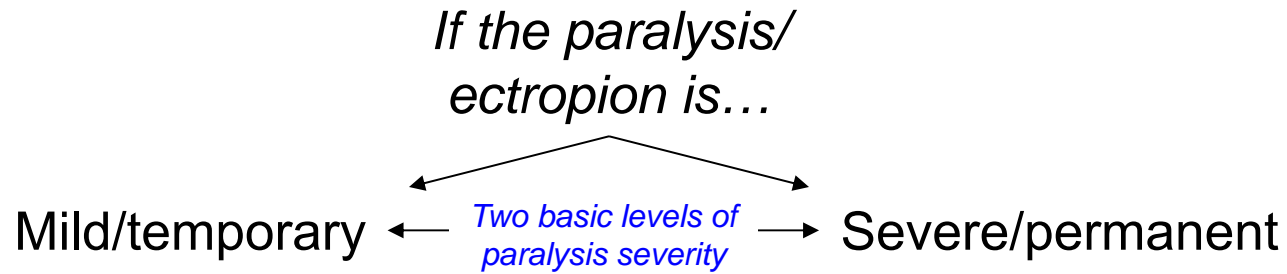
Mild/temporary ← *Two basic levels of paralysis severity* → Severe/permanent

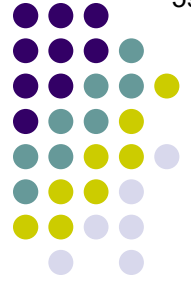


Paralytic Ectropion

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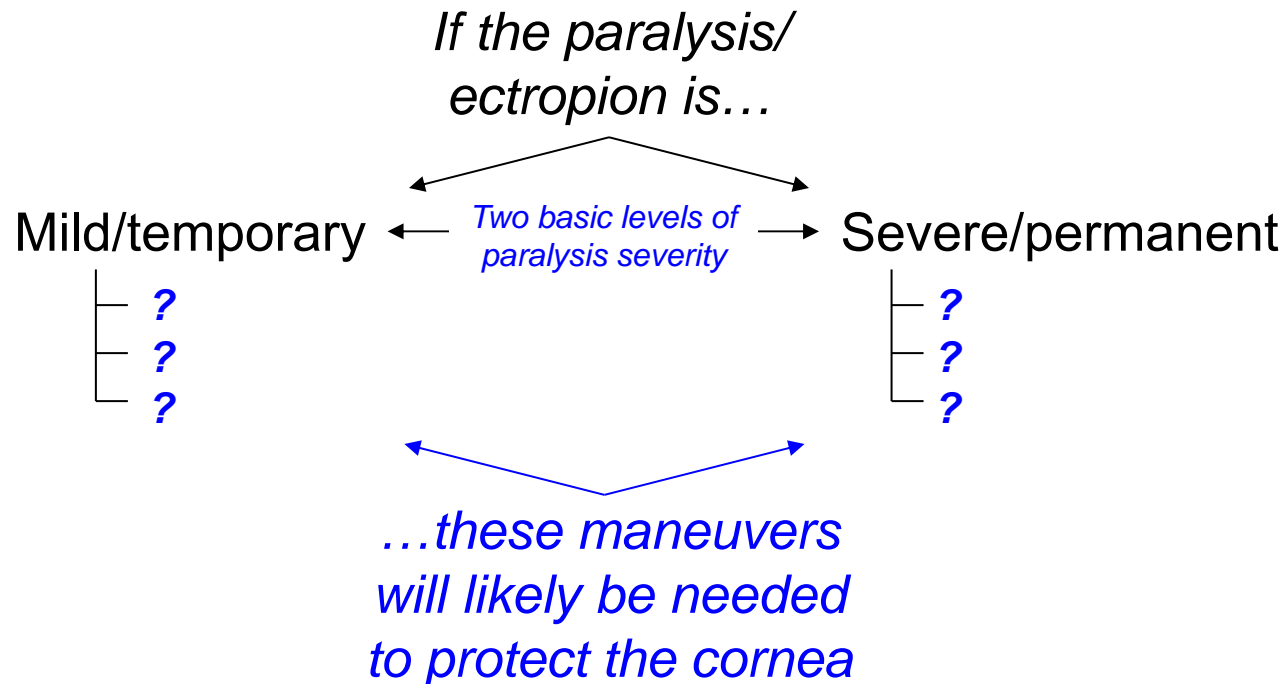


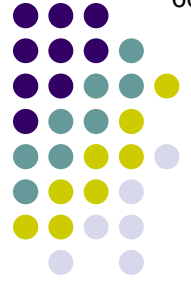
Q

Paralytic Ectropion

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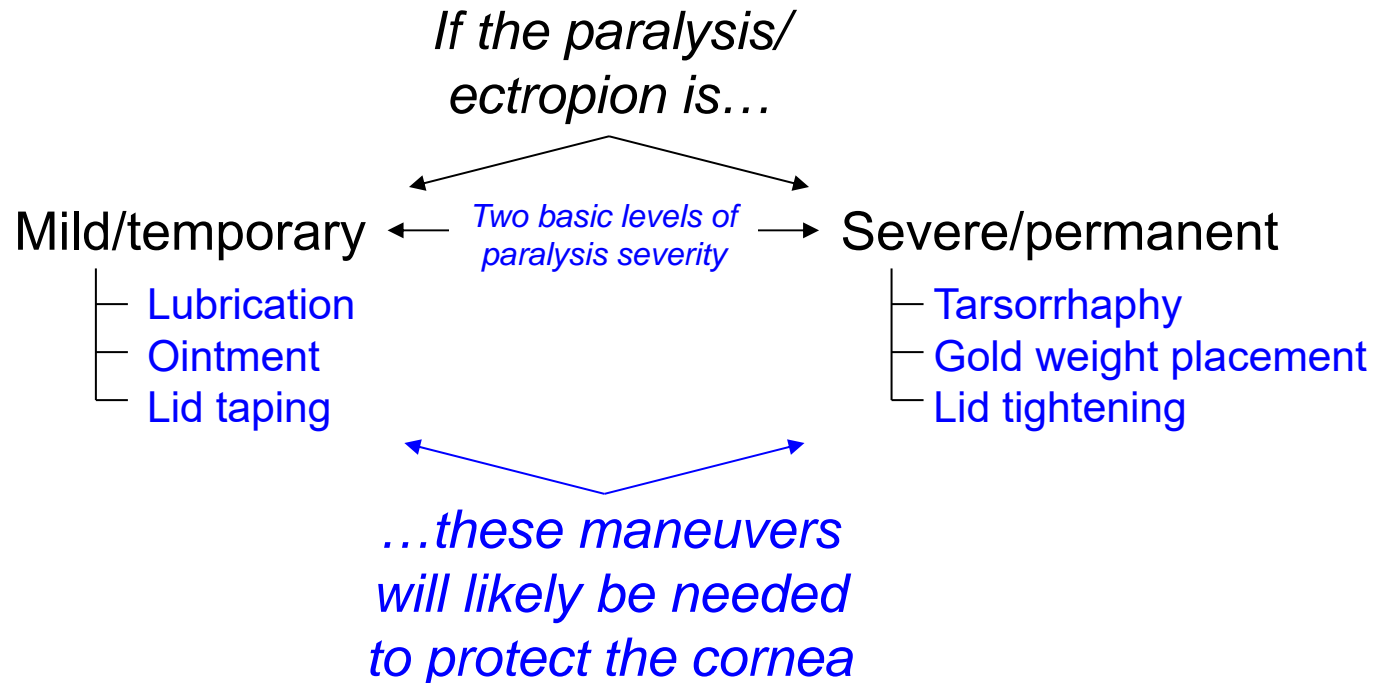


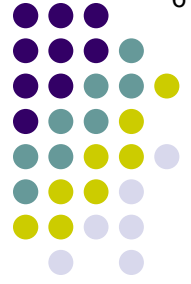
A

Paralytic Ectropion

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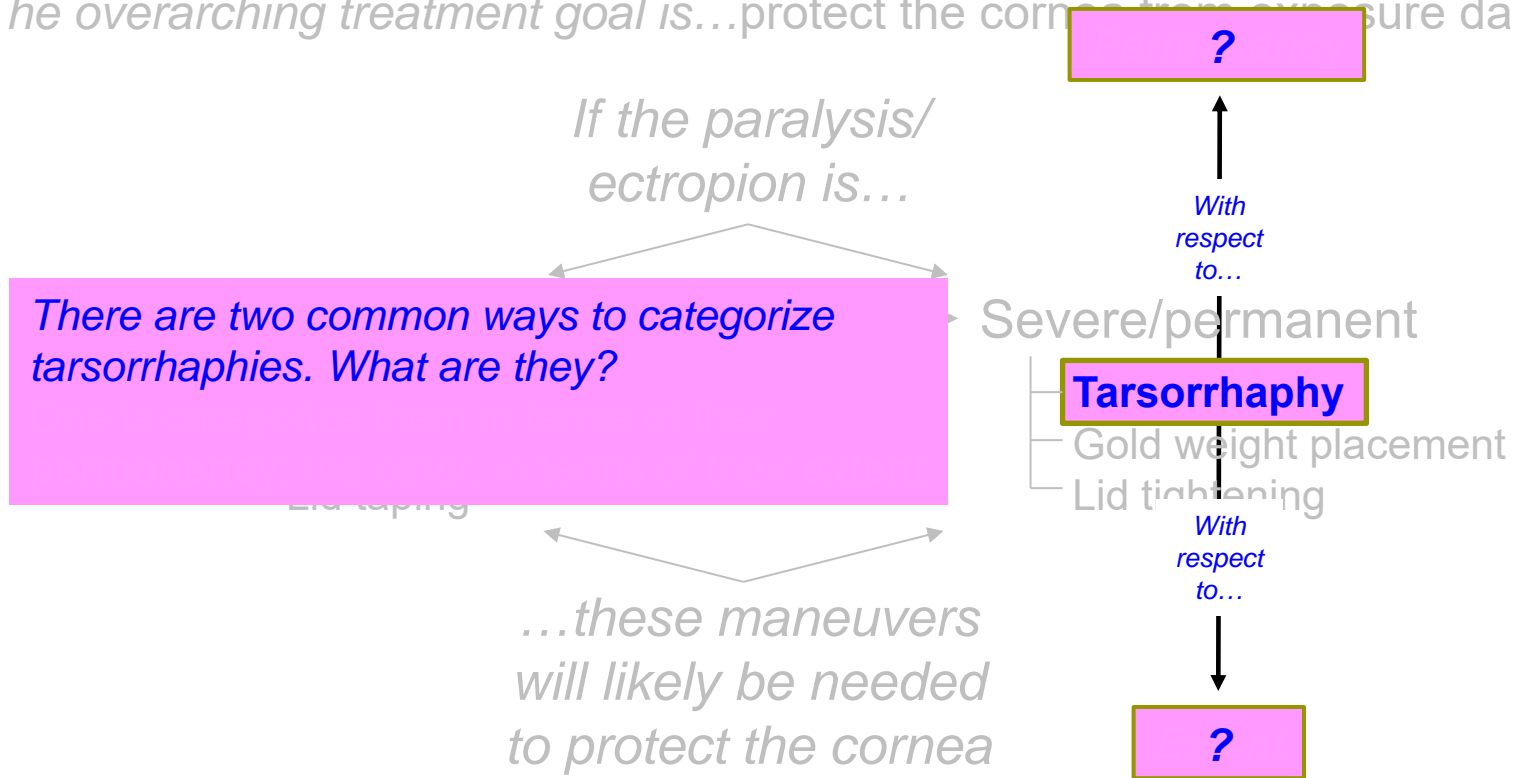


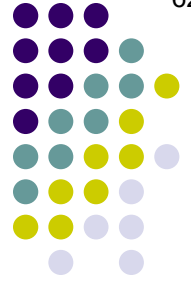
Paralytic Ectropion

Q

- As for managing paralytic ectropion:

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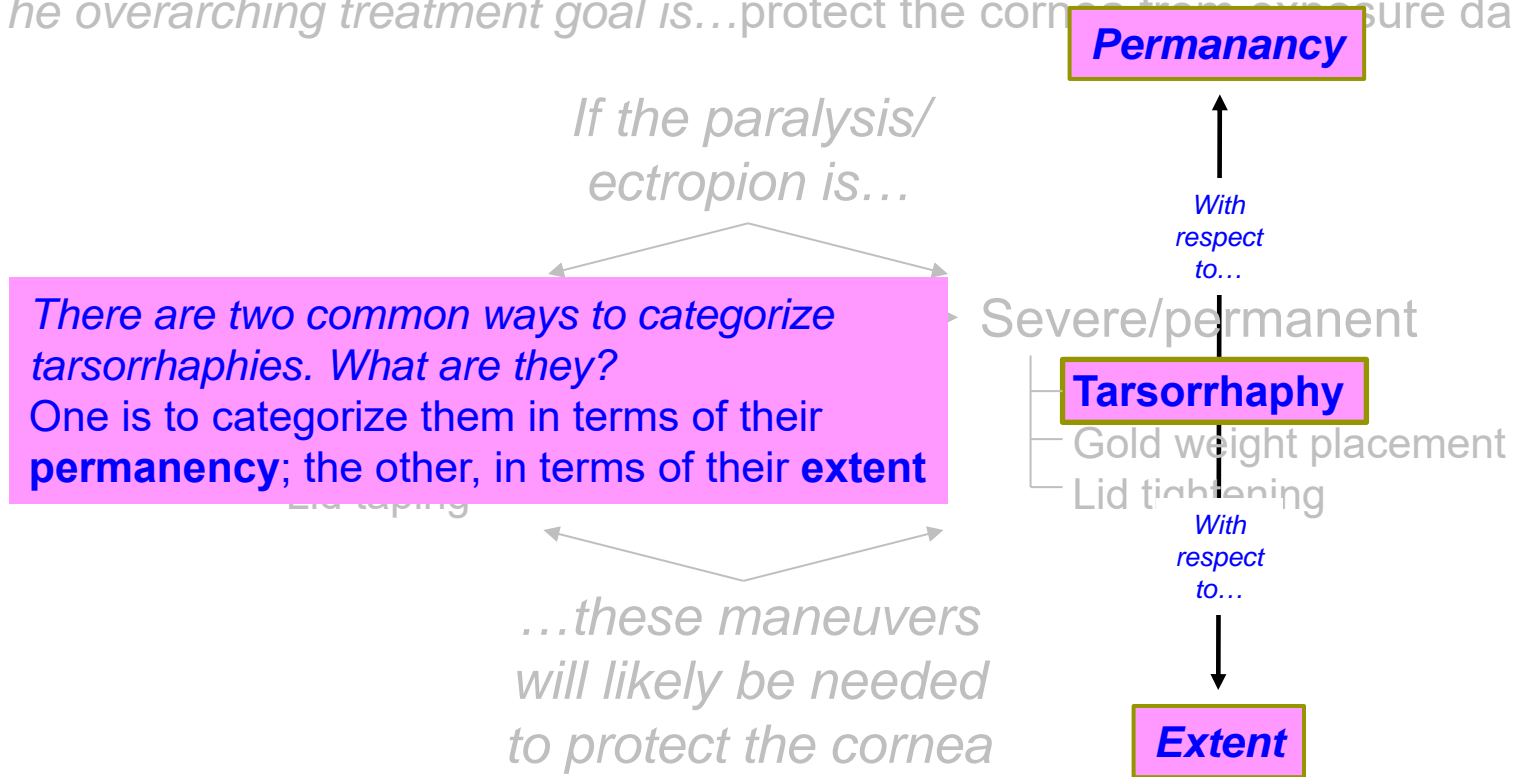


A

Paralytic Ectropion

- As for managing paralytic ectropion:

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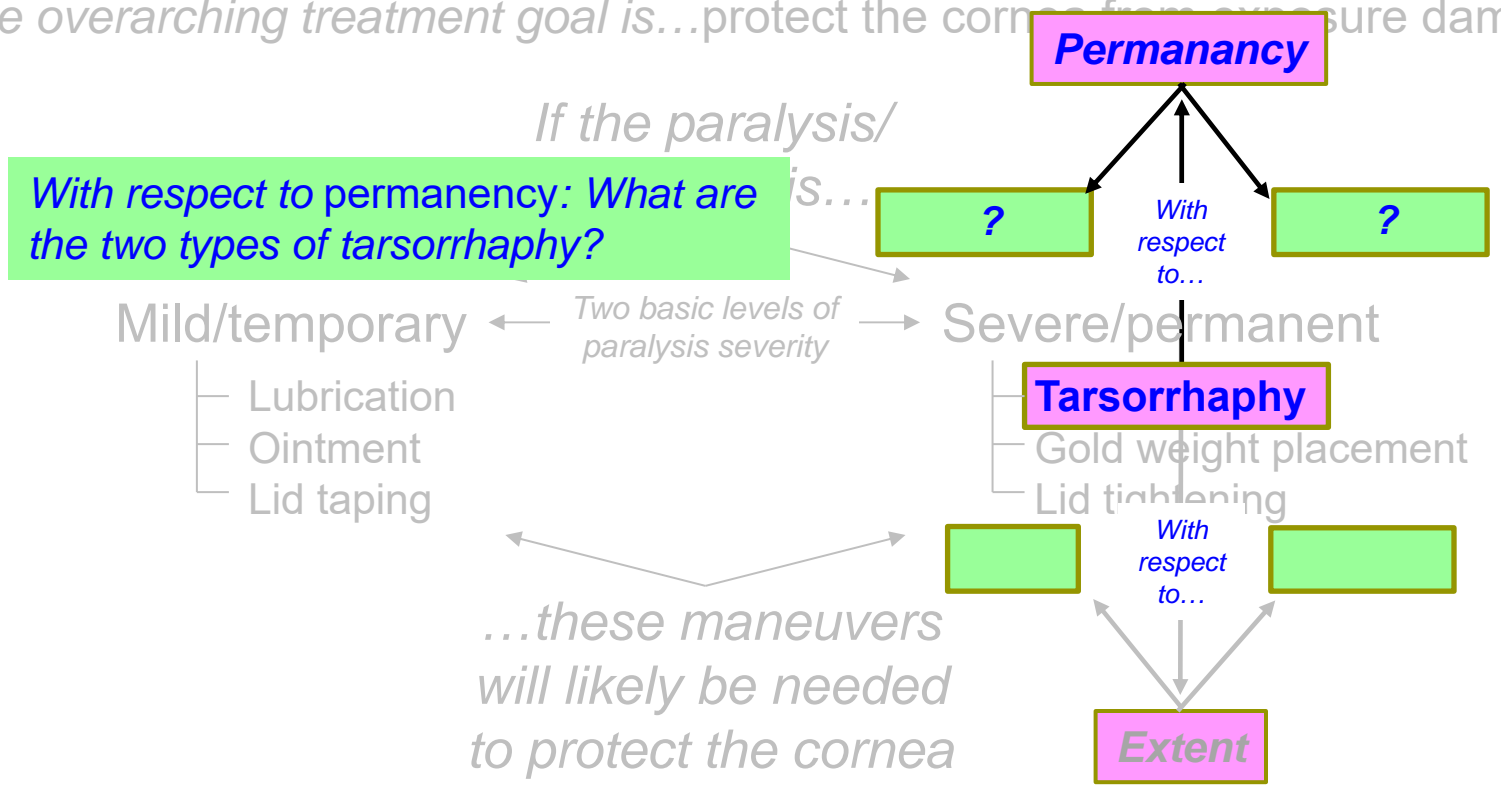


Paralytic Ectropion

Q

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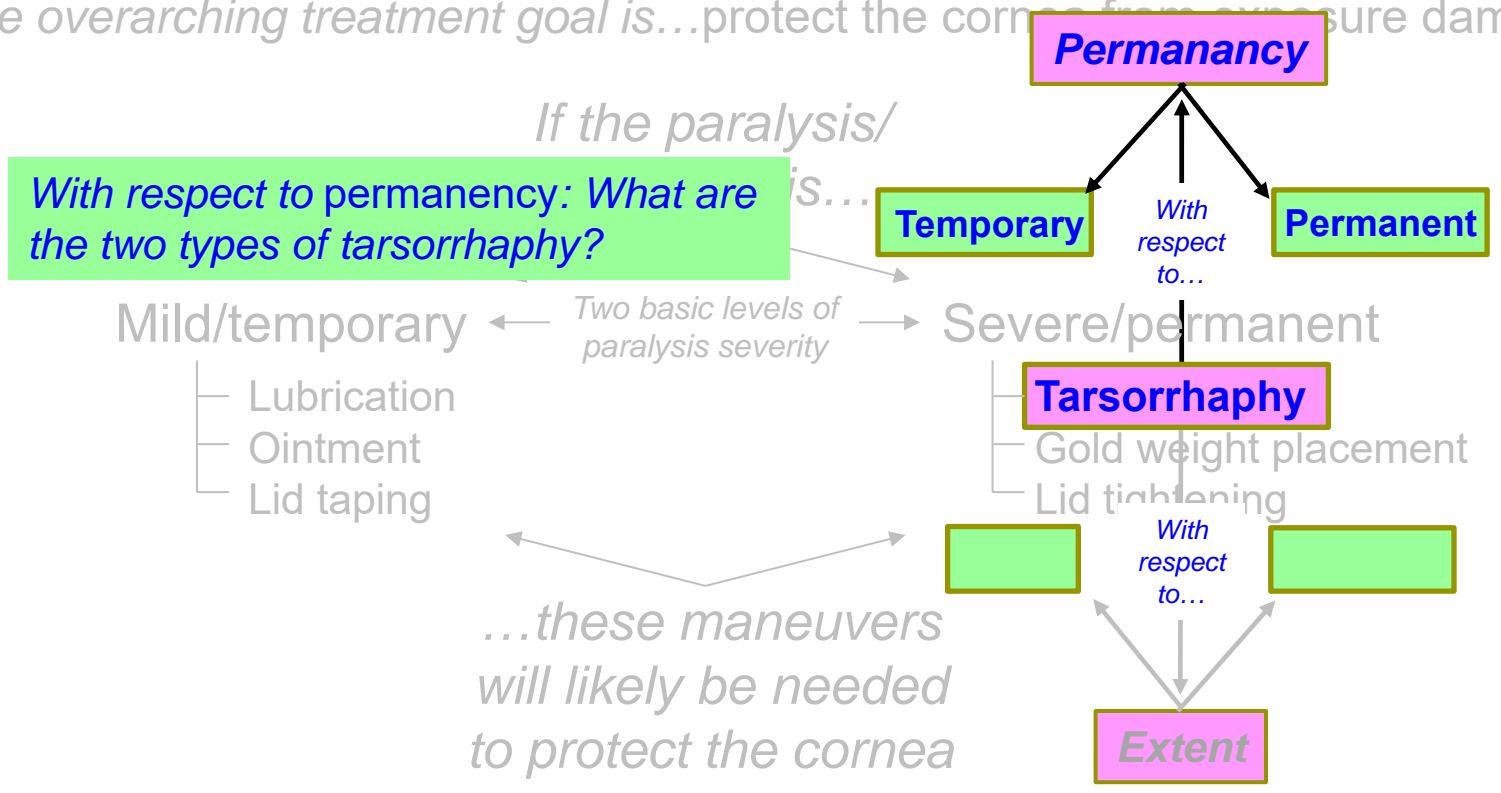


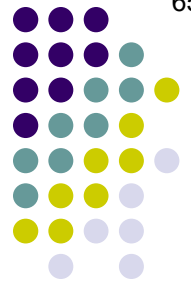
A

Paralytic Ectropion

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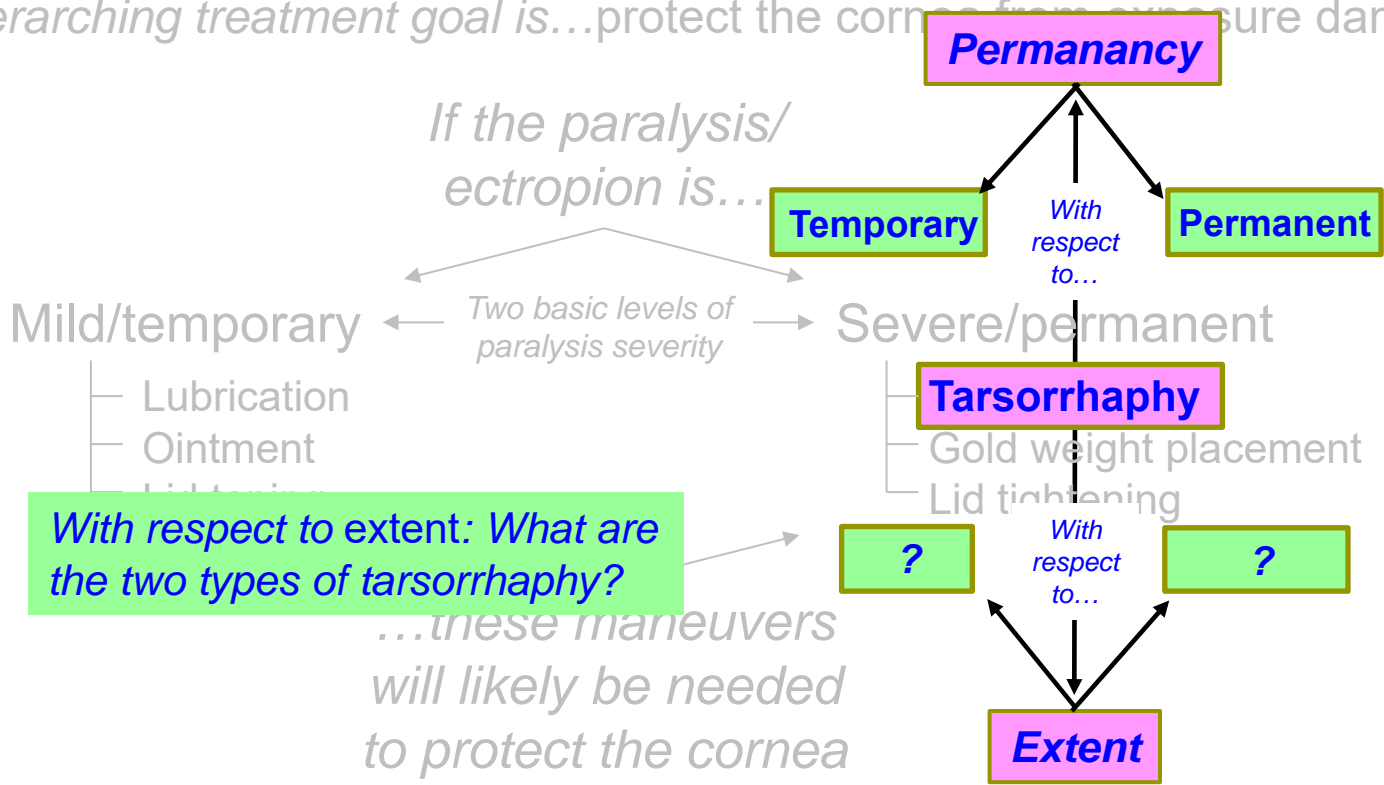


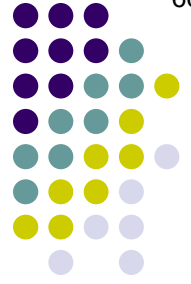
Paralytic Ectropion

Q

- As for managing paralytic ectropion:

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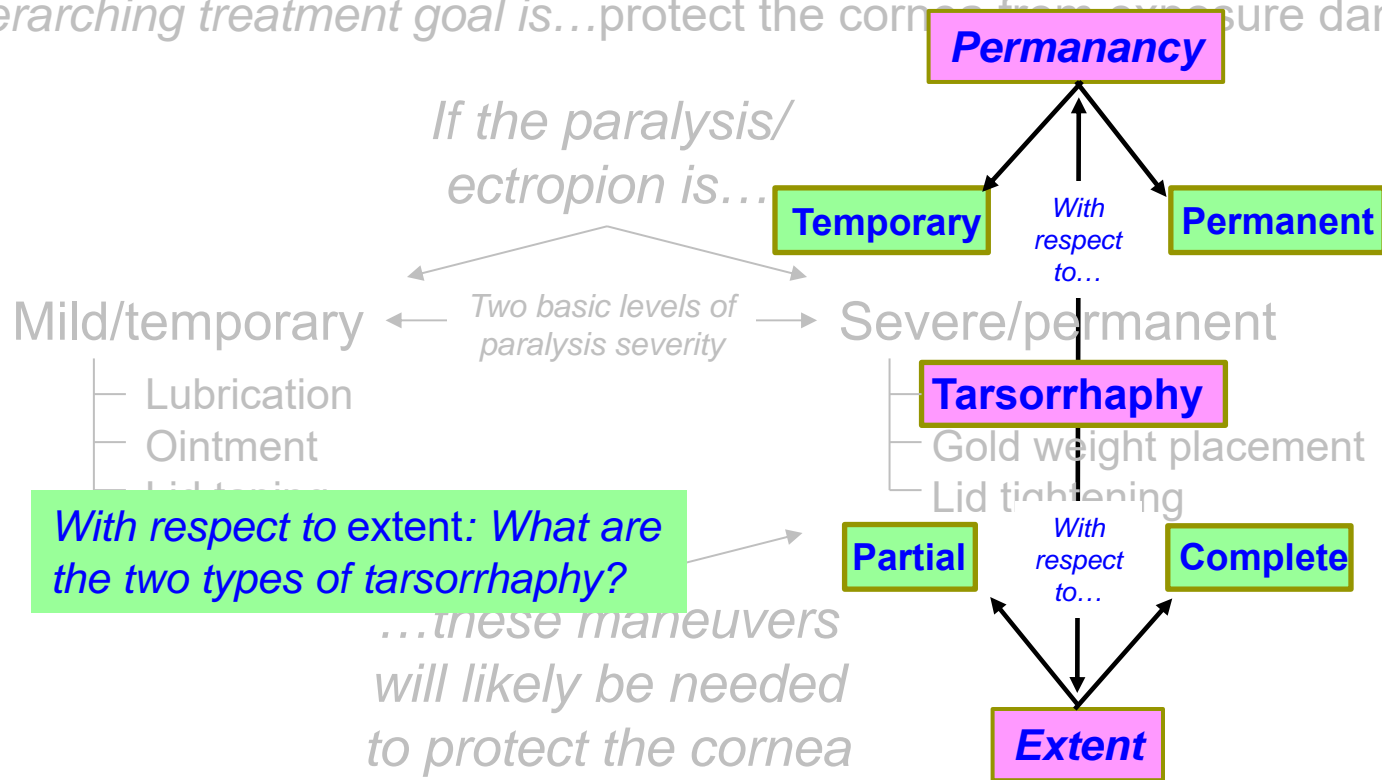


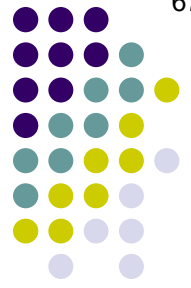
A

Paralytic Ectropion

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The overarching treatment goal is...protect the cornea from exposure damage





Paralytic Ectropion

Q

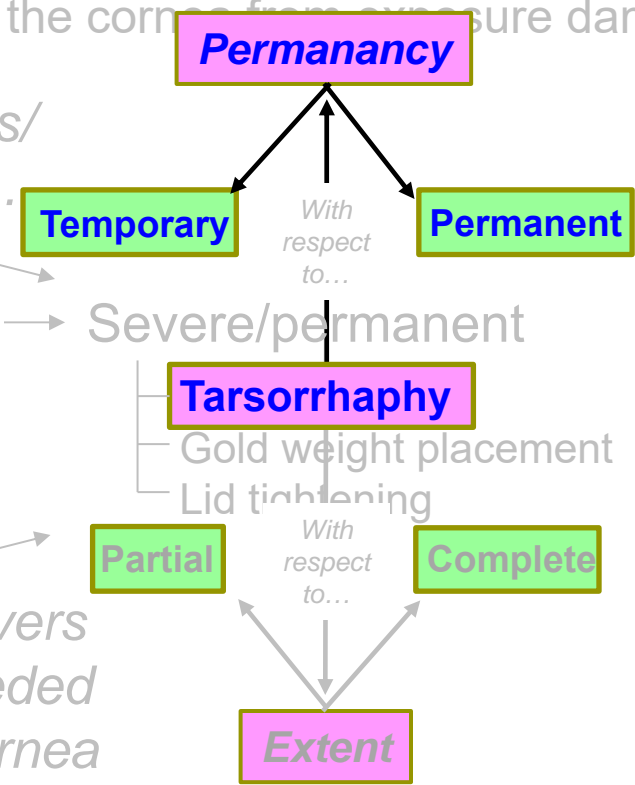
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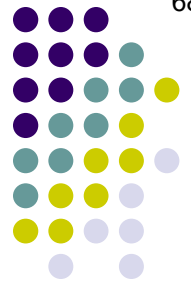
The overarching treatment goal is...protect the cornea from exposure damage

In terms of technique, temporary and permanent tarsorrhaphies differ in a couple of key ways. What are they?

- Lubrication
- Ointment
- Lid taping

...these maneuvers will likely be needed to protect the cornea





A

Paralytic Ectropion

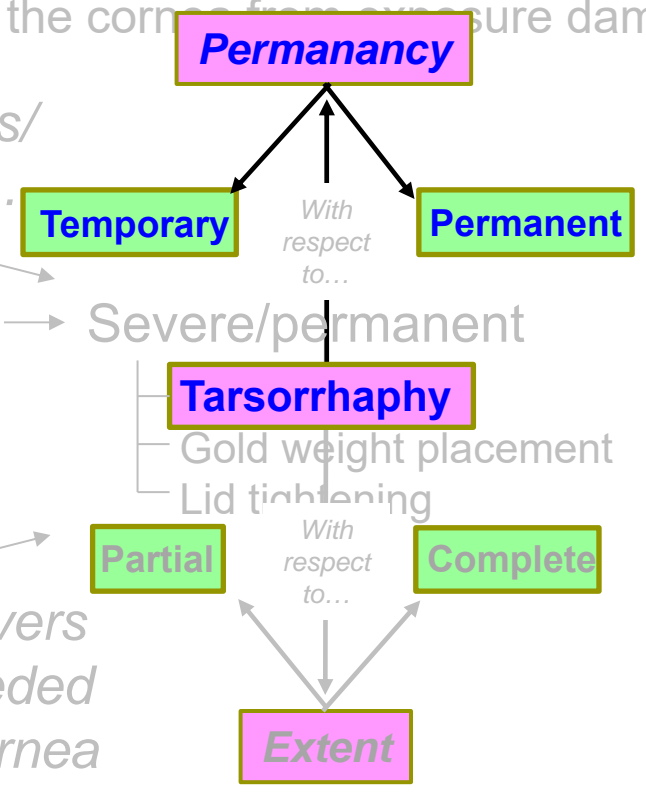
- As for managing paralytic ectropion:

The overarching treatment goal is...protect the cornea from exposure damage

In terms of technique, temporary and permanent tarsorrhaphies differ in a couple of key ways. What are they?
 They are 1) the type of suture used, and
 2) how the lid-margin epithelium is handled.

- Lubrication
- Ointment
- Lid taping

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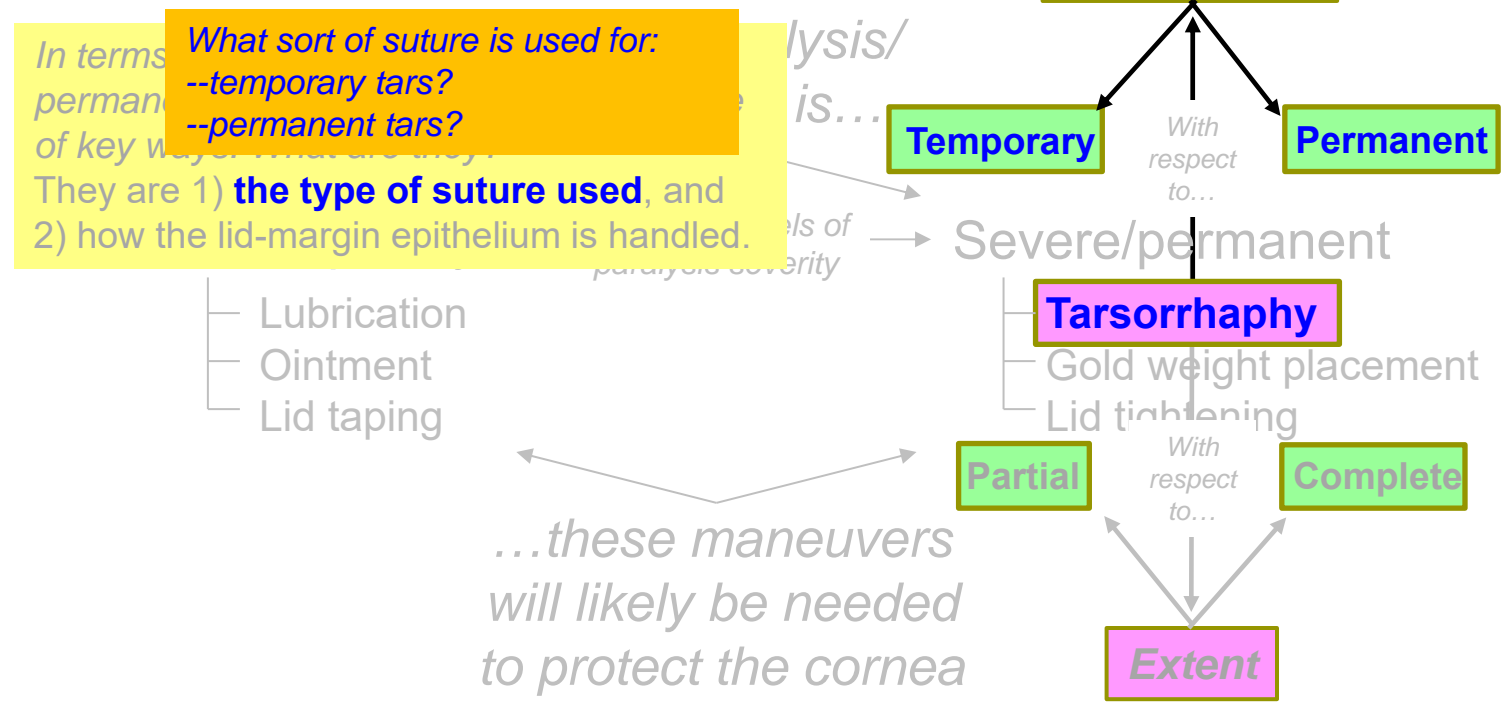


Paralytic Ectropion

Q

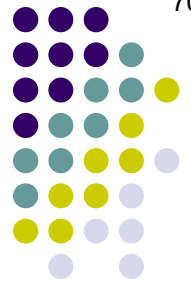
- As for managing paralytic ectropion:

The overarching treatment goal is...protect the cornea from exposure damage



In terms of key ways of key ways of what are they? They are 1) **the type of suture used**, and 2) how the lid-margin epithelium is handled.

What sort of suture is used for: --temporary tars? --permanent tars?

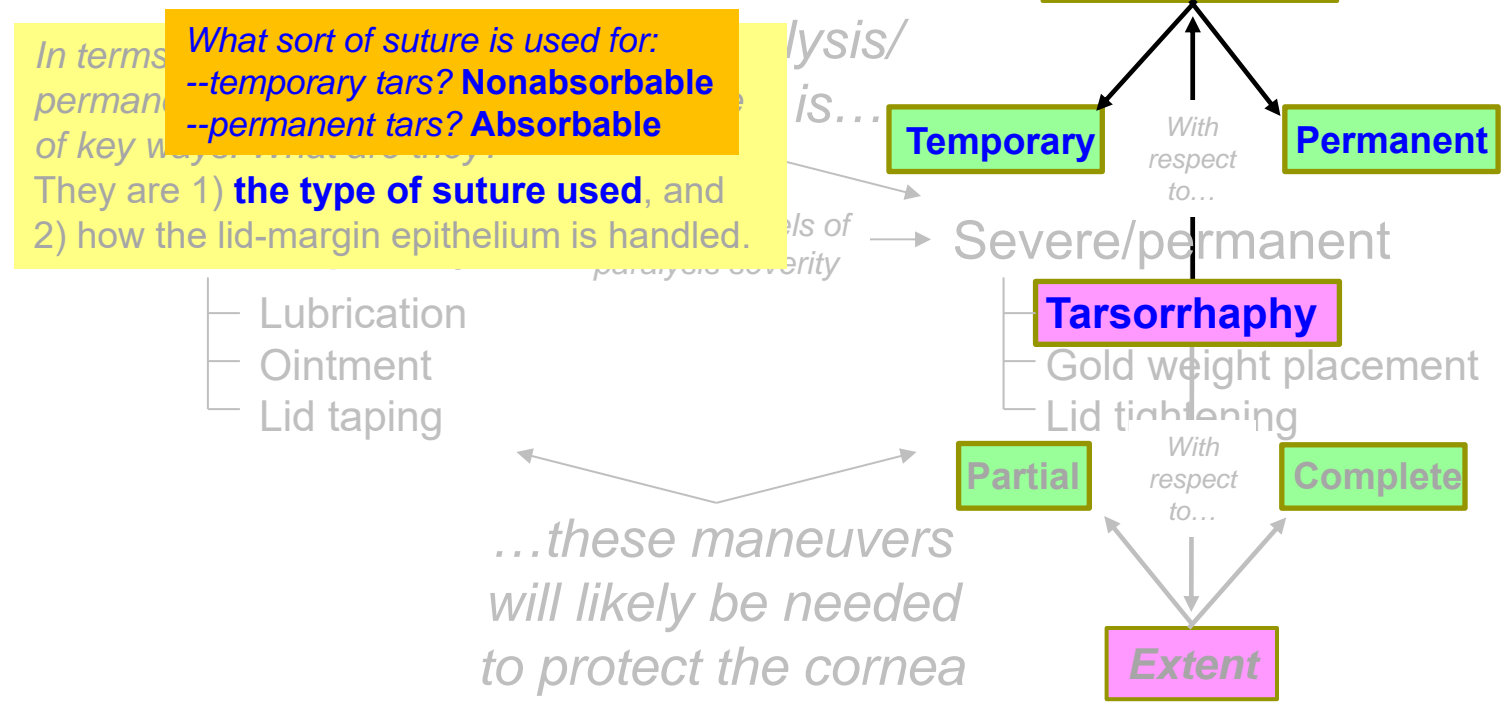


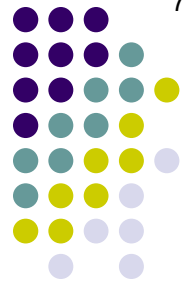
A

Paralytic Ectropion

- As for managing paralytic ectropion:

The overarching treatment goal is...protect the cornea from exposure damage





Paralytic Ectropion

Q

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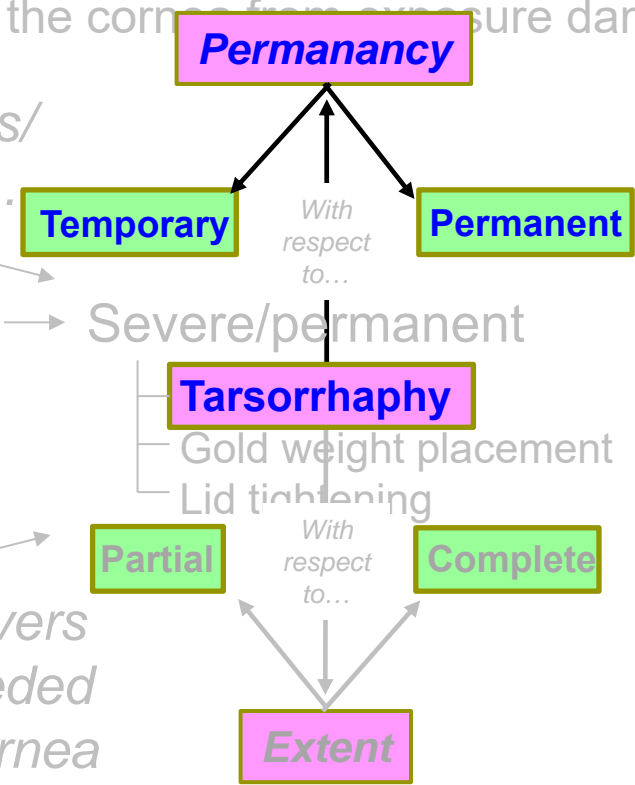
The overarching treatment goal is...protect the cornea from exposure damage

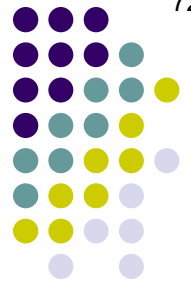
In terms of permanent vs temporary tarsorrhaphy, the key ways of what are they? They are 1) the type of suture used, and 2) **how the lid-margin epithelium is handled.**

What sort of suture is used for:
 --temporary tars? **Nonabsorbable**
 --permanent tars? **Absorbable**

Lubrication
 How is the epithelium handled in:
 --temporary tars?
 --permanent tars?

...these maneuvers will likely be needed to protect the cornea



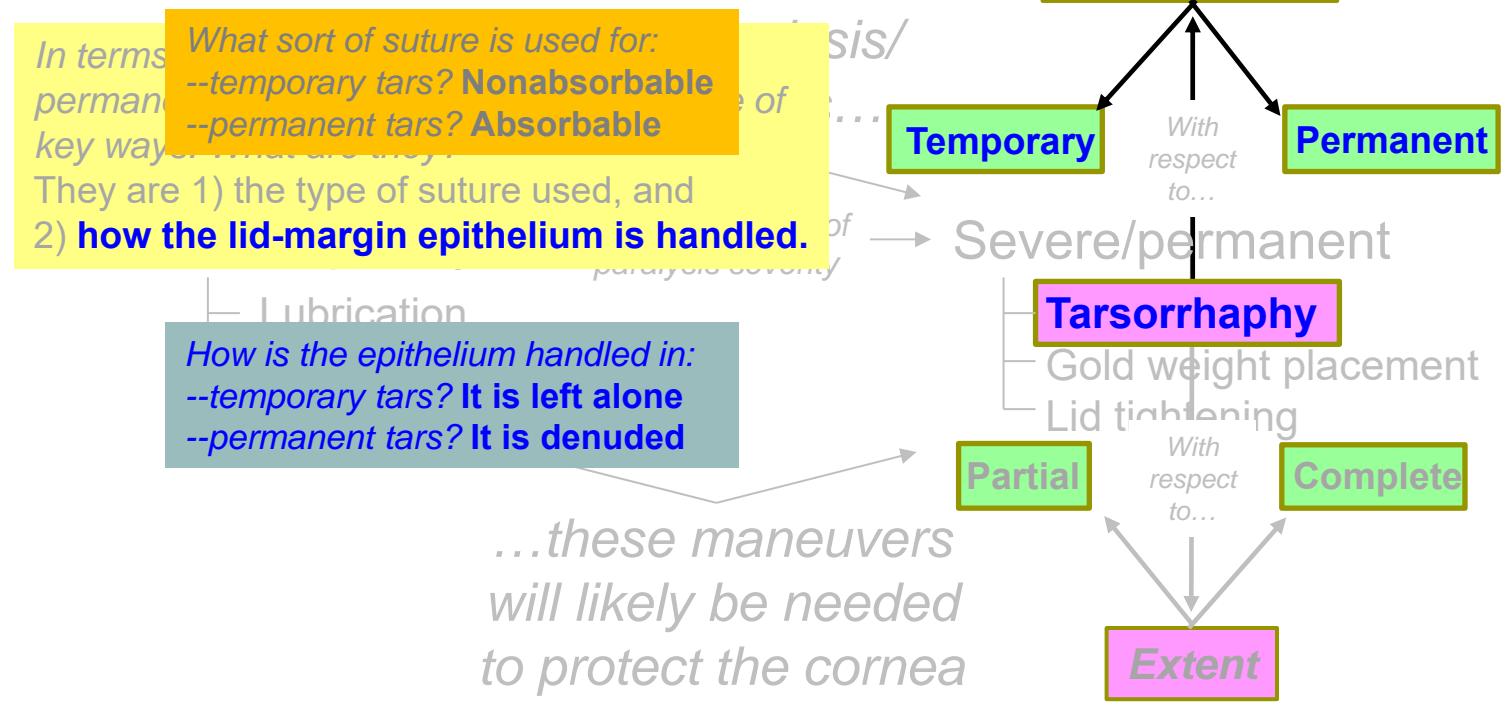


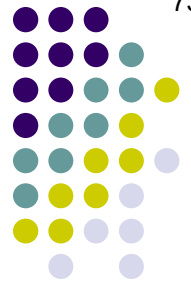
A

Paralytic Ectropion

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The overarching treatment goal is...protect the cornea from exposure damage



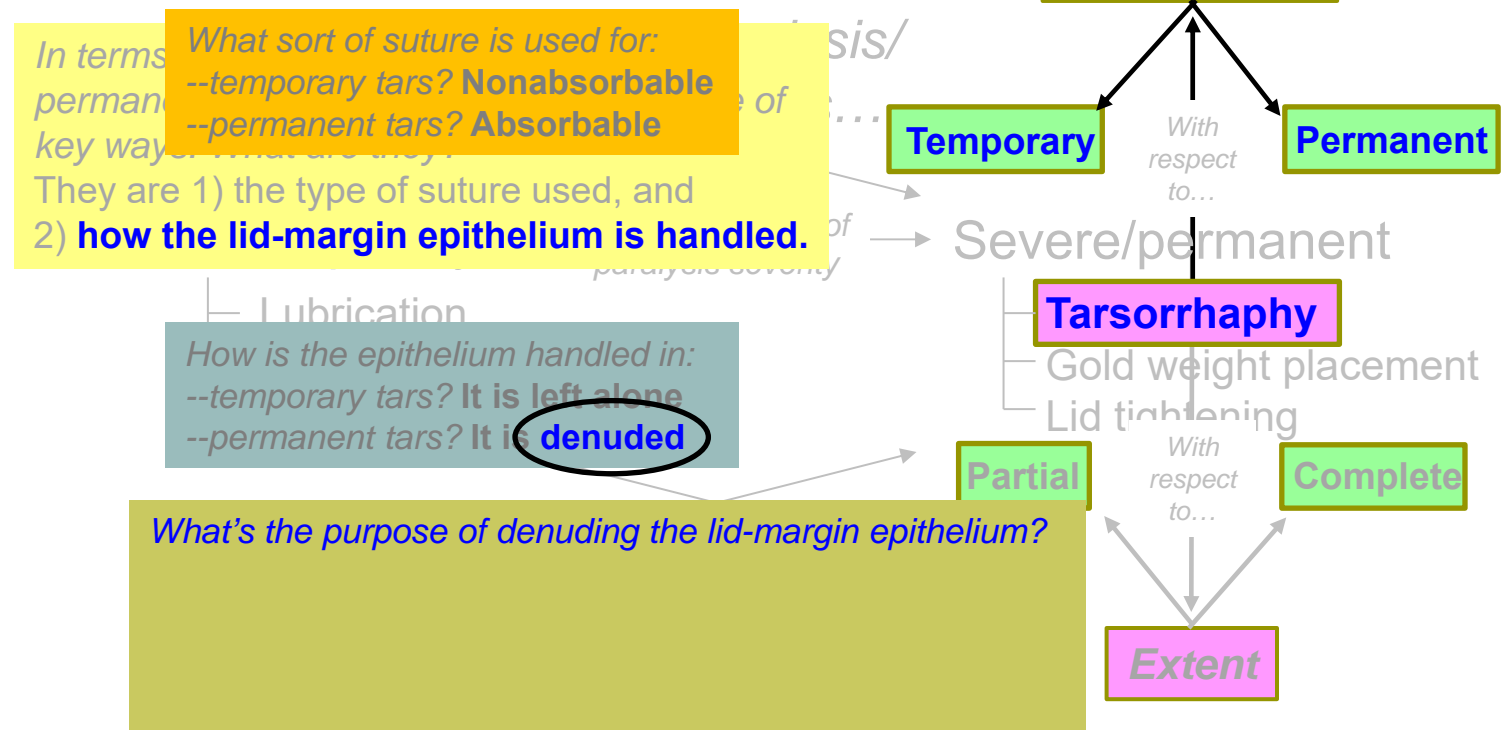


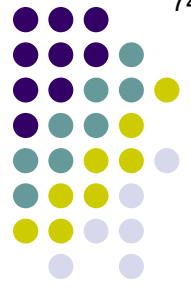
Paralytic Ectropion

Q

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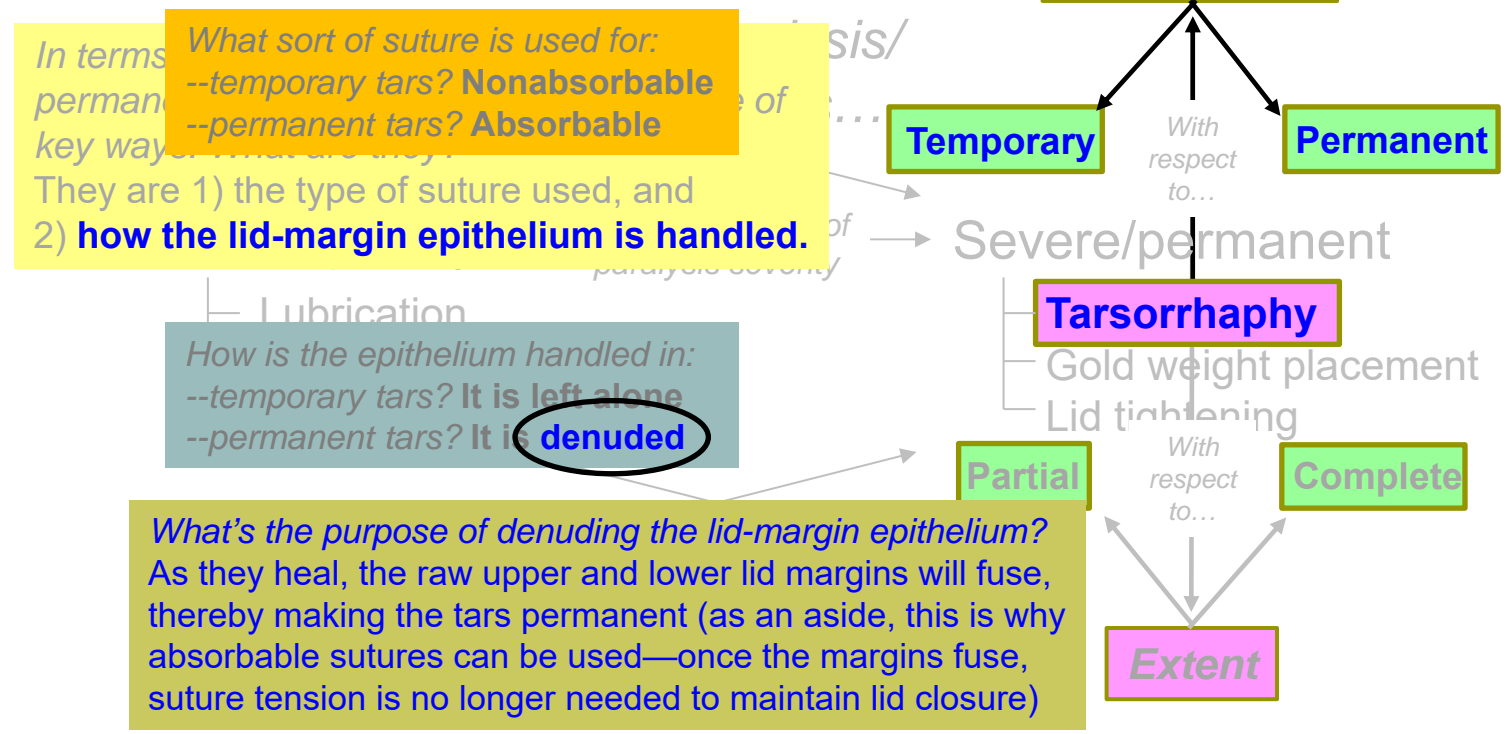


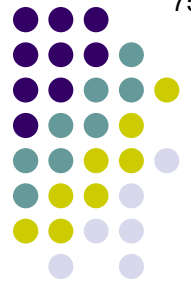
Paralytic Ectropion

A

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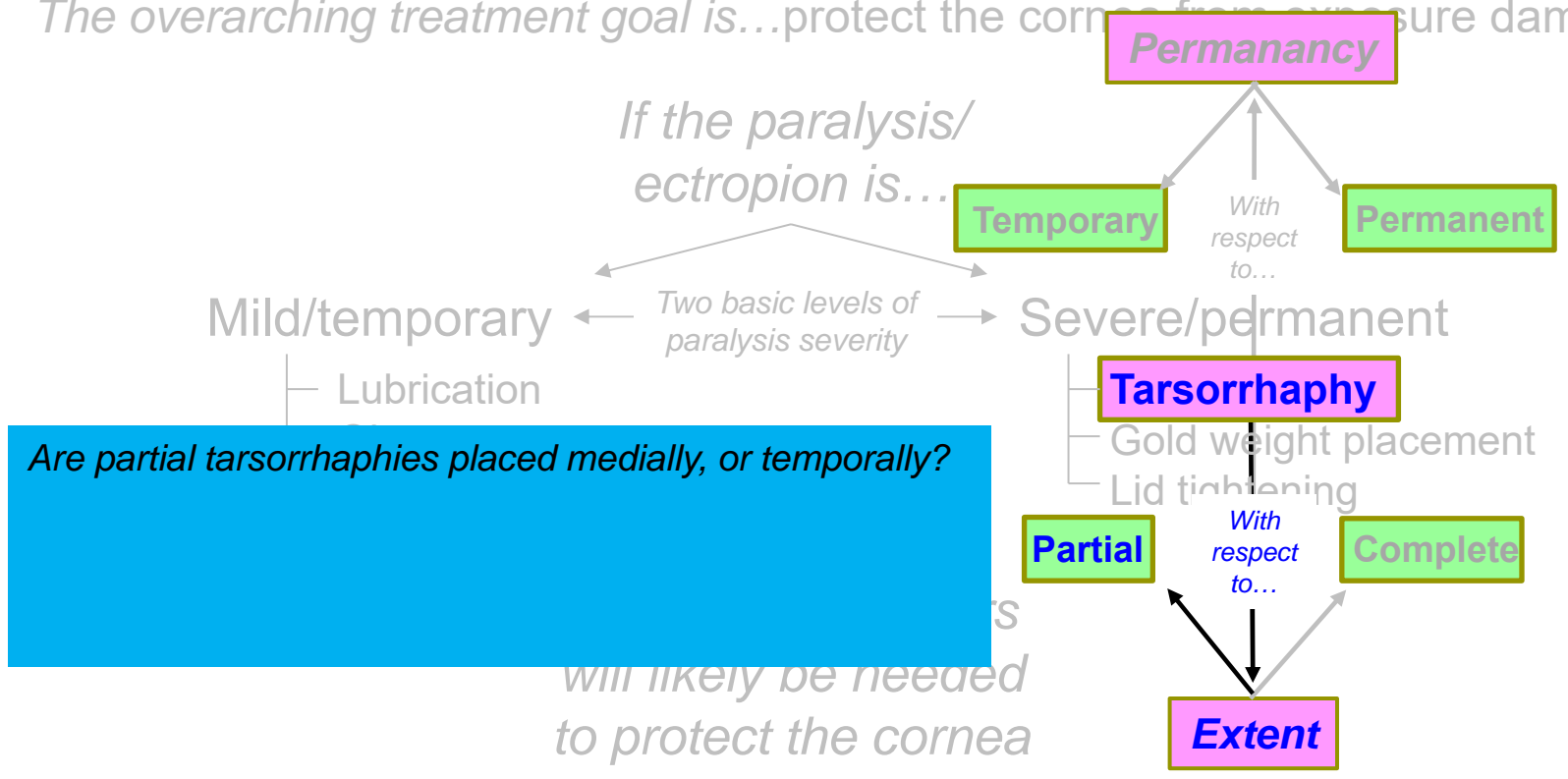


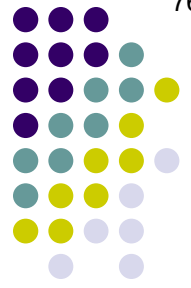
Paralytic Ectropion

Q

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The overarching treatment goal is...protect the cornea from exposure damage



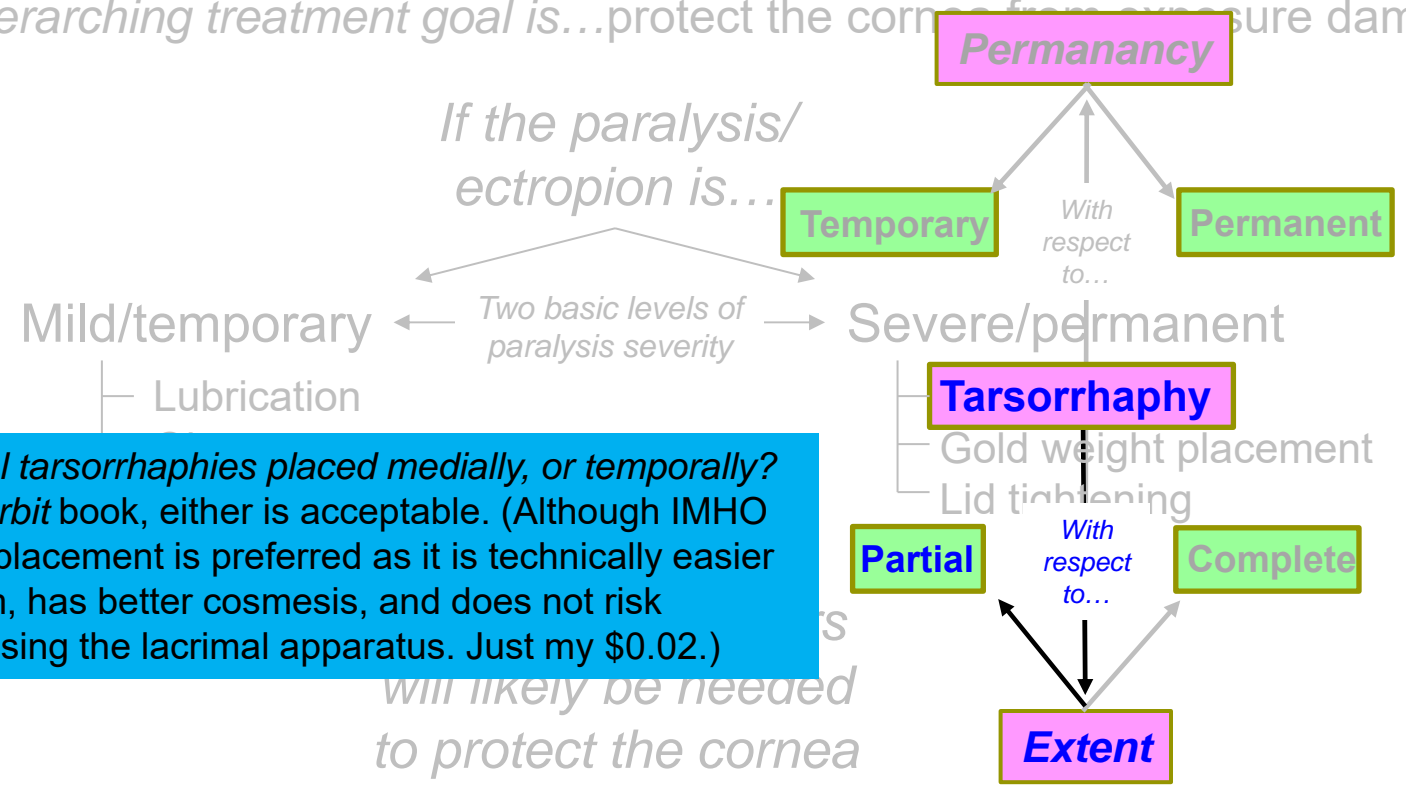


A

Paralytic Ectropion

- As for managing paralytic ectropion:

The overarching treatment goal is...protect the cornea from exposure damage



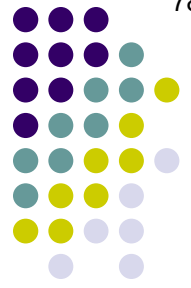
Are partial tarsorrhaphies placed medially, or temporally? Per the Orbit book, either is acceptable. (Although IMHO temporal placement is preferred as it is technically easier to perform, has better cosmesis, and does not risk compromising the lacrimal apparatus. Just my \$0.02.)

will likely be needed to protect the cornea

Paralytic Ectropion



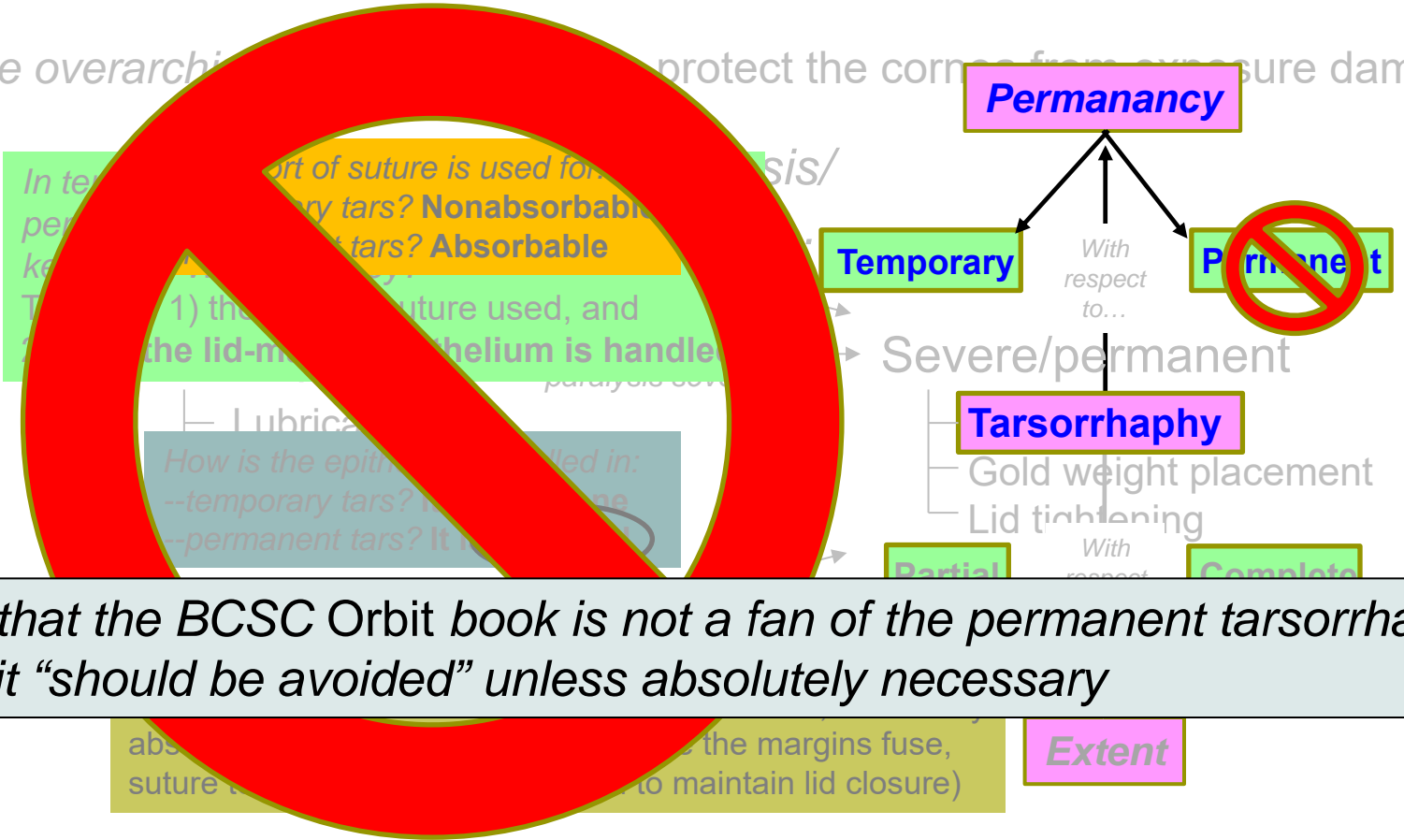
Partial tarsorrhaphy



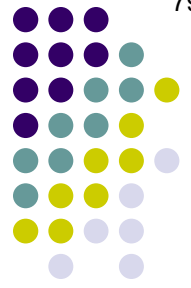
Paralytic Ectropion

- As for managing paralytic ectropion:

The overarching goal is to protect the cornea from exposure damage



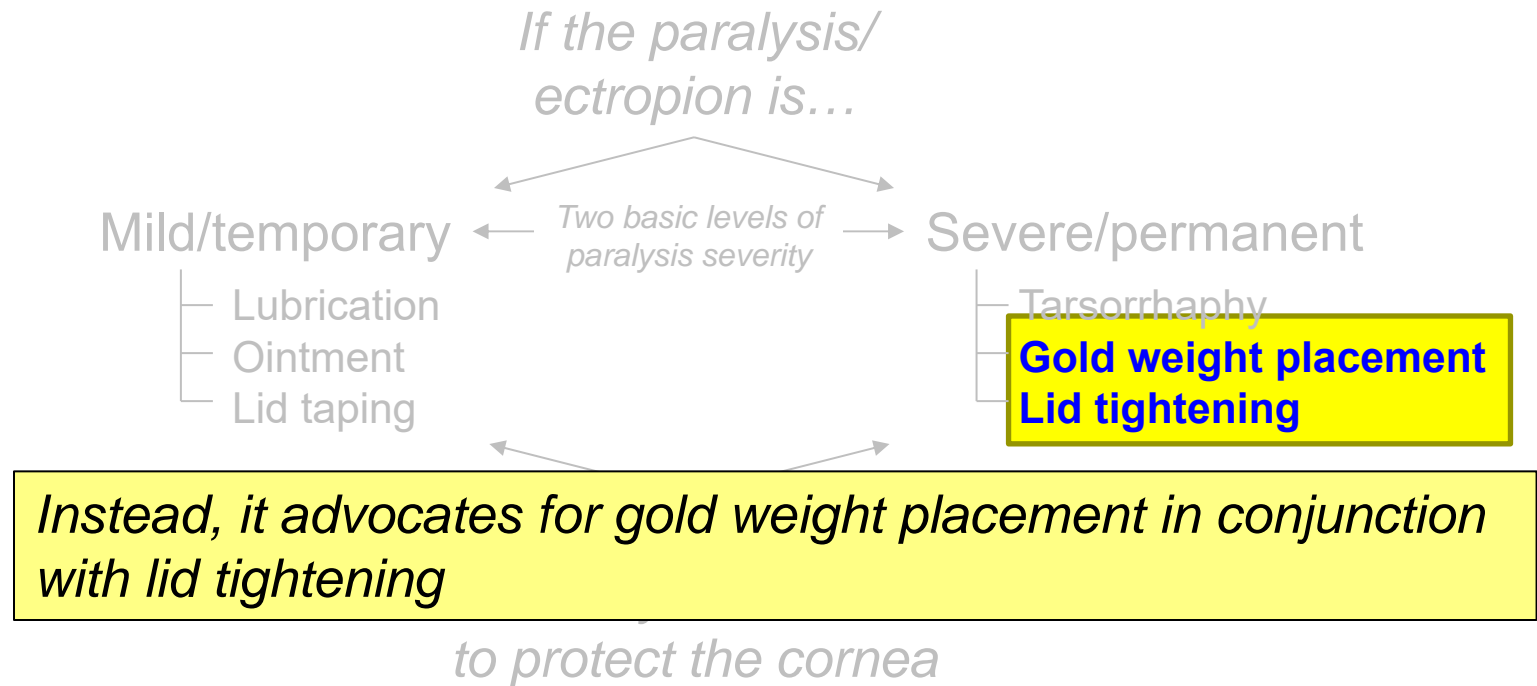
Note that the BCSC Orbit book is not a fan of the permanent tarsorrhaphy—says it “should be avoided” unless absolutely necessary

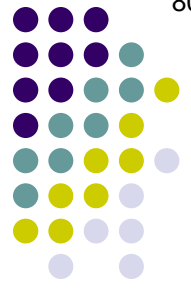


Paralytic Ectropion

- As for managing paralytic ectropion:

The overarching treatment goal is...protect the cornea from exposure damage



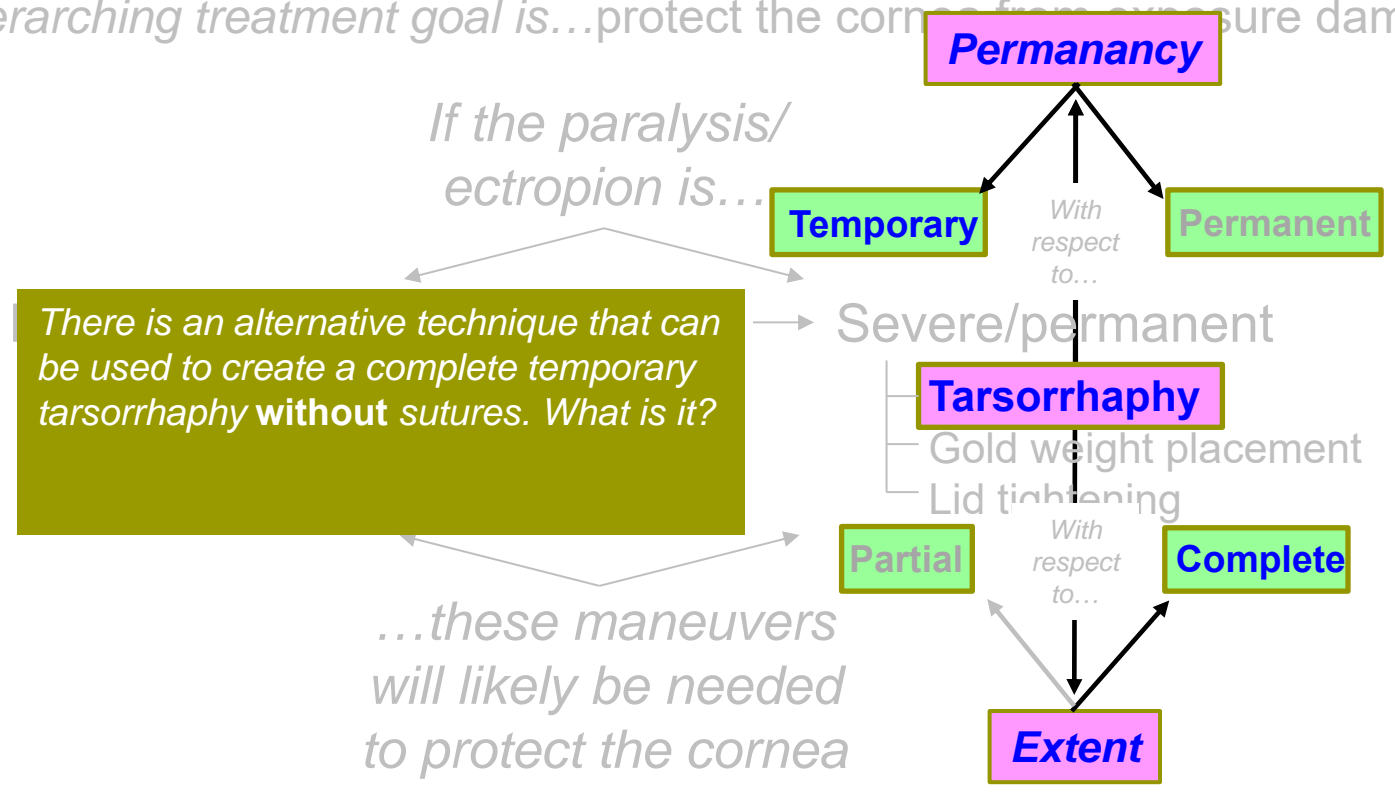


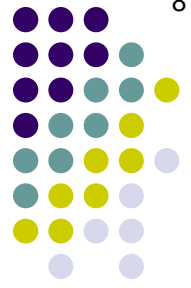
Paralytic Ectropion

Q

- As for managing paralytic ectropion:

The overarching treatment goal is...protect the cornea from exposure damage



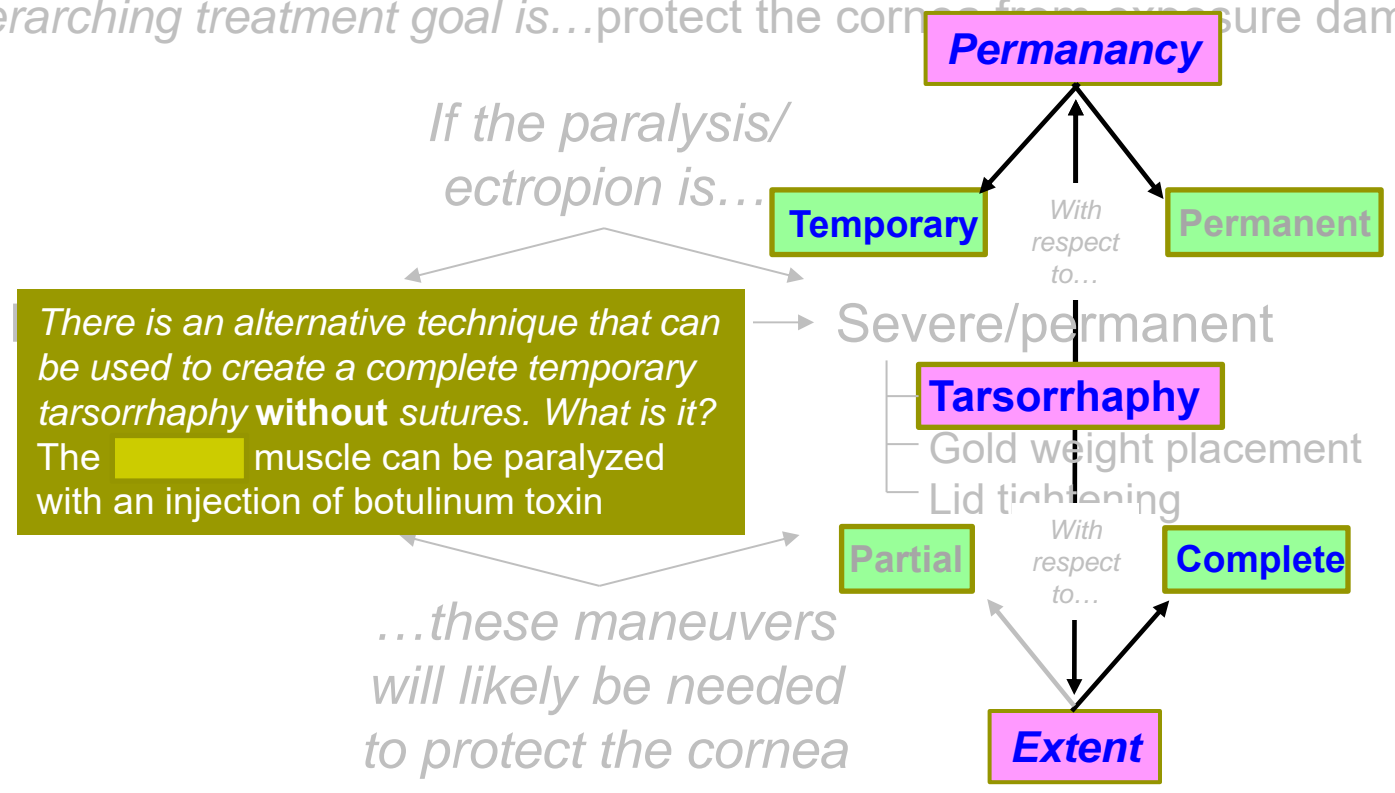


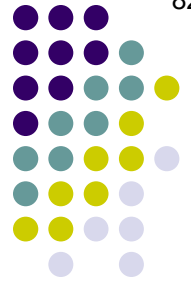
Q/A

Paralytic Ectropion

- As for managing paralytic ectropion:

The overarching treatment goal is...protect the cornea from exposure damage



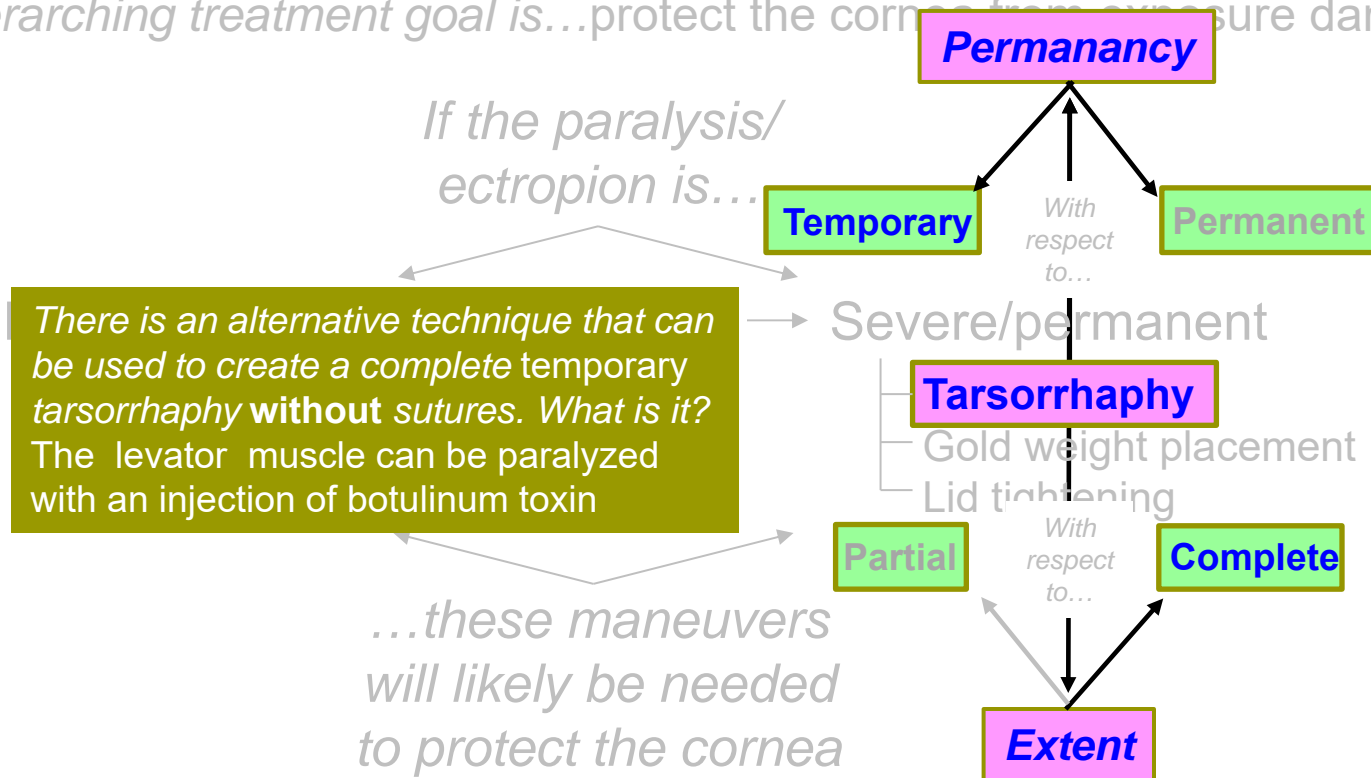


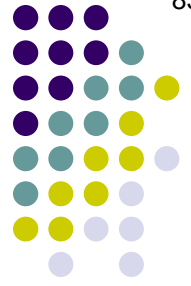
A

Paralytic Ectropion

- As for managing paralytic ectropion:

The overarching treatment goal is...protect the cornea from exposure damage



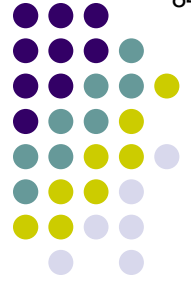


Paralytic Ectropion



A 10-year-old female with right meta-herpetic corneal ulcer (top left). Anterior transcutaneous chemodenervation of levator muscle was performed with Botox (top right). One week after chemodenervation demonstrating complete ptosis (bottom left). Patient in upgaze demonstrating preserved superior rectus function (bottom right).

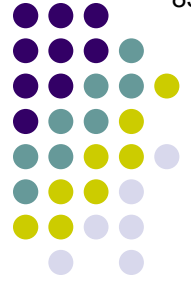
Neurotoxin (botulinum) tarsorrhaphy



Q

Paralytic Ectropion

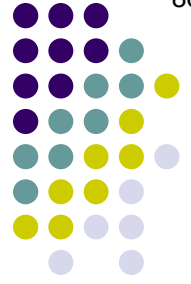
- Also, when managing paralytic ectropion...
 - Remember: $7 + 5 = ?$ [Note: *Not 12*]



A

Paralytic Ectropion

- Also, when managing paralytic ectropion...
 - Remember: $7 + 5 = \textit{Tarsorrhaphy}$

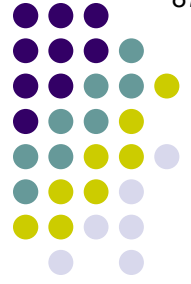


Q

Paralytic Ectropion

- Also, when managing paralytic ectropion...
 - Remember $7 + 5 = \textit{Tarsorrhaphy}$

7 + 5 = tarsorrhaphy? What on earth is that supposed to mean?

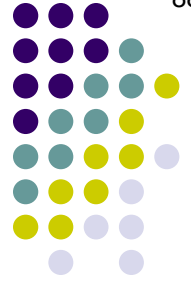


Q/A

Paralytic Ectropion

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It means if a pt has both a CN7 palsy preventing lid closure **and** decreased corneal sensation (ie, CN5 dysfunction), then s/he is at very high risk for two words, and prophylactic tarsorrhaphy (or similar procedure) should be strongly considered.

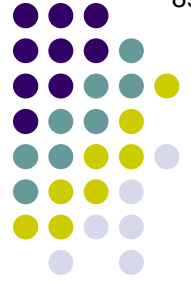


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Q

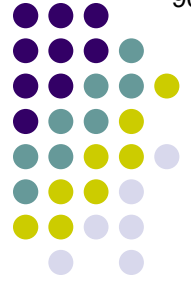
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What does this imply about the initial evaluation of a pt presenting with paralytic ectropion?



A

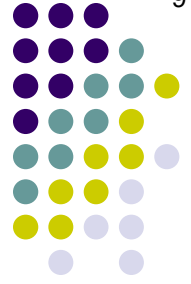
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Q

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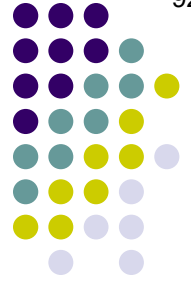
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A

Paralytic Ectropion

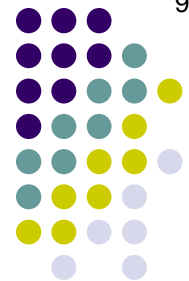
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What is the most common cause of simultaneous loss of CNs 5 & 7?



Q/A

Paralytic Ectropion

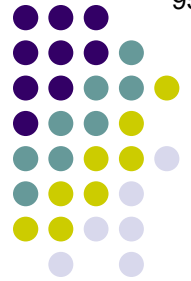
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What is the most common cause of simultaneous loss of CNs 5 & 7?
 tumor type (two words) **resection surgery**



A

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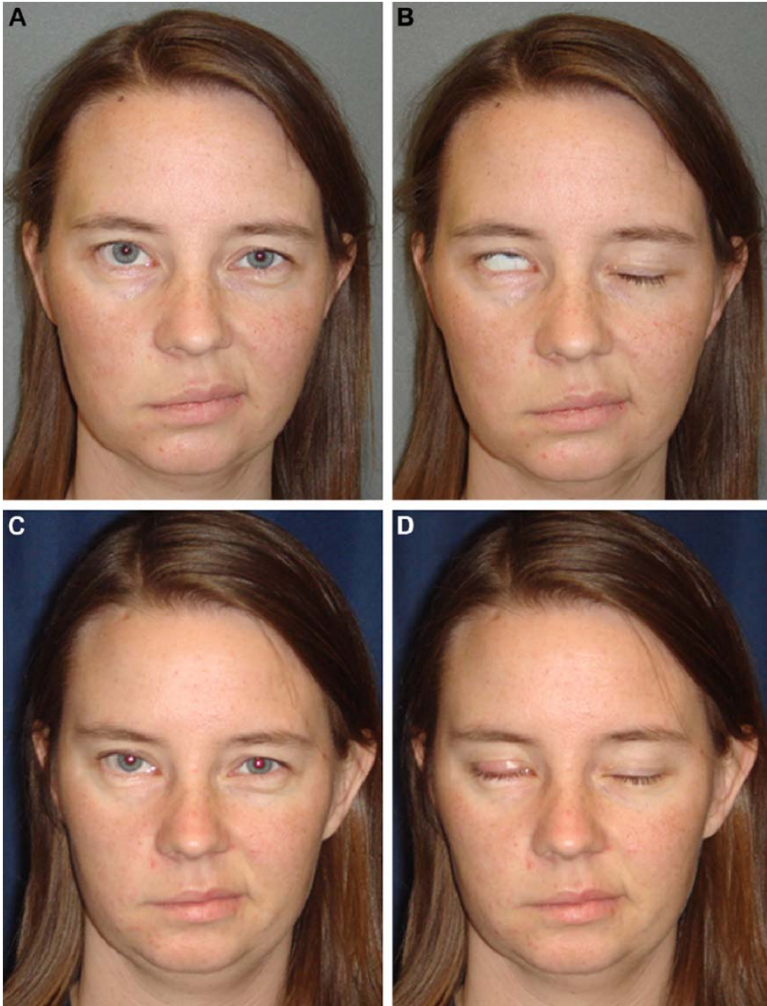
CVA, and **intracranial surgery**

What is the most common cause of simultaneous loss of CNs 5 & 7?

Acoustic neuroma resection surgery



Paralytic Ectropion



A. A 33-year-old woman with complete right facial paralysis following resection of a large acoustic neuroma resulting in the loss of the facial nerve at the skull base.

B. Lagophthalmos with corneal exposure despite the presence of Bell's phenomenon.

C,D. Shortly after the initial tumor surgery, a 1 g gold weight was placed in the upper eyelid, followed by cross facial nerve graft. Three weeks later, full closure is achieved.

Paralytic lagophthalmos