If you were limited to using just two words, how would you describe Parinaud syndrome; ie, in general terms, what sort of condition is it?
It is a gaze palsy.
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A gaze palsy is a limitation of extraocular motility that has two specific characteristics—what are they?
--?
--?
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It is a gaze palsy

A gaze palsy is a limitation of extraocular motility that has two specific characteristics—what are they?
--The limitation must involve only one eye, or both
--?
If you were limited to using just two words, how would you describe Parinaud syndrome; ie, in general terms, what sort of condition is it? It is a gaze palsy.

A gaze palsy is a limitation of extraocular motility that has two specific characteristics—what are they? The limitation must involve both eyes.
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A gaze palsy is a limitation of extraocular motility that has two specific characteristics—what are they?

--The limitation must involve both eyes
--The limitation is in the same direction of gaze bilaterally (eg, both eyes can’t look up; both eyes can’t look to the left; etc)
If you were limited to using just two words, how would you describe Parinaud syndrome; ie, in general terms, what sort of condition is it?

It is a gaze palsy

A gaze palsy is a limitation of extraocular motility that has two specific characteristics—what are they?

Before we get into Parinaud syndrome specifically, let’s first create a frame for thinking about extraocular motility limitation generally.
Parinaud Syndrome

If you were limited to using just two words, how would you describe Parinaud syndrome; ie, in general terms, what sort of condition is it?
It is a gaze palsy

A gaze palsy is a limitation of extraocular motility that has two specific characteristics—what are they?

Before we get into Parinaud syndrome specifically, let’s first create a frame for thinking about extraocular motility limitation generally. Once we have this general understanding we will see where Parinaud syndrome fits within it.

(No question—proceed when ready)
Which cranial nerves innervate the extraocular muscles (EOMs)?
Which cranial nerves innervate the extraocular muscles (EOMs)?
What is the name for the collections of neurons that give rise to each of these cranial nerves? (This is not a trick question--the answer is as obvious as it seems.)
What is the name for the collections of neurons that give rise to each of these cranial nerves? (This is not a trick question--the answer is as obvious as it seems.)
As will be apparent shortly, the ‘nuclear level’ is the locus around which we organize our understanding of extraocular motility control (and limitations thereof)
With respect to pathology of the EOM control pathways, there are four major ‘locations.’ One of these (the nuclear) has been identified already. What are the other three? (Hint: Their names reflect the relationship each has to the nuclear level.)
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...you may not be with this one, although you’ll agree it makes sense in context. (Further, and importantly, it is used in the BCSC Neuro book.)
With respect to pathology of the EOM control pathways, there are four major ‘locations.’ One of these (the nuclear) has been identified already. What are the other three? (Hint: Their names reflect the relationship each has to the nuclear level.)

…you may not be with this one, although you’ll agree it makes sense in context. (Further, and importantly, it is used in the BCSC Neuro book.)
Parinaud Syndrome

The *supranuclear pathways* consists of inputs to the nuclei from centers in the cortex, cerebellum, vestibular system, etc.

(No question—proceed when ready)
The **supranuclear pathways** consists of inputs to the nuclei from centers in the cortex, cerebellum, vestibular system, etc. These locations are ‘supra’ in that they carry signals to the nuclei.

(No question—proceed when ready)
Are lesions of the CN3 nucleus commonly encountered in clinical practice?
Are lesions of the CN3 nucleus commonly encountered in clinical practice?
No, they are rare
Are lesions of the CN4 nucleus commonly encountered in clinical practice?
Are lesions of the CN4 nucleus commonly encountered in clinical practice?
No, these are even rarer
Are lesions of the CN6 nucleus commonly encountered in clinical practice?
Are lesions of the CN6 nucleus commonly encountered in clinical practice?
While not common, they are a well-known clinical entity.
Which two nuclei share an internuclear connection that is of well-established clinical importance?
Which two nuclei share an internuclear connection that is of well-established clinical importance?

3 and 6

Parinaud Syndrome
What is the name of the internuclear pathway connecting the CN3 and CN6 nuclei?
What is the name of the internuclear pathway connecting the CN3 and CN6 nuclei?
The medial longitudinal fasciculus (MLF)
Parinaud Syndrome

Supranuclear

Nuclear

Infranuclear

The infranuclear pathway consists of everything below the nuclei: the axons as they run from the nuclei to the neuromuscular junction; the junction itself; and finally the EOMs themselves.

Extraocular muscle

(No question—proceed when ready)
This slide summarizes our general framework for understanding limitation of extraocular motility.

(No question—proceed when ready)
When you encounter a pt with a motility issue, you want to determine its status, ie, is it **nuclear**, **supranuclear**, **internuclear**, or **infranuclear**

This slide summarizes our general framework for understanding limitation of extraocular motility

(No question—proceed when ready)
When you encounter a pt with a motility issue, you want to determine its status, i.e., is it nuclear, supranuclear, internuclear, or infranuclear? Is Parinaud syndrome with a motility issue, you want to determine its status, nuclear, supranuclear, internuclear, or infranuclear?
Parinaud syndrome is a supranuclear palsy.

Is Parinaud syndrome with a motility issue, you want to determine its status, nuclear, supranuclear, internuclear, or infranuclear?
Parinaud syndrome is a supranuclear palsy. When you encounter a pt with a motility issue, you want to determine its status, i.e., is it nuclear, supranuclear, internuclear, or infranuclear? Recall we said Parinaud syndrome is a gaze palsy. Are all gaze palsies supranuclear?
Parinaud syndrome is a supranuclear palsy. Is Parinaud syndrome with a motility issue, you want to determine its status, as nuclear, supranuclear, internuclear, or infranuclear?
Parinaud syndrome has four main features:

- ?
- ?
- ?
- ?
Parinaud syndrome has four main features:

- Impaired upgaze
- Lid retraction
- Convergence-retraction nystagmus
- Light-near dissociation
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Do all Parinaud pts manifest all four features?
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Do all Parinaud pts manifest all four features? No

Is it common, or rare, for a pt to present with just a subset of them?
Parinaud Syndrome

- Parinaud syndrome has four main features:
  - Impaired upgaze
  - Lid retraction
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Do all Parinaud pts manifest all four features? No

Is it common, or rare, for a pt to present with just a subset of them? It is fairly common
Parinaud syndrome has four main features:

- Impaired upgaze?
- Lid retraction?
- Convergence-retraction nystagmus?
- Light-near dissociation?

Do all Parinaud pts manifest all four features?
No

Is it common, or rare, for a pt to present with just a subset of them?
It is fairly common

Of the four, which is the one most likely to be present?
Parinaud syndrome has four main features:

- **Impaired upgaze**
- Lid retraction
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**Do all Parinaud pts manifest all four features?**
No

**Is it common, or rare, for a pt to present with just a subset of them?**
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**Of the four, which is the one most likely to be present?**
Impaired upgaze
Parinaud Syndrome

Impaired upgaze in Parinaud’s
Parinaud syndrome has four main features:

- **Impaired upgaze**
- Lid retraction
- Convergence-retraction nystagmus
- Light-near dissociation

Parinaud syndrome is characterized by tonic downward displacement of the eyes, with impaired upgaze.

(No question yet—keep going)
Parinaud syndrome has four main features:

- **Impaired upgaze**
- Lid retraction
- Convergence-retraction nystagmus
- Light-near dissociation

Parinaud syndrome is characterized by tonic downward displacement of the eyes, with impaired upgaze. There is a clinical entity that is the opposite of this, that is, tonic upward deviation of the eyes, with impaired downgaze. What is this condition?

Oculogyric crisis

What is the etiology of oculogyric crisis?

It is an idiosyncratic drug reaction

Which two classes of drugs are most commonly implicated and which is number one?

The neuroleptics (#1), and the antiemetics
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*Which neuroleptic is most commonly implicated?*
*Haloperidol*

*Which antiemetic is most commonly implicated?*
*Metoclopramide*
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The neuroleptics (#1), and the antiemetics
Parinaud syndrome has four main features:
- Impaired upgaze
- **Lid retraction**
- Convergence-retraction nystagmus
- Light-near dissociation

What is the eponymous name for lid retraction in Parinaud syndrome?
Parinaud syndrome has four main features:

- Impaired upgaze
- Lid retraction
- Convergence-retraction nystagmus
- Light-near dissociation

What is the eponymous name for lid retraction in Parinaud syndrome? Collier’s sign
Parinaud Syndrome

Lid retraction in Parinaud’s
Parinaud Syndrome

- Parinaud syndrome has four main features:
  - Impaired upgaze
  - **Lid retraction**

Speaking of…The phrase *lid retraction* should bring to mind several conditions…

*First, what is the most common cause of lid retraction?*
Parinaud syndrome has four main features:

- Impaired upgaze
- **Lid retraction**

Speaking of…The phrase *lid retraction* should bring to mind several conditions…

*First, what is the most common cause of lid retraction?*
Thyroid eye dz (TED)
Parinaud Syndrome

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*A related TED lid issue: When TED pts move their eyes into downgaze, the upper lid will fail to follow the globe down. What is the name for this phenomenon?*
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Lid lag
Unilateral lid lag in TED. Note how the normal right upper lid has ‘followed’ the globe into downgaze

Bilateral lid lag in TED

TED: Lid lag
Parinaud Syndrome

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*What is the eponymous name for lid lag 2ndry to TED?*
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*There is a form of ptosis that has a strong association with lid lag—which one?*
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**Lid lag**

There is a form of *ptosis* that has a strong association with lid lag—which one?
Congenital myogenic ptosis
Parinaud syndrome has four main features:
- Impaired upgaze
- **Lid retraction**

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*There is a form of ptosis that has a strong association with lid lag—which one?* Congenital myogenic ptosis. In downgaze, their appearance will suggest lid retraction.
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**Lid lag**

*There is a form of ptosis that has a strong association with lid lag—which one?*  
Congenital myogenic ptosis. In downgaze, their appearance will suggest lid retraction.

*In a nutshell, what is the pathogenesis of congenital myogenic ptosis?*
Parinaud syndrome has four main features:
- Impaired upgaze
- **Lid retraction**

Speaking of... The phrase *lid retraction* should bring to mind several conditions...

*First, what is the most common cause of lid retraction?* Thyroid eye dz (TED). When you hear 'lid retraction,' think TED first.

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*In a nutshell, what is the pathogenesis of congenital myogenic ptosis?* The levator fails to develop properly, with some or all of its muscle fibers replaced by fibrofatty tissue.
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- Impaired upgaze
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Speaking of…The phrase *lid retraction* should bring to mind several conditions…

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A related TED lid issue: When TED pts move their eyes into downgaze, the upper lid will fail to follow the globe down. What is the name for this phenomenon? *Lid lag*

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In a nutshell, what is the pathogenesis of congenital myogenic ptosis? The levator fails to develop properly, with some or all of its muscle fibers replaced by fibrofatty tissue

*OK, I can see how a lack of functioning levator leads to ptosis, but why do these pts have lid lag?*
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The levator fails to develop properly, with some or all of its muscle fibers replaced by fibrofatty tissue.

*OK, I can see how a lack of functioning levator leads to ptosis, but why do these pts have lid lag?*  
Because the fibrofatty tissue can neither contract (causing ptosis) *nor* relax (causing lid lag).
Parinaud Syndrome

Parinaud syndrome has four main features:
- Impaired upgaze
- Lid retraction
- Convergence-retraction nystagmus
- Light-near dissociation

First, what is the most common cause of lid retraction?
Thyroid eye dz (TED). When you hear ‘lid retraction,’ think TED first.

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Lid lag

What is the eponymous name for lid lag 2ndry to TED?
von Graefe’s sign

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Because the fibrofatty tissue can neither contract (causing ptosis) nor relax (causing lid lag).
What well-known phenomenon associated with a cranial-nerve palsy frequently manifests with lid lag? Aberrant regeneration after CN3 palsy

First, what is the most common cause of lid retraction? Thyroid eye dz (TED). When you hear ‘lid retraction,’ think TED first.

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What is the eponymous name for lid lag secondary to TED? von Graefe’s sign

There is a form of ptosis that has a strong association with lid lag—which one? Congenital myogenic ptosis. In downgaze, their appearance will suggest lid retraction.

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What well-known phenomenon associated with a cranial-nerve palsy frequently manifests with lid lag? Aberrant regeneration after CN3 palsy

What the heck is aberrant regeneration?
What well-known phenomenon associated with a cranial-nerve palsy frequently manifests with lid lag? Aberrant regeneration after CN3 palsy

What the heck is aberrant regeneration? A phenomenon in which healing nerve fibers form incorrect connections, resulting in impulses intended for one muscle stimulating a different one.

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What the heck is aberrant regeneration? A phenomenon in which healing nerve fibers form incorrect connections, resulting in impulses intended for one muscle stimulating a different one

What are the three potential mechanisms of CN3 palsy?
--Ischemic
--Traumatic
--Compressive

First, what is the most common cause of lid retraction? Thyroid eye dz (TED). When you hear ‘lid retraction,’ think TED first.

A related TED lid issue: When TED pts move their eyes into downgaze, the upper lid will fail to follow the globe down. What is the name for this phenomenon?
Lid lag

What is the eponymous name for lid lag 2ndry to TED?
von Graefe's sign

There is a form of ptosis that has a strong association with lid lag—which one? Congenital myogenic ptosis. In downgaze, their appearance will suggest lid retraction.

In a nutshell, what is the pathogenesis of congenital myogenic ptosis? The levator fails to develop properly, with some or all of its muscle fibers replaced by fibrofatty tissue

OK, I can see how a lack of functioning levator leads to ptosis, but why do these pts have lid lag? Because the fibrofatty tissue can neither contract (causing ptosis) nor relax (causing lid lag)
Parinaud syndrome has four main features:

- Impaired upgaze
- Lid retraction
- Convergence-retraction nystagmus
- Light-near dissociation

Speaking of... The phrase "lid retraction" should bring to mind several conditions...

First, what is the most common cause of lid retraction? Thyroid eye dz (TED). When you hear ‘lid retraction,’ think TED first.

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**Lid lag**

What is the eponymous name for lid lag secondary to TED?

**von Graefe's sign**

There is a form of **ptosis** that has a strong association with lid lag— which one?

**Congenital myogenic ptosis.** In downgaze, their appearance will suggest lid retraction.

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OK, I can see how a lack of functioning levator leads to ptosis, but why do these pts have lid lag? Because the fibrofatty tissue can neither contract (causing ptosis) nor relax (causing lid lag).
What well-known phenomenon associated with a cranial-nerve palsy frequently manifests with lid lag? Aberrant regeneration after CN3 palsy

What the heck is aberrant regeneration? A phenomenon in which healing nerve fibers form incorrect connections, resulting in impulses intended for one muscle stimulating a different one.

What are the three potential mechanisms of CN3 palsy? Which is the most common cause? Which cause is never associated with aberrant regeneration?—Ischemic—most common; never associated with aberrant regeneration—Traumatic—Compressive

First, what is the most common cause of lid retraction? Thyroid eye dz (TED). When you hear ‘lid retraction,’ think TED first.

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Aberrant regeneration of the right third nerve. A, In primary gaze, there is mild ptosis, pupillary mydriasis, and exotropia, all on the right.
Aberrant regeneration of the right third nerve. A, In primary gaze, there is mild ptosis, pupillary mydriasis, and exotropia, all on the right. B, With attempted downward gaze, the right eyelid retracts as fibers of the right third nerve supplying the inferior rectus now also innervate the levator muscle.
Aberrant regeneration after CN3 palsy

What well-known phenomenon associated with a cranial-nerve palsy frequently manifests with lid lag?

Thyroid eye dz

What the heck is aberrant regeneration?
A phenomenon in which healing nerve fibers form incorrect connections, resulting in impulses intended for one muscle stimulating a different one

What are the three potential mechanisms of CN3 palsy? Which is the most common cause? Which cause is never associated with aberrant regeneration?
--Ischemic—most common; never associated with aberrant regeneration
--Traumatic
--Compressive

What is the classic CN3 aberrant regeneration mis-connection that produces lid lag?
Attempted adduction or depression

Lid lag

These are some of the other conditions that must be considered when faced with a case of lid retraction

There is a form of ptosis that has a strong association with lid lag—which one?
Congenital myogenic ptosis

In a nutshell, what is the pathogenesis of congenital myogenic ptosis?
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- Convergence-retraction nystagmus
- Light-near dissociation

The combination of downward-deviated eyes + lid retraction produces an appearance that has resulted in this being known as the two-words sign.
Parinaud syndrome has four main features:

- **Impaired upgaze**
- **Lid retraction**
- Convergence-retraction nystagmus
- Light-near dissociation

The combination of downward-deviated eyes + lid retraction produces an appearance that has resulted in this being known as the **setting-sun sign**
Parinaud syndrome. The combination of lid retraction + impaired upgaze gives rise to a characteristic appearance known as *setting sun sign*.
Parinaud syndrome has four main features:

- Impaired upgaze
- Lid retraction
- Convergence-retraction nystagmus

*What is convergence-retraction nystagmus?*
Parinaud syndrome has four main features:

- Impaired upgaze
- Lid retraction
- **Convergence-retraction nystagmus**

What is convergence-retraction nystagmus?
A phenomena in which attempted upgaze causes the globes to retract (ie, sink deeper into the orbit), converge, and ‘shimmy’ (for lack of a better word)
Parinaud syndrome has four main features:

- Impaired upgaze
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What is **convergence-retraction nystagmus**?
A phenomena in which attempted upgaze causes the globes to retract (ie, sink deeper into the orbit), converge, and ‘shimmy’ (for lack of a better word)

Why is the name **convergence-retraction nystagmus** a misnomer?

Parinaud Syndrome
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**Why is the name convergence-retraction nystagmus a misnomer?**

Because the movement disorder it is not a true nystagmus
Parinaud syndrome has four main features:

- Impaired upgaze
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- **Convergence-retraction nystagmus**
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**What is convergence-retraction nystagmus?**

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**Why is the name convergence-retraction nystagmus a misnomer?**

Because the movement disorder it is **not a true nystagmus**

**If it’s not a nystagmus, what is it?**
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Why is the name convergence-retraction nystagmus a misnomer? Because the movement disorder it is not a true nystagmus.

If it’s not a nystagmus, what is it? A saccadic disorder.
Parinaud Syndrome

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  - Impaired upgaze
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Because the movement disorder is not a true nystagmus.

If it’s not a nystagmus, what is it?
A saccadic disorder.

What’s the difference between a nystagmus and a saccadic disorder?
Parinaud Syndrome

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Because the movement disorder it is not a true nystagmus.

If it’s not a nystagmus, what is it?
A saccadic disorder

What’s the difference between a nystagmus and a saccadic disorder?
By definition, a nystagmus commences with a slow movement away from fixation, whereas a saccadic disorder commences with a fast movement away from fixation.
Parinaud syndrome has four main features:

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*What causes the eyes to retract?*
Parinaud syndrome has four main features:

- Impaired upgaze
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What is convergence-retraction nystagmus?
A phenomena in which attempted upgaze causes the globes to retract (ie, sink deeper into the orbit), converge, and ‘shimmy’ (for lack of a better word)

What causes the eyes to retract?
Attempted elevation causes the medial and lateral recti muscles to fire simultaneously, the net result of which is the globes being pulled back into the orbits--retracting, in other words

(Note: One reliable source said all the recti muscles fire on attempted upgaze—not just the MR/LR. Caveat emptor.)
● Parinaud syndrome has four main features:
  ● Impaired upgaze
  ● Lid retraction
  ● Convergence-retraction nystagmus

What is convergence-retraction nystagmus?
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What causes the eyes to retract?
Attempted elevation causes the **medial and lateral recti muscles to fire simultaneously**, the net result of which is the globes being pulled back into the **orbits--retracting**, in other words

Another well-known motility disorder involves simultaneous firing of the MR and LR, resulting in globe retraction. What is it?
Parinaud syndrome has four main features:
- Impaired upgaze
- Lid retraction
- **Convergence-retraction nystagmus**

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**Another well-known motility disorder involves simultaneous firing of the MR and LR, resulting in globe retraction. What is it?**
Duane syndrome (remember, the full name is Duane retraction syndrome)
Parinaud syndrome has four main features:
- Impaired upgaze
- Lid retraction
- Convergence-retraction nystagmus

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Another well-known motility disorder involves simultaneous firing of the MR and LR, resulting in globe retraction. What is it?
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Parinaud Syndrome

Duane syndrome: Globe retraction
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- Lid retraction
- **Convergence-retraction nystagmus**

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Attempted elevation causes the medial and lateral recti muscles to fire simultaneously, the net result of which is the globes being pulled back into the orbits--retracting, in other words

**OK, but if the MR and LR are both firing, why do the eyes converge?**
Parinaud syndrome has four main features:

- Impaired upgaze
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**What is convergence-retraction nystagmus?**
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**What causes the eyes to retract?**
Attempted elevation causes the medial and lateral recti muscles to fire simultaneously, the net result of which is the globes being pulled back into the orbits--retracting, in other words

**OK, but if the MR and LR are both firing, why do the eyes converge?**
Because the medial recti are the strongest EOMs. Thus, in a battle royale among the recti, the MR are going to cause both eyes to adduct--to converge, in other words.
Parinaud syndrome has four main features:

- Impaired upgaze
- Lid retraction
- Convergence-retraction nystagmus
- **Light-near dissociation**

*What is light-near dissociation?*
Parinaud syndrome has four main features:
- Impaired upgaze
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- **Light-near dissociation**

*What is light-near dissociation?*
A phenomena in which pupils miosis less robustly in response to light than they do as part of the near response
Light-near dissociation in Parinaud’s Syndrome
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*What are the three general types (locations, really) of light-near dissociation?*
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What is light-near dissociation?
A phenomena in which pupils miose less robustly in response to light than they do as part of the near response

What are the three general types (locations, really) of light-near dissociation?
--Afferent
--Central
--Peripheral
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*Damage to which type/location is implicated in the light-near dissociation associated with Parinaud’s?*
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*What is light-near dissociation?*
A phenomena in which pupils mirose less robustly in response to light than they do as part of the near response.

*What are the three general types (locations, really) of light-near dissociation?*
- **Afferent**
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- Peripheral

*Where is the lesion in an afferent near-light dissociation?*

*Damage to which type/location is implicated in the light-near dissociation associated with Parinaud’s?*
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What is light-near dissociation?
A phenomena in which pupils miosis less robustly in response to light than they do as part of the near response.

What are the three general types (locations, really) of light-near dissociation?
--Afferent
--Central
--Peripheral

Where is the lesion in an afferent near-light dissociation?
Anywhere in the anterior visual pathway.

Damage to which type/location is implicated in the light-near dissociation associated with Parinaud’s?
Central

Parinaud syndrome has four main features:
- Impaired upgaze
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- Convergence-retraction nystagmus
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Central

Parinaud syndrome has four main features:

- Impaired upgaze
- Lid retraction
- Convergence-retraction nystagmus
- Light-near dissociation

What is the lesion in peripheral near-light dissociation?
The ciliary ganglion, or the long ciliary nerves

What common condition is associated with ciliary ganglion damage?
Adie's syndrome

What is the pathophysiology of ciliary ganglion damage in Adie's?
Unknown; some authorities suspect a viral cause

What is the most common cause of damage to the long ciliary nerves?
(P Pancretal photocoagulation (PRP)
Parinaud syndrome has four main features:

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**What is the most common cause of damage to the long ciliary nerves?**
(Hint: It’s iatrogenic)
Panretinal photocoagulation (PRP)
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- Central
- Peripheral

Damage to which type/location is implicated in the light-near dissociation associated with Parinaud's?
- Central

**Parinaud Syndrome**

**Q**

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Damage to which type/location is implicated in the light-near dissociation associated with Parinaud's?
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Parinaud Syndrome

Parinaud syndrome has four main features:

- Impaired upgaze
- Lid retraction
- Convergence-retraction nystagmus
- **Light-near dissociation**

Where is the lesion in **peripheral** near-light dissociation?
The ciliary ganglion, or the long ciliary nerves

What common condition is associated with ciliary ganglion damage?
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Damage to which type/location is implicated in the light-near dissociation associated with Parinaud's?
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Panretinal photocoagulation (PRP)
light-near dissociation is a phenomenon in which pupils miotic less robustly in response to light than they do as part of the near response.

There are three general types (locations) of light-near dissociation:
- Afferent
- Central
- Peripheral

Damage to which type/location is implicated in the light-near dissociation associated with Parinaud's syndrome is central.

Parinaud syndrome has four main features:
- Impaired upgaze
- Lid retraction
- Convergence-retraction nystagmus
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Where is the lesion in peripheral near-light dissociation? The ciliary ganglion, or the long ciliary nerves.

What are the three general types (locations) of light-near dissociation?
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Q

Parinaud Syndrome

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What is the most common cause of damage to the long ciliary nerves?
(Hint: It's iatrogenic)
What is light-near dissociation?
A phenomena in which pupils miose less robustly in response to light than they do as part of the near response.

What are the three general types (locations, really) of light-near dissociation?
--Afferent
--Central
--Peripheral

Damage to which type/location is implicated in the light-near dissociation associated with Parinaud’s?
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Parinaud Syndrome

Parinaud syndrome has four main features:

- Impaired upgaze
- Lid retraction
- Convergence-retraction nystagmus
- **Light-near dissociation**

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Where is the lesion in **peripheral** near-light dissociation?
The ciliary ganglion, or the long ciliary nerves

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What common condition is associated with ciliary ganglion damage?
Adie’s syndrome

What is the pathophysiology of ciliary ganglion damage in Adie’s?
Unknown; some authorities suspect a viral cause

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**How does PRP result in damage to the long ciliary nerves?**
These nerves run fairly close to the inner wall of the eye, and thus are frequently impacted by thermal laser procedures that cover extensive portions of the retinal periphery.

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More precisely, where does Parinaud syndrome localize to?

The dorsal midbrain

Damage to what dorsal midbrain structure is causative in Parinaud syndrome?
The pretectum (specifically, the pretectal nuclei)

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The etiology of a Parinaud syndrome is often a function of who the pt is. For each of these pts with Parinaud’s, state the most likely cause:
--A child:
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For each of these pts with Parinaud's, state the most likely cause:
--A child: Hydrocephalus
--A young man: A pineal tumor
--A young woman: MS
--An older man: CVA

What other signs will be present in an infant with hydrocephalus?
--
--Bulging fontanelle
--Dilated scalp vessels

Q
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What other signs will be present in an infant with hydrocephalus?
--Enlarged
--?
--?
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- A young woman:
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What other signs will be present in an infant with hydrocephalus?

- Enlarged head
- ?
- ?
Parinaud Syndrome

Hydrocephalus: Enlarged head
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Hydrocephalus: Bulging fontanelle
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Hydrocephalus: Dilated scalp vessels
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