Which embryologic cell line gives rise to the lens epithelium?
A

Which embryologic cell line gives rise to the lens epithelium? **Surface ectoderm**
Surface ectoderm and lens formation. A portion of surface ectoderm thickens to form the lens placode.
Which embryologic cell line gives rise to the lens epithelium? **Surface ectoderm**

T/F: The optic vesicle is a sphere containing a single layer of cuboidal cells encased within its basement membrane
A

- Which embryologic cell line gives rise to the lens epithelium? **Surface ectoderm**
- T/F: The optic vesicle is a sphere containing a single layer of cuboidal cells encased within its basement membrane **F**
Surface ectoderm and lens formation. A portion of surface ectoderm thickens to form the lens placode, which goes on to form the lens vesicle and finally the mature lens.
Q

- Which embryologic cell line gives rise to the lens epithelium? **Surface ectoderm**
- T/F: The optic vesicle is a sphere containing a single layer of cuboidal cells encased within its basement membrane **F**
- T/F: The anterior cells of the lens vesicle elongate and progressively obliterate the lumen, forming the embryonic nucleus
Which embryologic cell line gives rise to the lens epithelium? Surface ectoderm

T/F: The optic vesicle is a sphere containing a single layer of cuboidal cells encased within its basement membrane. \(\text{F}\)

T/F: The cells of the lens vesicle elongate and progressively obliterate the lumen, forming the embryonic nucleus. \(\text{F}\)
**Lens Embryology**

Posterior cells of the lens vesicle elongate to obliterate the vesicle's lumen, thus creating the **embryonic nucleus**.
Q

- Which embryologic cell line gives rise to the lens epithelium? **Surface ectoderm**
- T/F: The **optic vesicle** is a sphere containing a single layer of cuboidal cells encased within its basement membrane **F**
- T/F: The **anterior** cells of the lens vesicle elongate and progressively obliterate the lumen, forming the embryonic nucleus **F**
- T/F: The Y sutures are formed by the anterior and posterior interdigitations of fetal nucleus fibers
A

- Which embryologic cell line gives rise to the lens epithelium? **Surface ectoderm**
- T/F: The **lens optic vesicle** is a sphere containing a single layer of cuboidal cells encased within its basement membrane **F**
- T/F: The **anterior** cells of the lens vesicle elongate and progressively obliterate the lumen, forming the embryonic nucleus **F**
- T/F: The Y sutures are formed by the anterior and posterior interdigitations of fetal nucleus fibers **T**
Lens: Y suture formation
Which embryologic cell line gives rise to the lens epithelium?  
**Surface ectoderm**

- T/F: The **optic vesicle** is a sphere containing a single layer of cuboidal cells encased within its basement membrane  
  **F**

- T/F: The **anterior** cells of the lens vesicle elongate and progressively obliterate the lumen, forming the embryonic nucleus  
  **F**

- T/F: The **Y sutures** are formed by the anterior and posterior interdigitations of fetal nucleus fibers  
  **T**

The *lens* originates as a thickening of surface ectoderm overlying the optic vesicle (an outpouching of the primitive forebrain destined to become the neurosensory retina, RPE, and ciliary body epithelium). This thickened area is the *lens placode*. The placode subsequently invaginates, eventually forming a fluid-filled sphere containing a single layer of cells; this sphere is the *lens* (not optic!) *vesicle*. The outer ‘shell’ of the lens vesicle consists of the basement membrane of the surface ectoderm cells which now line the *inner* aspect of the vesicle; *this BM will form the lens capsule*. The cells at the **posterior** aspect of the vesicle elongate to obliterate the vesicle’s lumen and form the *embryonic nucleus*. Soon thereafter the equatorial cells elongate and insinuate themselves anteriorly and posteriorly; as they encounter one another at the anterior and posterior poles, they interdigitate themselves in a pattern that gives rise to the Y sutures. This first wave of elongating fibers comprise the *fetal nucleus*.

(No questions—review slide)
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**.
The vascular supply encapsulating the developing lens is called the *tunica vasculosa lentis*.
Tunica vasculosa lentis
In the eye of this very premature infant, the *tunical vasculosa lentis* surrounds the lens (arrows 1) and is contiguous with the hyaloid vascular system (arrow 2). Notice the glial sheath of the hyaloid artery (arrow 3).
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. 

**It has three sections:**

1) The *posterior vascular capsule* arises from the artery
The vascular supply encapsulating the developing lens is called the *tunica vasculosa lentis*. It has three sections:

1) The *posterior vascular capsule* arises from the *hyaloid* artery.
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1) The posterior vascular capsule arises from the hyaloid artery.

The hyaloid artery runs from where to where?

It runs from the optic nerve head to the back of the fetal lens.

Does it survive into post-fetal life?
No—it is supposed to regress prior to birth.

What is the name of the trans-vitreous passageway that remains after it regresses?
Cloquet's canal.
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis.

1. The posterior vascular capsule arises from the hyaloid artery.

The hyaloid artery runs from where to where?
From the optic nerve head to the back of the fetal lens.

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Tunica vasculosa lentis
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:
1) The posterior vascular capsule arises from the hyaloid artery.

The hyaloid artery runs from where to where?
From the optic nerve head to the back of the fetal lens.

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Cloquet's canal.
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery.

The hyaloid artery runs from where to where?
From the optic nerve head to the back of the fetal lens.

Does it survive into post-fetal life?
No—it is supposed to regress prior to birth.

The trans-vitreous passageway that remains after it regresses is Cloquet’s canal.

Lens (Vasculature) Embryology
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1) The posterior vascular capsule arises from the hyaloid artery.

The hyaloid artery runs from where to where?
From the optic nerve head to the back of the fetal lens.

Does it survive into post-fetal life?
No—it is supposed to regress prior to birth.

What is the name of the trans-vitreous passageway that remains after it regresses?

Cloquet's canal
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery.

The hyaloid artery runs from where to where?
From the optic nerve head to the back of the fetal lens

Does it survive into post-fetal life?
No—it is supposed to regress prior to birth

What is the name of the trans-vitreous passageway that remains after it regresses?
Cloquet's canal
Cloquet's canal

Cloquet's canal
Single loop of a persistent hyaloid artery extending anteriorly within Cloquet's canal to insert on the posterior capsule of the lens.
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery.

The hyaloid artery runs from where to where?
From the optic nerve head to the back of the fetal lens.

Does it survive into post-fetal life?
No—it is supposed to regress prior to birth.

'Supposed to regress' implies it doesn't always do so. Is this the case?
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1) The posterior vascular capsule arises from the hyaloid artery.

The hyaloid artery runs from where to where?
From the optic nerve head to the back of the fetal lens.

Does it survive into post-fetal life?
No—it is supposed to regress prior to birth.

‘Supposed to regress’ implies it doesn’t always do so. Is this the case?
Yes—in a significant number of people, complete regression fails to occur (to some degree).
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1) The posterior vascular capsule arises from the hyaloid artery.

The hyaloid artery runs from where to where? From the optic nerve head to the back of the fetal lens.

Does it survive into post-fetal life? No—it is supposed to regress prior to birth.

‘Supposed to regress’ implies it doesn’t always do so. Is this the case? Yes—in a significant number of people, complete regression fails to occur (to some degree).

Is this failure-to-regress clinically significant?
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery.

The hyaloid artery runs from where to where?
From the optic nerve head to the back of the fetal lens.

Does it survive into post-fetal life?
No—it is supposed to regress prior to birth.

‘Supposed to regress’ implies it doesn’t always do so. Is this the case?
Yes—in a significant number of people, complete regression fails to occur (to some degree).

Is this failure-to-regress clinically significant?
In the vast majority of cases, no; but it is extremely significant (ie, sight-threatening) in a few (more on this coming in hot).
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**.

**It has three sections:**

1) The *posterior vascular capsule* arises from the **hyaloid** artery.
   - A common, clinically insignificant remnant is the **Mittendorf dot**.
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. It has three sections:

1) The *posterior vascular capsule* arises from the **hyaloid** artery
   - A common, clinically insignificant remnant is the **Mittendorf dot**
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1) The posterior vascular capsule arises from the hyaloid artery
   - A common, clinically insignificant remnant is the Mittendorf dot (Bergmeister papillae works too—more about it shortly)
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. **It has three sections:**

1) The *posterior vascular capsule* arises from the *hyaloid artery*
   - A common, clinically insignificant remnant is the *Mittendorf dot*  
   (*Bergmeister papillae* works too—more about it shortly)
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery.

A common, clinically insignificant remnant is the Mittendorf dot. How does a Mittendorf dot present clinically?

- Typically, it presents as a small white dot on the posterior capsule of the lens.
- It is not usually found on the central aspect of the capsule but is usually a bit nasal of center.
- If you encounter a larger, gnarlier, more central opacification involving the posterior capsule, it is more consistent with a posterior polar cataract.
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The **posterior vascular capsule** arises from the hyaloid artery.

How does a Mittendorf dot present clinically?

As a small white dot on the posterior capsule of the lens.

Is it located on the central aspect of the capsule?
No, usually it is a bit nasal of center.

If you encounter a larger, gnarlier, more central opacification involving the posterior capsule, is that also a Mittendorf dot?
Perhaps, but the description is more consistent with a posterior polar cataract.
Mittendorf dot
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis.

How does a Mittendorf dot present clinically?
As a small white dot on the posterior capsule of the lens

Is it located on the central aspect of the capsule?
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery.

A common, clinically insignificant remnant is the Mittendorf dot.

How does a Mittendorf dot present clinically?
As a small white dot on the posterior capsule of the lens

Is it located on the central aspect of the capsule?
No, usually it is a bit nasal and inferior of center
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery. A common, clinically insignificant remnant is the Mittendorf dot.

How does a Mittendorf dot present clinically?
As a small white dot on the posterior capsule of the lens

Is it located on the central aspect of the capsule?
No, usually it is a bit nasal and inferior of center

If you encounter a larger, gnarlier, more central opacification involving the posterior capsule, is that also a Mittendorf dot?
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery.

A common, clinically insignificant remnant is the Mittendorf dot.

How does a Mittendorf dot present clinically?
As a small white dot on the posterior capsule of the lens.

Is it located on the central aspect of the capsule?
No, usually it is a bit nasal and inferior of center.

If you encounter a larger, gnarlier, more central opacification involving the posterior capsule, is that also a Mittendorf dot?
Perhaps, but the description is more consistent with a posterior polar cataract.
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery.

A common, clinically insignificant remnant is the Mittendorf dot. How does a Mittendorf dot present clinically? As a small white dot on the posterior capsule of the lens. Is it located on the central aspect of the capsule? No, usually it is a bit nasal and inferior of center. If you encounter a larger, gnarlier, more central opacification involving the posterior capsule, is that also a Mittendorf dot? Perhaps, but the description is more consistent with a posterior polar cataract.
**Lens (Vasculature) Embryology**

Mittendorf dot

Posterior polar cataract
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery.

How does a Mittendorf dot present clinically?
As a small white dot on the posterior capsule of the lens.

Is it located on the central aspect of the capsule?
No, usually it is a bit nasal and inferior of center.

If you encounter a larger, gnarlier, more central opacification involving the posterior capsule, is that also a Mittendorf dot?
Perhaps, but the description is more consistent with a posterior polar cataract.

Is a posterior polar cataract an insignificant finding?
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery. A common, clinically insignificant remnant is the Mittendorf dot.

How does a Mittendorf dot present clinically?
As a small white dot on the posterior capsule of the lens.

Is it located on the central aspect of the capsule?
No, usually it is a bit nasal and inferior of center.

If you encounter a larger, gnarlier, more central opacification involving the posterior capsule, is that also a Mittendorf dot?
Perhaps, but the description is more consistent with a posterior polar cataract.

Is a posterior polar cataract an insignificant finding?
No! It greatly increases the risk of capsule rupture during cataract surgery.
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. It has three sections:

1. **Posterior vascular capsule** arises from the hyaloid artery.
2. **Mittendorf dot** is a common, clinically insignificant remnant.

**How does a Mittendorf dot present clinically?**
- As a small white dot on the posterior capsule of the lens.

**Is it located on the central aspect of the capsule?**
- No, usually it is a bit nasal and inferior of center.

**If you encounter a larger, gnarlier, more central opacification involving the posterior capsule, is that also a Mittendorf dot?**
- Perhaps, but the description is more consistent with a **posterior polar cataract**.

**Is a posterior polar cataract an insignificant finding?**
- No! It greatly increases the risk of capsule rupture during cataract surgery.

**But I thought a posterior polar cataract was that vacuolated, hazy cataract that uveitis/steroid pts get…**
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery.

How does a Mittendorf dot present clinically?
As a small white dot on the posterior capsule of the lens.

Is it located on the central aspect of the capsule?
No, usually it is a bit nasal and inferior of center.

If you encounter a larger, gnarlier, more central opacification involving the posterior capsule, is that also a Mittendorf dot?
Perhaps, but the description is more consistent with a posterior polar cataract.

Is a posterior polar cataract an insignificant finding?
No! It greatly increases the risk of capsule rupture during cataract surgery.

But I thought a posterior polar cataract was that vacuolated, hazy cataract that uveitis/steroid pts get…
That’s a posterior subcapsular cataract (PSC), an unrelated entity located on the inner surface of the posterior capsule.
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1. The posterior vascular capsule arises from the hyaloid artery.

How does a Mittendorf dot present clinically?
As a small white dot on the posterior capsule of the lens

Is it located on the central aspect of the capsule?
No, usually it is a bit nasal and inferior of center

If you encounter a larger, gnarlier, more central opacification involving the posterior capsule, is that also a Mittendorf dot?
Perhaps, but the description is more consistent with a posterior polar cataract.

Is a posterior polar cataract an insignificant finding?
No! It greatly increases the risk of capsule rupture during cataract surgery.

But I thought a posterior polar cataract was that vacuolated, hazy cataract that uveitis/steroid pts get…
That’s a posterior subcapsular cataract (PSC), an unrelated entity located on the inner surface of the posterior capsule.
**Lens (Vasculature) Embryology**

PSC

Posterior polar cataract
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. **It has three sections:**

1) The **posterior vascular capsule** arises from the hyaloid artery.

How does a Bergmeister papilla present clinically?
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1) The posterior vascular capsule arises from the hyaloid artery.

How does a Bergmeister papilla present clinically? As a tuft of glial-like tissue extending veil-like from the ONH a short distance into the vitreous.
Bergmeister papillae
The vascular supply encapsulating the developing lens is called the *tunica vasculosa lentis*. It has three sections:

1) The *posterior vascular capsule* arises from the hyaloid artery.

How does a Bergmeister papilla present clinically? As a tuft of glial-like tissue extending veil-like from the ONH a short distance into the vitreous.

I saw a pt with a vascularized Bergmeister papilla. Is the vessel a hyaloid artery remnant?
The vascular supply encapsulating the developing lens is called the *tunica vasculosa lentis*. It has three sections:

1) The *posterior vascular capsule* arises from the hyaloid artery.

- **How does a Bergmeister papilla present clinically?**
  - As a tuft of glial-like tissue extending veil-like from the ONH a short distance into the vitreous.

- *I saw a pt with a vascularized Bergmeister papilla. Is the vessel a hyaloid artery remnant?*
  - No, the vessel is what is known as a *prepapillary vascular loop*. It is a retinal vessel that has grown up into the papilla.*
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. **It has three sections:**

1. The **posterior vascular capsule** arises from the hyaloid artery.

   - **How does a Bergmeister papilla present clinically?**
     As a tuft of glial-like tissue extending veil-like from the ONH a short distance into the vitreous

   *I saw a pt with a vascularized Bergmeister papilla. Is the vessel a hyaloid artery remnant?*
   *No, the vessel is what is known as a prepapillary vascular loop.*
   *It is a retinal vessel that has grown up into the papilla.*
Prepapillary vascular loop
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. **It has three sections:**

1) The *posterior vascular capsule* arises from the *hyaloid artery*
   - A common, clinically insignificant remnant is the *Mittendorf dot*
   - A less common, clinically devastating remnant is *PFV*
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**.

**It has three sections:**

1) The *posterior vascular capsule* arises from the **hyaloid artery**
   - A common, clinically insignificant remnant is the **Mittendorf dot**
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The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. It has three sections:

1) The *posterior vascular capsule* arises from the hyaloid artery
   - A common, clinically insignificant remnant is the *Mittendorf dot*
   - A less common, clinically devastating remnant is *PFV*

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**PFV** is the ‘rare but extremely significant’ sequelae that was alluded to previously.

*Is this failure-to-regress clinically significant?*

In the vast majority of cases, no; but it is extremely significant (ie, sight-threatening) in a few (more on this coming in hot)
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. **It has three sections:**

1) The *posterior vascular capsule* arises from the hyaloid artery
   - A common, clinically insignificant remnant is the **Mittendorf dot**
   - A less common, clinically devastating remnant is **PFV**

*What does PFV stand for in this context?*
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. **It has three sections:**

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   - A less common, clinically devastating remnant is **PFV**

---

**What does PFV stand for in this context?**

Persistent fetal vasculature
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1) The posterior vascular capsule arises from the hyaloid artery
   - A common, clinically insignificant remnant is the Mittendorf dot
   - A less common, clinically devastating remnant is PFV

What does PFV stand for in this context? Persistent fetal vasculature

By what name was this condition known previously?
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. It has three sections:

1) The *posterior vascular capsule* arises from the hyaloid artery
   - A common, clinically insignificant remnant is the *Mittendorf dot*
   - A less common, clinically devastating remnant is **PFV**

*What does PFV stand for in this context?*
Persistent fetal vasculature

*By what name was this condition known previously?*
Persistent hyperplastic primary vitreous (PHPV)
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. 

*It has three sections:*

1) The *posterior vascular capsule* arises from the hyaloid artery
   - A common, clinically insignificant remnant is the **Mittendorf dot**
   - A less common, clinically devastating remnant is **PFV**

*What does PFV stand for in this context?*
Persistent fetal vasculature

*By what name was this condition known previously?*
Persistent hyperplastic primary vitreous (PHPV)

*We will see why this weird name makes sense later in the slide-set*
The vascular supply encapsulating the developing lens is called the *tunica vasculosa lentis*. It has three sections:

1) The *posterior vascular capsule* arises from the hyaloid artery
   - A common, clinically insignificant remnant is the Mittendorf dot
   - A less common, clinically devastating remnant is **PFV**

*In general terms, what is PFV?*
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. 

*It has three sections:*  
1) The *posterior vascular capsule* arises from the *hyaloid artery*  
   - A common, clinically insignificant remnant is the **Mittendorf dot**  
   - A less common, clinically devastating remnant is the **PFV**

*In general terms, what is PFV?*  
A retrolental fibrovascular membrane that induces a variety of sight-threatening problems.
PFV: Retrolental membrane
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. 

*It has three sections:*

1) The posterior vascular capsule arises from the hyaloid artery
   - A common, clinically insignificant remnant is the Mittendorf dot
   - A less common, clinically devastating remnant is **PFV**

*In general terms, what is PFV?*
A retrolental fibrovascular membrane that induces a variety of sight-threatening problems

*What is the inheritance pattern for PFV?*
The vascular supply encapsulating the developing lens is called the *tunica vasculosa lentis*. It has three sections:

1) The *posterior vascular capsule* arises from the hyaloid artery
   - A common, clinically insignificant remnant is the **Mittendorf dot**
   - A less common, clinically devastating remnant is **PFV**

*In general terms, what is PFV?*
A retrolental fibrovascular membrane that induces a variety of sight-threatening problems

*What is the inheritance pattern for PFV?*
None (it is sporadic)
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. **It has three sections:**

1. The *posterior vascular capsule* arises from the hyaloid artery
   - A common, clinically insignificant remnant is the Mittendorf dot
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---

*In general terms, what is PFV?*

A retrolental fibrovascular membrane that induces a variety of sight-threatening problems

*What is the inheritance pattern for PFV?*

None (it is sporadic)

*Does it present unilaterally, or bilaterally?*
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. 

It has three sections:

1) The posterior vascular capsule arises from the hyaloid artery
   - A common, clinically insignificant remnant is the Mittendorf dot
   - A less common, clinically devastating remnant is PFV

**In general terms, what is PFV?**
A retrolental fibrovascular membrane that induces a variety of sight-threatening problems

**What is the inheritance pattern for PFV?**
None (it is sporadic)

**Does it present unilaterally, or bilaterally?**
It is unilateral in % of cases
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1) The posterior vascular capsule arises from the hyaloid artery
   - A common, clinically insignificant remnant is the Mittendorf dot
   - A less common, clinically devastating remnant is PFV

In general terms, what is PFV? A retrolental fibrovascular membrane that induces a variety of sight-threatening problems

What is the inheritance pattern for PFV? None (it is sporadic)

Does it present unilaterally, or bilaterally? It is unilateral in 90% of cases
The vascular supply encapsulating the developing lens is called the *tunica vasculosa lentis*. It has three sections:

1. The *posterior vascular capsule* arises from the hyaloid artery.
   - A common, clinically insignificant remnant is the Mittendorf dot.
   - A less common, clinically devastating remnant is PFV.

In general terms, what is PFV?
A retrolental fibrovascular membrane that induces a variety of sight-threatening problems.

What are the sight-threatening manifestations of PFV?
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Does it present unilaterally, or bilaterally?
It is unilateral in 90% of cases.
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis.**

*It has three sections:*

1. The **posterior vascular capsule** arises from the hyaloid artery
   - A common, clinically insignificant remnant is the **Mittendorf dot**
   - A less common, clinically devastating remnant is **PFV**

*In general terms, what is PFV?*

A retrolental fibrovascular membrane that induces a variety of sight-threatening problems

*What are the sight-threatening manifestations of PFV?*

- Cataract
- Progressive AC shallowing
- Retinal detachment

*Does it present unilaterally, or bilaterally?*

It is unilateral in 90% of cases
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1) The posterior vascular capsule arises from the hyaloid artery
   - A common, clinically insignificant remnant is the Mittendorf dot
   - A less common, clinically devastating remnant is PFV

In general terms, what is PFV? A retrolental fibrovascular membrane that induces a variety of sight-threatening problems.

What are the sight-threatening manifestations of PFV?
- Cataract
- Progressive AC shallowing
- Retinal detachment

How is shallowing of the AC sight-threatening?
It is unilateral in 90% of cases.
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. It has three sections:

1) The posterior vascular capsule arises from the hyaloid artery
   - A common, clinically insignificant remnant is the Mittendorf dot
   - A less common, clinically devastating remnant is PFV

In general terms, what is PFV?
A retrolental fibrovascular membrane that induces a variety of sight-threatening problems

What are the sight-threatening manifestations of PFV?
-- Cataract
-- Progressive AC shallowing
-- Retinal detachment

How is shallowing of the AC sight-threatening?
It can lead to angle-closure glaucoma

Does it present unilaterally, or bilaterally?
It is unilateral in 90% of cases

What is the inheritance pattern for PFV?
None (it is sporadic)
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. **It has three sections:**

1) The *posterior vascular capsule* arises from the hyaloid artery
   - A common, clinically insignificant remnant is the **Mittendorf dot**
   - A less common, clinically devastating remnant is **PFV**

*In general terms, what is PFV?*  
A retrolental fibrovascular membrane that induces **a variety of sight-threatening problems**

*Who is PFV inevitably a blinding disease?*
- Cataract
- Progressive AC shallowing
- Retinal detachment

*Does it present unilaterally, or bilaterally?*  
It is unilateral in 90% of cases
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. *It has three sections:*

1) The *posterior vascular capsule* arises from the hyaloid artery
   - A common, clinically insignificant remnant is the Mittendorf dot
   - A less common, clinically devastating remnant is PFV

*In general terms, what is PFV?*  
A retrolental fibrovascular membrane that induces a variety of sight-threatening problems

*Is PFV inevitably a blinding disease?*  
--Ca: No. Early cataract extraction and membranectomy  
--Pr: may salvage the eye, and useful vision.  
--Retinal detachment

*Does it present unilaterally, or bilaterally?*  
It is unilateral in 90% of cases
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. **It has three sections:**

1) The *posterior vascular capsule* arises from the **hyaloid artery**
   - A common, clinically insignificant remnant is the **Mittendorf dot**
   - A less common, clinically devastating remnant is **PFV**
2) The *anterior vascular capsule* derives from the **long ciliary arteries**
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Tunica vasculosa lentis
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Persistent pupillary membrane
The vascular supply encapsulating the developing lens is called the \textit{tunica vasculosa lentis}. \textbf{It has three sections:}

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   - Another common remnant is the two words, often described as ‘chicken feet’ on the anterior capsule
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*Lens (Vasculature) Embryology*
Lenticular Star (Vasculature) Embryology

Epicapsular star
The vascular supply encapsulating the developing lens is called the **tunica vasculosa lentis**. 

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   - A common, clinically insignificant remnant is the **Mittendorf dot**
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3) The **portion** anastomoses the anterior and posterior sections of the tunica
The vascular supply encapsulating the developing lens is called the tunica vasculosa lentis. **It has three sections:**

1) The *posterior vascular capsule* arises from the hyaloid artery
   - A common, clinically insignificant remnant is the Mittendorf dot
   - A less common, clinically devastating remnant is PFV
2) The *anterior vascular capsule* derives from the long ciliary arteries
   - A common, clinically insignificant (usually) remnant is a persistent pupillary membrane
   - Another common remnant is the epicapsular star, often described as ‘chicken feet’ on the anterior capsule
3) The *capsulopupillary portion* anastomoses the anterior and posterior sections of the tunica
Tunica vasculosa lentis
Zonules are secreted by the specific cell type near the end of the third month of gestation.
Zonules are secreted by the ciliary epithelium near the end of the third month of gestation.
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This begs the question: What are the primary and secondary vitreous? (vitreous?)

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Hence PFV is aka four words.
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- **Primary vitreous**: The hyaloid vasculature
  - Hence PFV is aka persistent hyperplastic primary vitreous.
Lens (Zonules) Embryology

Primary vitreous
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Zonules comprise the so-called tertiary vitreous.

This begs the question: What are the primary and secondary vitreous? (vitrei?)

Primary vitreous: The hyaloid vasculature.

Hence PFV is aka **persistent hyperplastic primary vitreous**.

Now we see why this weird name makes sense later in the slide set.
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Zonules comprise the so-called tertiary vitreous.

This begs the question: What are the primary and secondary vitreous (vitrei?)?

- **Primary vitreous**: The hyaloid vasculature
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- **Secondary vitreous**: The...
- Zonules are secreted by the ciliary epithelium near the end of the third month of gestation.
- Zonules comprise the so-called tertiary vitreous.
- This begs the question: What are the primary and secondary vitreous? (vitreous?)
  - Primary vitreous: The hyaloid vasculature
    - Hence PFV is aka persistent hyperplastic primary vitreous.
  - Secondary vitreous: The main vitreous body.
Lens (Zonules) Embryology

(Tertiary vitreous will form the zonules)

Secondary vitreous