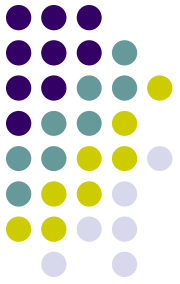


Before you begin: This is a big topic, and big topics beget big slide-sets. There's a natural break near slide 205; a *Break time!* slide has been placed at that point to mark it.

Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Basics

What is the causative organism in ocular toxoplasmosis?

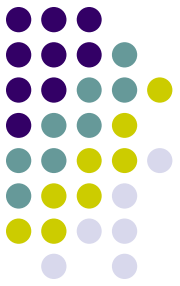


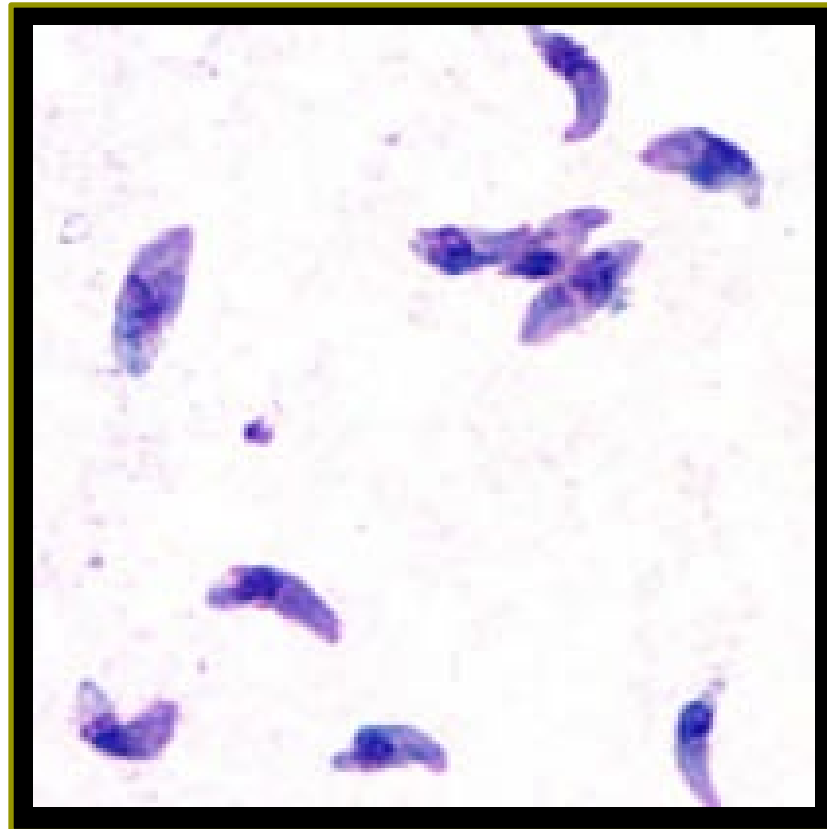
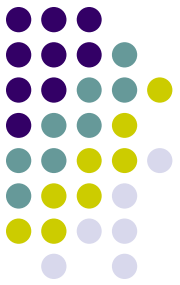
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Toxoplasma gondii

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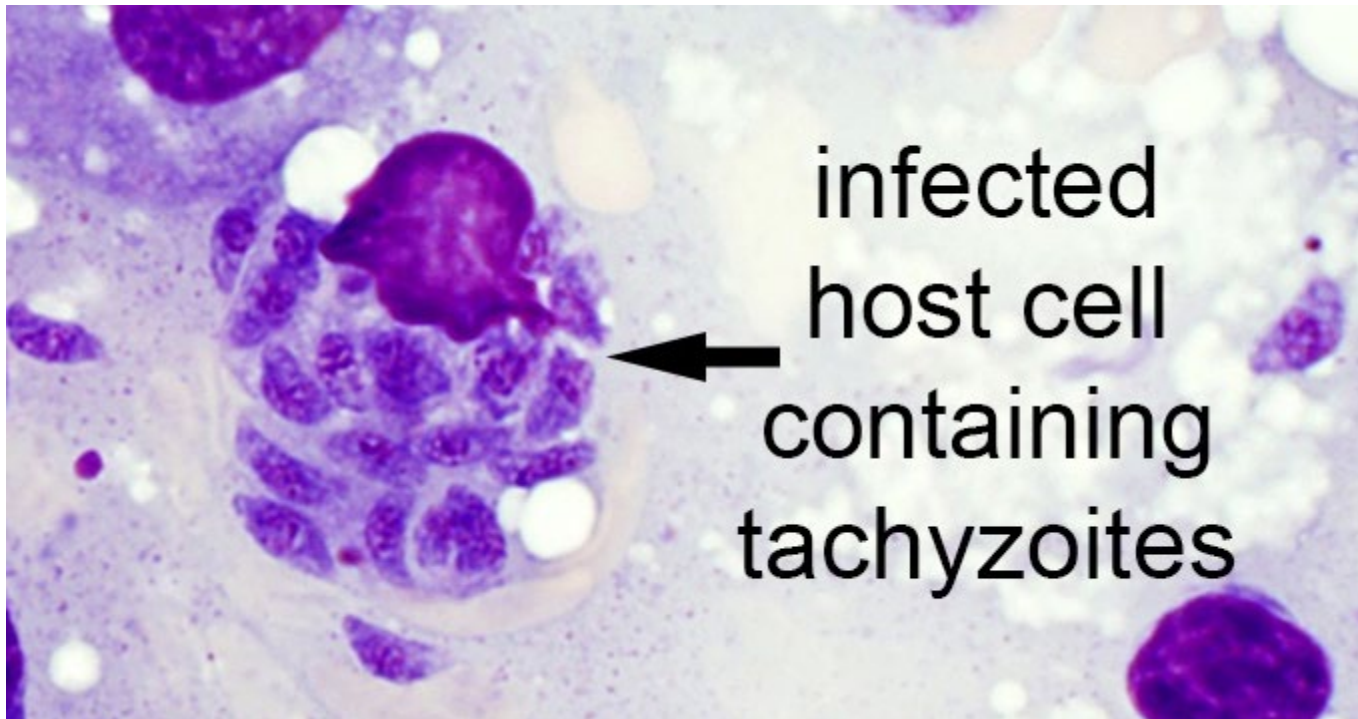
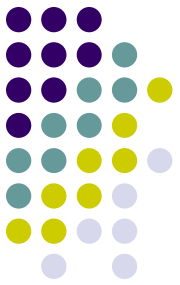
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Toxoplasma gondii intracellular

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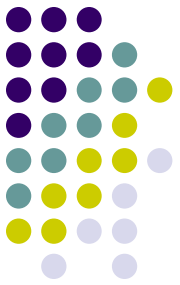
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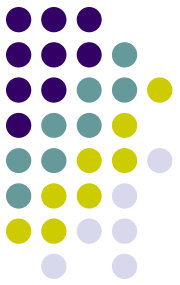
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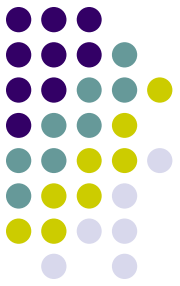
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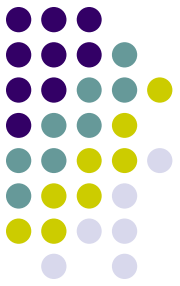
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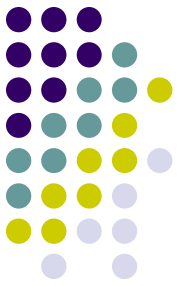
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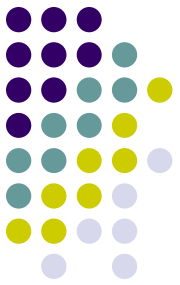
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A cat

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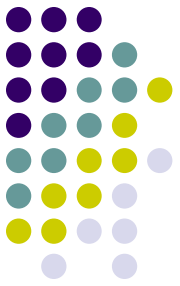
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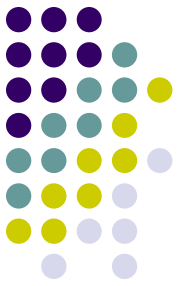
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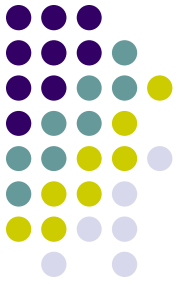
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About 2

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Toxoplasmosis: Basics

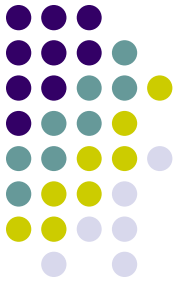
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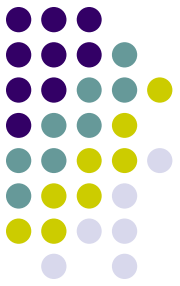
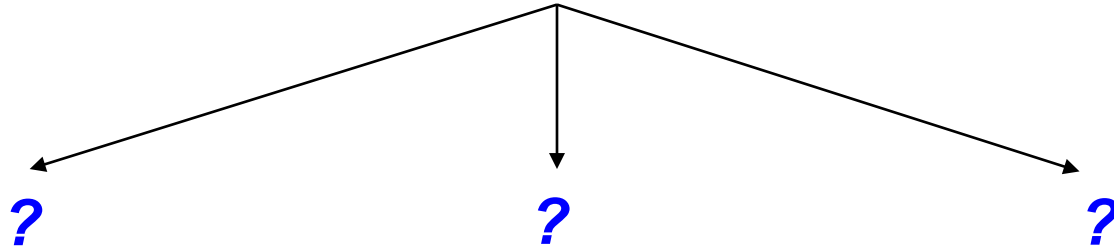
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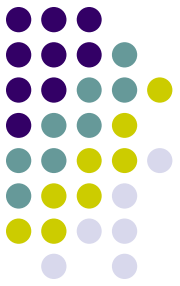
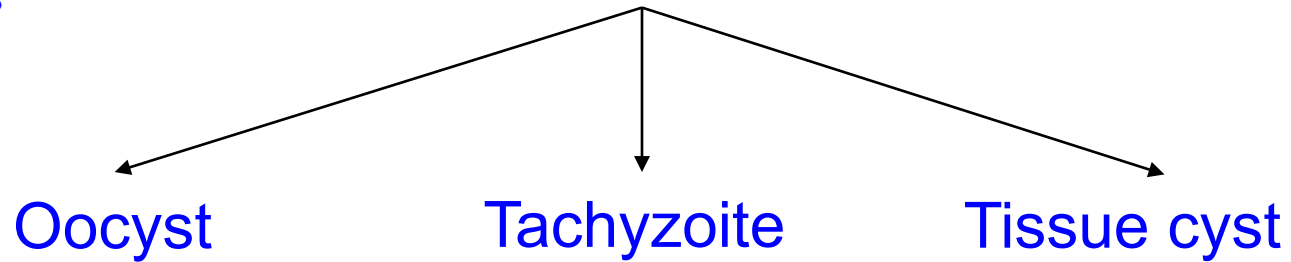
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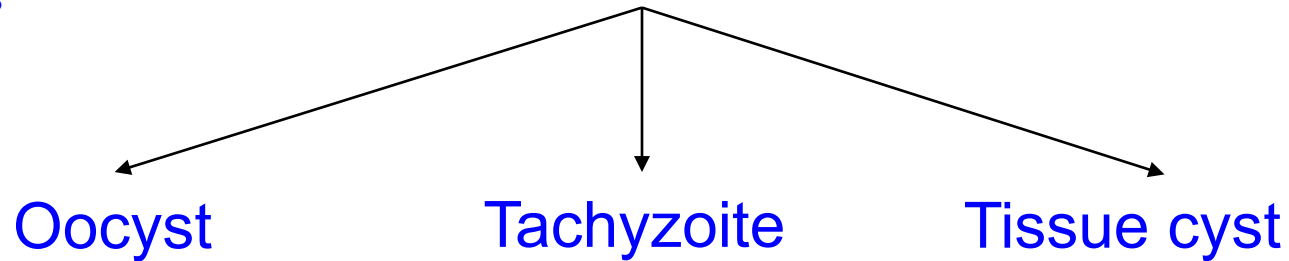


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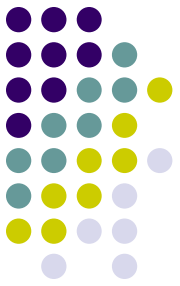
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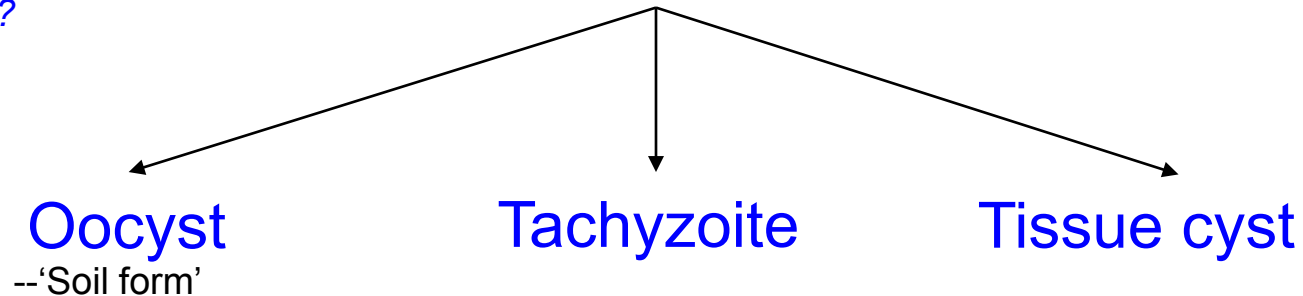
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What is the nickname for this form?*

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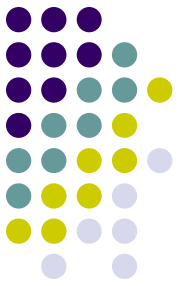
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'Soil form'

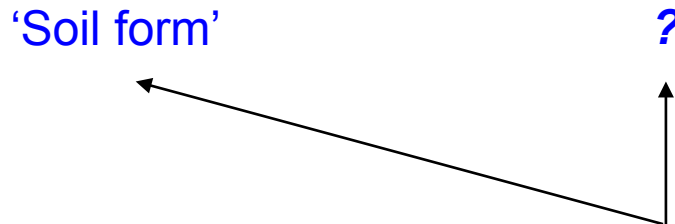
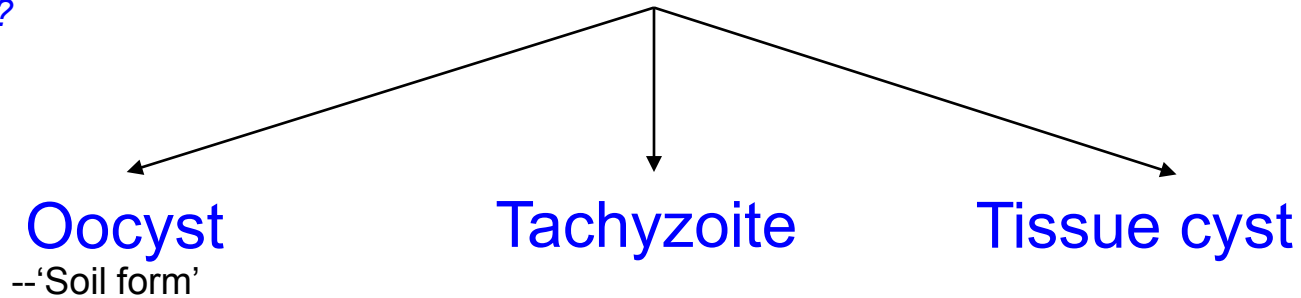
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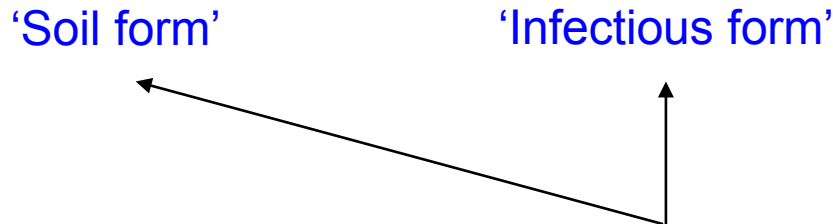
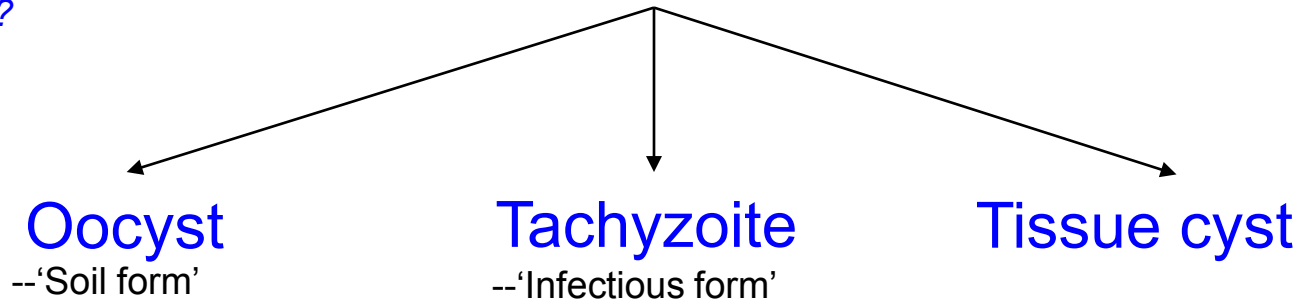
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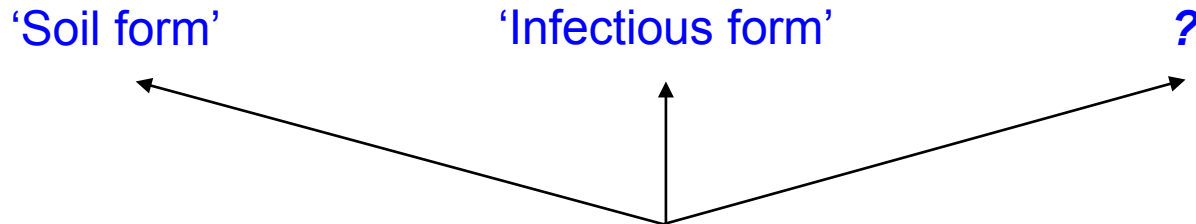
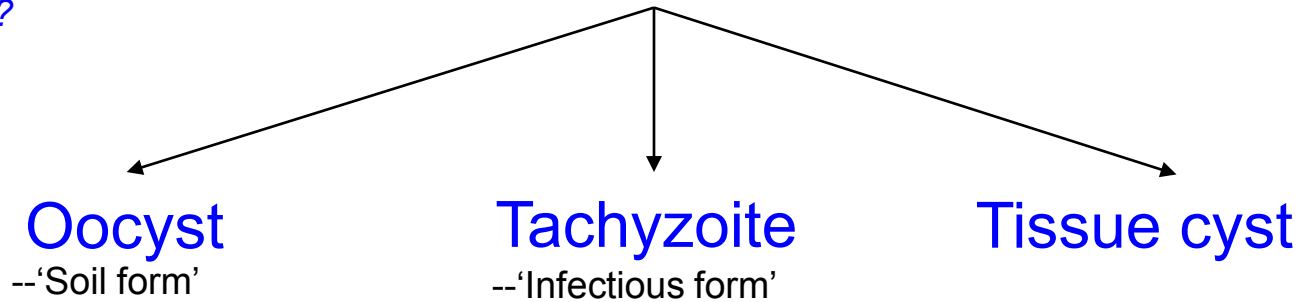
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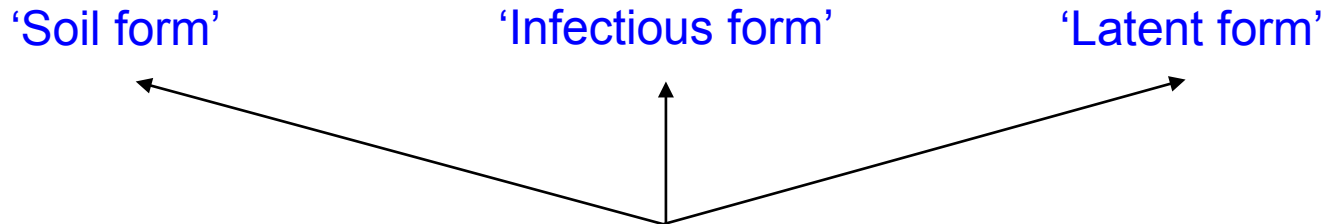
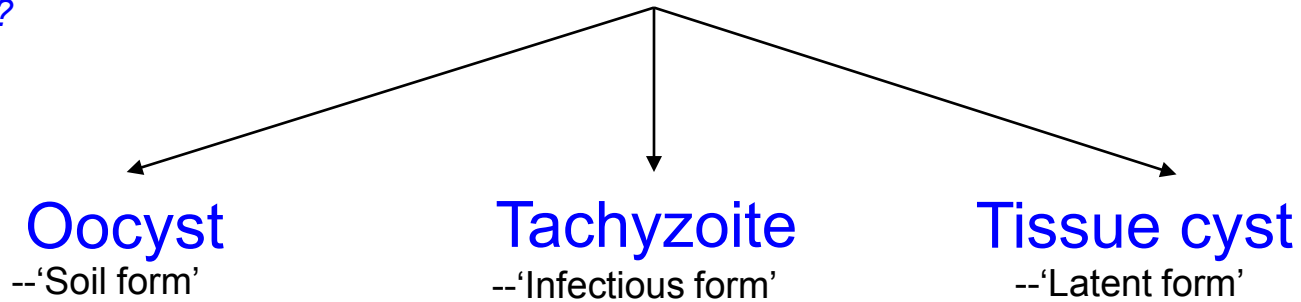
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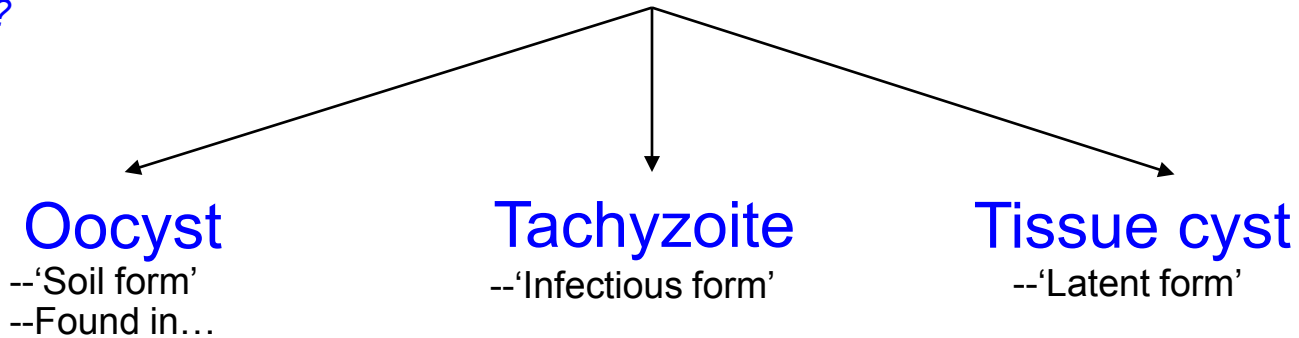


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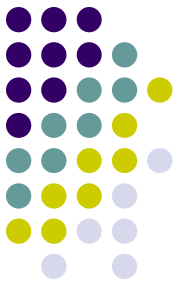
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Where does this form reside?

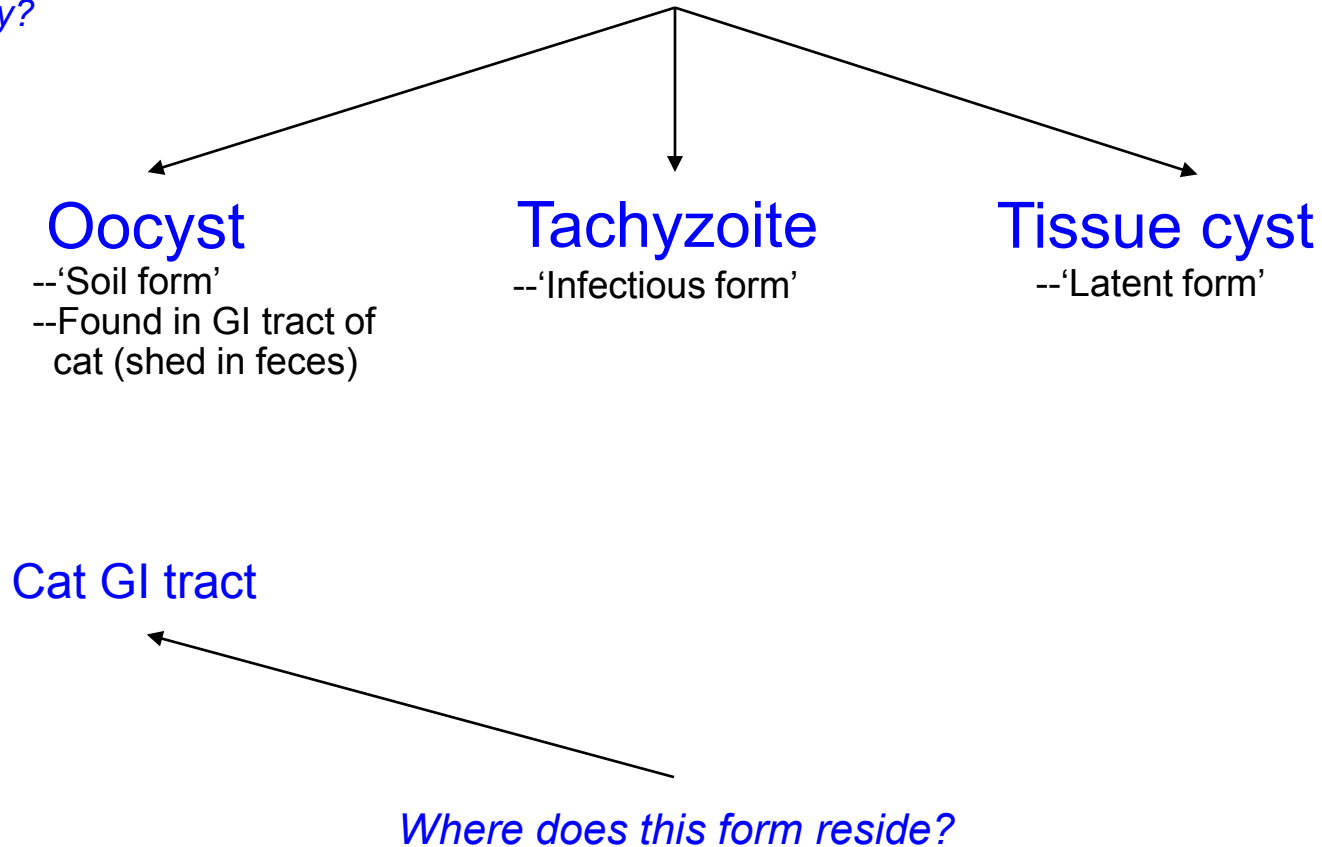


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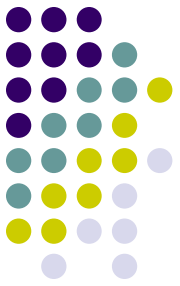


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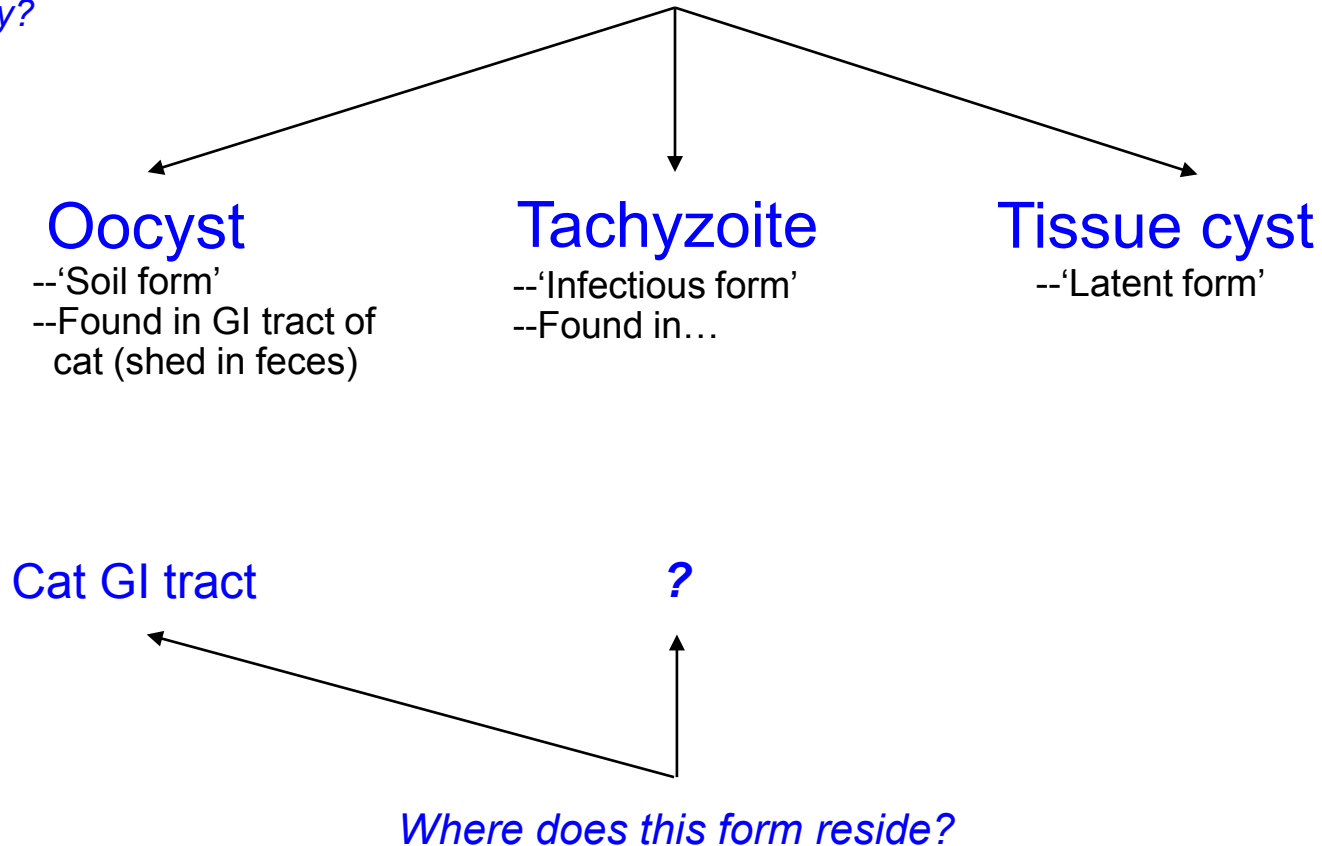


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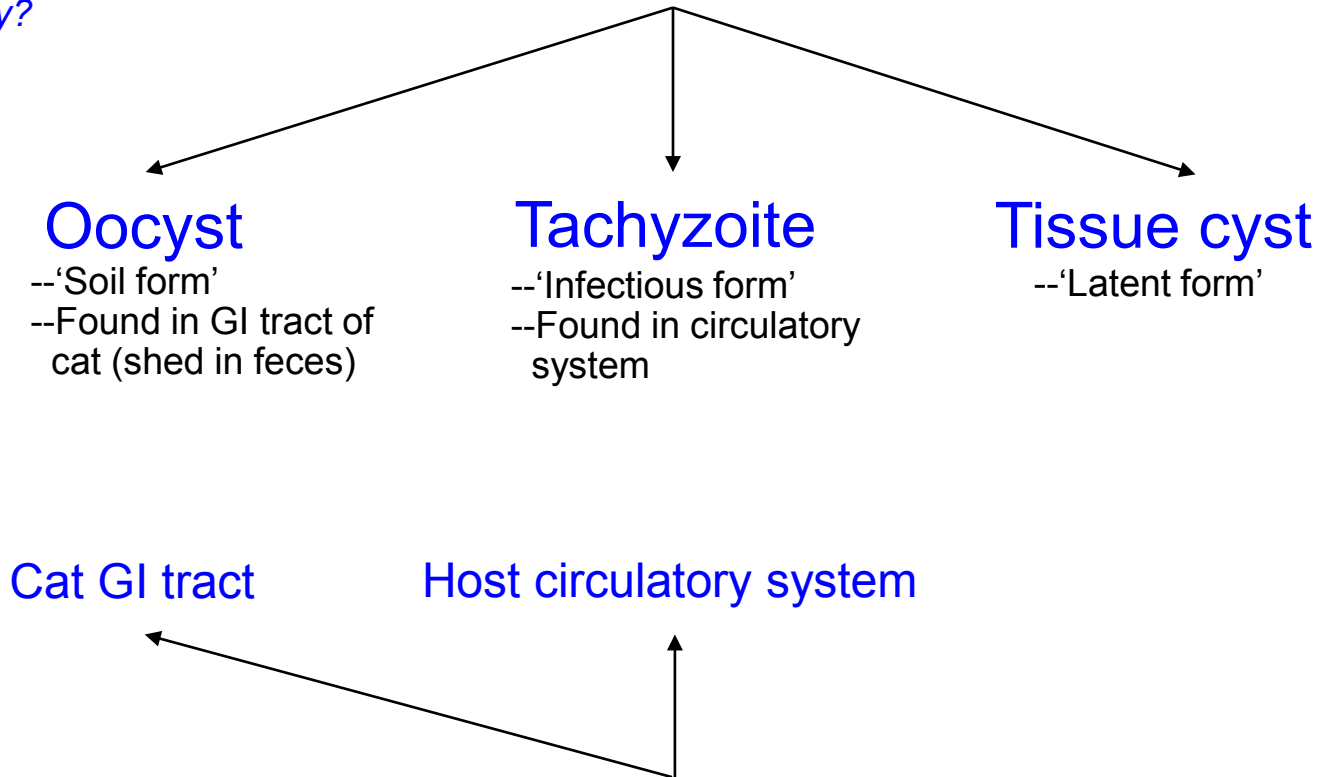


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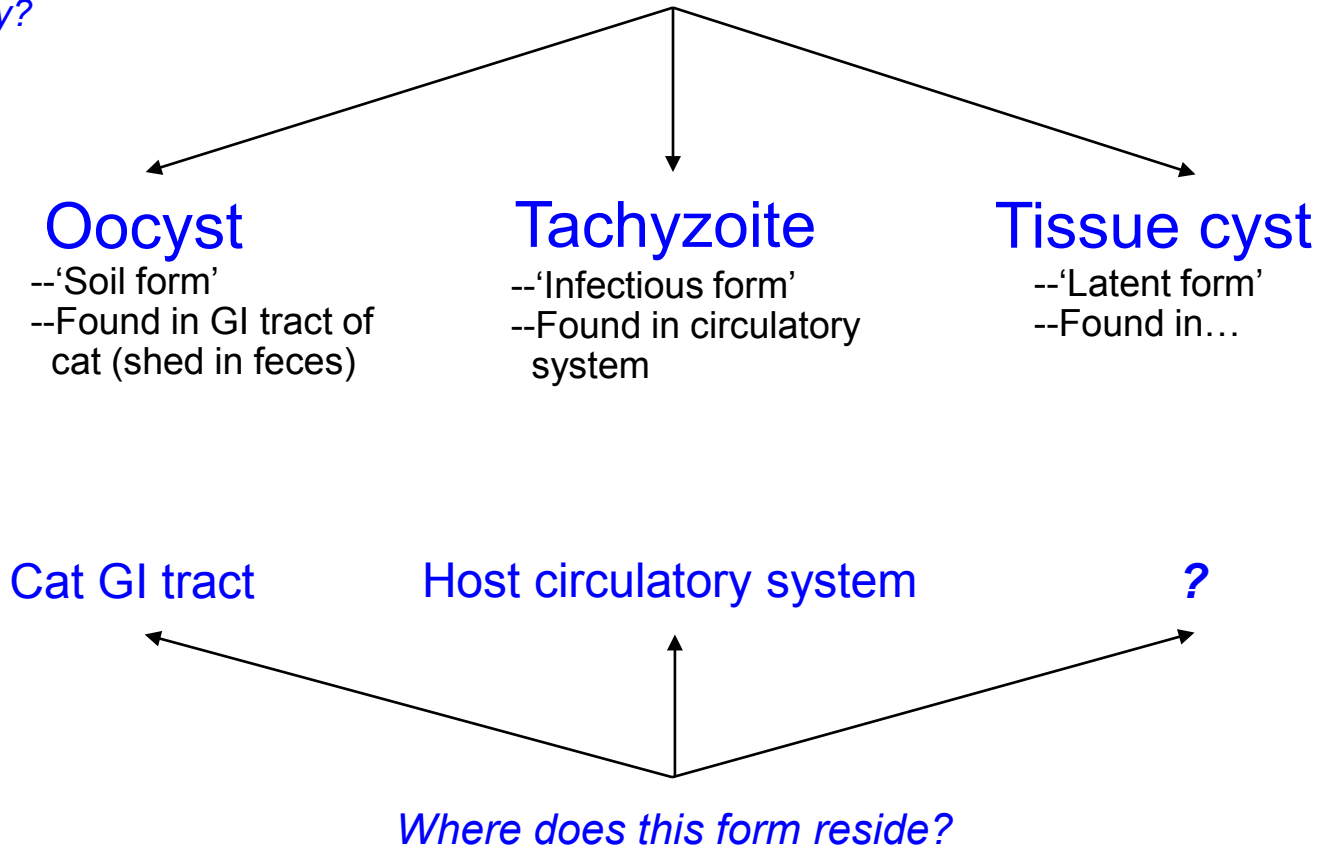
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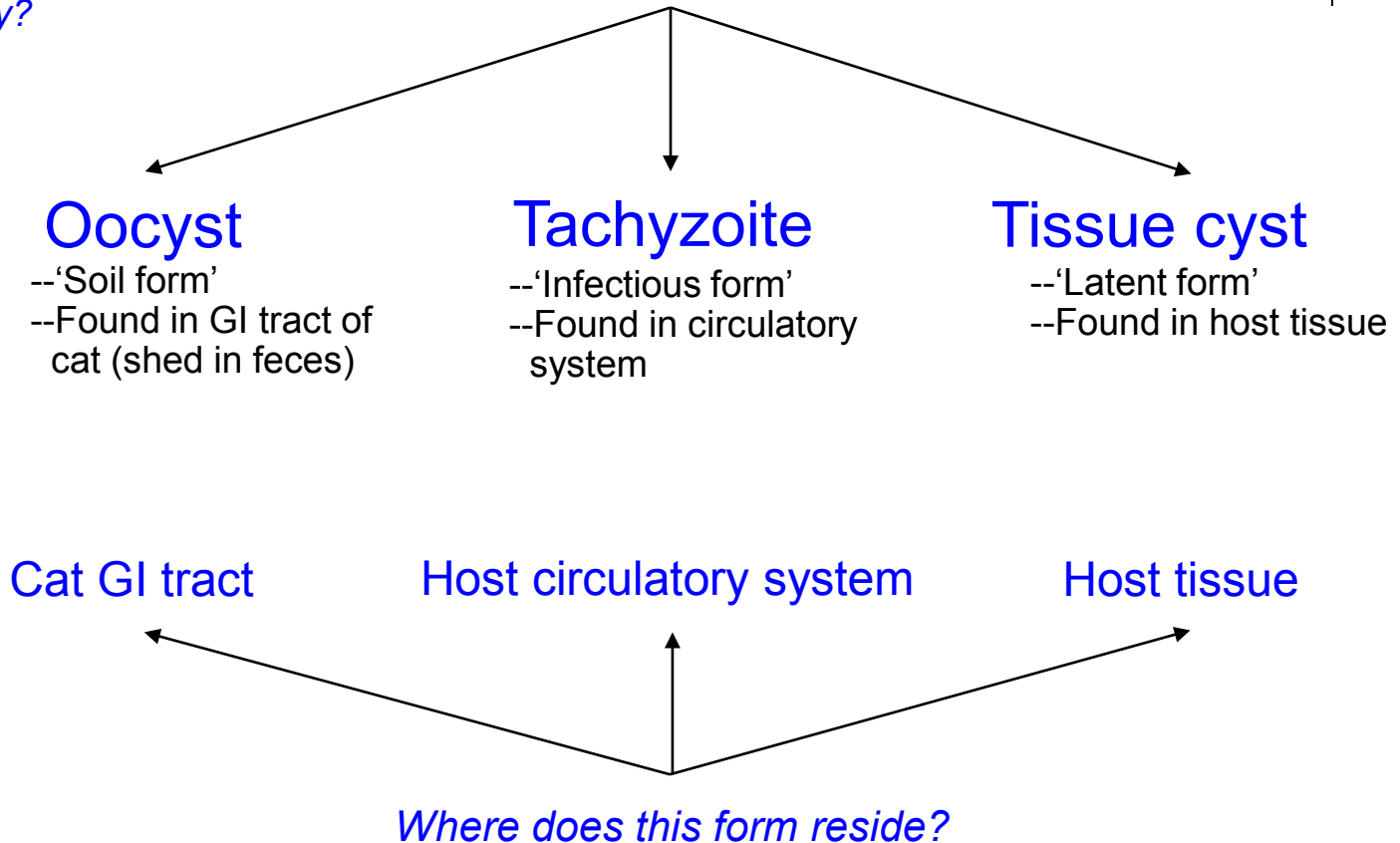


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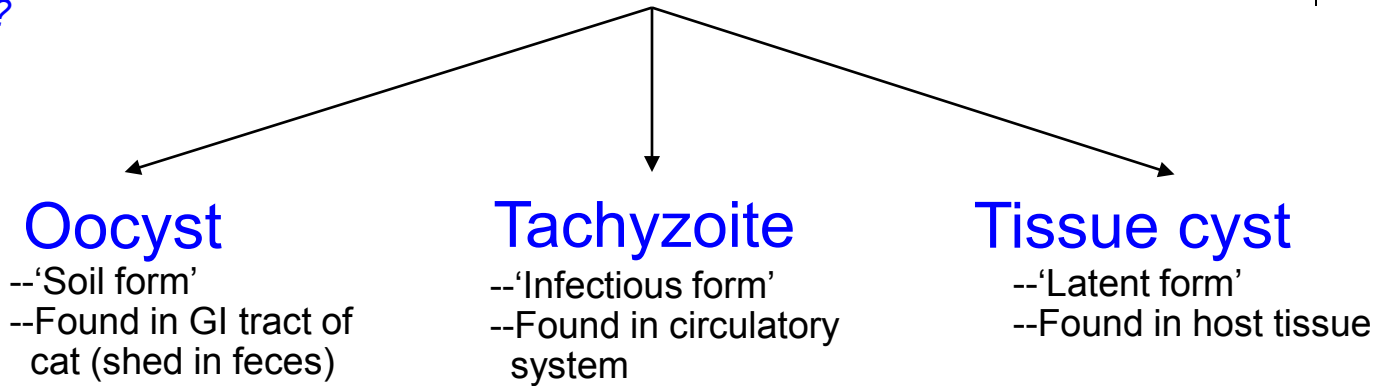
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Infectious?

Is this form infectious?

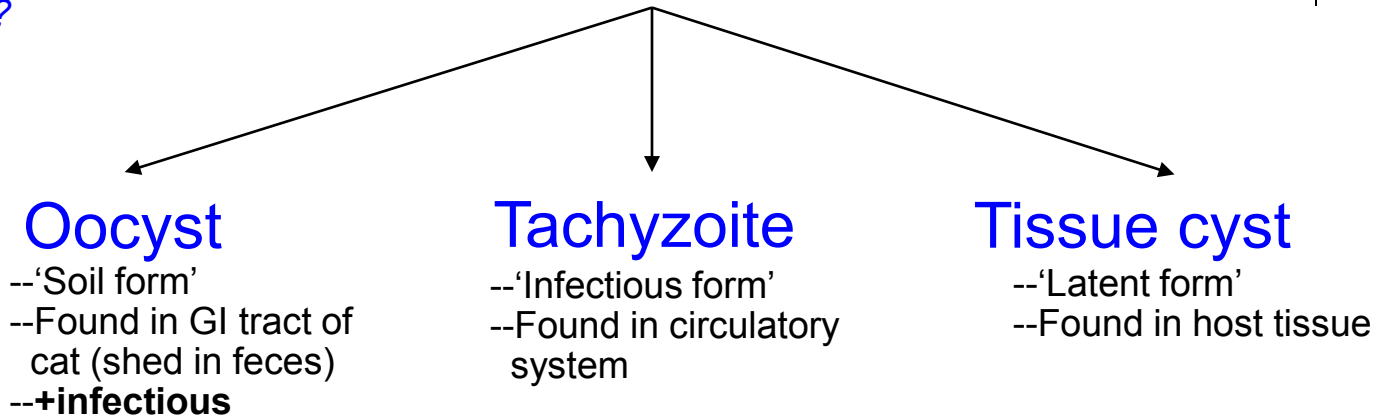


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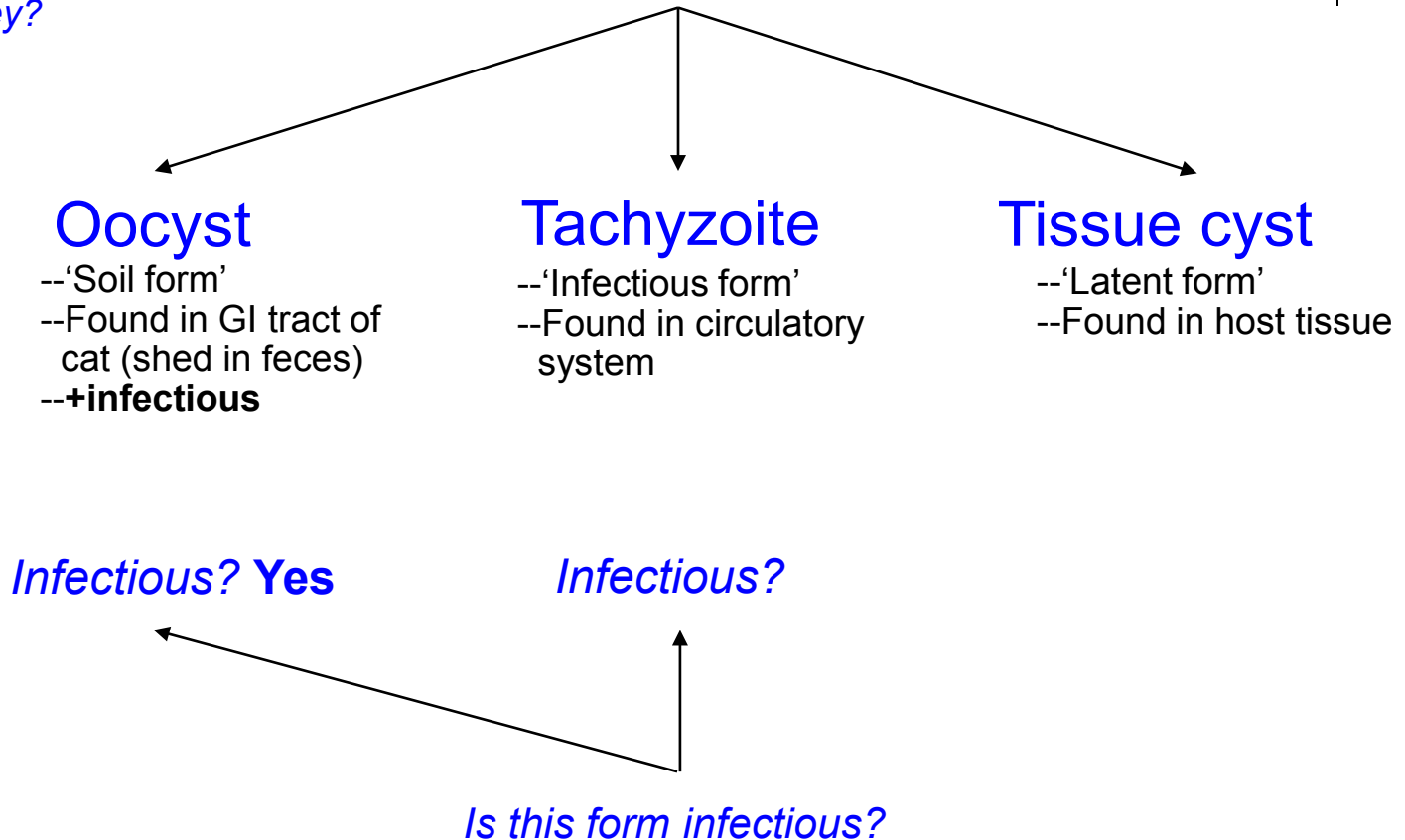
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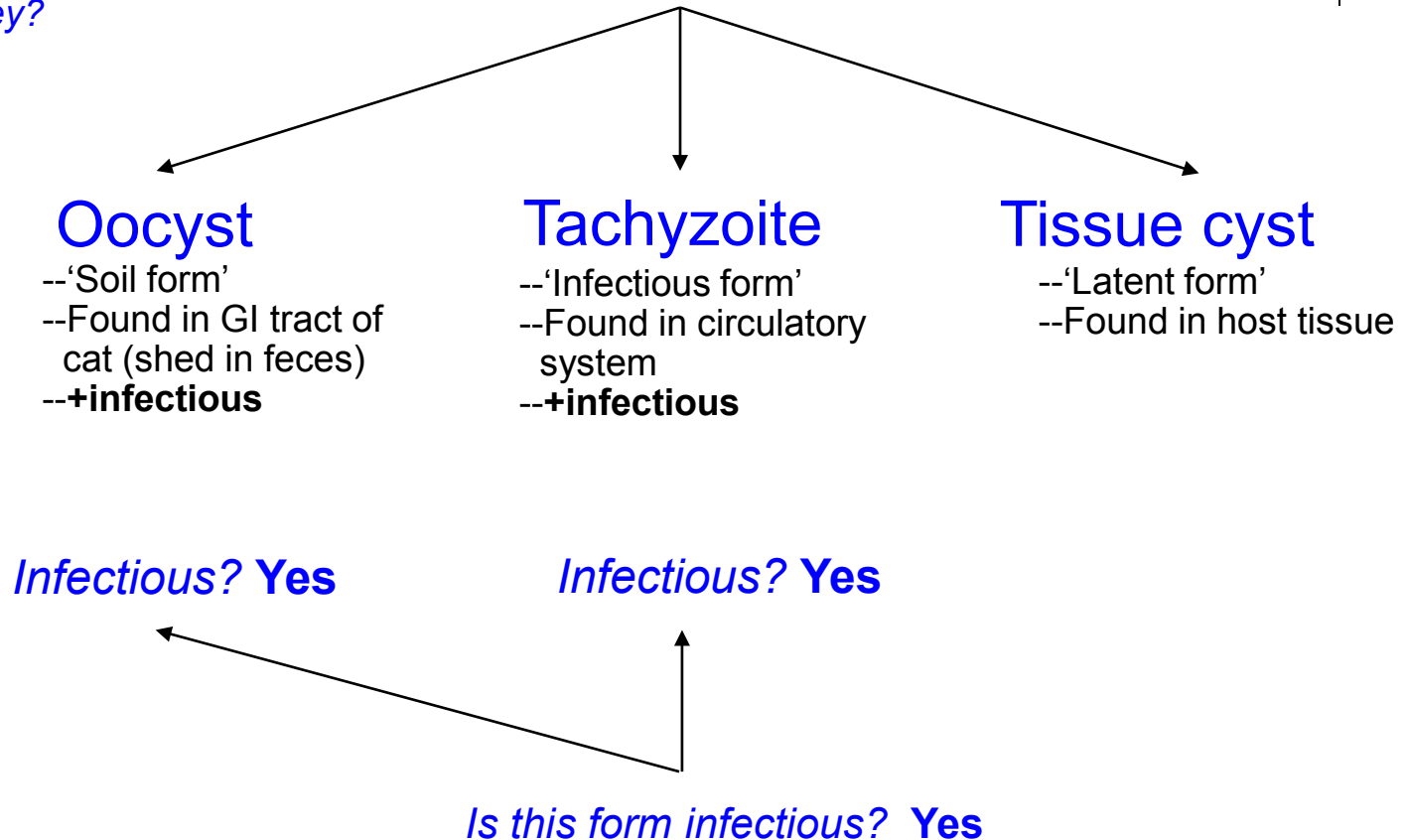


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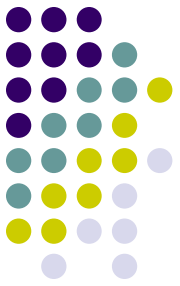


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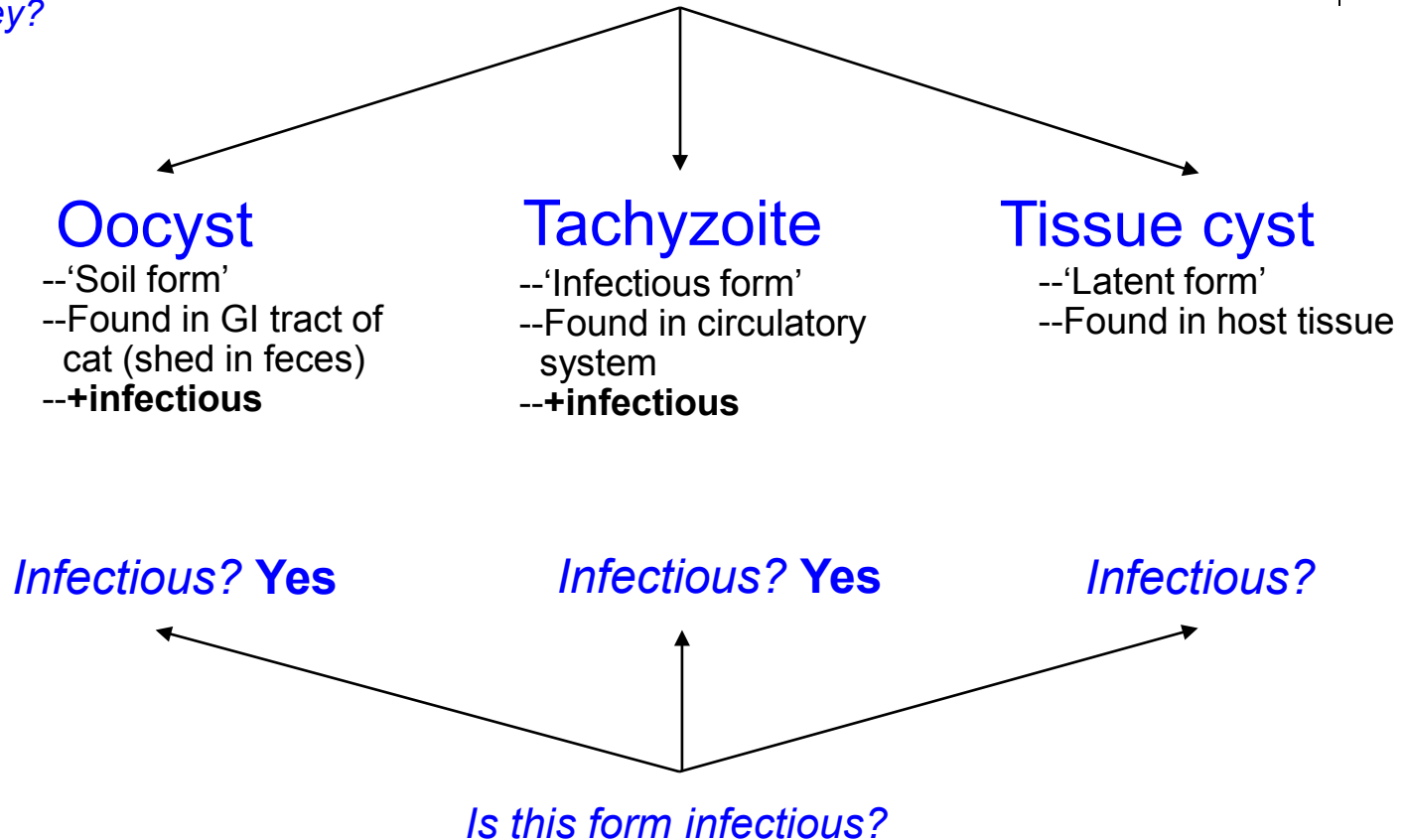


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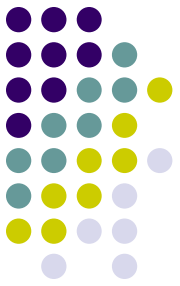


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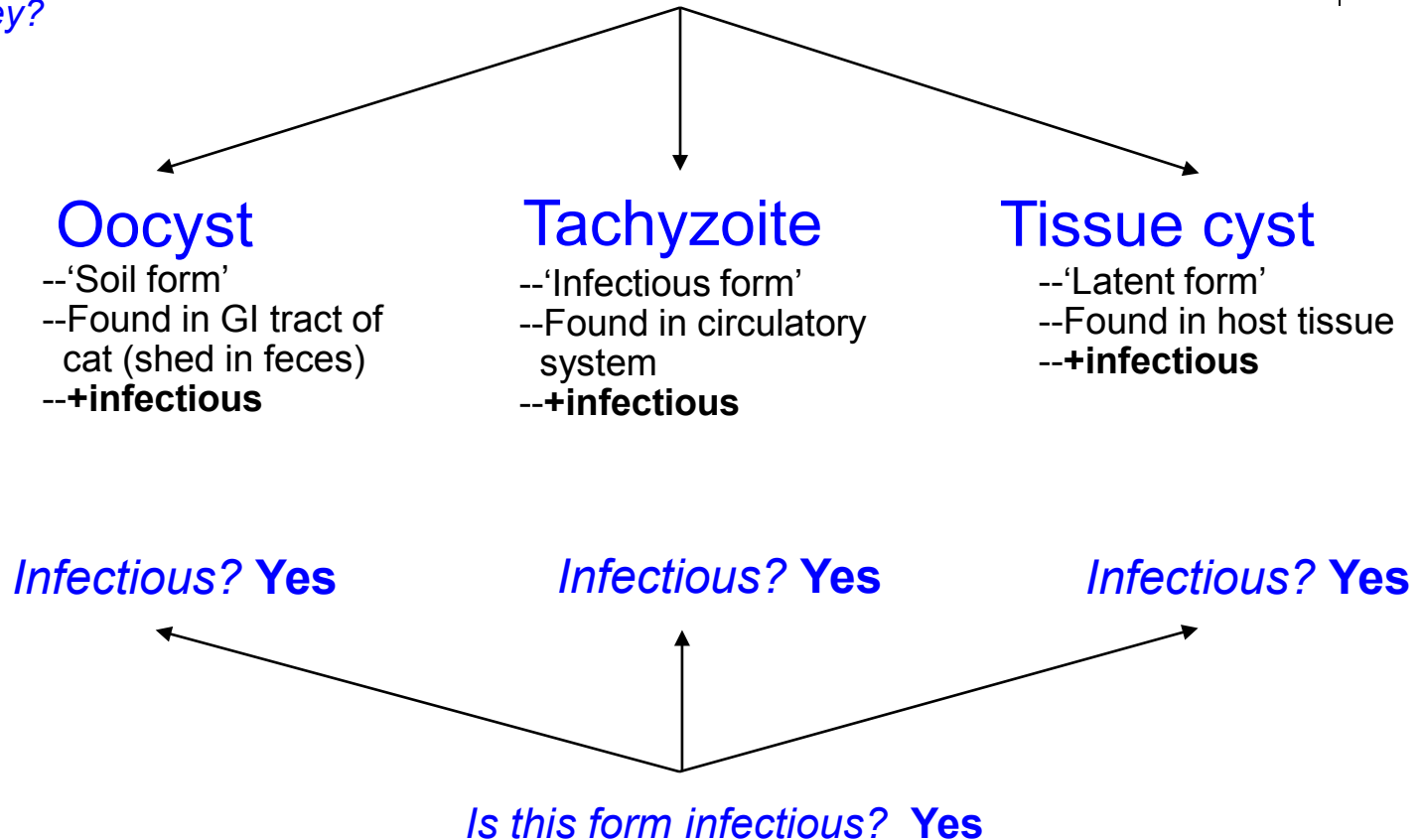


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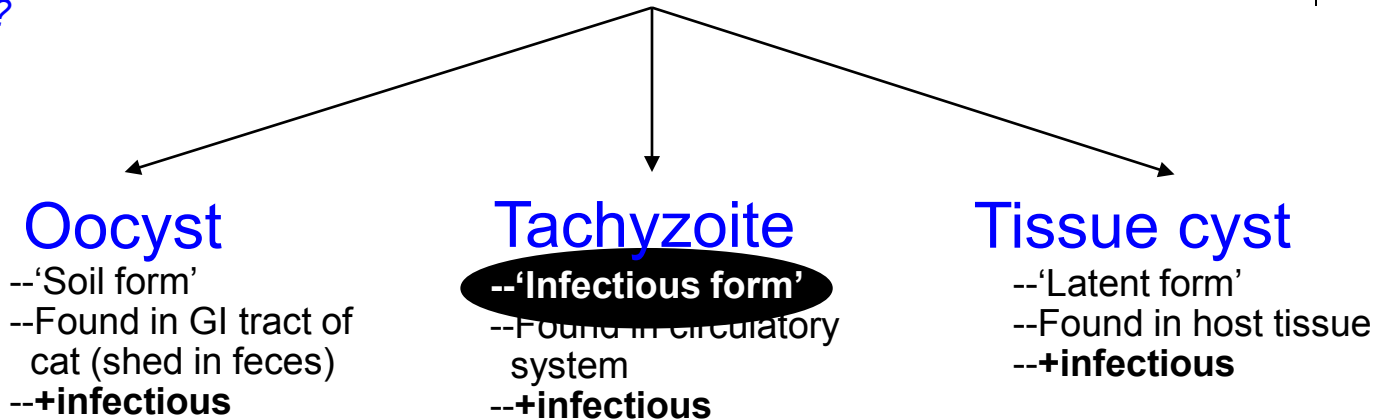


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Infectious? Yes

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Infectious? Yes

All forms are infectious under the right circumstances!

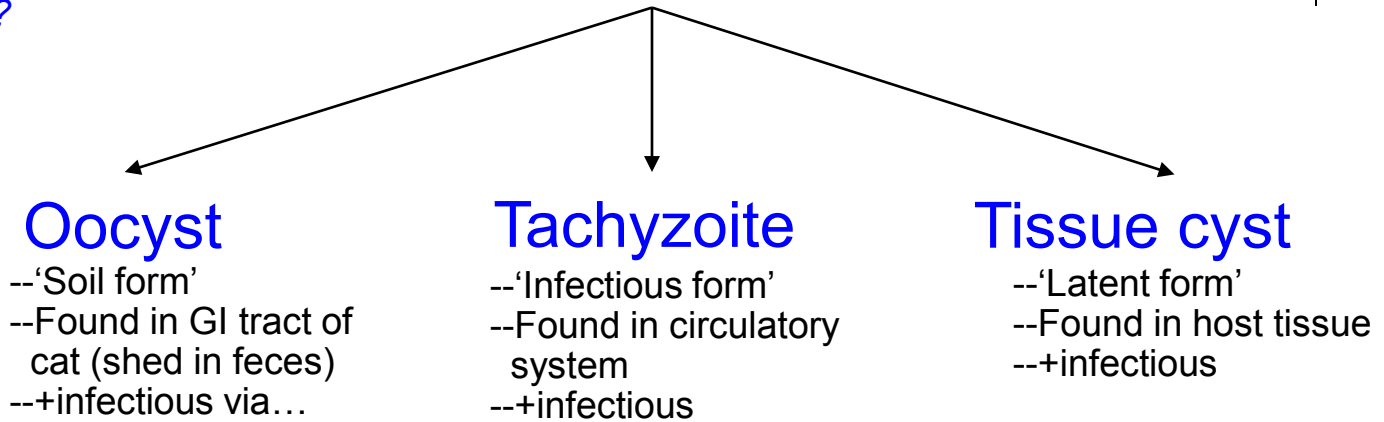
Don't let the nickname of the tachyzoite form fool you into thinking it's the only one.

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in **three forms**
What are they?



Infectious via...

How is infection transmitted for this form?

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?

Oocyst

- 'Soil form'
- Found in GI tract of cat (shed in feces)
- +infectious via...
- Ingestion of contaminated soil**

Tachyzoite

- 'Infectious form'
- Found in circulatory system
- +infectious

Tissue cyst

- 'Latent form'
- Found in host tissue
- +infectious

Infectious via...

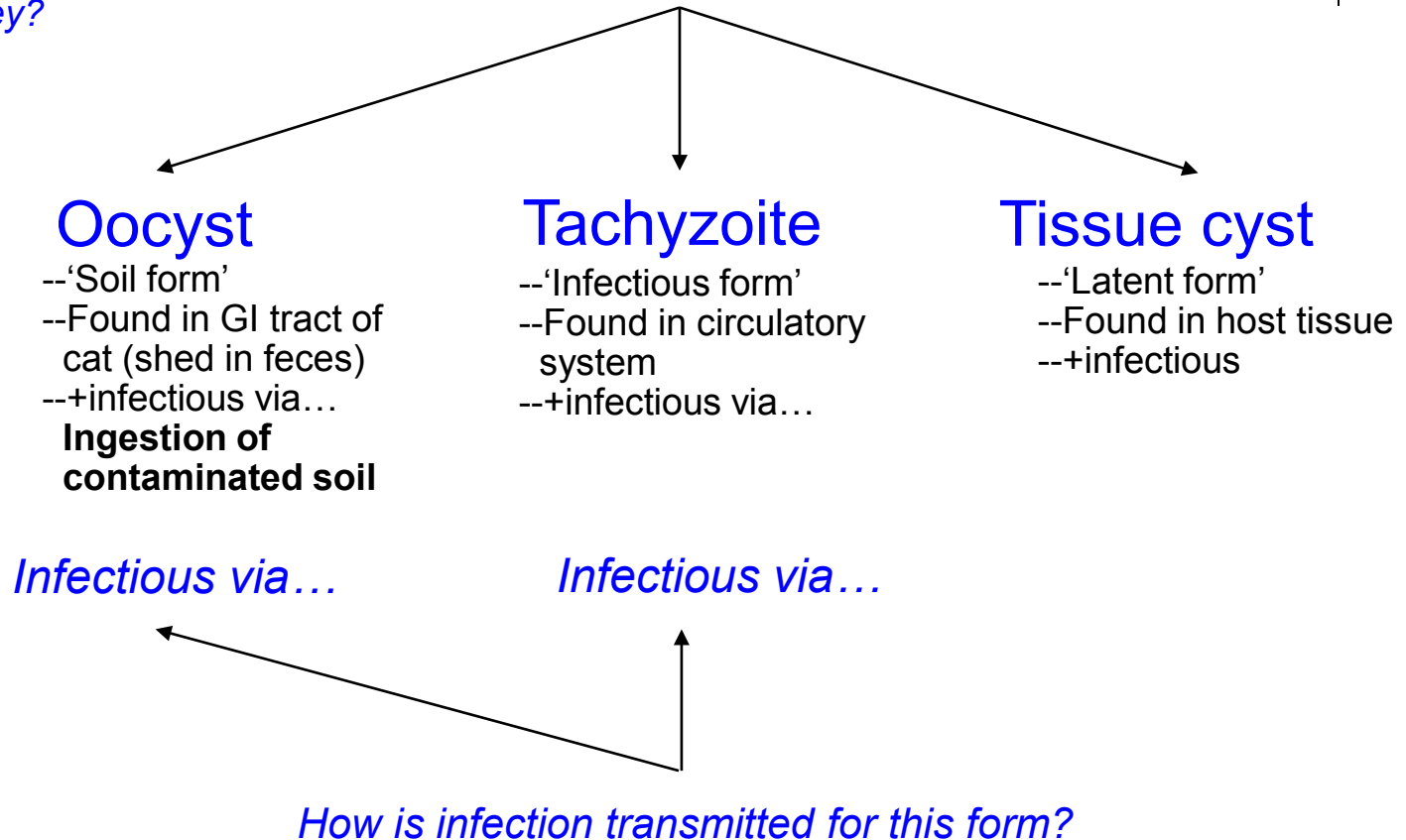
How is infection transmitted for this form?

Uveitis: *Toxoplasmosis*

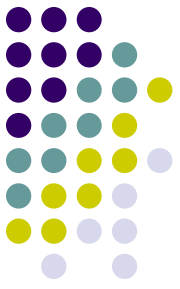


Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?

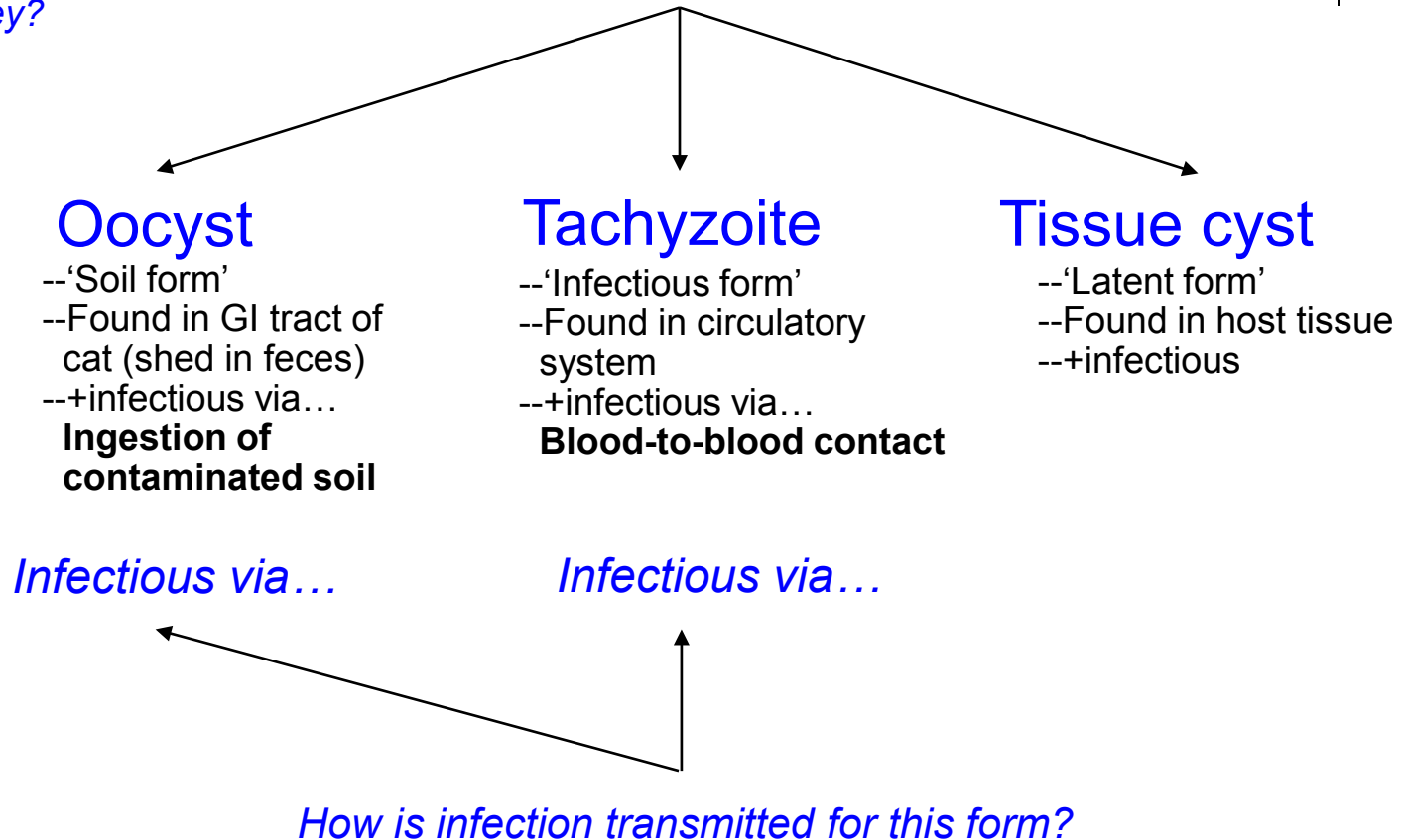


Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?

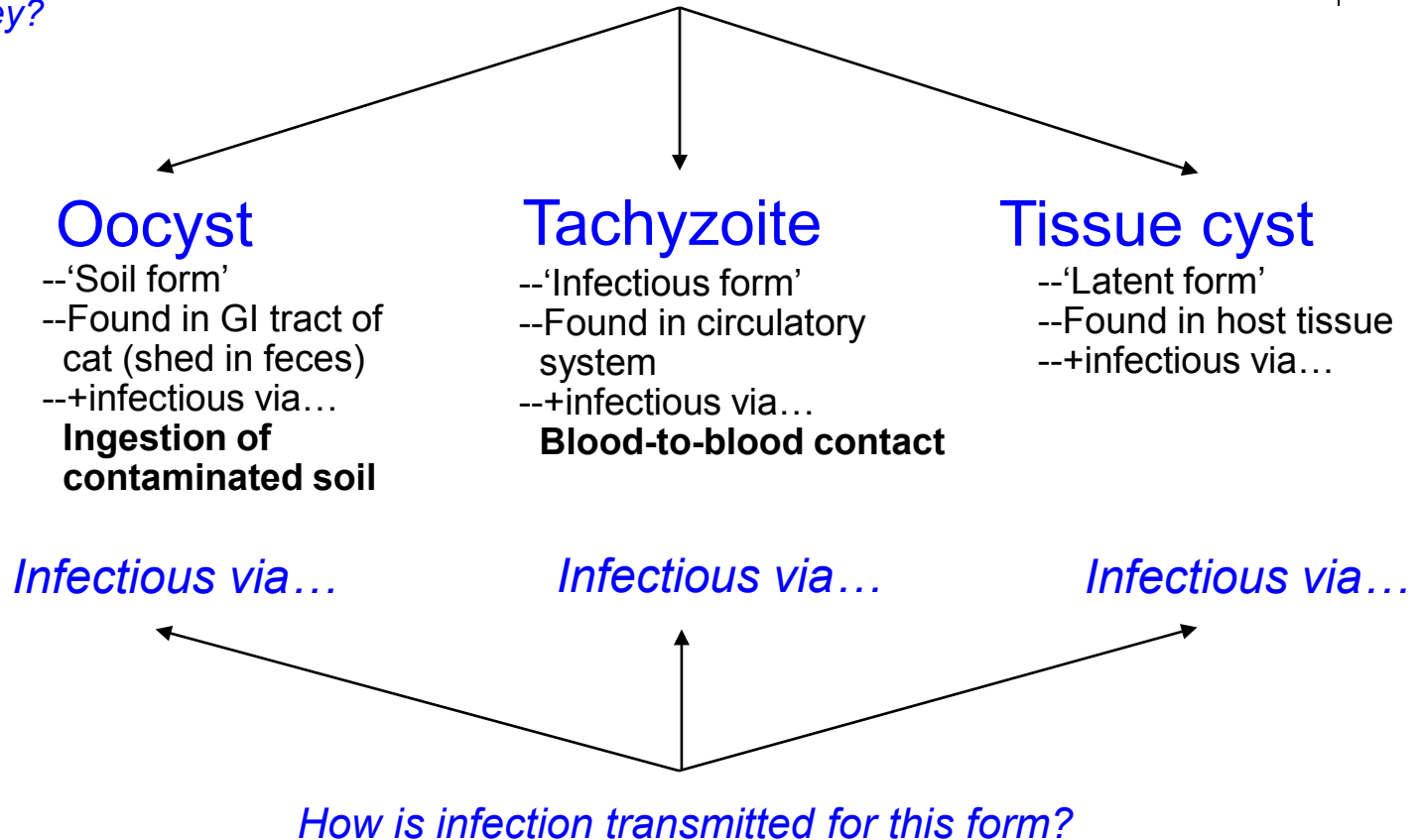


Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?

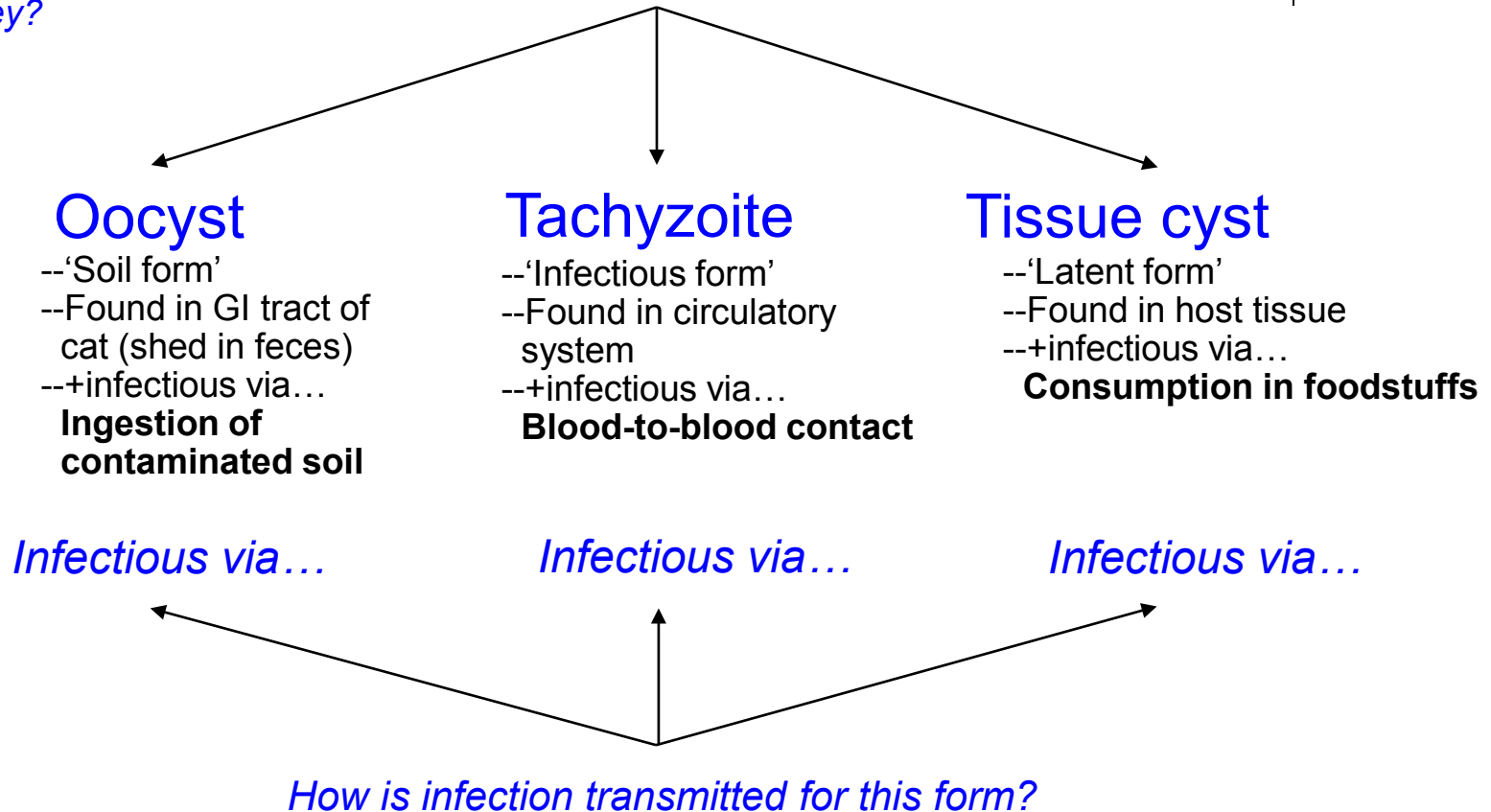


Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?

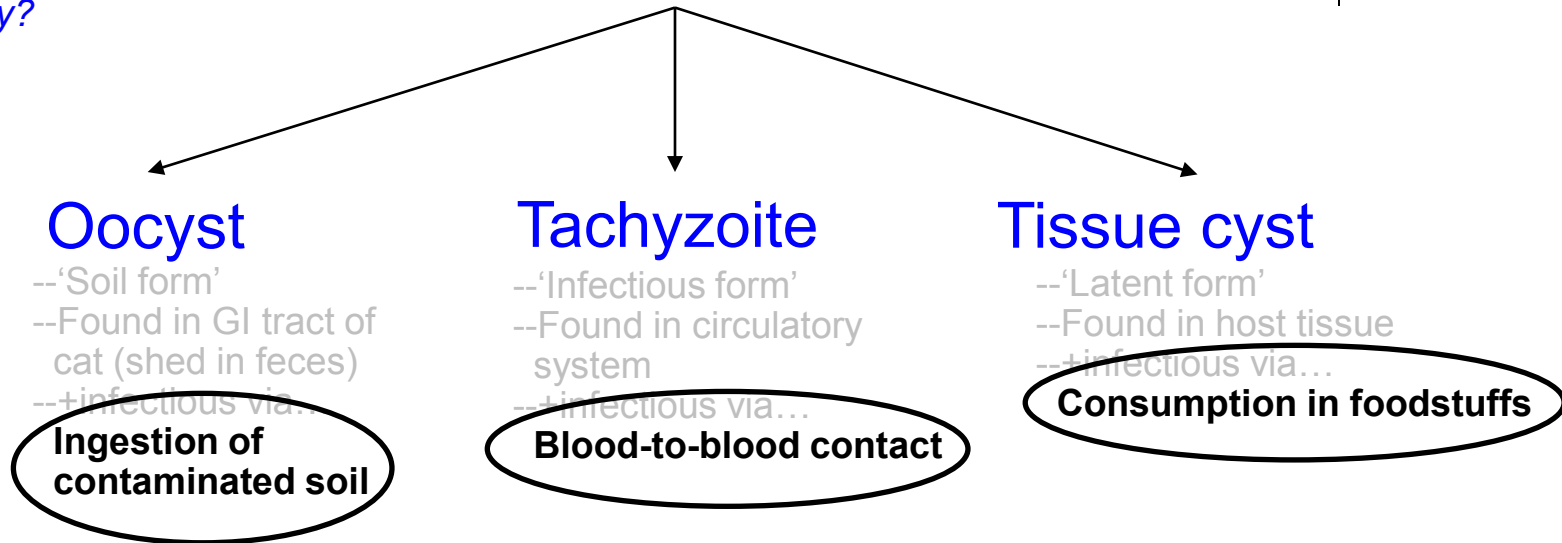


Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

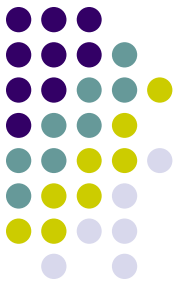
T gondii has a complex life cycle, existing in **three forms**
What are they?



Inf...
What very, very important means of dz transmission is not mentioned here?

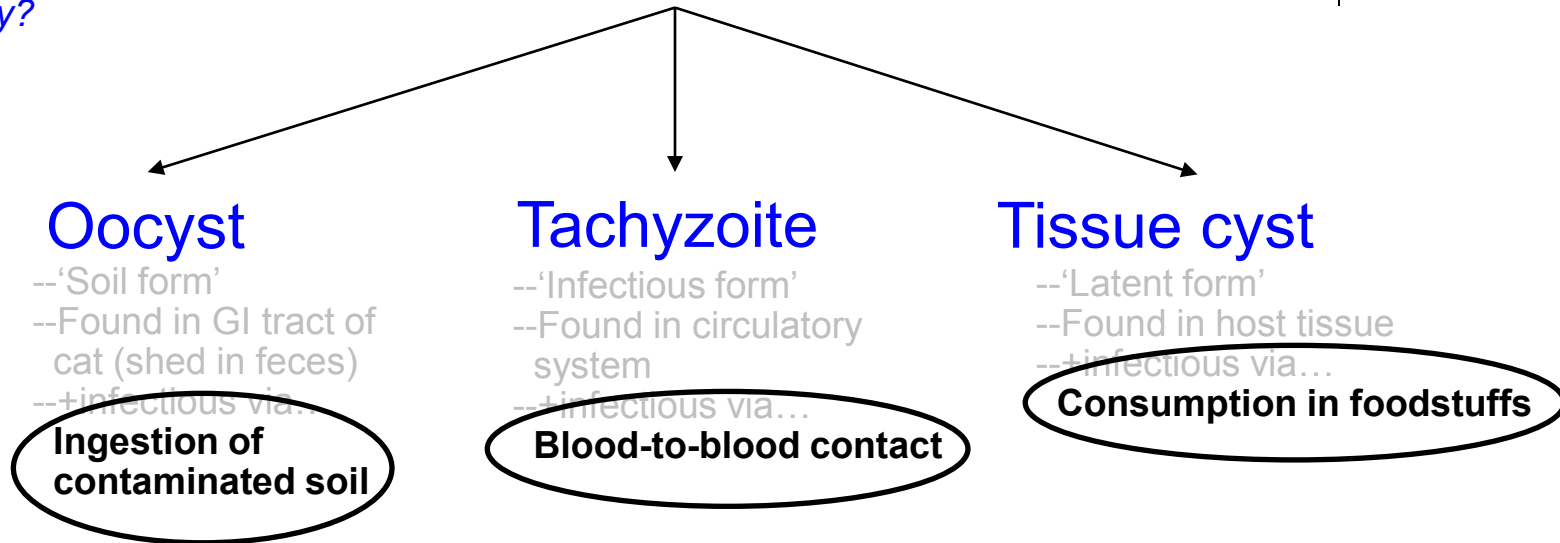
How is infection transmitted for this form?

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in **three forms**
What are they?



Inf **What very, very important means of dz transmission is not mentioned here?**
Transplacentally, resulting in congenital toxoplasmosis (we will have much to say about this later in the slide-set)

How is infection transmitted for this form?

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?

Oocyst

- 'Soil form'
- Found in GI tract of cat (shed in feces)
- +infectious via...
Ingestion of contaminated soil
- ?

Tachyzoite

- 'Infectious form'
- Found in circulatory system
- +infectious via...
Blood-to-blood contact

Tissue cyst

- 'Latent form'
- Found in host tissue
- +infectious via...
Consumption in foodstuffs

In a nutshell...

In a nutshell, how should we think of each form?
--Oocysts...

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?

Oocyst

- 'Soil form'
- Found in GI tract of cat (shed in feces)
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- 'Spores'

In a nutshell...

Tachyzoite

- 'Infectious form'
- Found in circulatory system
- +infectious via...
Blood-to-blood contact

Tissue cyst

- 'Latent form'
- Found in host tissue
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Consumption in foodstuffs

In a nutshell, how should we think of each form?

--Oocysts...are toxo eggs or 'spores' (the bug is a bug name at this stage)

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?

Oocyst

- 'Soil form'
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In a nutshell...

Tachyzoite

- 'Infectious form'
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Consumption in foodstuffs

In a nutshell, how should we think of each form?

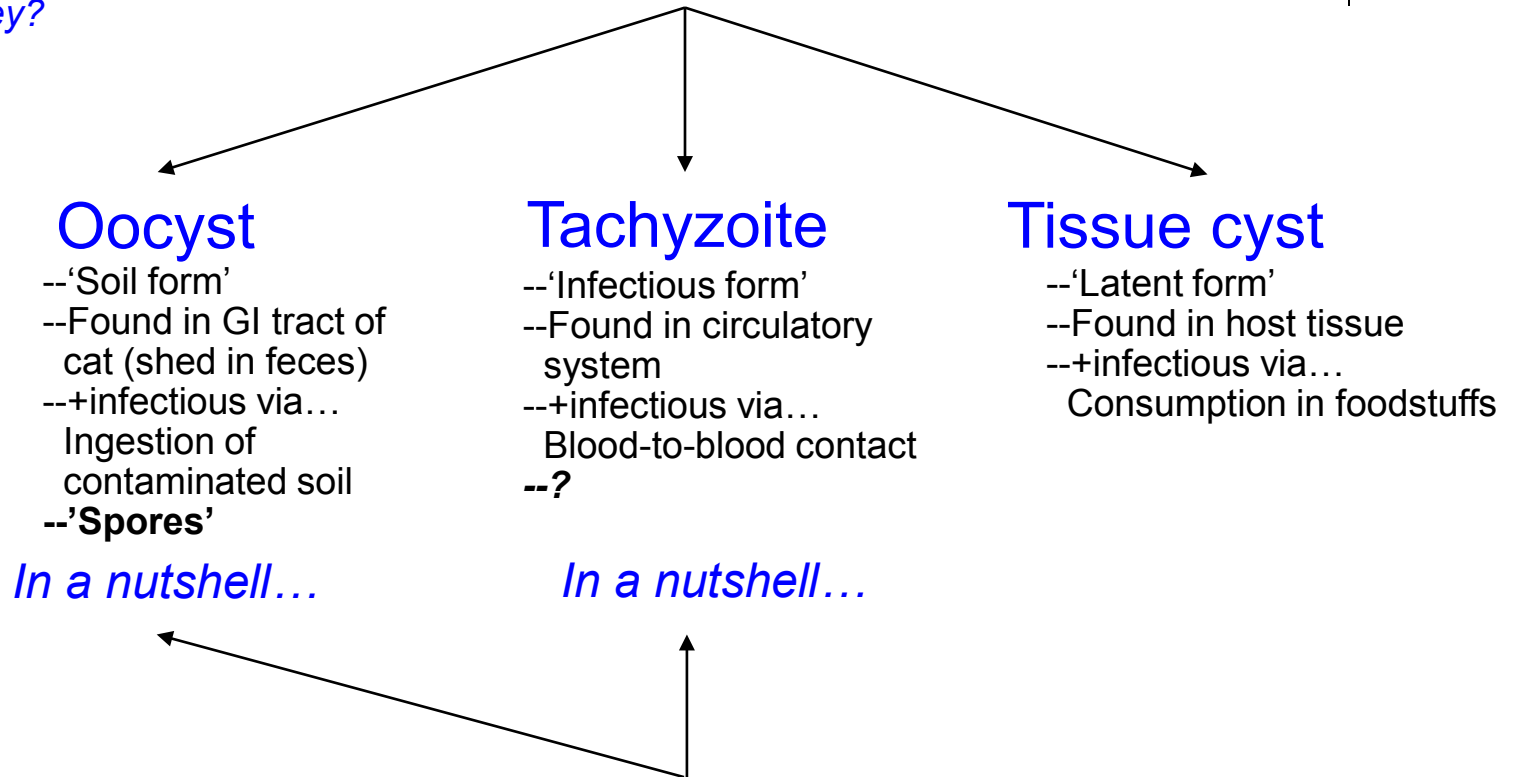
--Oocysts...are toxo eggs or 'spores' (the bug is a *sporozoite* at this stage)

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?



In a nutshell, how should we think of each form?

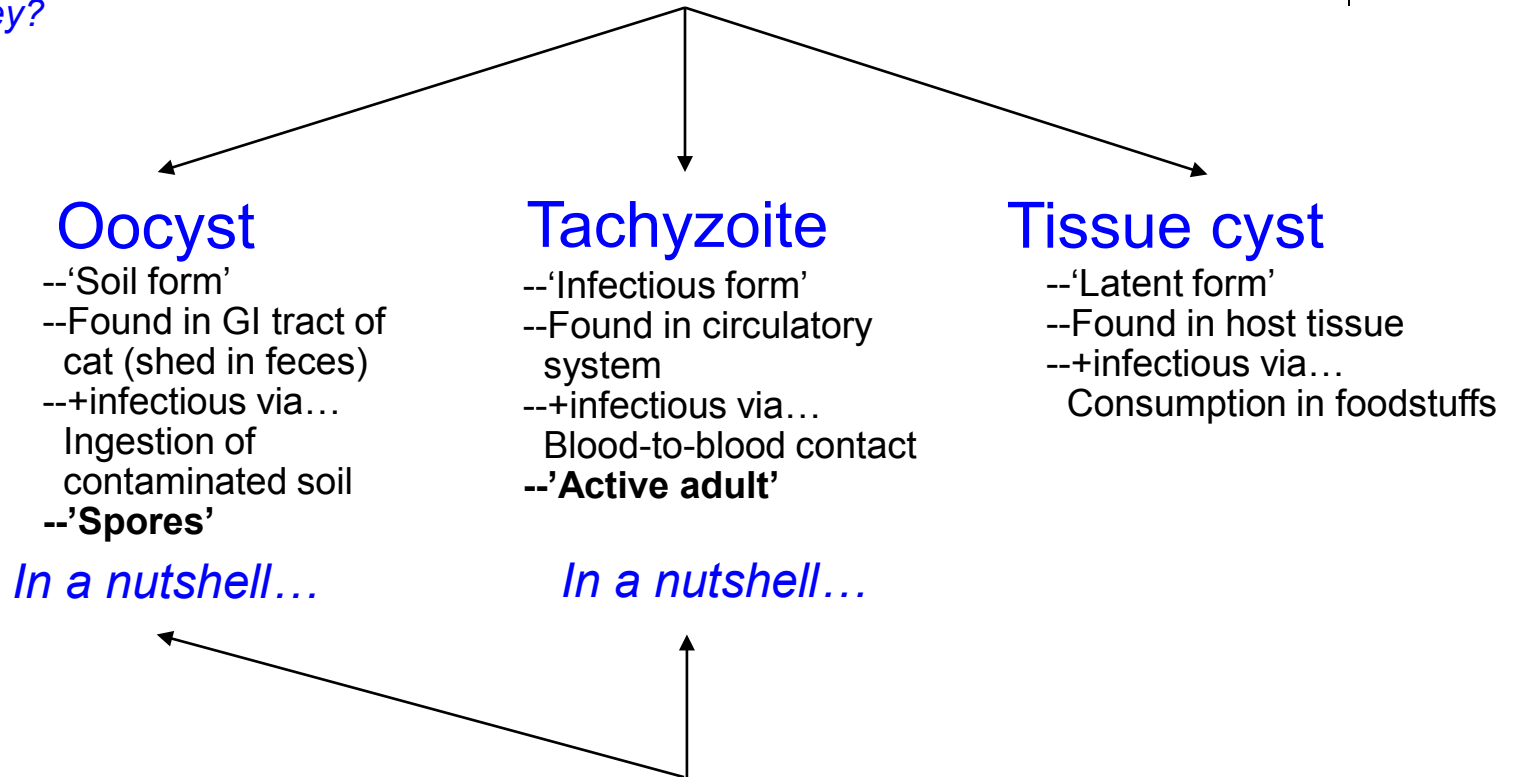
- Oocysts...are toxo eggs or 'spores' (the bug is a *sporozoite* at this stage)
- Tachyzoites...

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?



In a nutshell, how should we think of each form?

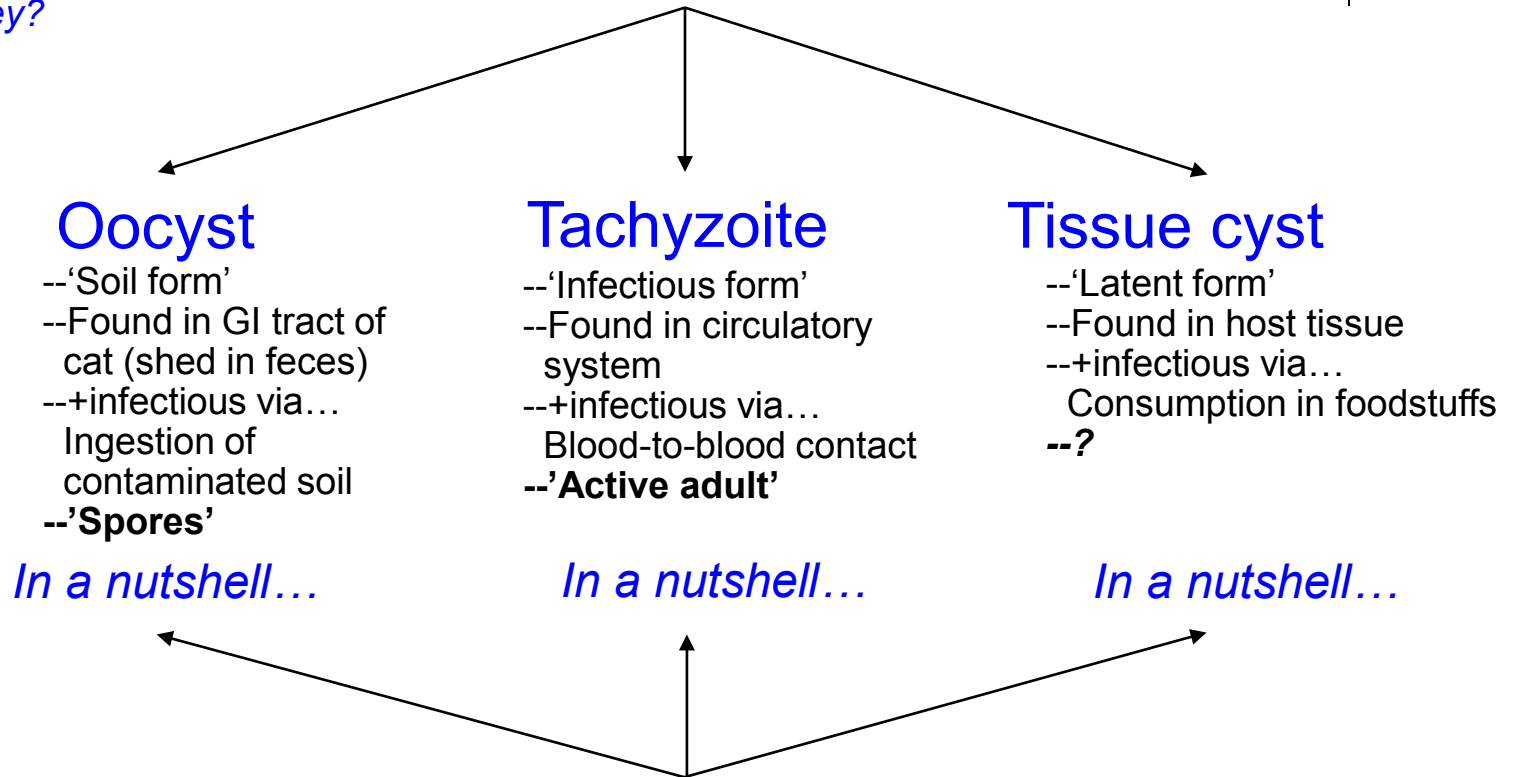
- Oocysts...are toxo eggs or 'spores' (the bug is a *sporozoite* at this stage)
- Tachyzoites...are toxo 'adults' that are **active**

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?



In a nutshell, how should we think of each form?

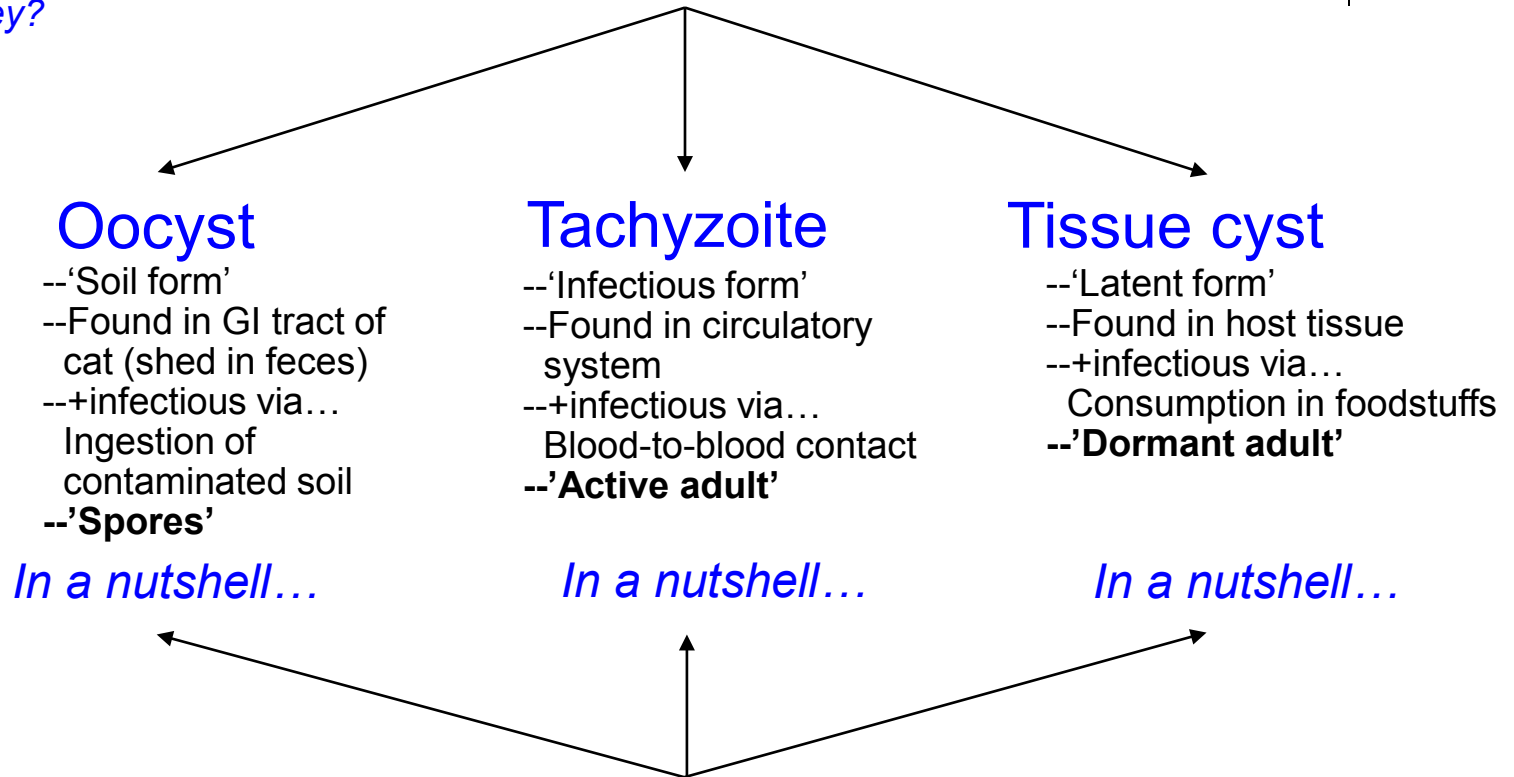
- Oocysts...are toxo eggs or 'spores' (the bug is a *sporozoite* at this stage)
- Tachyzoites...are toxo 'adults' that are **active**
- The tissue cysts...

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

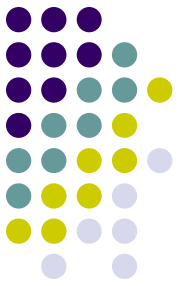
T gondii has a complex life cycle, existing in *three forms*
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In a nutshell, how should we think of each form?

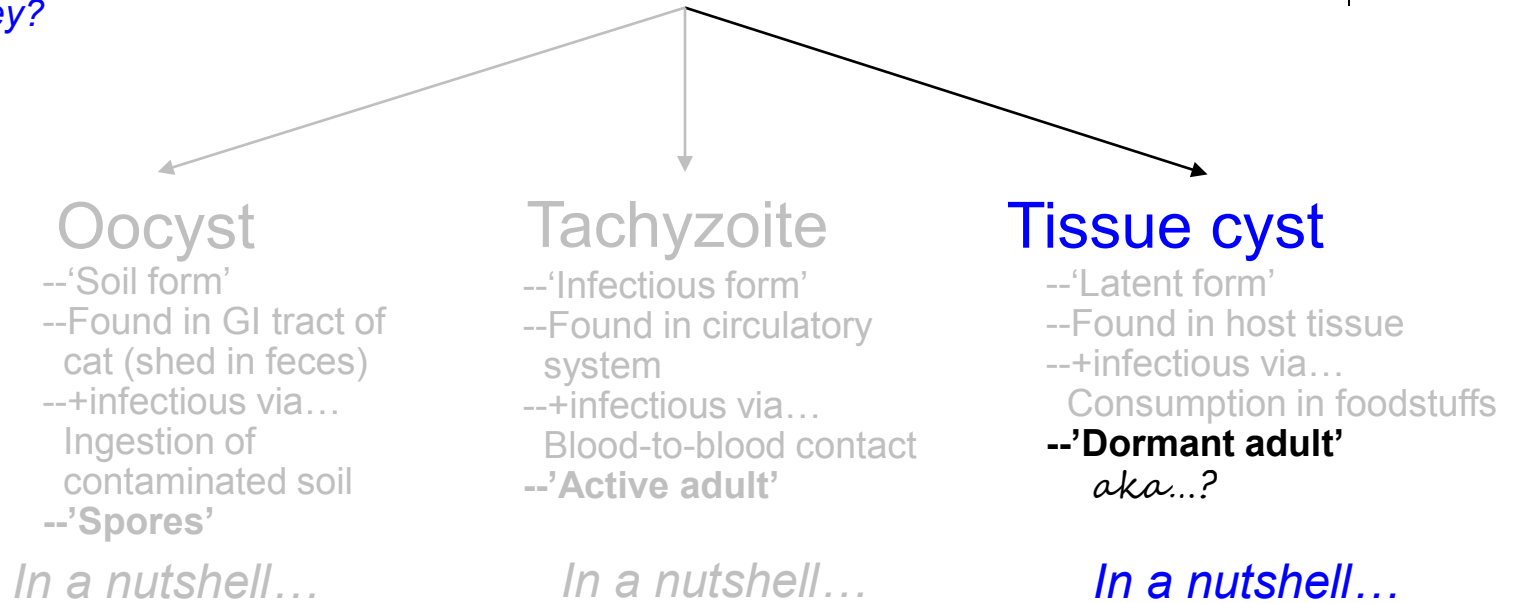
- Oocysts...are toxo eggs or 'spores' (the bug is a *sporozoite* at this stage)
- Tachyzoites...are toxo 'adults' that are **active**
- The tissue cysts...contain toxo adults that are **dormant**

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in **three forms**
What are they?



In a nutshell, how

What is the name for the dormant adults in the tissue cysts?

--Oocysts...are toxo eggs or spores (the bag is a sporozoite at this stage)

--Tachyzoites...are toxo 'adults' that are **active**

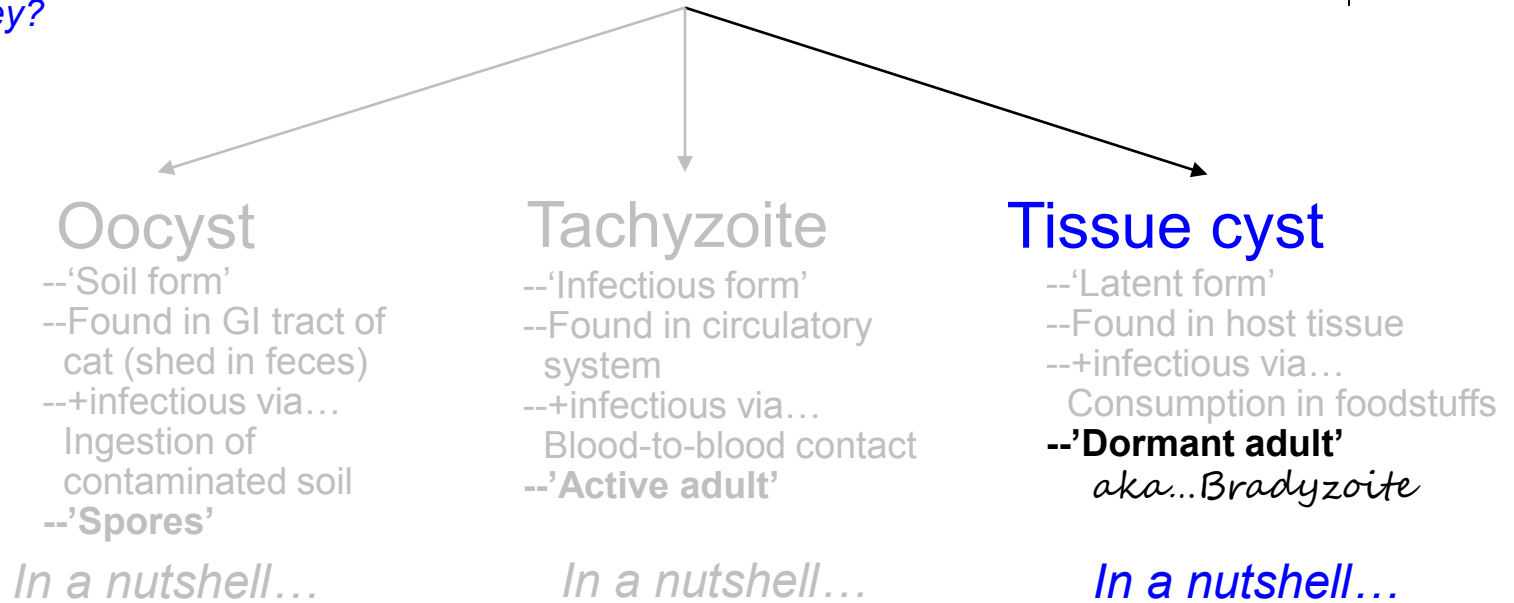
--The tissue cysts...contain **toxoplasma adults that are dormant**

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in **three forms**
What are they?



In a nutshell, how

What is the name for the dormant adults in the tissue cysts?
Bradyzoites

--Oocysts...are toxo eggs or spores (the bag is a sporozoite at this stage)

--Tachyzoites...are toxo 'adults' that are active

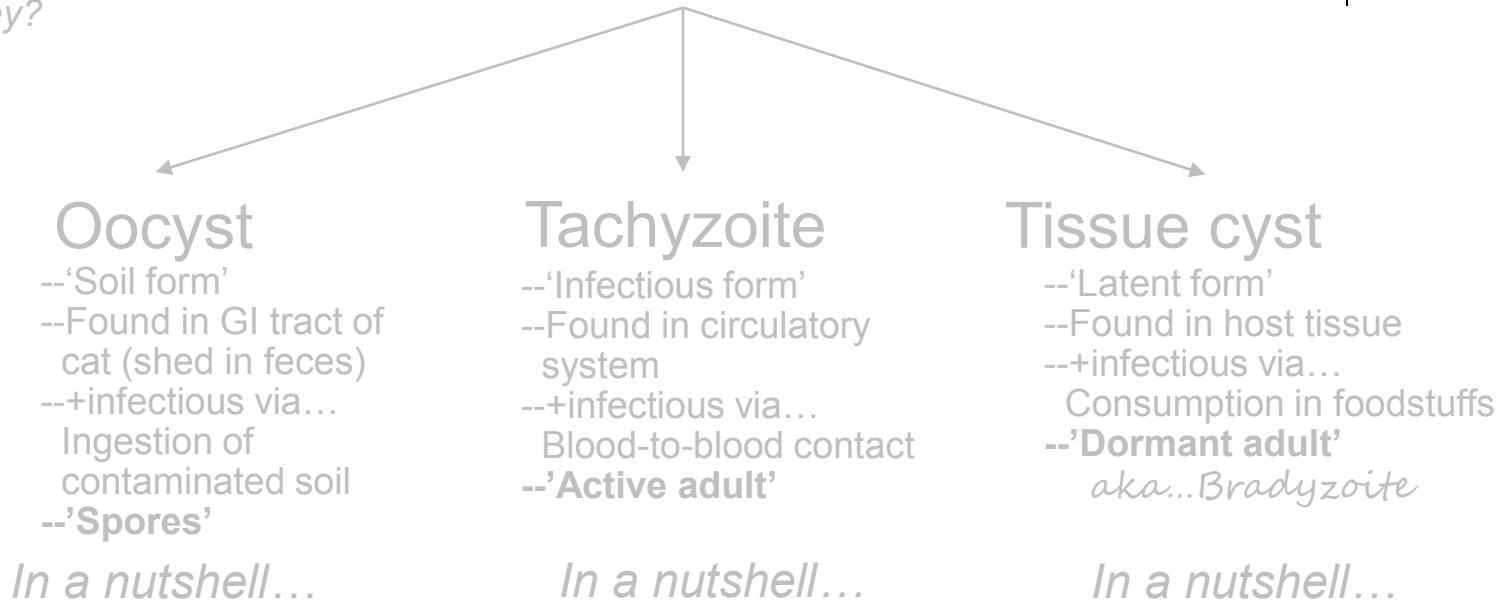
--The tissue cysts...contain **toxoplasma adults that are dormant**

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?



It's not a coincidence that the *dormant* adults are identified as *brady* ('slow') -zoites...

Bradyzoites

In a nutshell, how do you identify dormant adults in the tissue cysts?

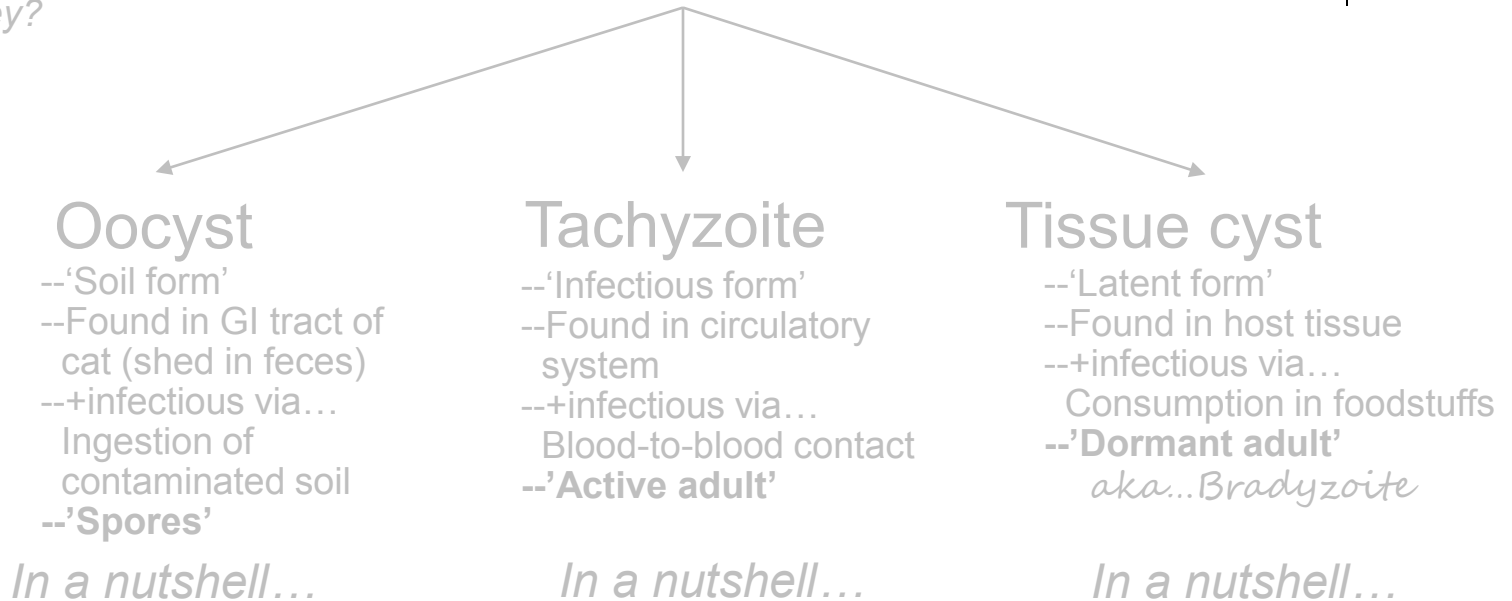
--Oocysts...are to...
--Tachyzoites...are toxo 'adults' that are active
--The tissue cysts...contain toxo adults that are dormant

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?



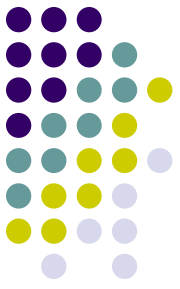
It's not a coincidence that the *dormant* adults are identified as *brady* ('slow') -zoites...whereas the *active* adults are *tachy* ('fast') -zoites

Bradyzoites

Tachyzoites

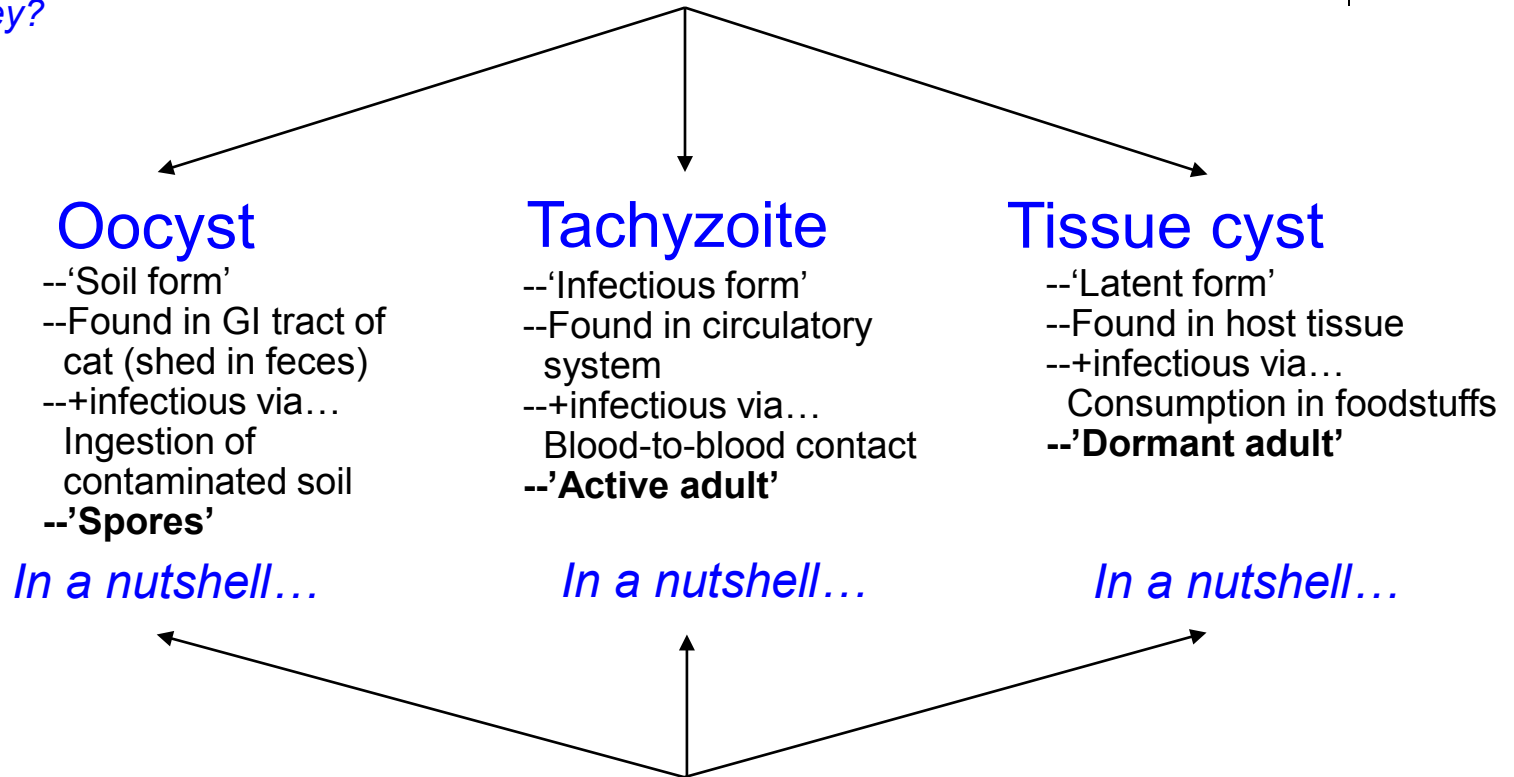
toxo adults that are dormant

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
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In a nutshell, how should we think of each form?

- Oocysts...are toxo eggs or 'spores' (the bug is a *sporozoite* at this stage)
- Tachyzoites...are toxo 'adults' that are **active**
- The tissue cysts...contain toxo adults that are **dormant**

★ *Summary slide—no question* ★

Uveitis: *Toxoplasmosis*



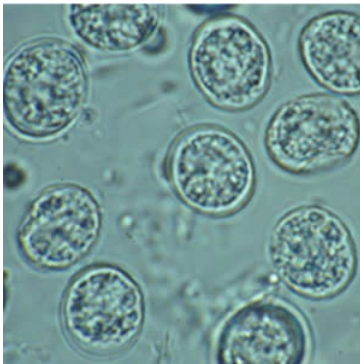
Toxoplasmosis: Basics

Toxoplasmosis Basics tl;dr

The person consumes either oocysts (wash your hands!) or tissue cysts (cook your meat!).

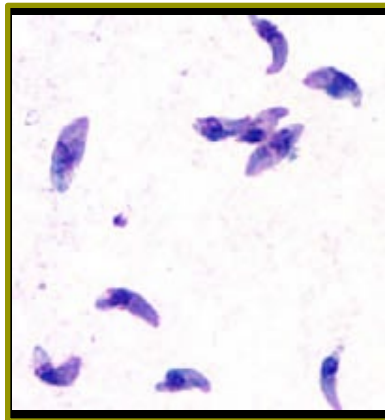
Oocyst

- 'Soil form'
- Found in GI tract of cat (shed in feces)
- +infectious via...
Ingestion of contaminated soil
- 'Spores'



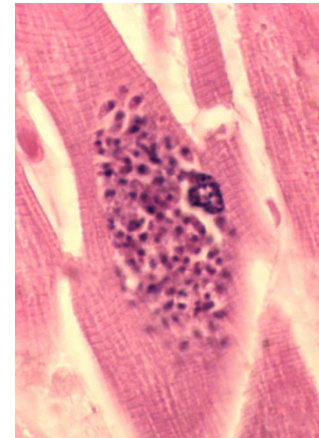
Tachyzoite

- 'Infectious form'
- Found in circulatory system
- +infectious via...
Blood-to-blood contact
- 'Active adult'



Tissue cyst

- 'Latent form'
- Found in host tissue
- +infectious via...
Consumption in foodstuffs
- 'Dormant adult'



(No question—review slide, proceed when ready)

Uveitis: *Toxoplasmosis*



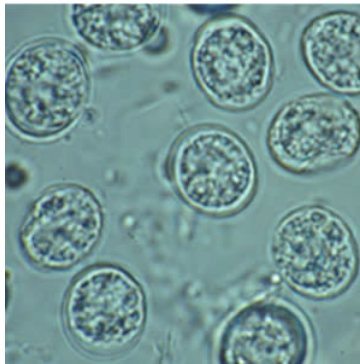
Toxoplasmosis: Basics

Toxoplasmosis Basics tl;dr

The person consumes either oocysts (wash your hands!) or tissue cysts (cook your meat!). The consumed bugs transform into tachyzoites, enter the bloodstream, then disseminate throughout the body.

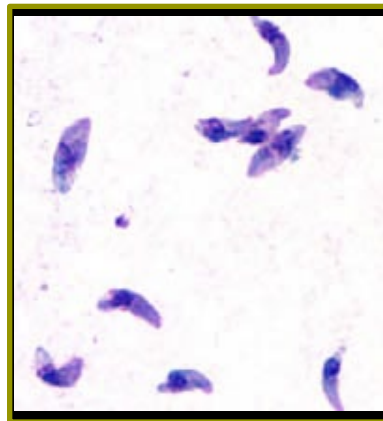
Oocyst

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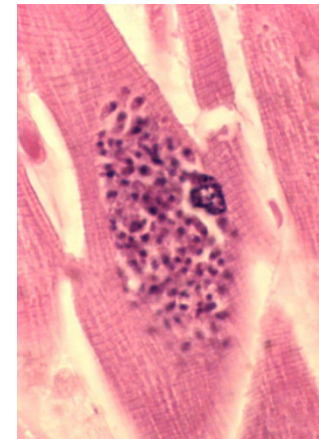
Tachyzoite

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Tissue cyst

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- Found in host tissue
- +infectious via...
Consumption in foodstuffs
- 'Dormant adult'



(No question—review slide, proceed when ready)

Uveitis: *Toxoplasmosis*



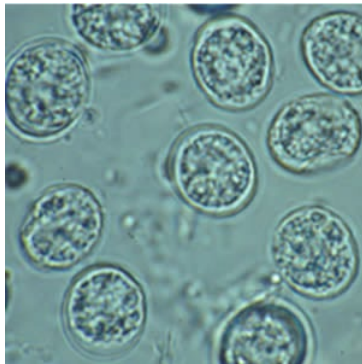
Toxoplasmosis: Basics

Toxoplasmosis Basics tl;dr

The person consumes either oocysts (wash your hands!) or tissue cysts (cook your meat!). The consumed bugs transform into tachyzoites, enter the bloodstream, then disseminate throughout the body. The immune system quickly clears the circulating parasites, but not before some get encased in tissue cysts, which are impervious to the host's immune system.

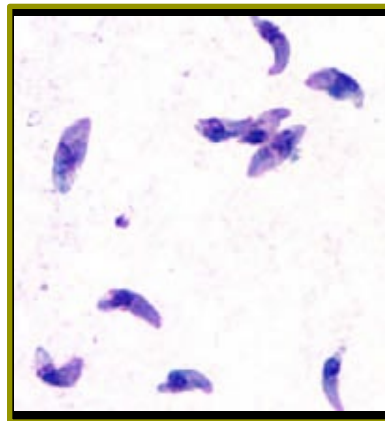
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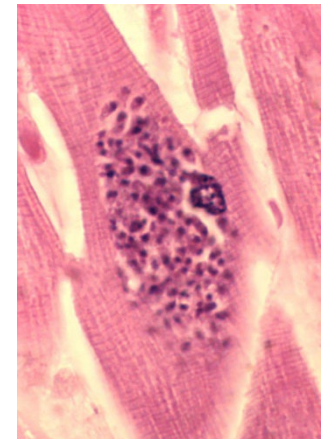
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- Found in host tissue
- +infectious via...
Consumption in foodstuffs
- 'Dormant adult'

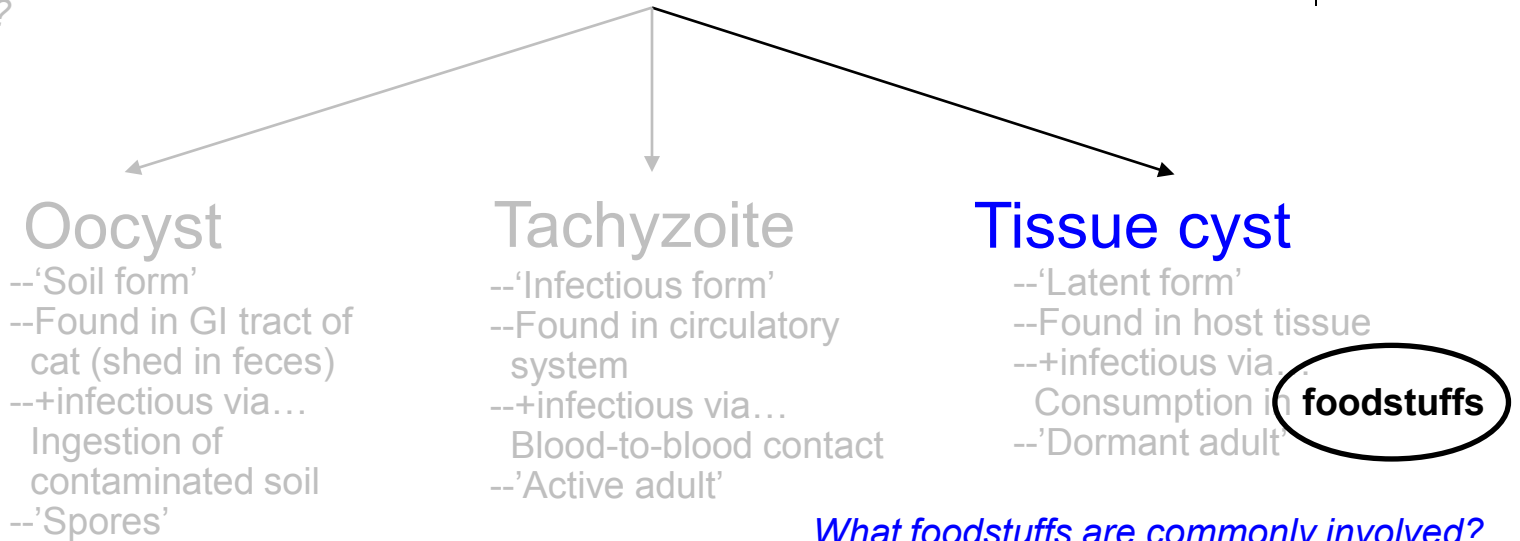


(No question—review slide, proceed when ready)

Uveitis: *Toxoplasmosis*

Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in *three forms*
What are they?

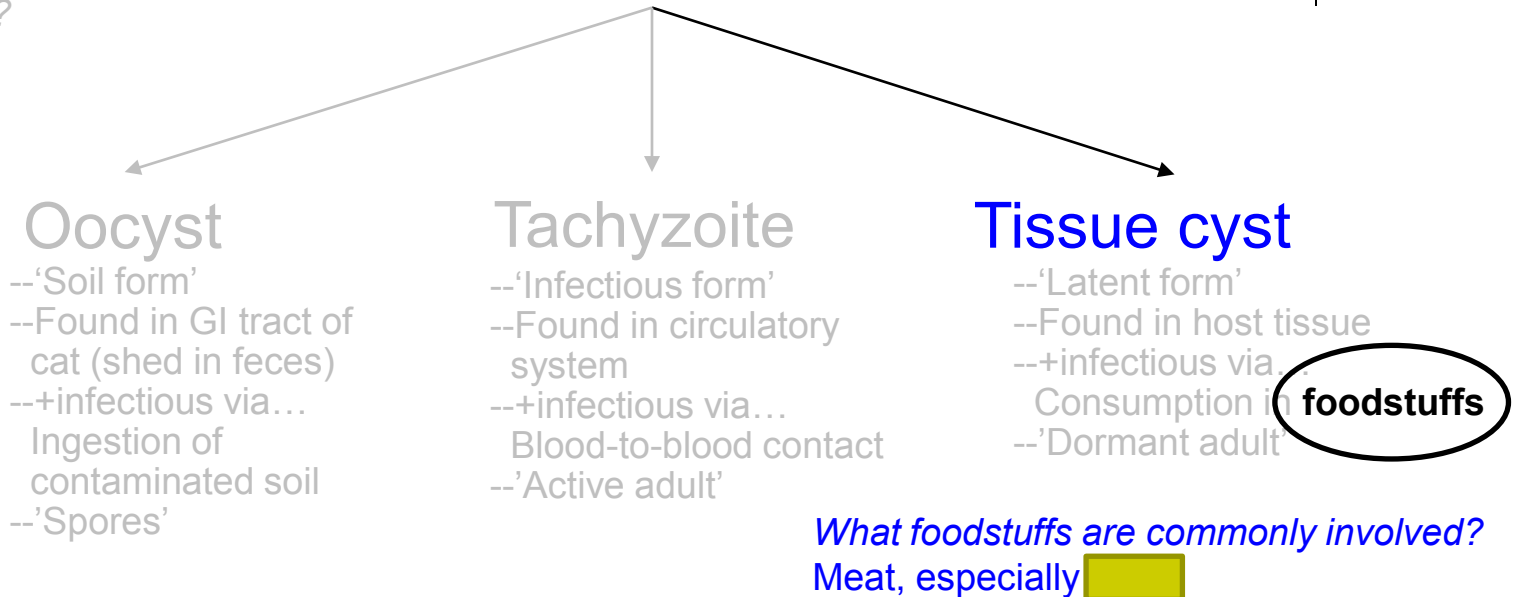


Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

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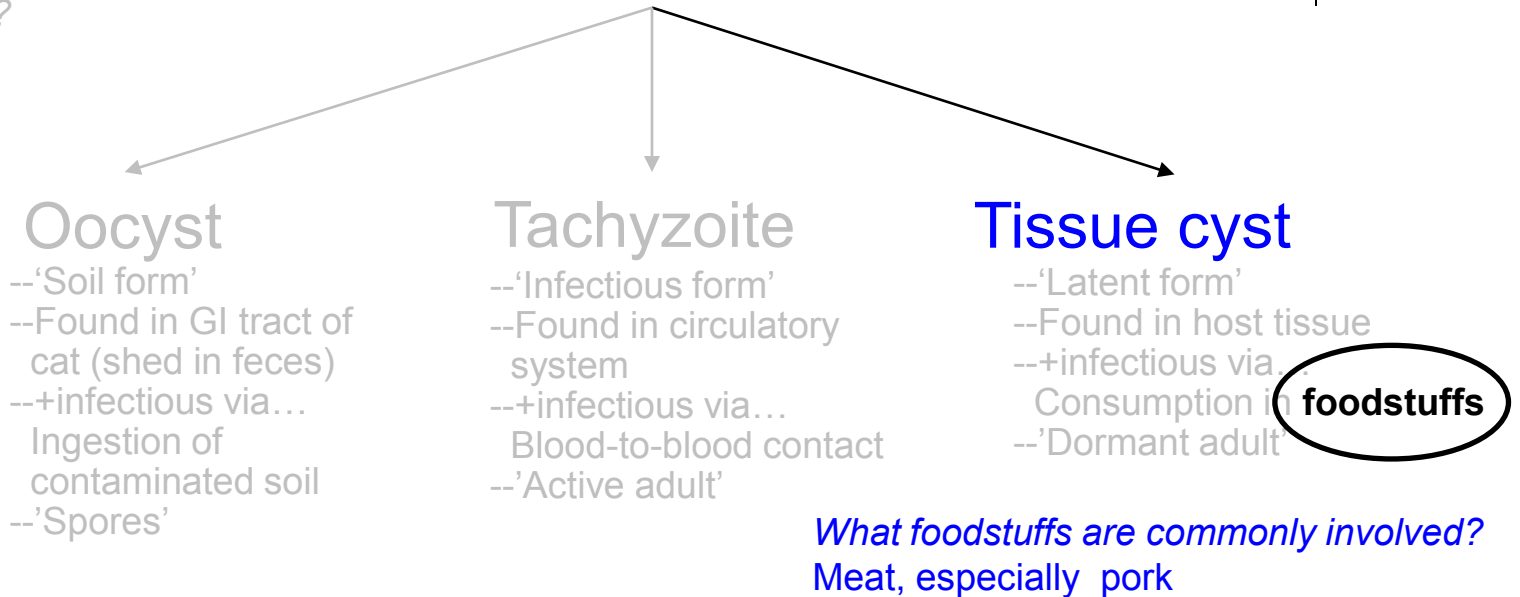


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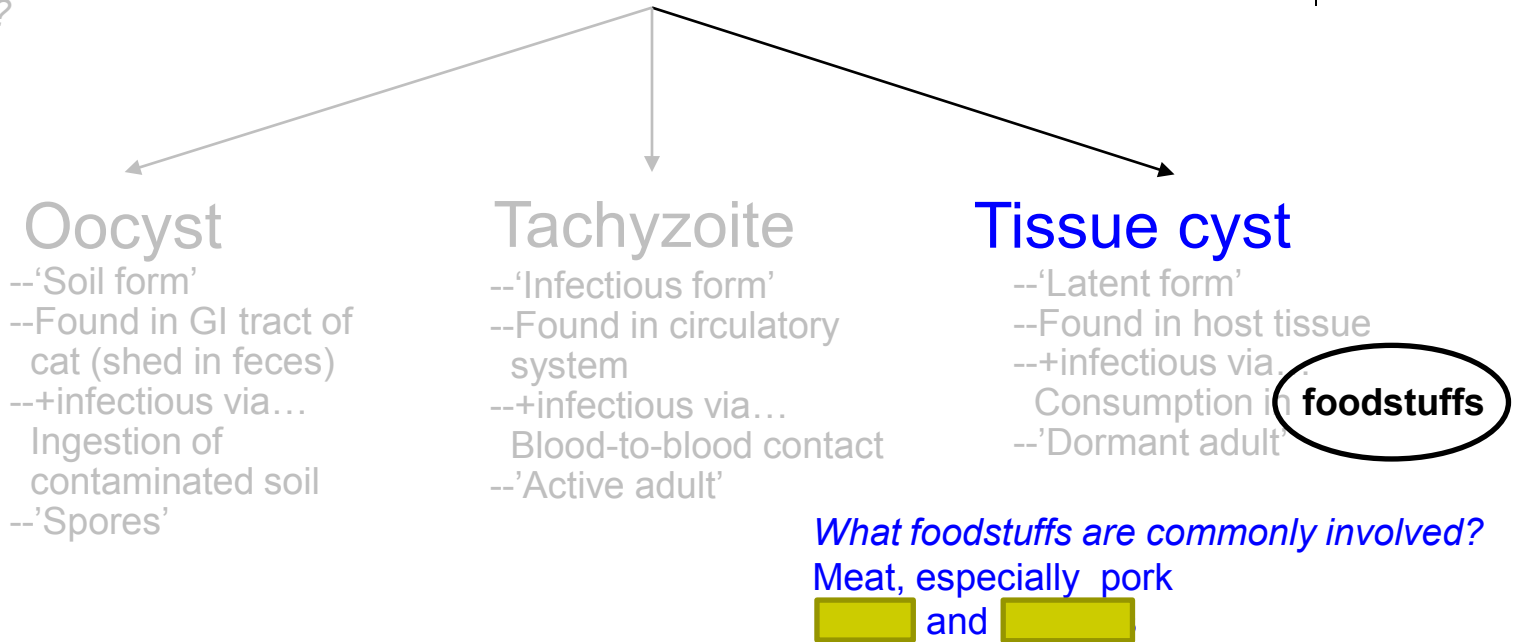


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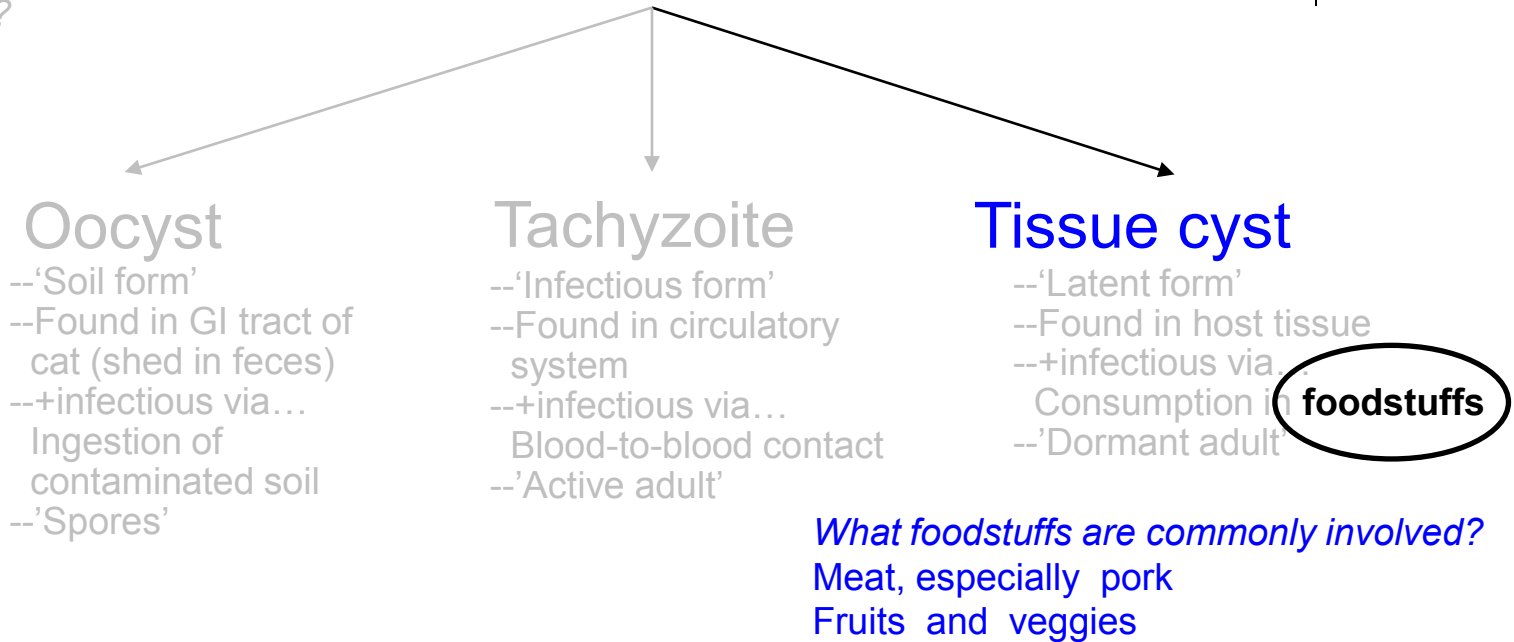


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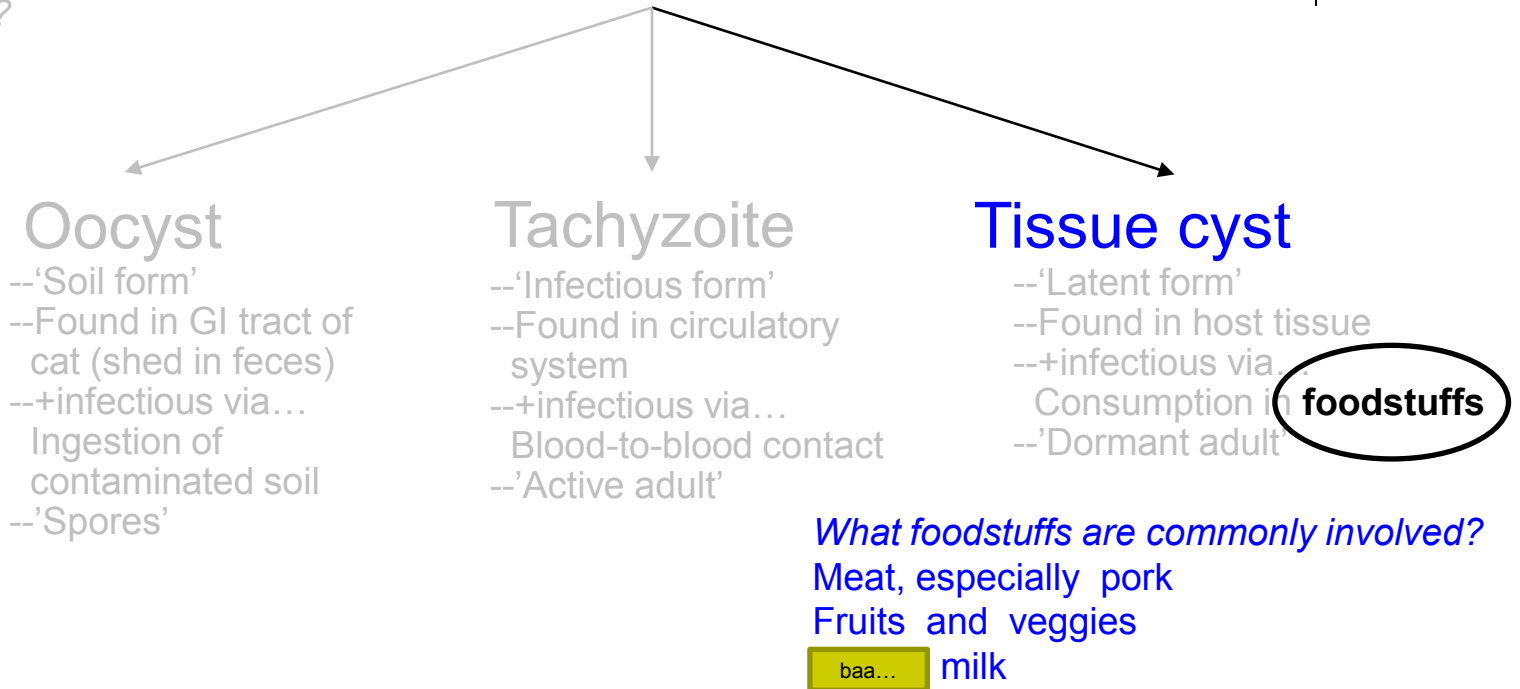


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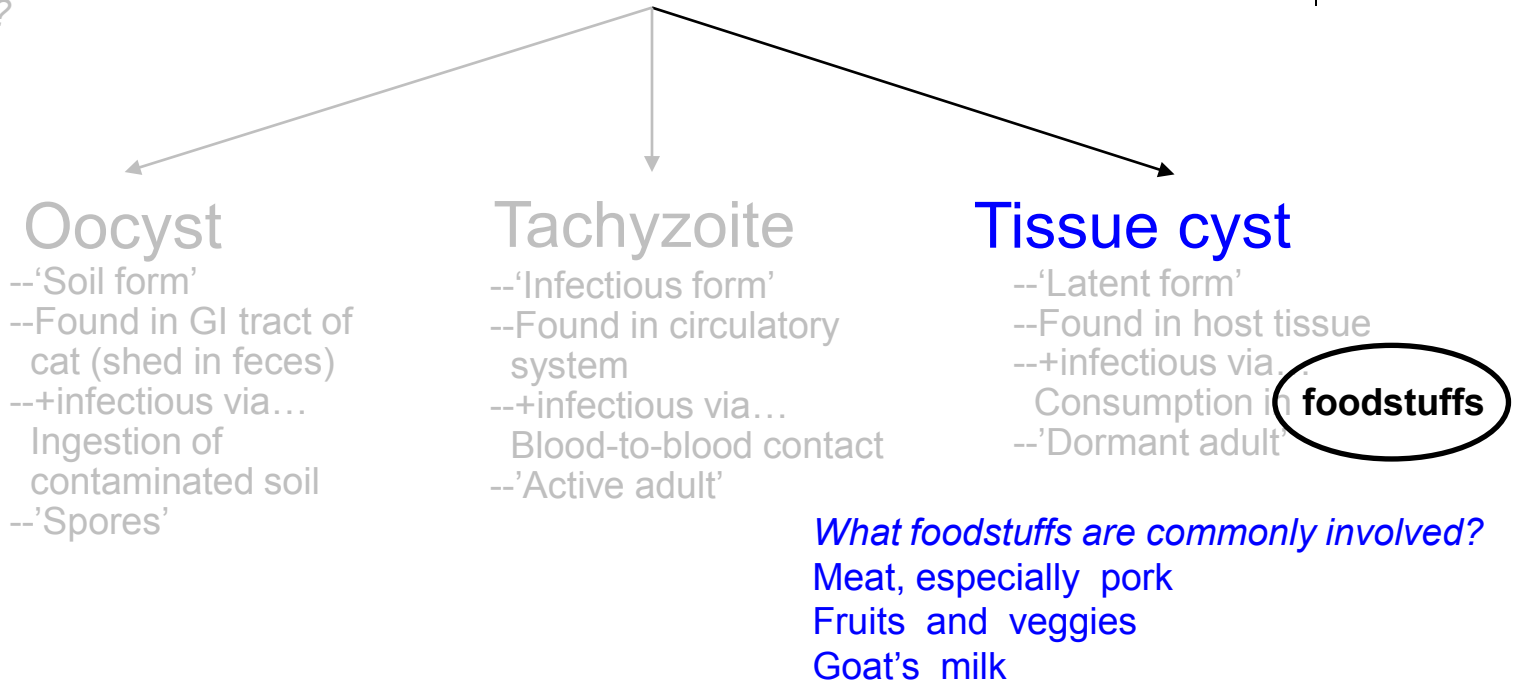


Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

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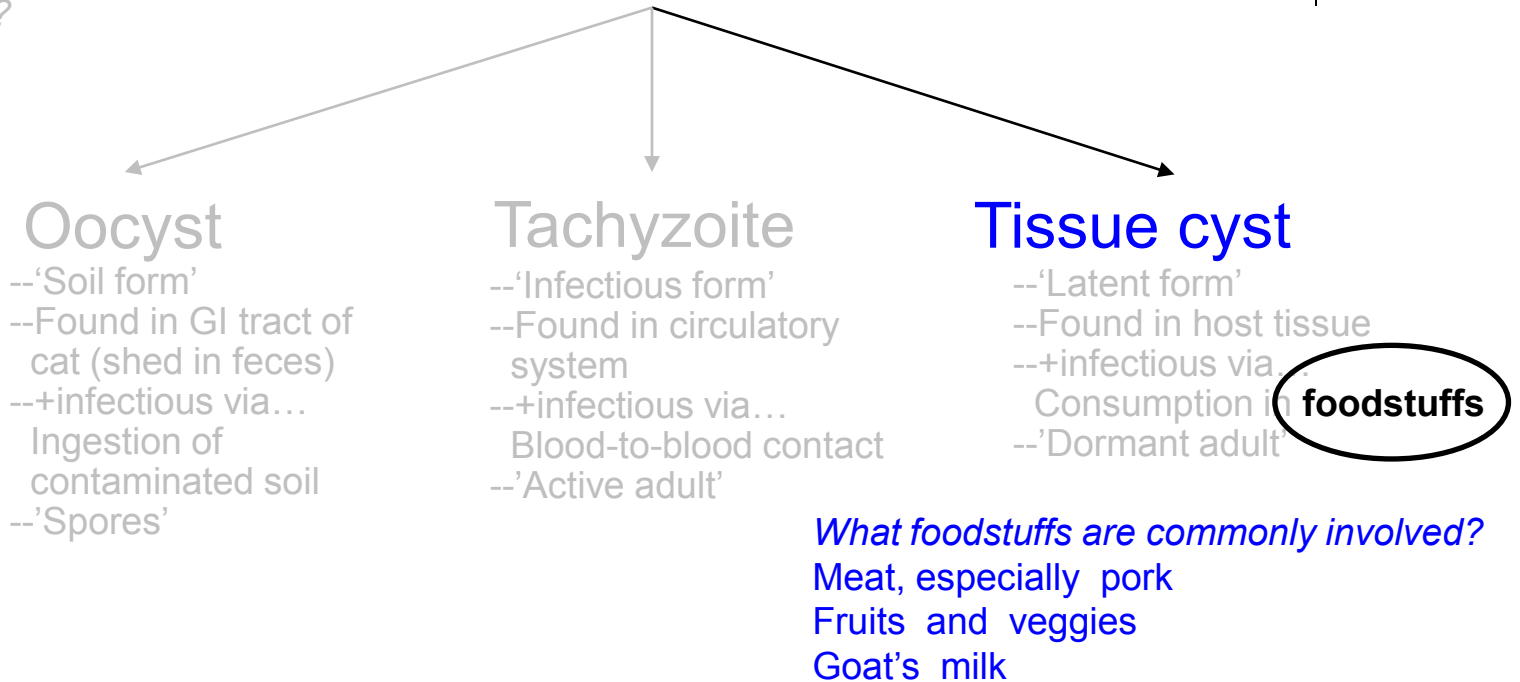


Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in **three forms**
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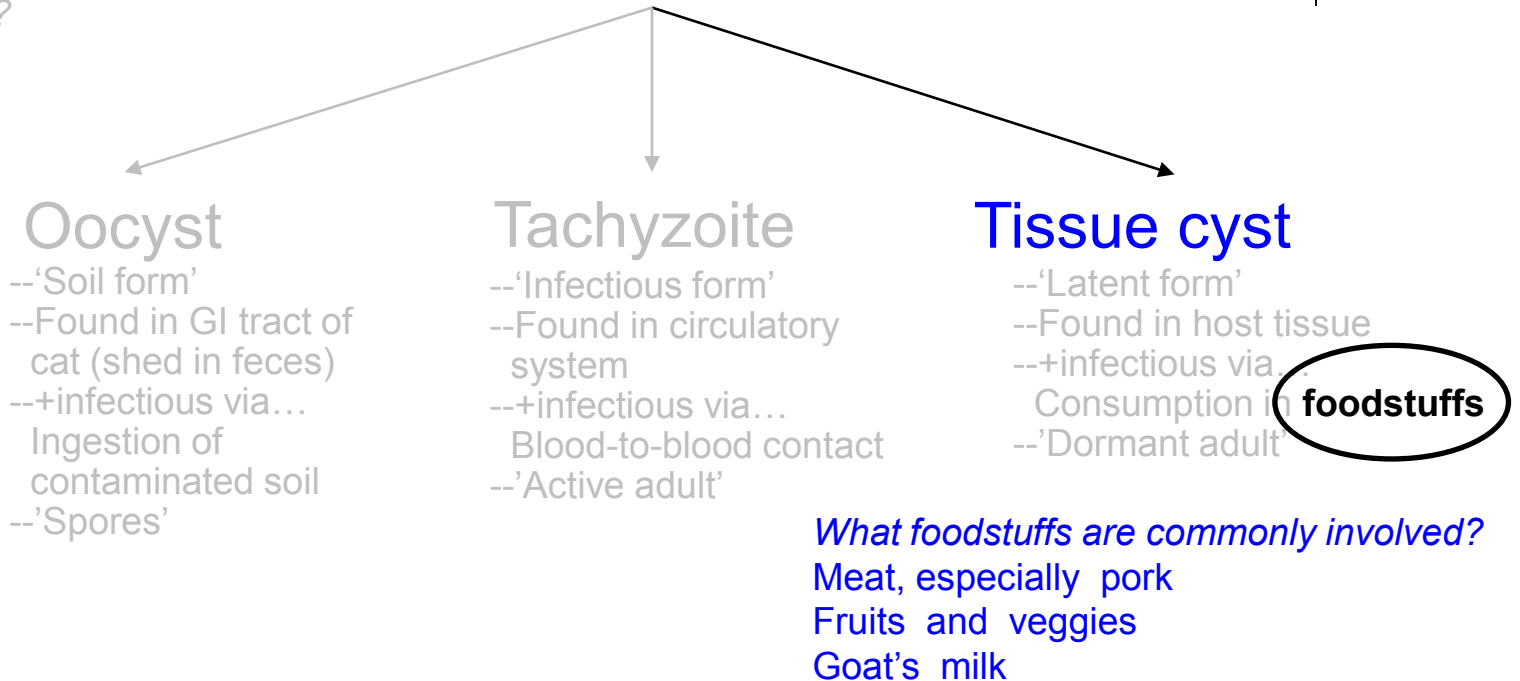
How does toxo get into the animals and/or onto the fruits and veggies?

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in **three forms**
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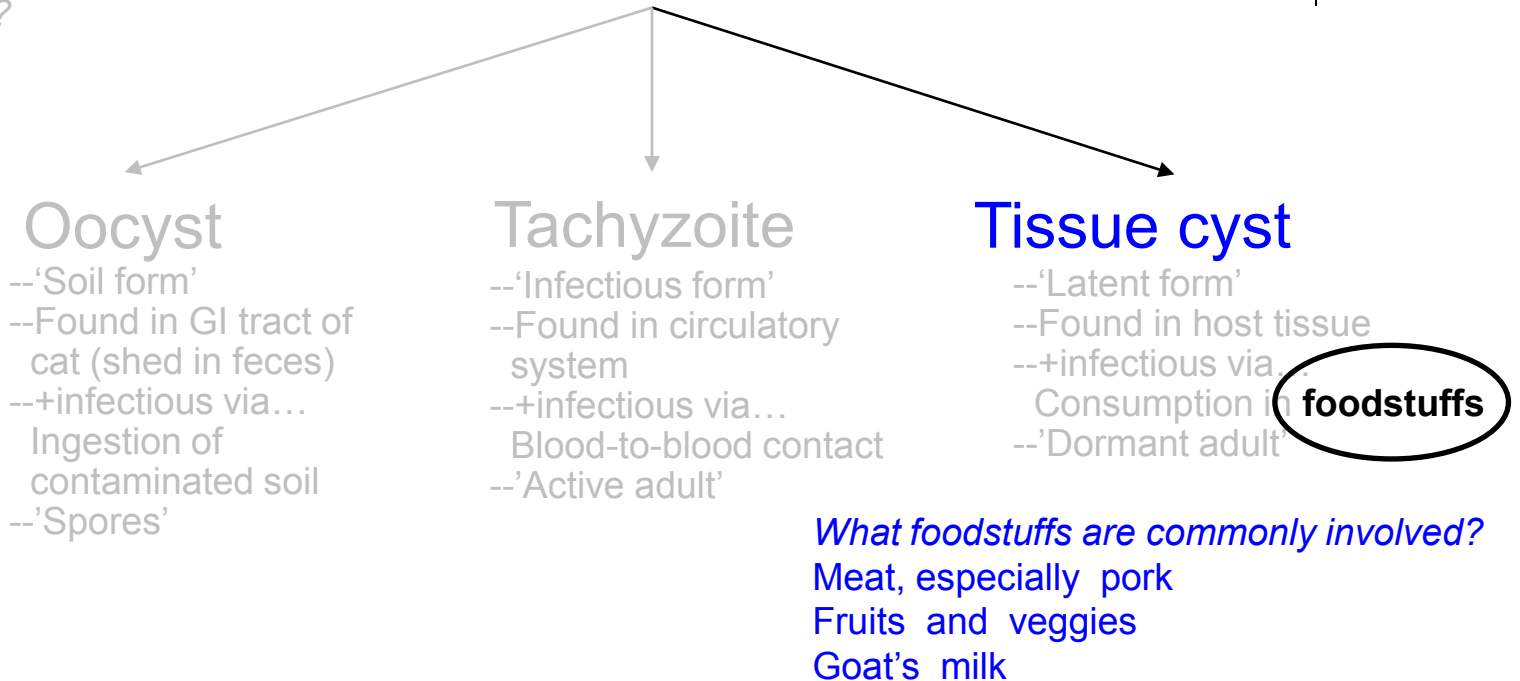
How does toxo get into the animals and/or onto the fruits and veggies?
It gets into animals when they eat feed that has been pooped on by infected cats (ie, that contains oocysts)

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

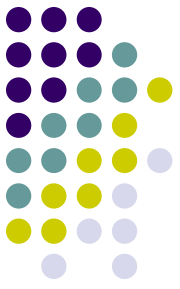
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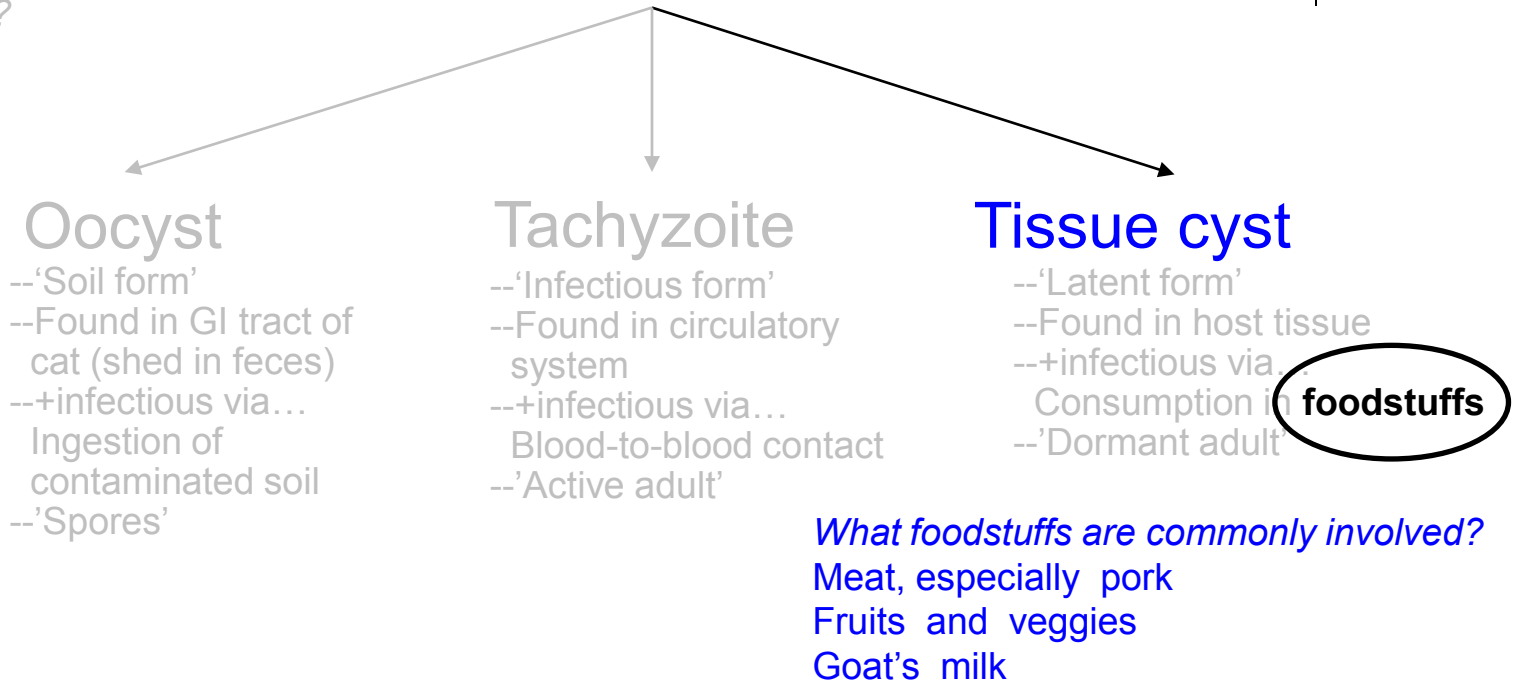
How is toxo able to get into humans from the animals?

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in **three forms**
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How does toxo get into the animals and/or onto the fruits and veggies?
It gets into animals when they eat feed that has been pooped on by infected cats (ie, that contains oocysts)

How is toxo able to get into humans from the animals?

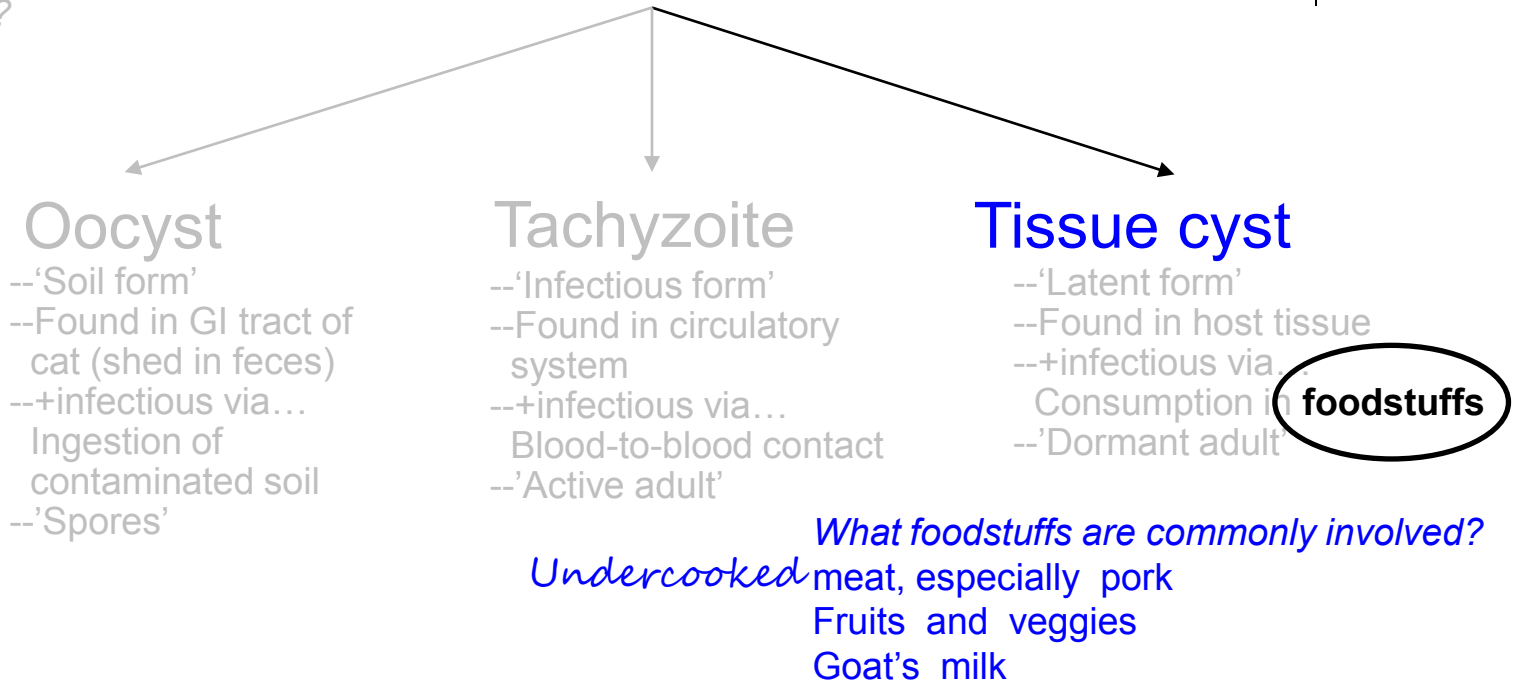
It gets into them when they eat meat that is

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

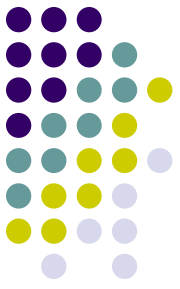
T gondii has a complex life cycle, existing in **three forms**
What are they?



How does toxo get into the animals and/or onto the fruits and veggies?
It gets into animals when they eat feed that has been pooped on by infected cats (ie, that contains oocysts)

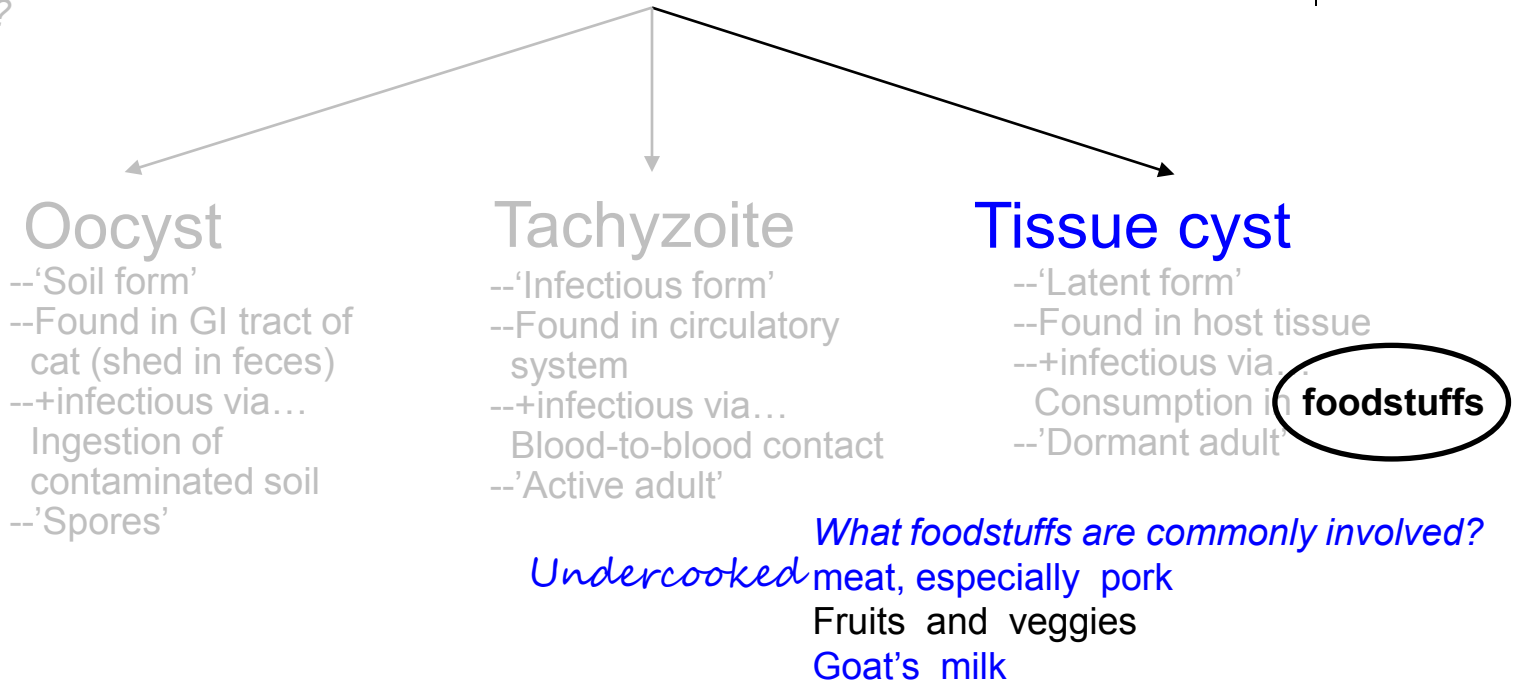
How is toxo able to get into humans from the animals?
It gets into them when they eat meat that is undercooked...

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in **three forms**
What are they?



How does toxo get into the animals and/or onto the fruits and veggies?
It gets into animals when they eat feed that has been pooped on by infected cats (ie, that contains oocysts)

How is toxo able to get into humans from the animals? From fruits/veggies?

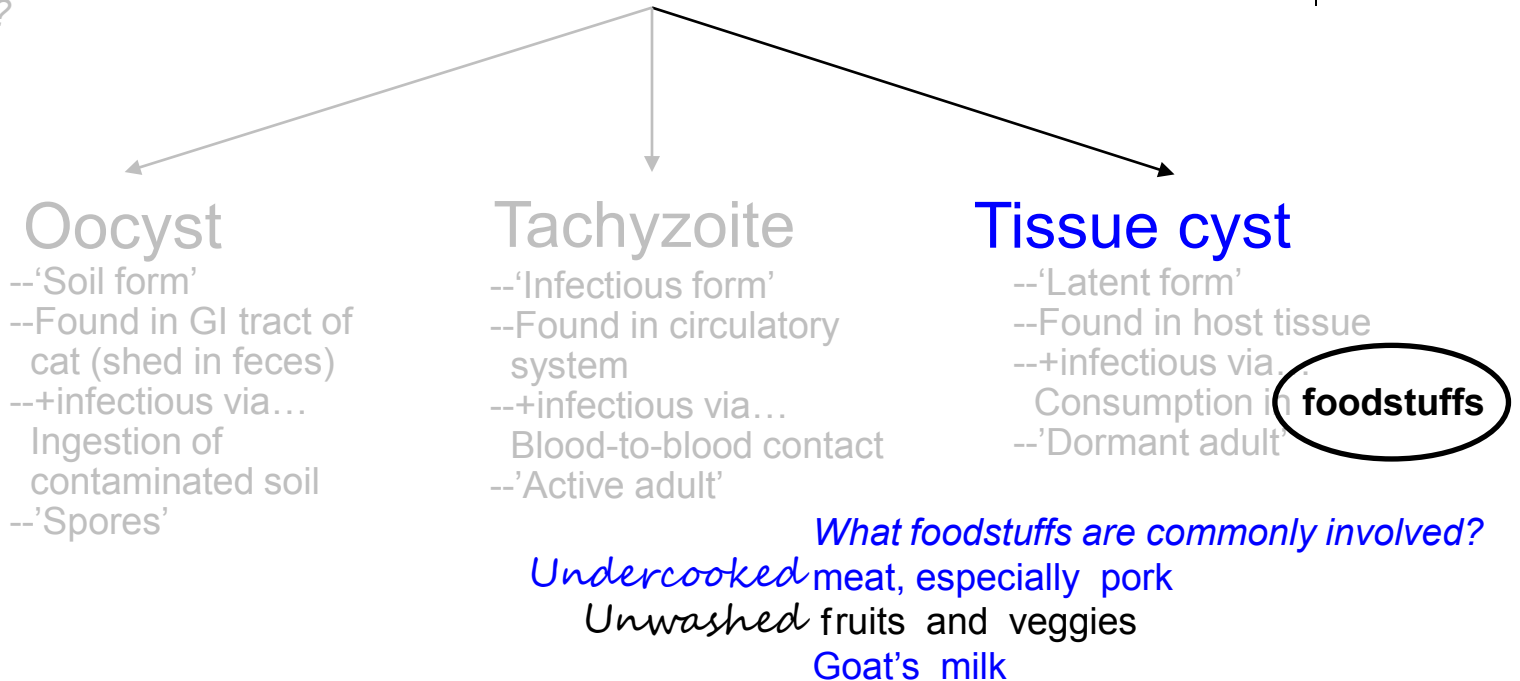
It gets into them when they eat meat that is undercooked...eat fruits/veggies that are

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in **three forms**
What are they?



How does toxo get into the animals and/or onto the fruits and veggies?
It gets into animals when they eat feed that has been pooped on by infected cats (ie, that contains oocysts)

How is toxo able to get into humans from the animals? From fruits/veggies?

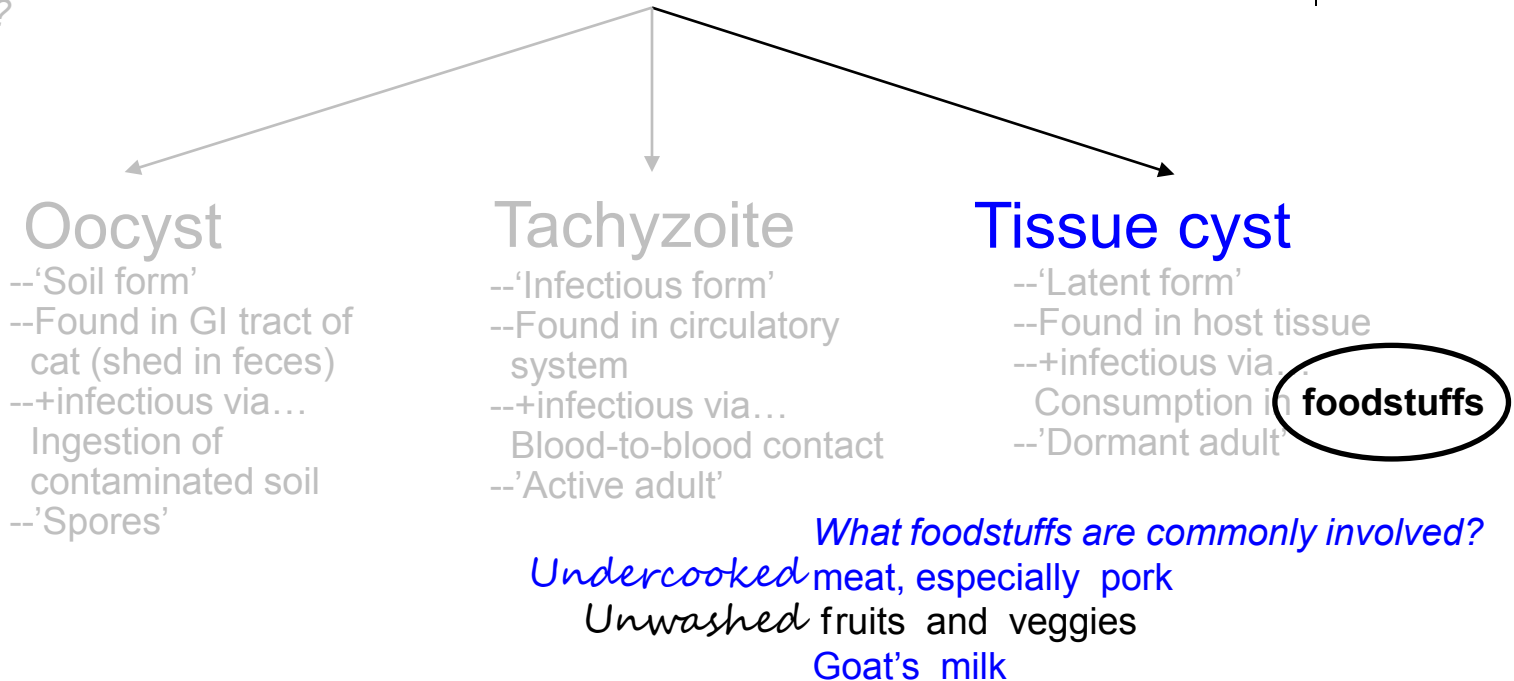
It gets into them when they eat meat that is undercooked...eat fruits/veggies that are unwashed...

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in **three forms**
What are they?



How does toxo get into the animals and/or onto the fruits and veggies?
It gets into animals when they eat feed that has been pooped on by infected cats (ie, that contains oocysts)

How is toxo able to get into humans from the animals? From fruits/veggies? From goat's milk?

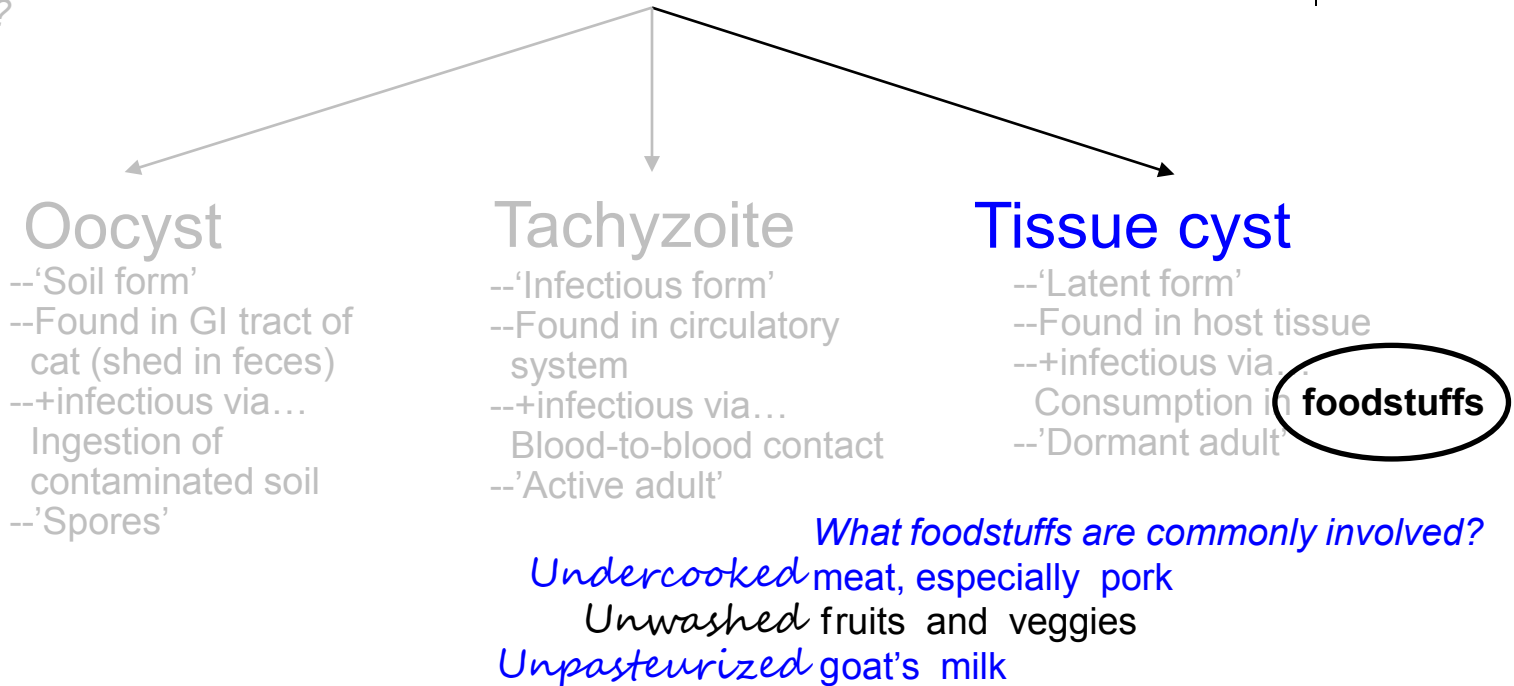
It gets into them when they eat meat that is undercooked...eat fruits/veggies that are unwashed... or drink goat's milk that is

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Basics

T gondii has a complex life cycle, existing in **three forms**
What are they?

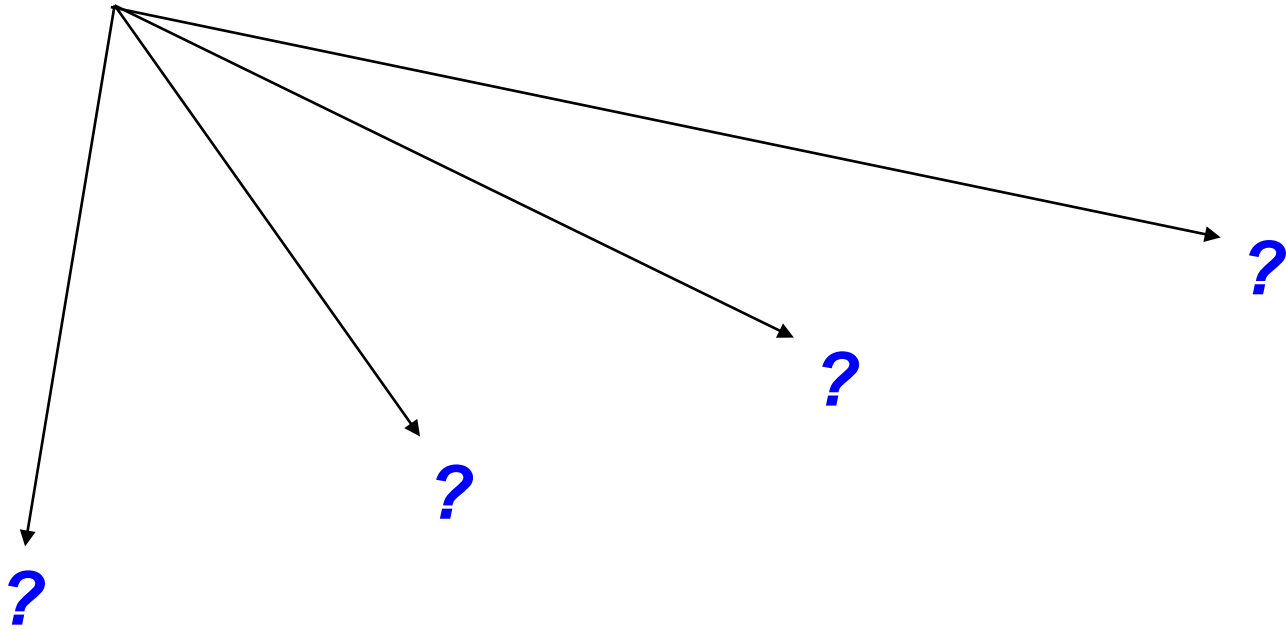
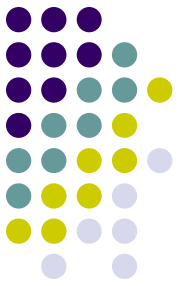


How does toxo get into the animals and/or onto the fruits and veggies?
It gets into animals when they eat feed that has been pooped on by infected cats (ie, that contains oocysts)

How is toxo able to get into humans from the animals? From fruits/veggies? From goat's milk?

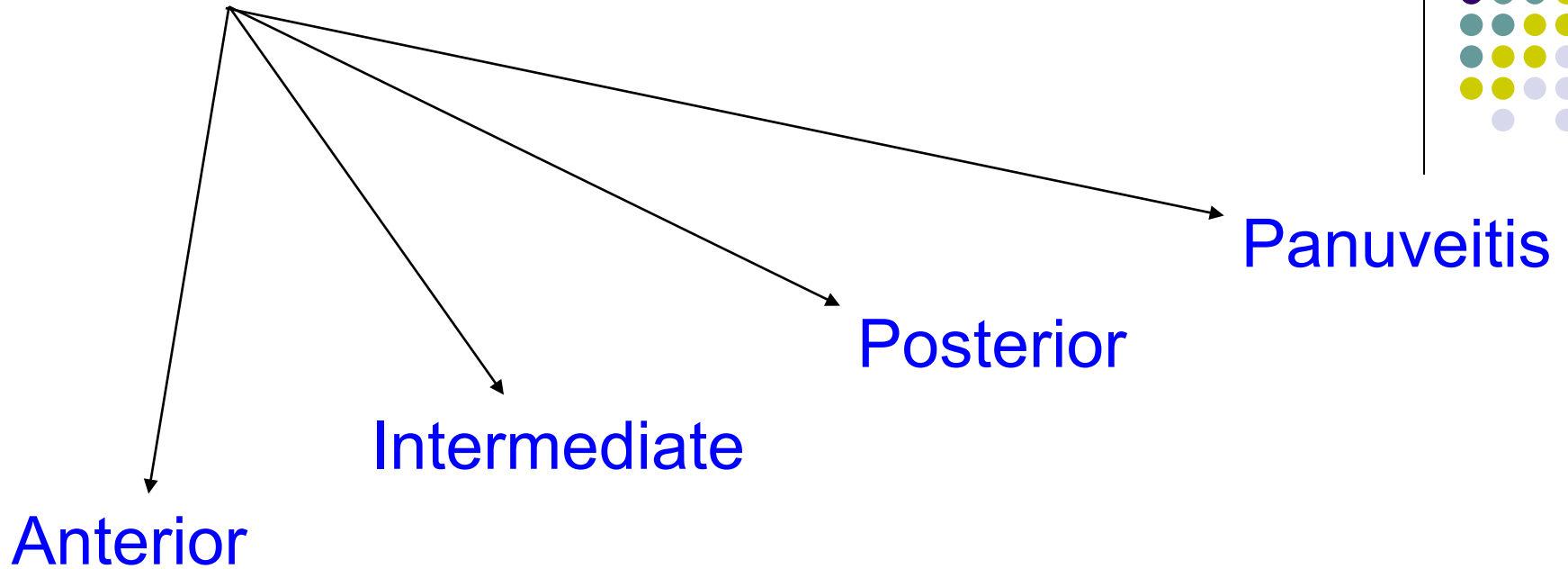
It gets into them when they eat meat that is undercooked...eat fruits/veggies that are unwashed...or drink goat's milk that is unpasteurized

Uveitis

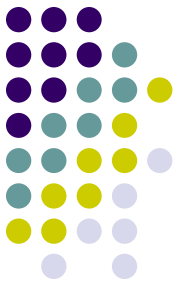


*What are the four basic anatomic locations for uveitis?
(In general, ie, this is not a toxo-specific question.)*

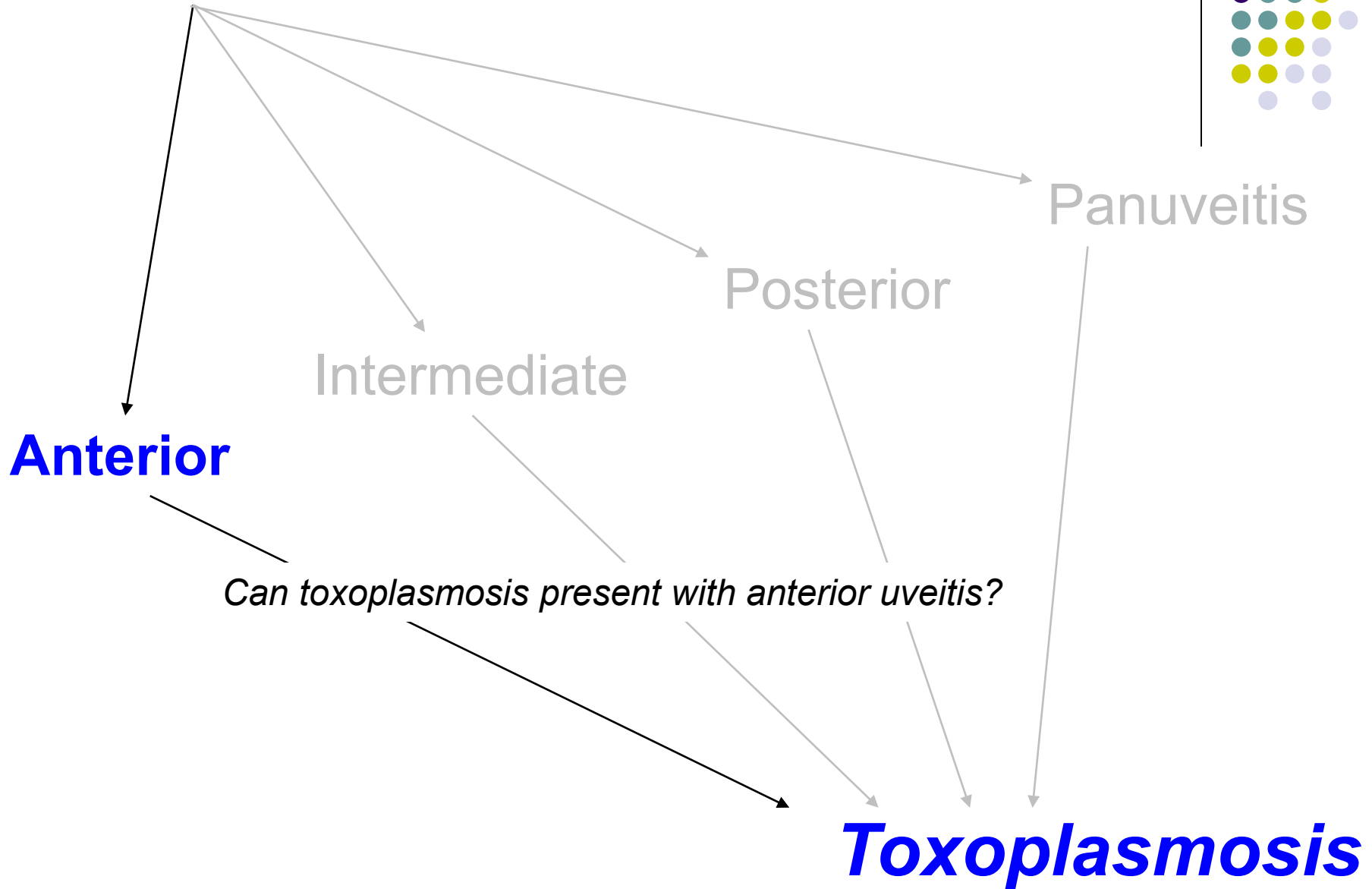
Uveitis

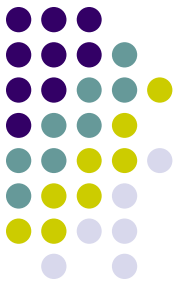


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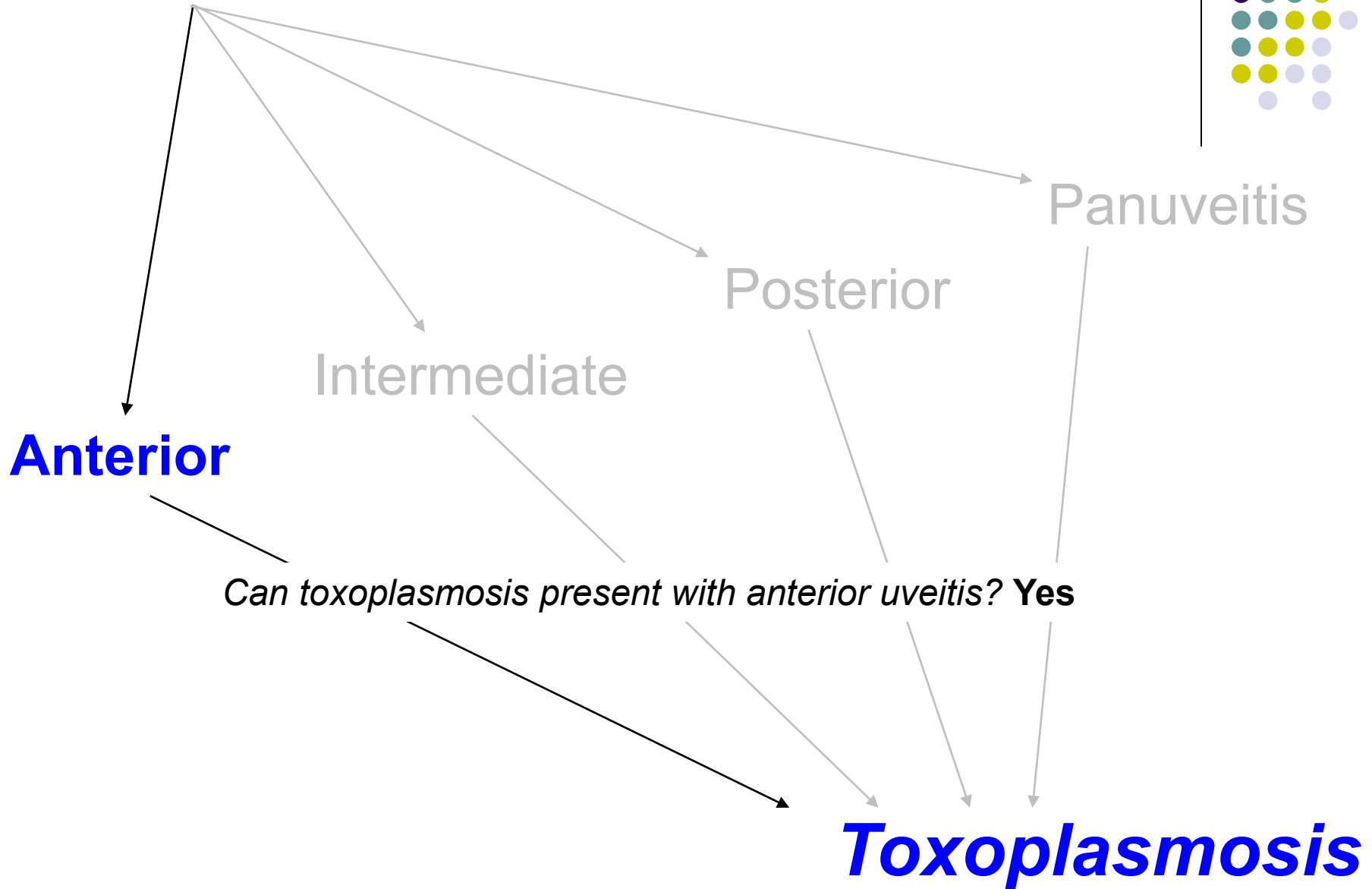


Uveitis



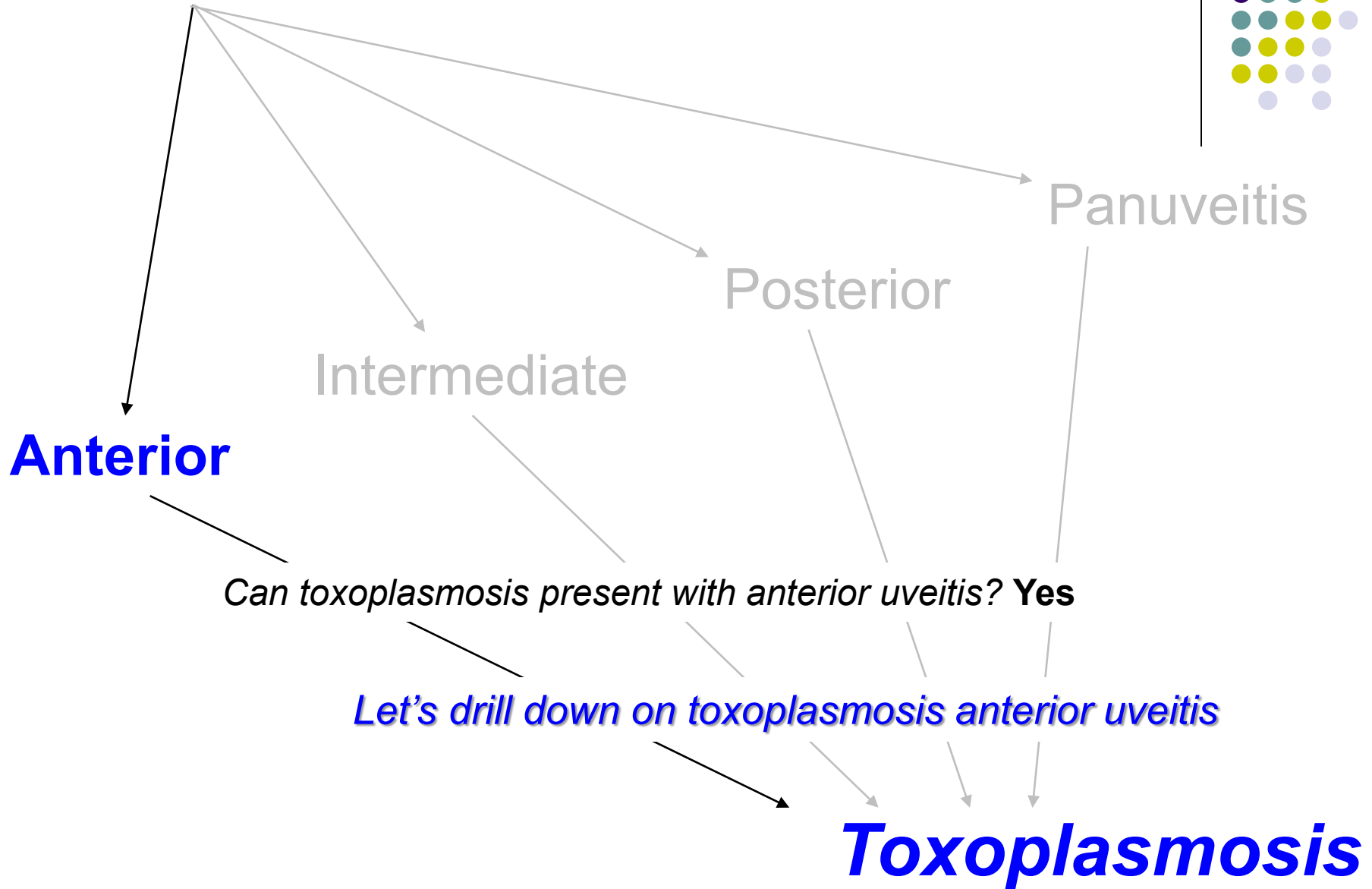


Uveitis





Uveitis

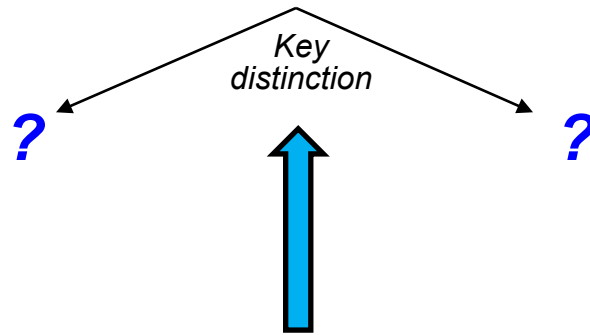


Uveitis: *Anterior*



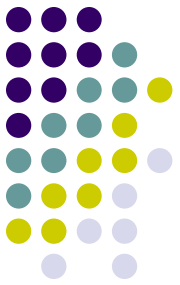
But first, let's review the basic taxonomy of anterior uveitis

Uveitis: *Anterior*

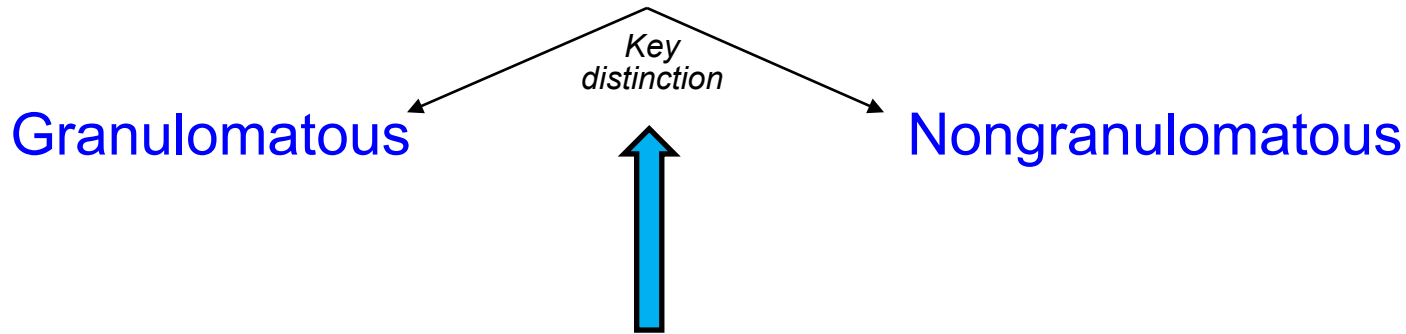


*What is this first, fundamental way
we divvy up anterior uveitis?*

But first, let's review the basic taxonomy of anterior uveitis

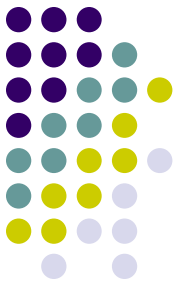


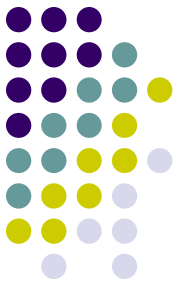
Uveitis: *Anterior*



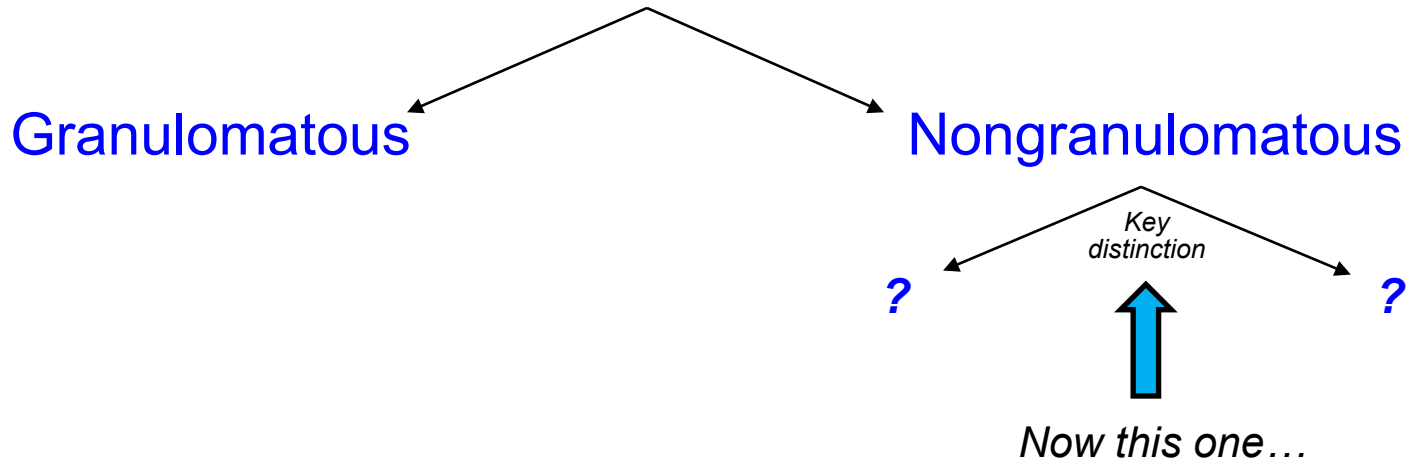
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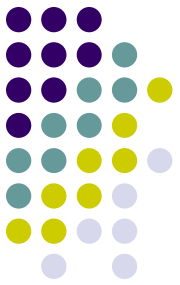




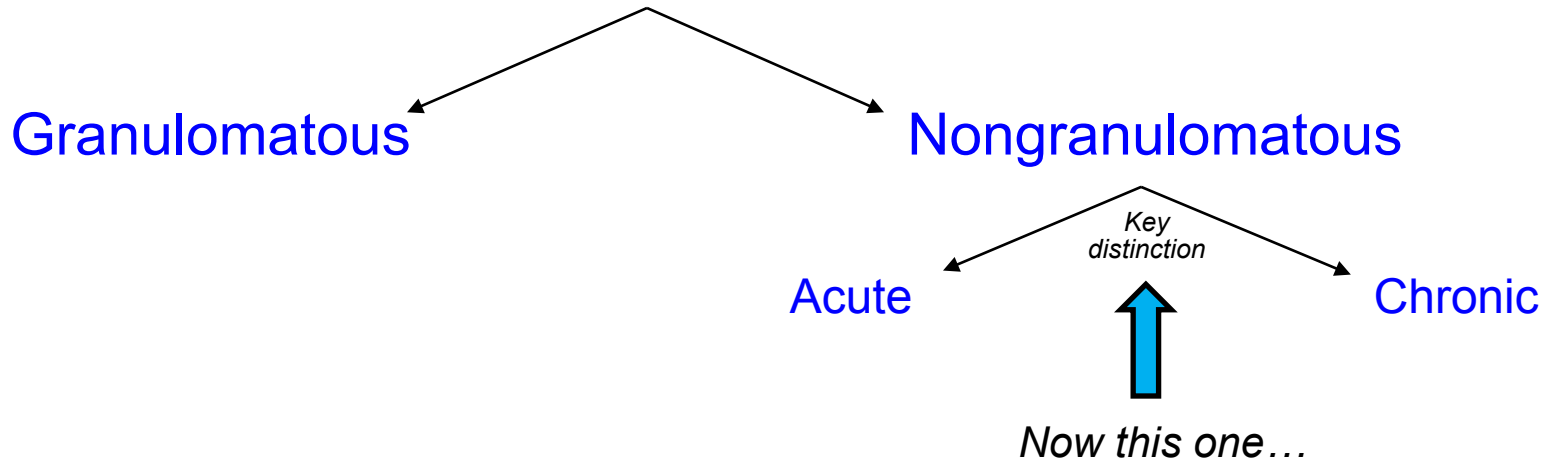
Uveitis: *Anterior*



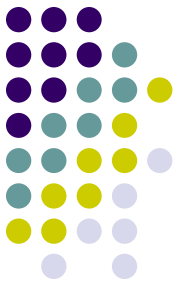
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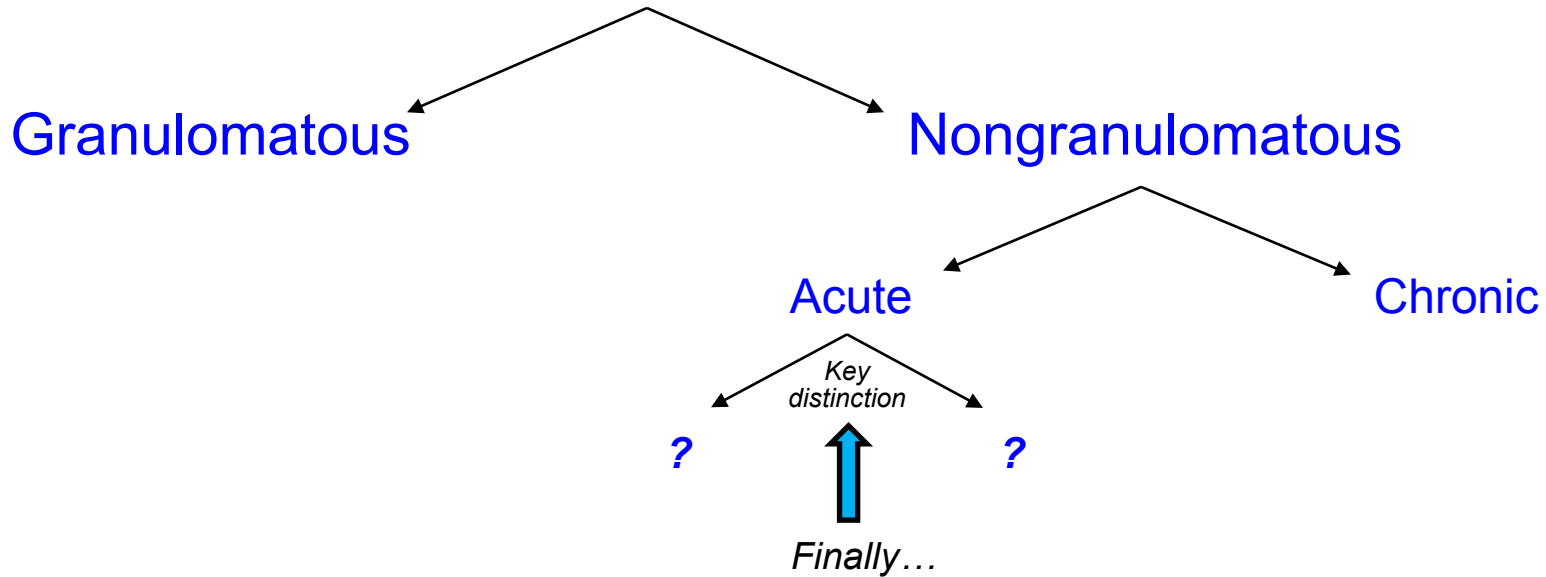
Uveitis: *Anterior*



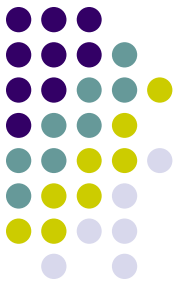
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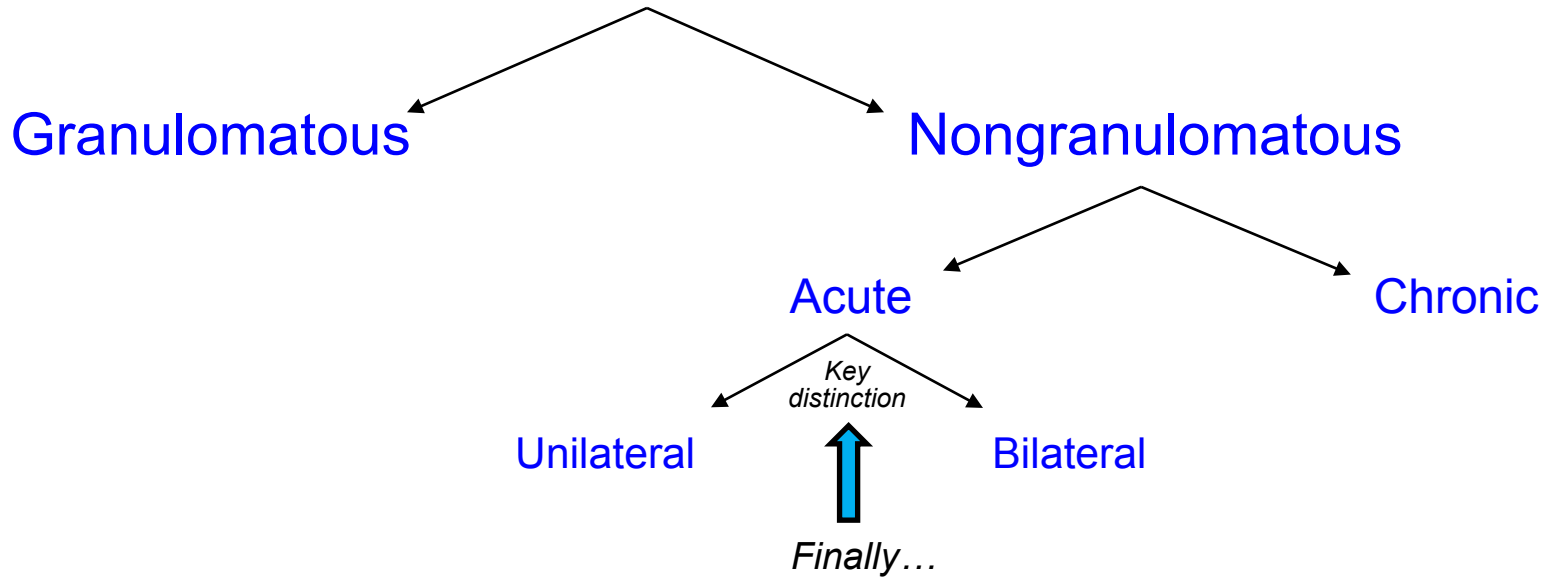
Uveitis: *Anterior*



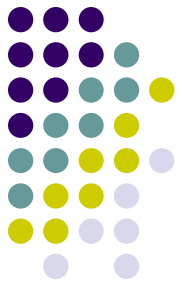
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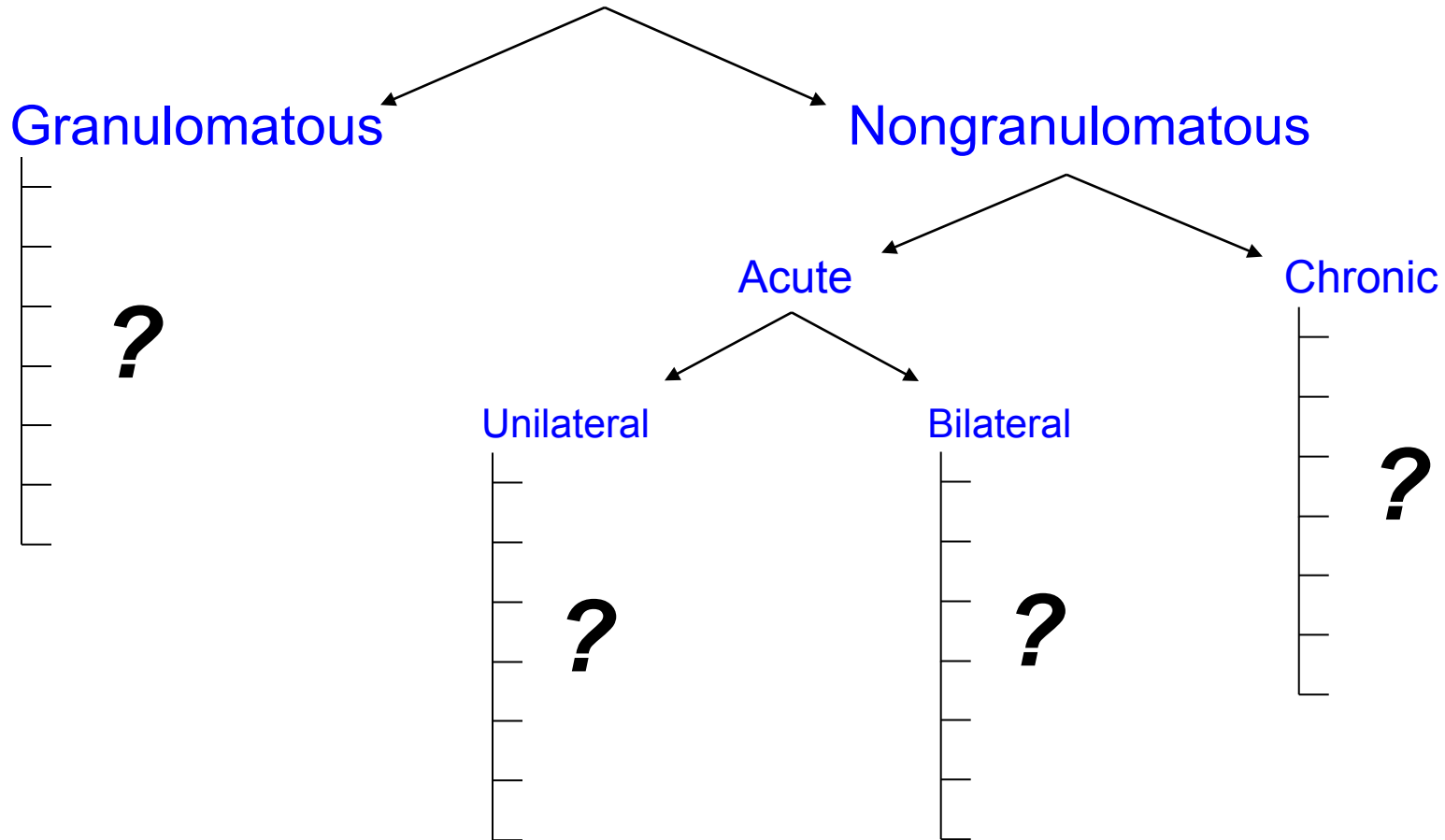
Uveitis: *Anterior*



But first, let's review the basic taxonomy of anterior uveitis

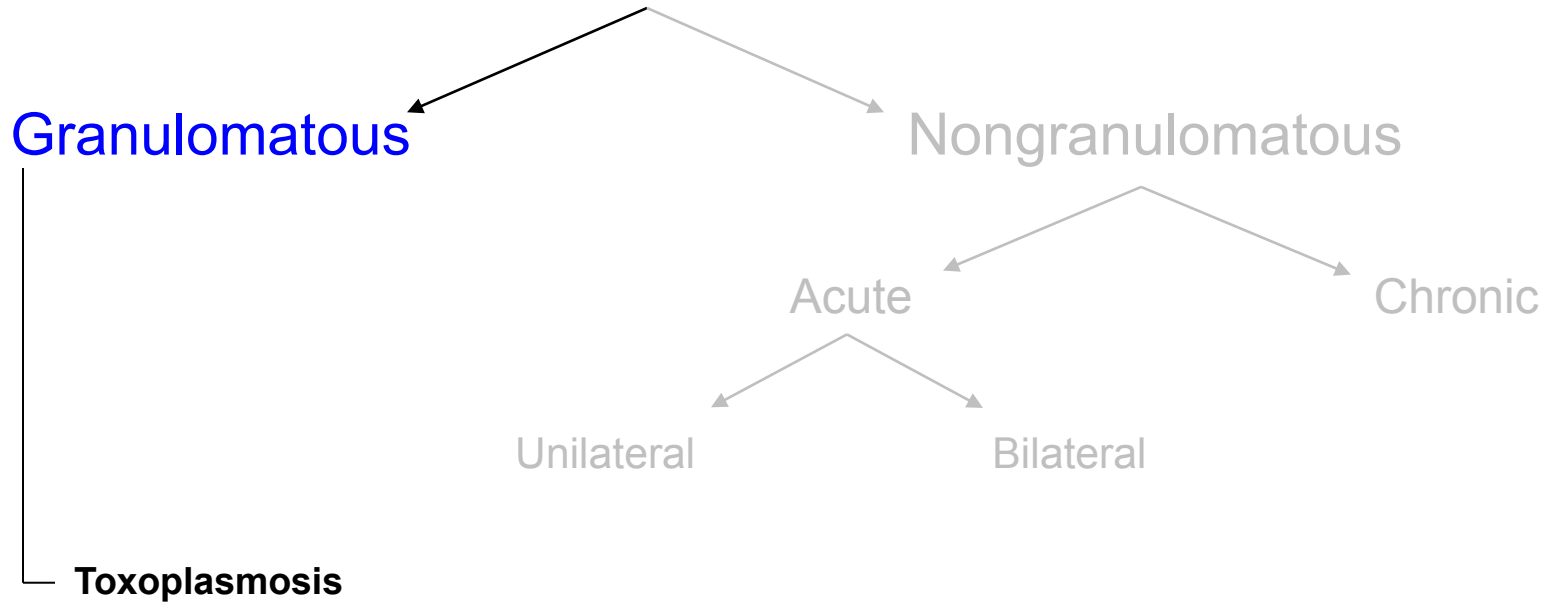


Uveitis: *Anterior*

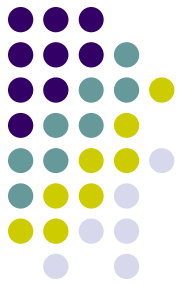


Now that the taxonomy is laid out:
Where does toxoplasmosis reside?

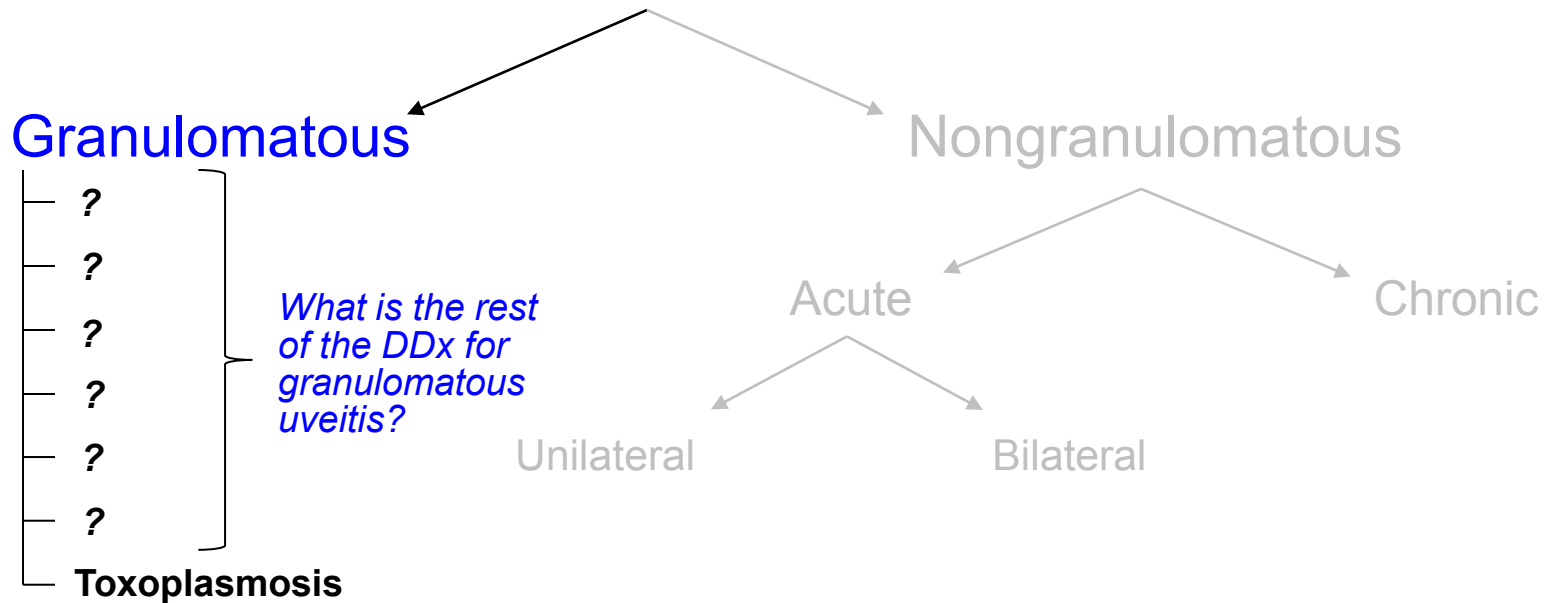
Uveitis: *Anterior*



Now that the taxonomy is laid out:
Where does toxoplasmosis reside?
Among the granulomatous uveitides

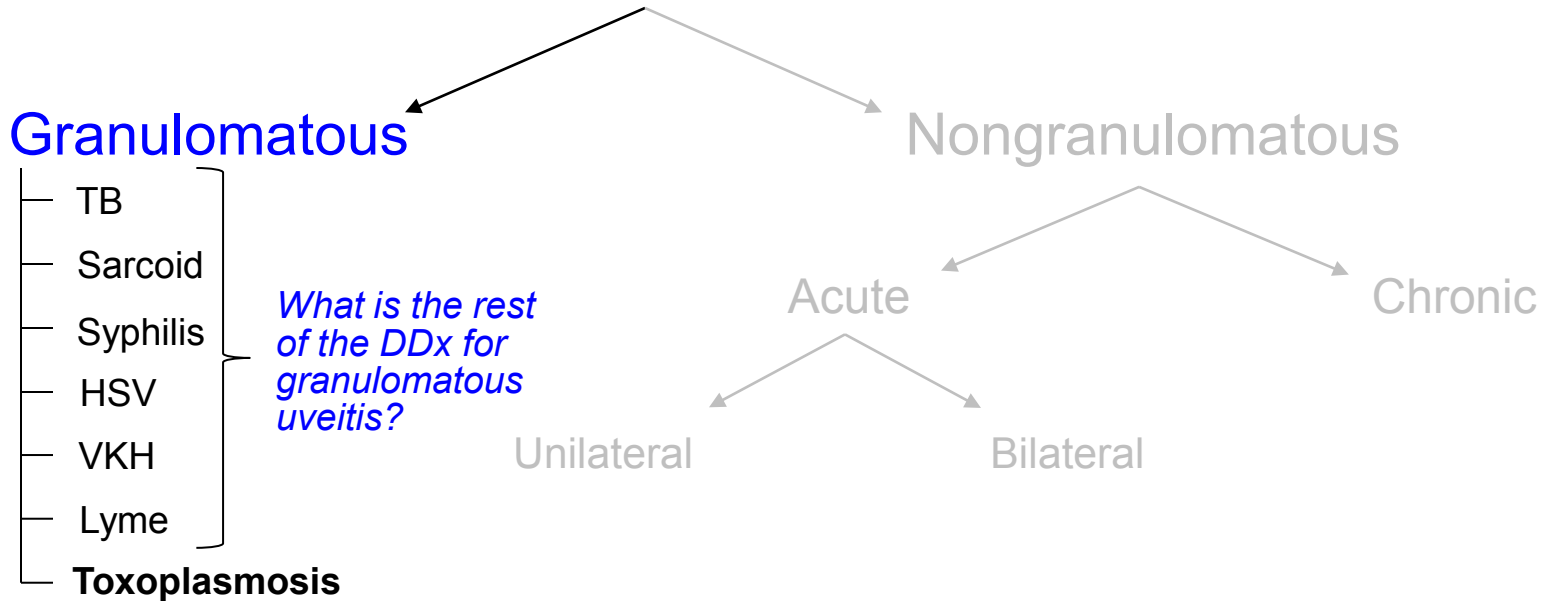


Uveitis: *Anterior*



Now that the taxonomy is laid out:
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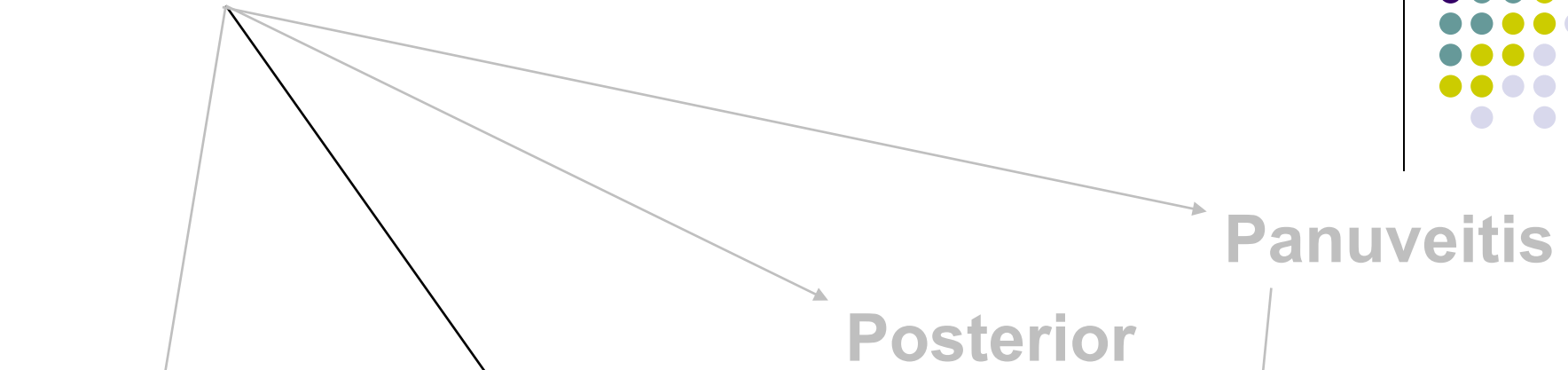
Uveitis: *Anterior*



Now that the taxonomy is laid out:
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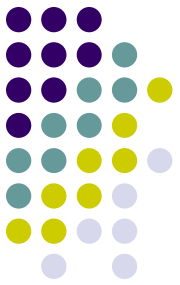


Uveitis

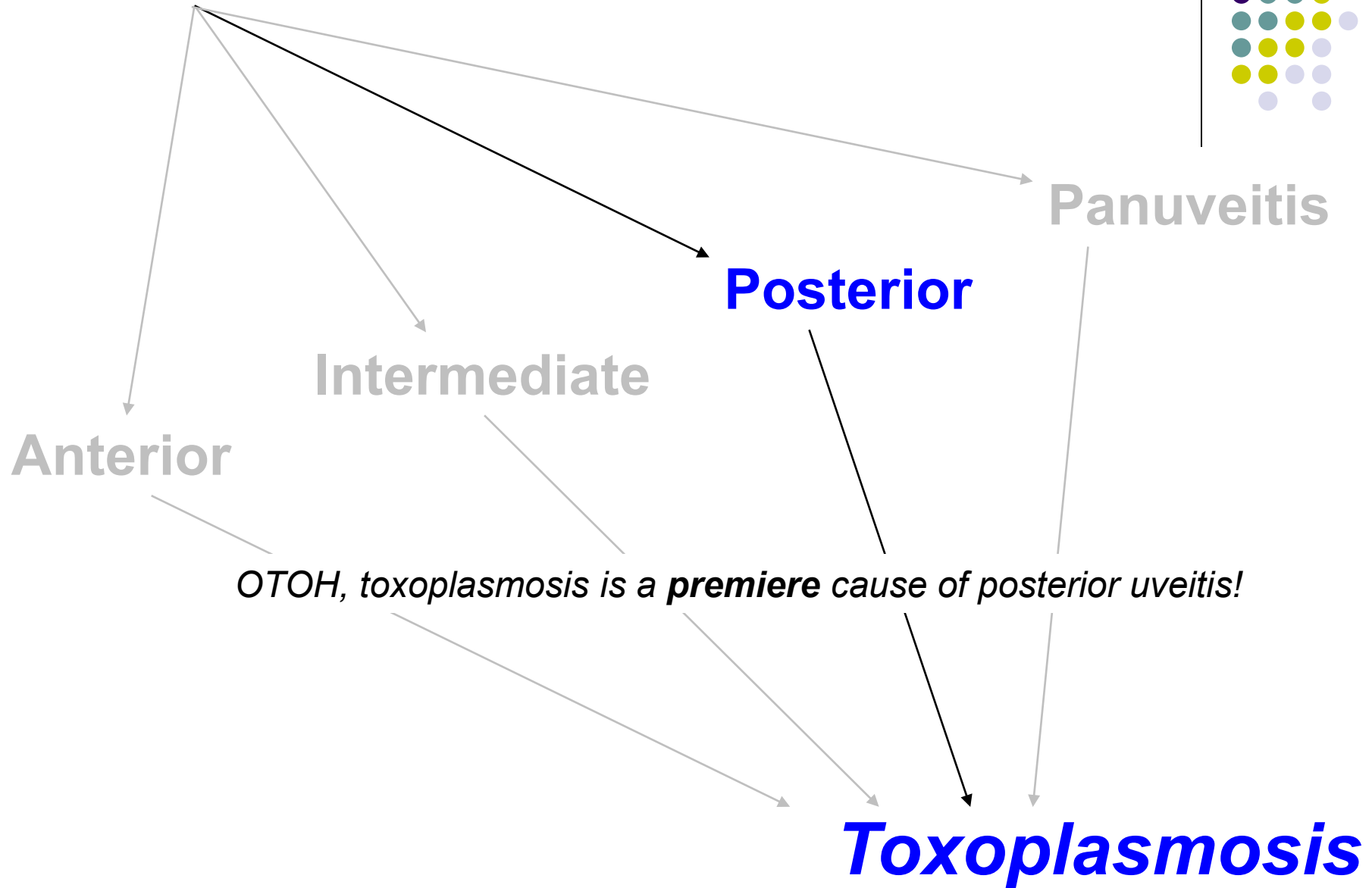


The BCSC Uveitis book does not list toxoplasmosis in the DDx for intermediate uveitis

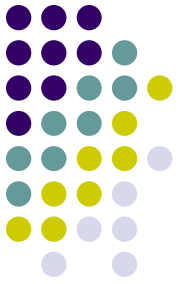
Toxoplasmosis



Uveitis



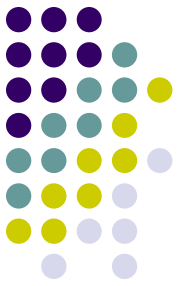
Uveitis: ***Toxoplasmosis***



Posterior uveitis

...Is divided into three subtypes based on what attribute?

Uveitis: *Toxoplasmosis*



Posterior uveitis

...Is divided into three subtypes based on what attribute?

Inflammation the attribute

Uveitis: ***Toxoplasmosis***



Posterior uveitis

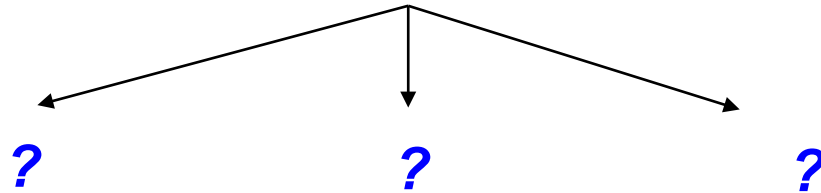
...Is divided into three subtypes based on what attribute?

Inflammation location

Uveitis: *Toxoplasmosis*



Posterior uveitis

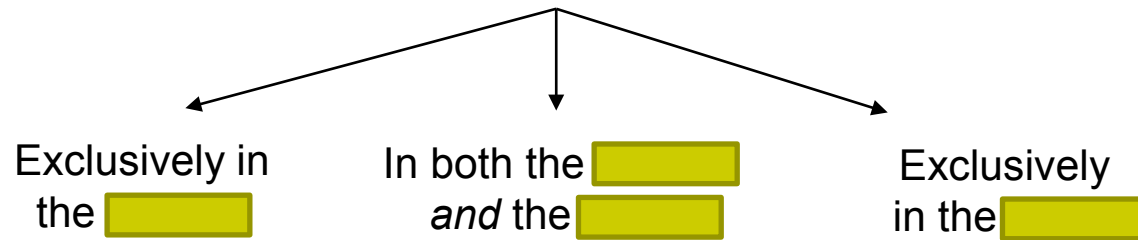


What are the three 'inflammation locations' in posterior uveitis?

Uveitis: *Toxoplasmosis*

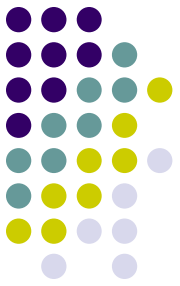


Posterior uveitis

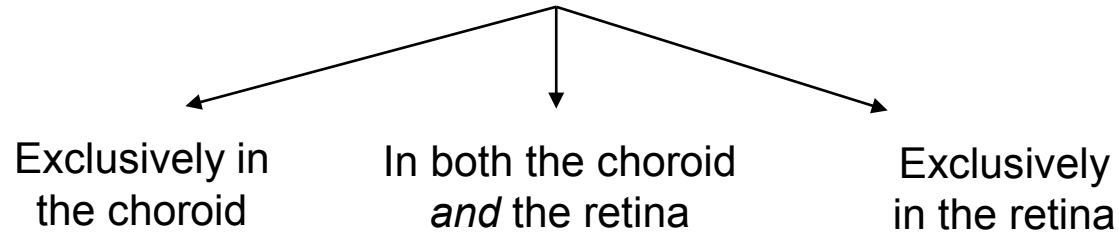


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Uveitis: *Toxoplasmosis*

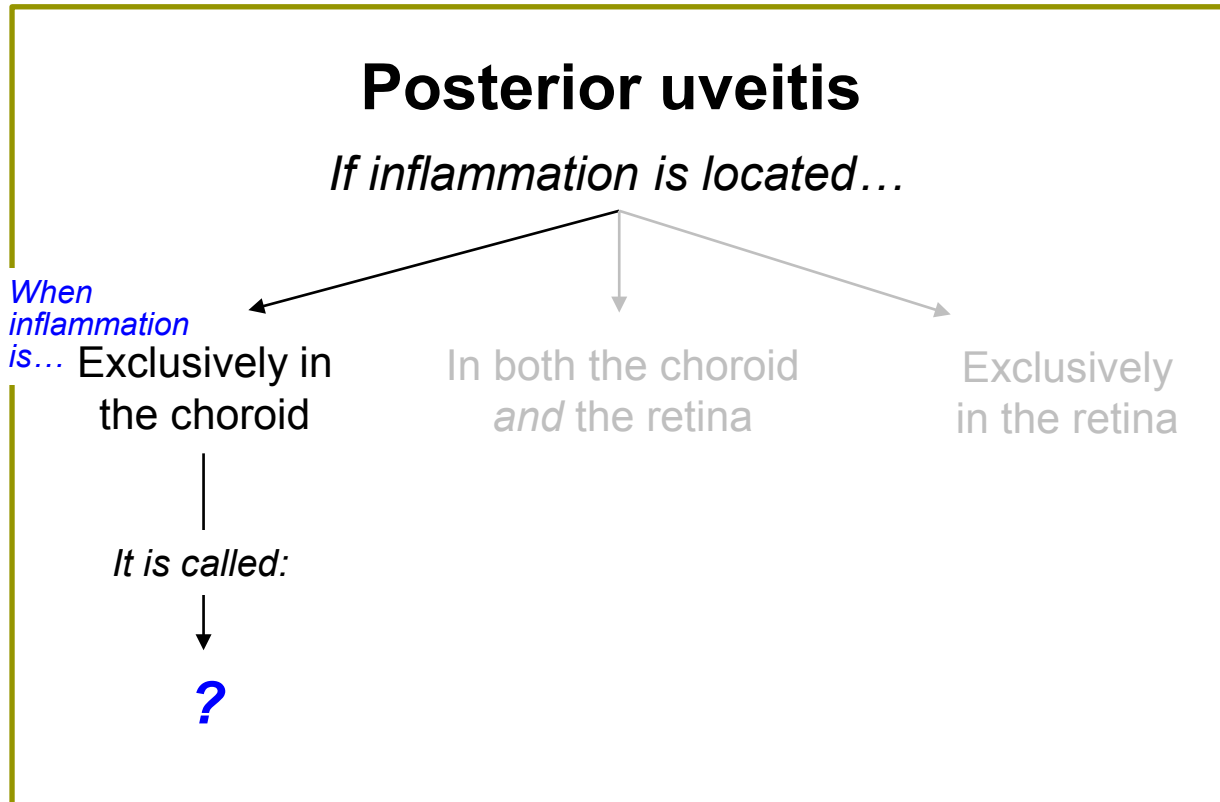


Posterior uveitis

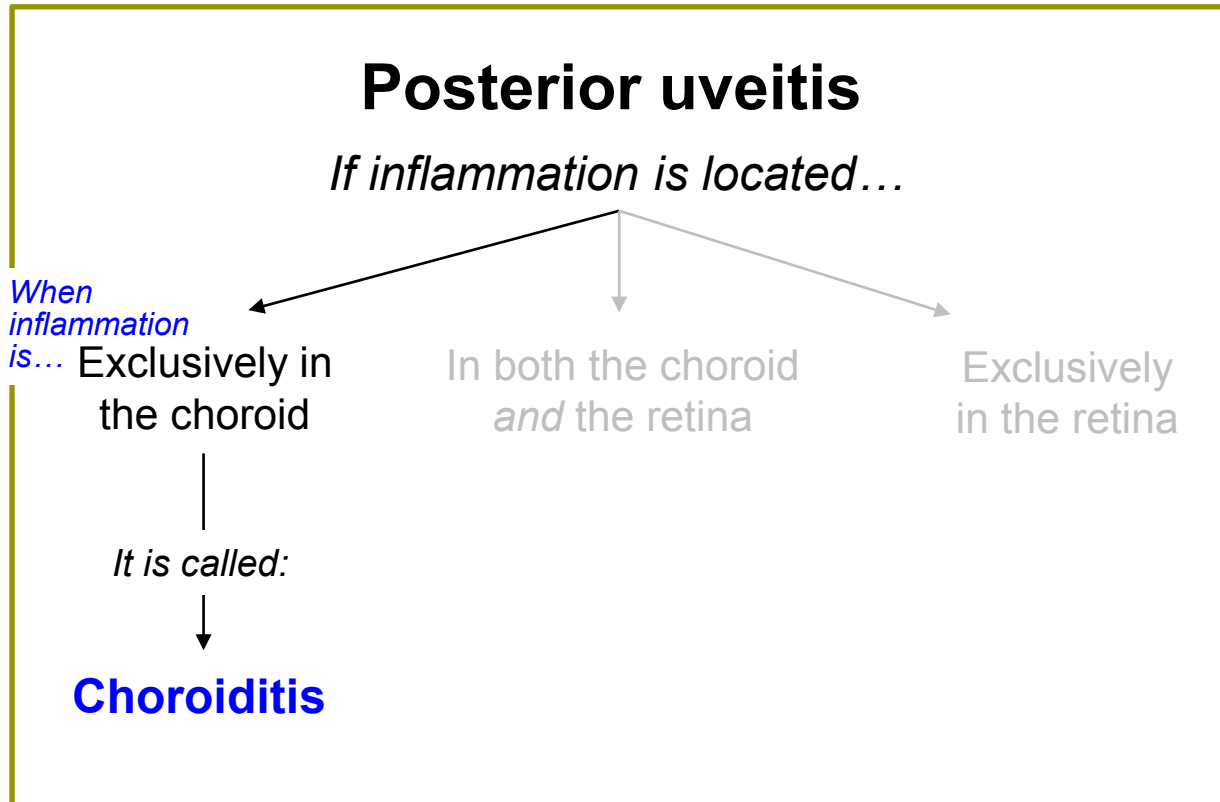


What are the three 'inflammation locations' in posterior uveitis?

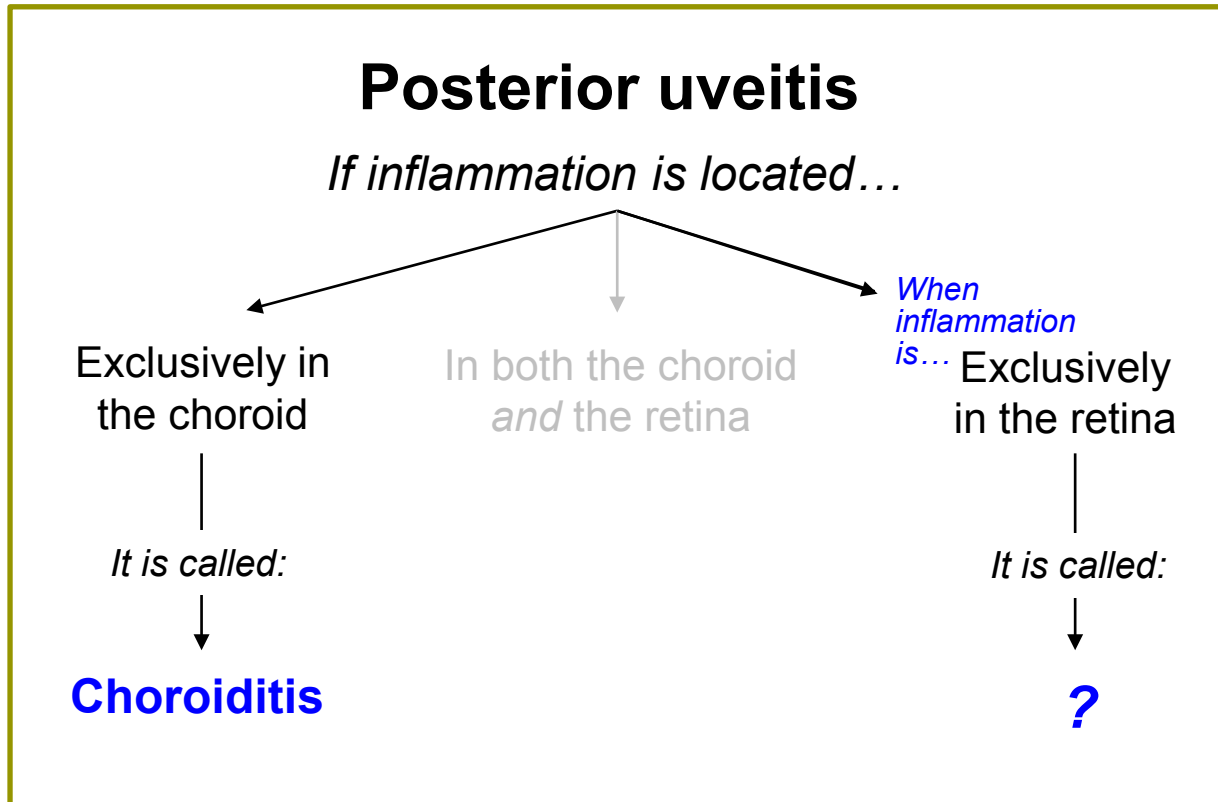
Uveitis: *Toxoplasmosis*



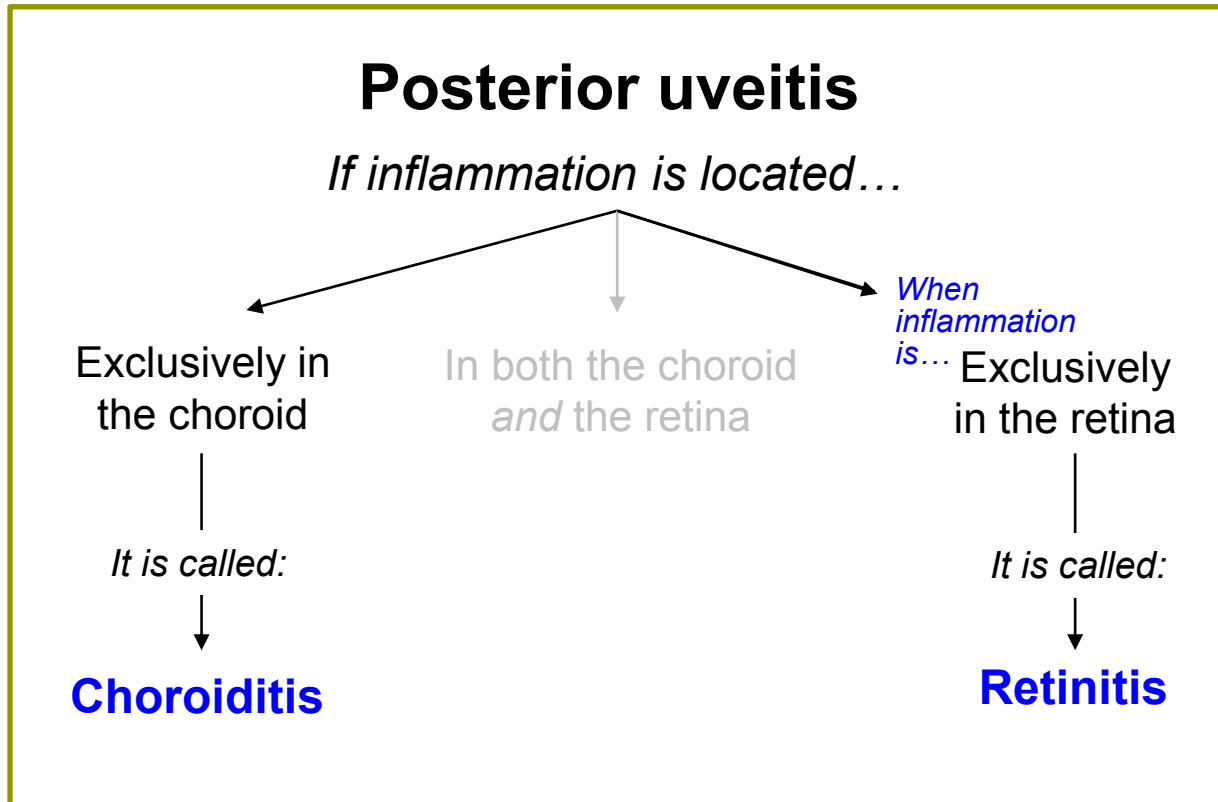
Uveitis: *Toxoplasmosis*



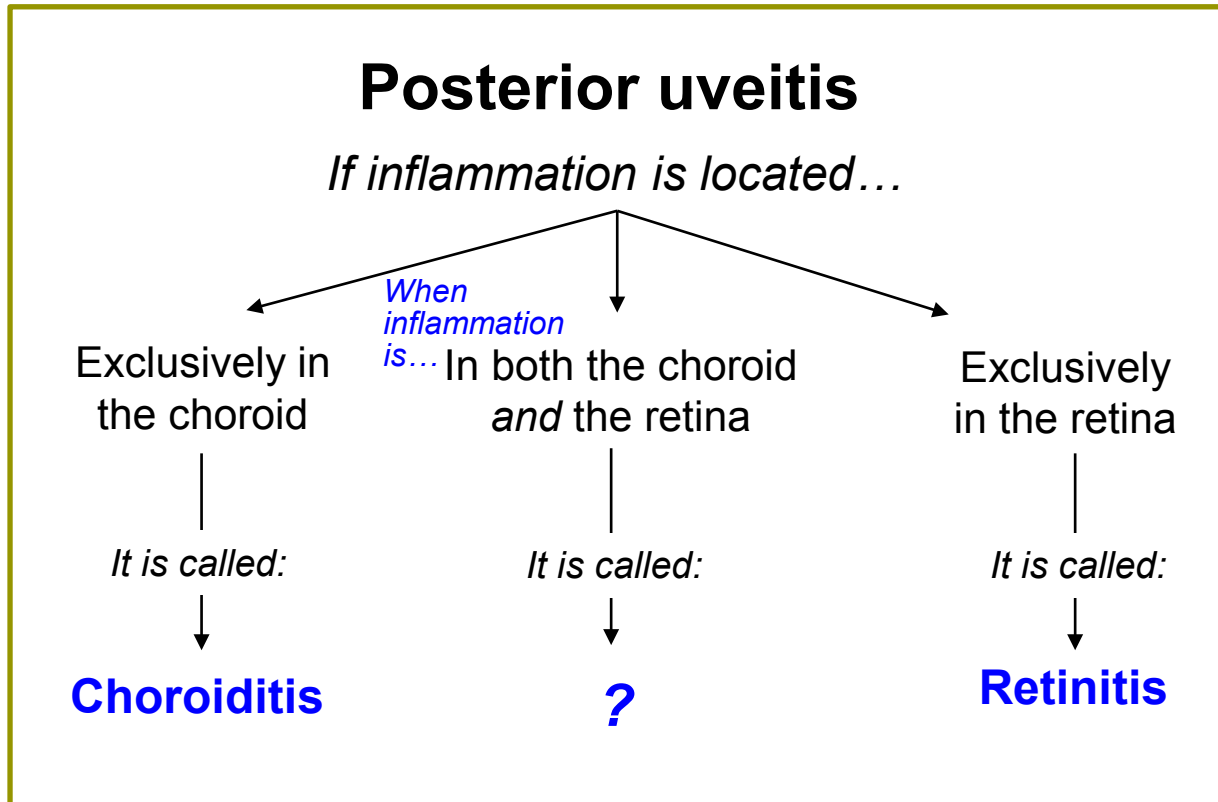
Uveitis: *Toxoplasmosis*



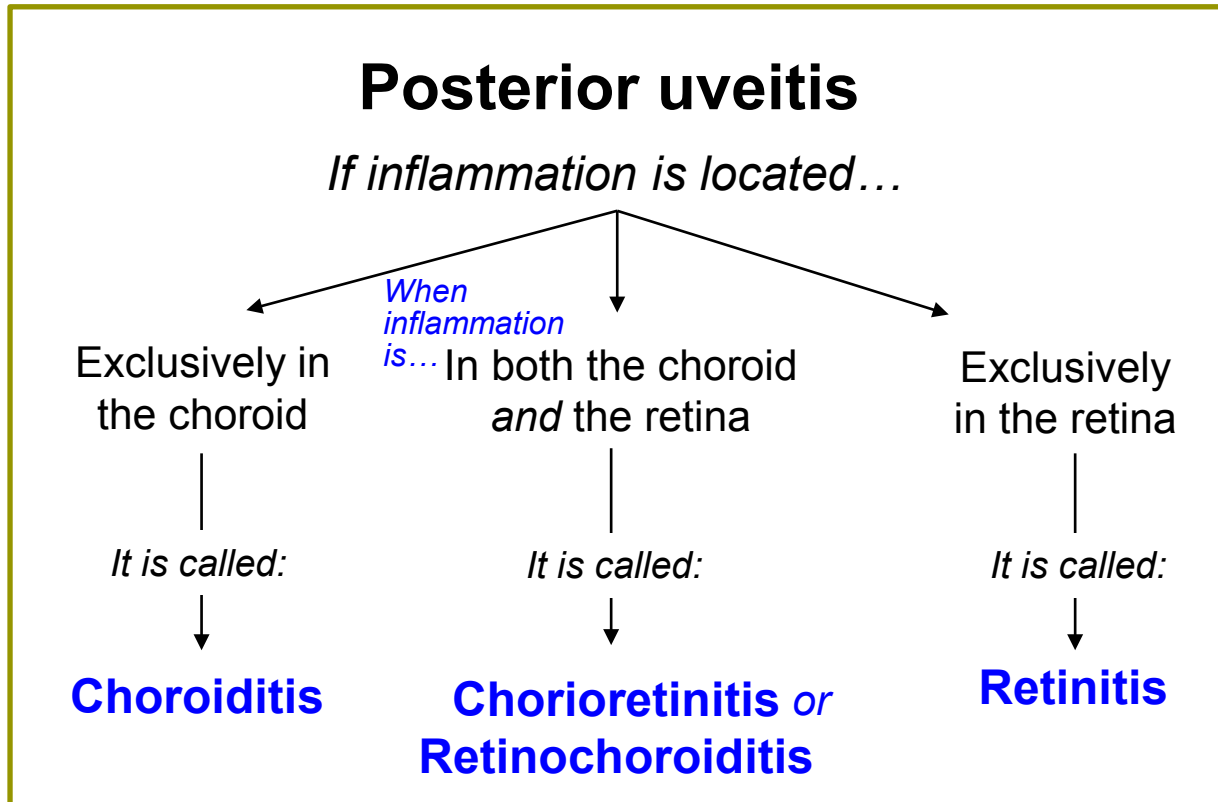
Uveitis: *Toxoplasmosis*



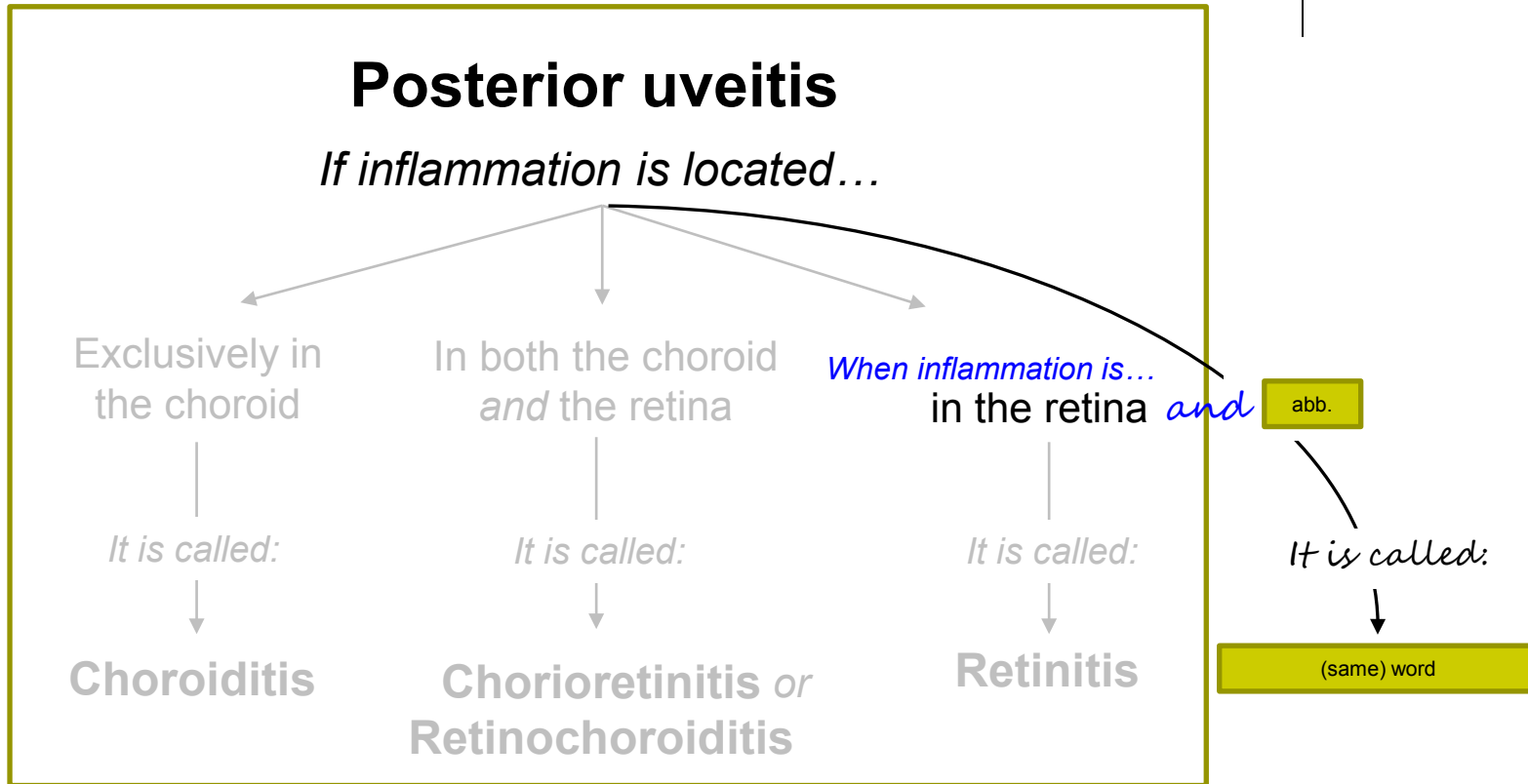
Uveitis: *Toxoplasmosis*



Uveitis: *Toxoplasmosis*

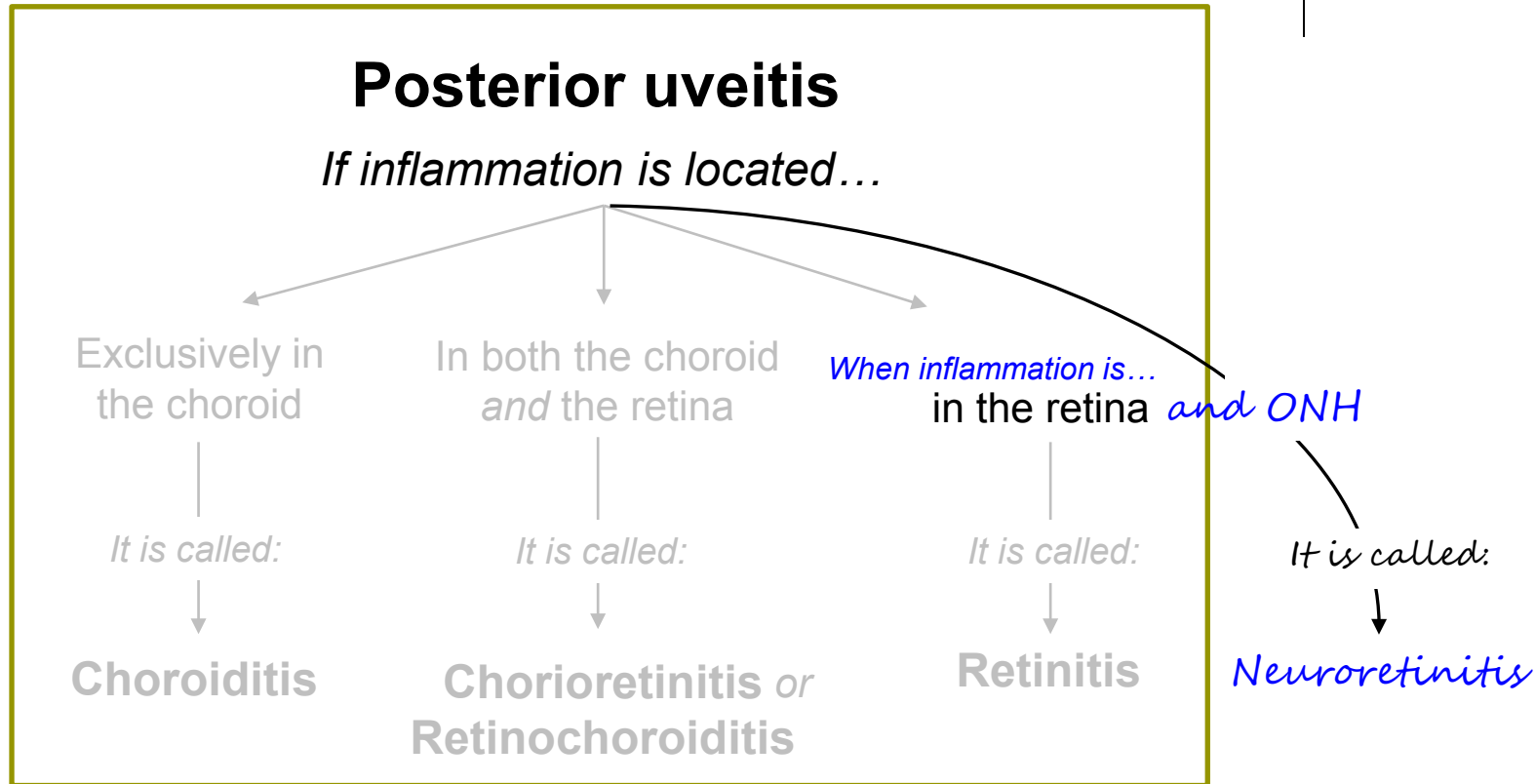
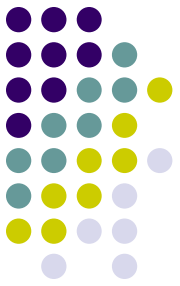


Uveitis: *Toxoplasmosis*



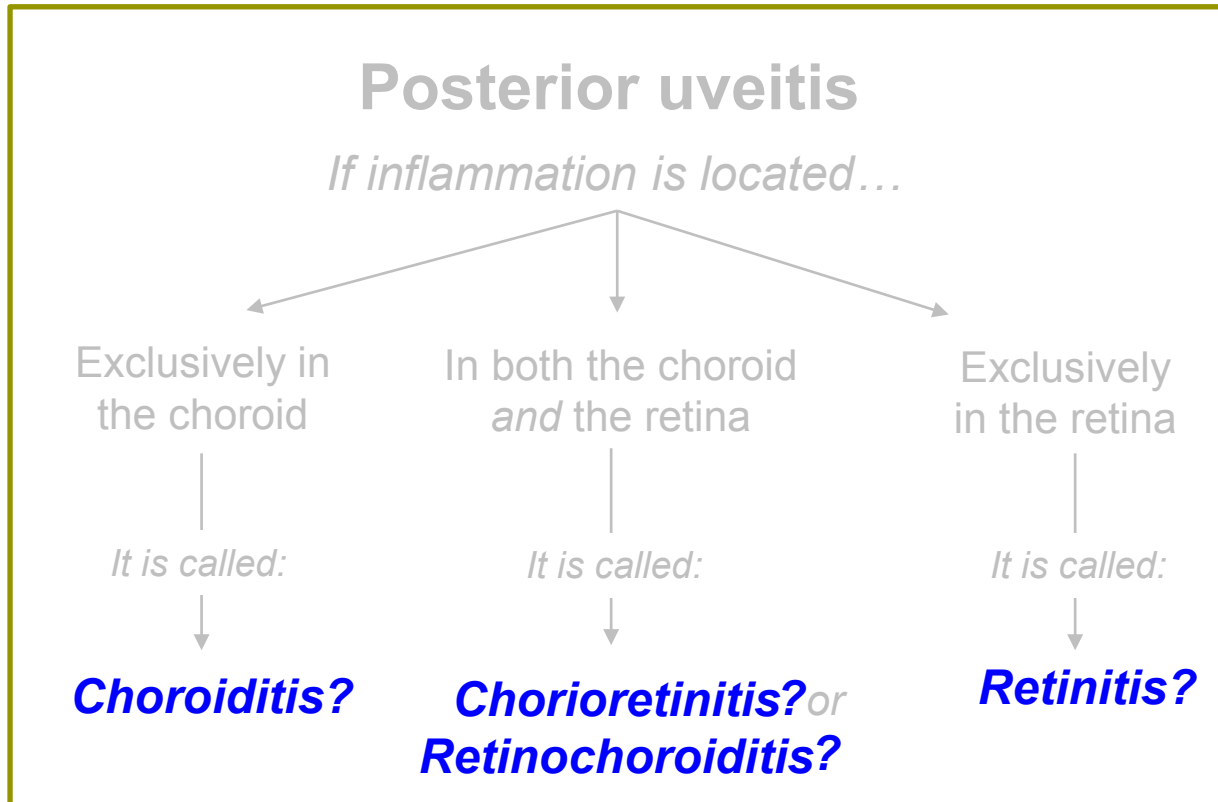
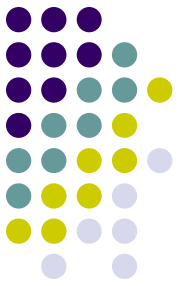
Note: If you took exception to the suggestion that there are only 3 posterior uveitis locations by pointing out the existence of **word**, you're not wrong

Uveitis: *Toxoplasmosis*



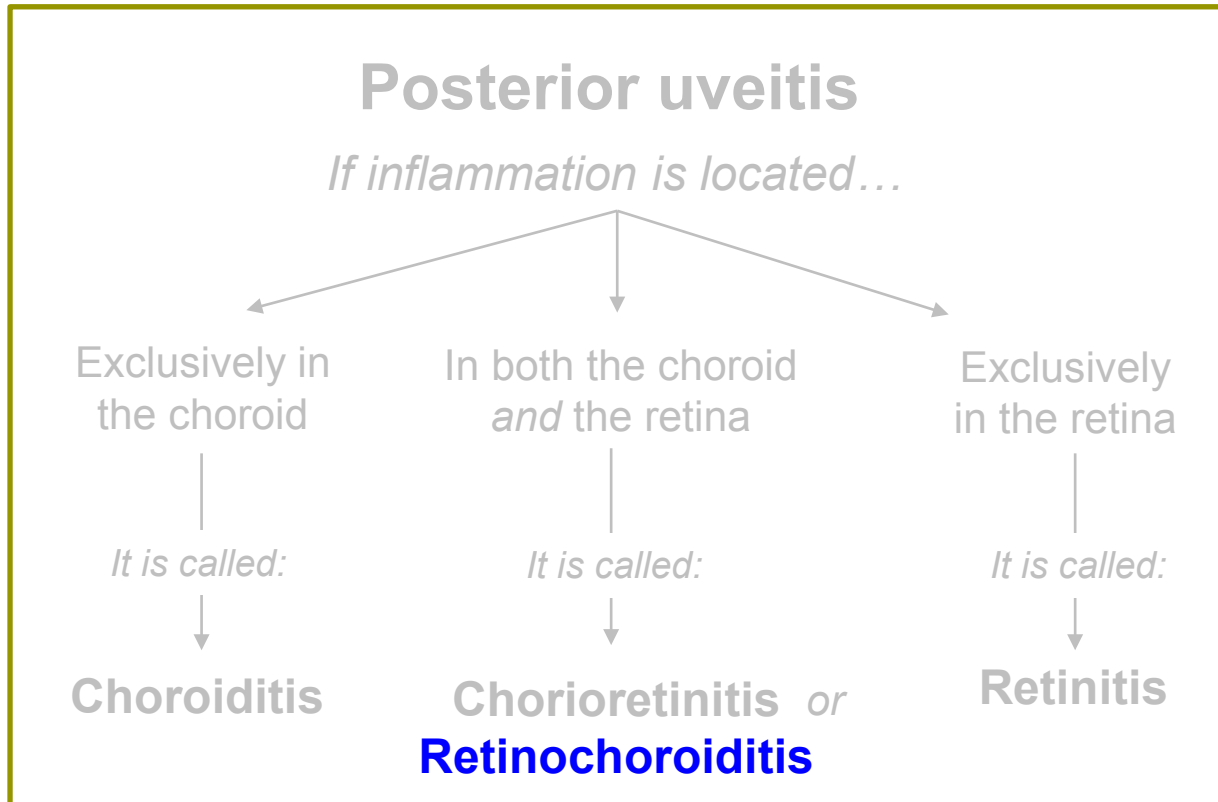
Note: If you took exception to the suggestion that there are only 3 posterior uveitis locations by pointing out the existence of *neuroretinitis*, you're not wrong

Uveitis: ***Toxoplasmosis***



What is the classic posterior manifestation of toxoplasmosis?

Uveitis: ***Toxoplasmosis***



What is the classic posterior manifestation of toxoplasmosis?
Retinochoroiditis

Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Retinochoroiditis

*What is the classic appearance of an **inactive** toxoplasmosis lesion?*

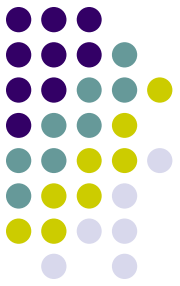


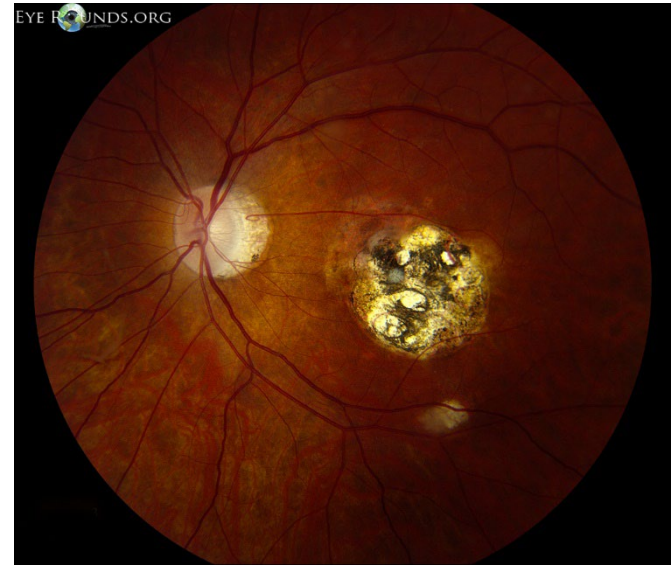
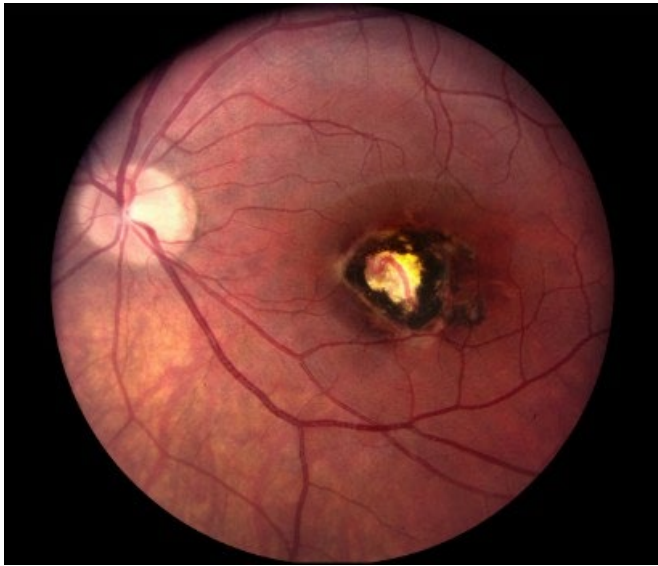
Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Retinochoroiditis

*What is the classic appearance of an **inactive** toxoplasmosis lesion?*

A pigmented chorioretinal scar





Toxoplasmosis: Inactive scar

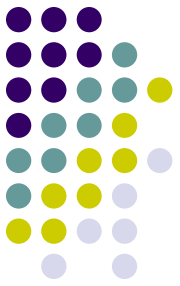
Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Retinochoroiditis

What is the classic appearance of an inactive toxoplasmosis lesion?

A pigmented chorioretinal scar

*What is the classic appearance of an **active** toxoplasmosis lesion?*



Uveitis: ***Toxoplasmosis***

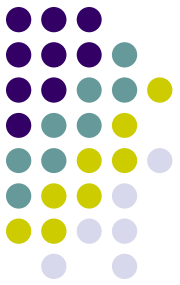
Toxoplasmosis: Retinochoroiditis

What is the classic appearance of an inactive toxoplasmosis lesion?

A pigmented chorioretinal scar

*What is the classic appearance of an **active** toxoplasmosis lesion?*

A color lesion



Uveitis: ***Toxoplasmosis***

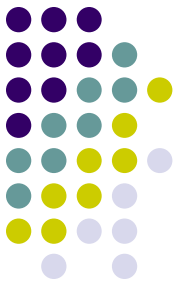
Toxoplasmosis: Retinochoroiditis

What is the classic appearance of an inactive toxoplasmosis lesion?

A pigmented chorioretinal scar

*What is the classic appearance of an **active** toxoplasmosis lesion?*

A white lesion



Uveitis: ***Toxoplasmosis***

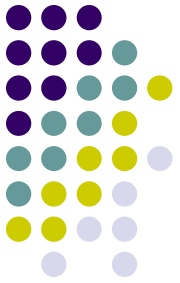
Toxoplasmosis: Retinochoroiditis

What is the classic appearance of an inactive toxoplasmosis lesion?

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*What is the classic appearance of an **active** toxoplasmosis lesion?*

A white lesion adjacent to a structure



Uveitis: ***Toxoplasmosis***

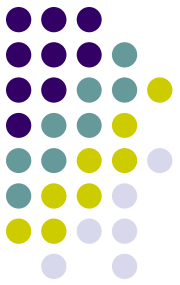
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Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Retinochoroiditis

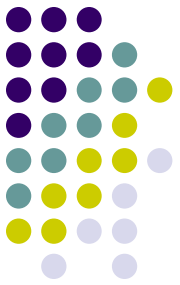
What is the classic appearance of an inactive toxoplasmosis lesion?

A pigmented chorioretinal scar

*What is the classic appearance of an **active** toxoplasmosis lesion?*

A white lesion adjacent to a scar, with overlying

two words



Uveitis: ***Toxoplasmosis***

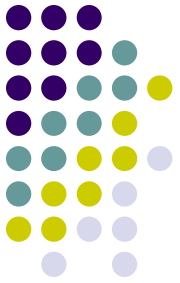
Toxoplasmosis: Retinochoroiditis

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*What is the classic appearance of an **active** toxoplasmosis lesion?*

A white lesion adjacent to a scar, with overlying vitreous cell



Uveitis: *Toxoplasmosis*



Recurrent ocular toxoplasmosis. Note the active retinal lesion associated with an old inactive scar

Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Retinochoroiditis

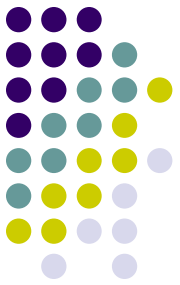
What is the classic appearance of an inactive toxoplasmosis lesion?

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*What is the classic appearance of an **active** toxoplasmosis lesion?*

A white lesion **adjacent to a scar**, with overlying vitreous cell

The fact that active lesions are usually adjacent to an old scar indicates what about their origin?



Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Retinochoroiditis

What is the classic appearance of an inactive toxoplasmosis lesion?

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The fact that active lesions are usually adjacent to an old scar indicates what about their origin?

It indicates they represent reactivation of a previously dormant infection



Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Retinochoroiditis

What is the classic appearance of an inactive toxoplasmosis lesion?

A pigmented chorioretinal scar

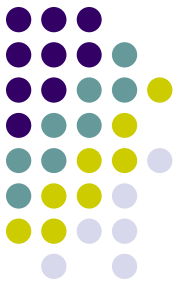
*What is the classic appearance of an **active** toxoplasmosis lesion?*

A white lesion, ^{not} **adjacent to a scar**, with overlying vitreous cell

The fact that active lesions are usually adjacent to an old scar indicates what about their origin?

It indicates they represent reactivation of a previously dormant infection

*What is indicated if an active is **not** adjacent to a scar?*



Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Retinochoroiditis

What is the classic appearance of an inactive toxoplasmosis lesion?

A pigmented chorioretinal scar

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The fact that active lesions are usually adjacent to an old scar indicates what about their origin?

It indicates they represent reactivation of a previously dormant infection

*What is indicated if an active is **not** adjacent to a scar?*

It indicates the dz is newly acquired



Uveitis: *Toxoplasmosis*



Newly acquired toxo retinitis (note the absence of an adjacent scar)

Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Retinochoroiditis

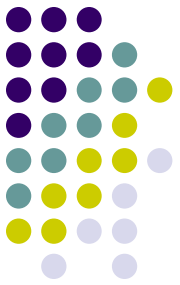
What is the classic appearance of an inactive toxoplasmosis lesion?

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*What is the classic appearance of an **active** toxoplasmosis lesion?*

A white lesion adjacent to a scar, with overlying vitreous cell

What is the classic description of the appearance of an active lesion?



Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Retinochoroiditis

What is the classic appearance of an inactive toxoplasmosis lesion?

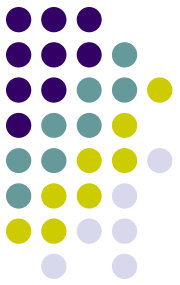
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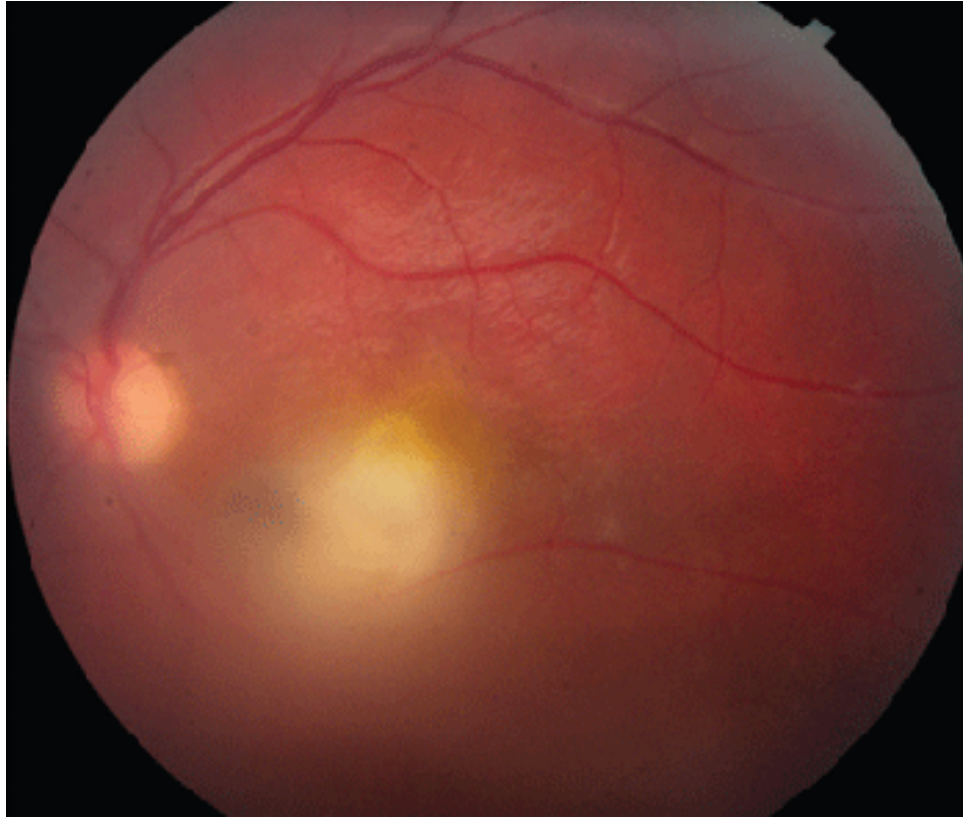
A white lesion adjacent to a scar, with overlying vitreous cell

What is the classic description of the appearance of an active lesion?

'Headlight in the fog'



Uveitis: *Toxoplasmosis*



Active toxoplasmosis: Headlight in the fog

Uveitis: *Toxoplasmosis*

Toxoplasmosis: Retinochoroiditis

What is the classic appearance of an inactive toxoplasmosis lesion?

A pigmented chorioretinal scar

*What is the classic appearance of an **active** toxoplasmosis lesion?*

A white lesion adjacent to a scar, with overlying vitreous cell

What is the classic description of an active lesion in terms of the Headlight in the fog appearance...

'Headlight in the fog'

The headlight = ?

The fog =



Uveitis: *Toxoplasmosis*

Toxoplasmosis: Retinochoroiditis

What is the classic appearance of an inactive toxoplasmosis lesion?

A pigmented chorioretinal scar

*What is the classic appearance of an **active** toxoplasmosis lesion?*

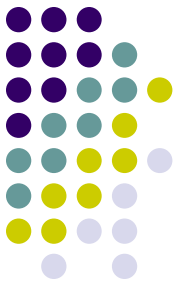
A white lesion adjacent to a scar, with overlying vitreous cell

What is the classic description of the Headlight in the fog appearance...

'Headlight in the fog'

The headlight = the white toxo lesion

The fog =



Uveitis: *Toxoplasmosis*

Toxoplasmosis: Retinochoroiditis

What is the classic appearance of an inactive toxoplasmosis lesion?

A pigmented chorioretinal scar

*What is the classic appearance of an **active** toxoplasmosis lesion?*

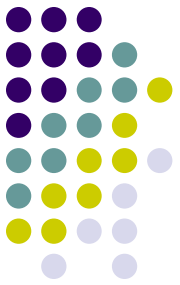
A white lesion adjacent to a scar, with overlying vitreous cell

What is the classic description of the Headlight in the fog appearance...

'Headlight in the fog'

The headlight = the white toxo lesion

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Uveitis: *Toxoplasmosis*

Toxoplasmosis: Retinochoroiditis

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A pigmented chorioretinal scar

*What is the classic appearance of an **active** toxoplasmosis lesion?*

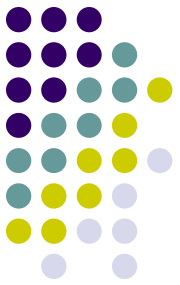
A white lesion adjacent to a scar, with overlying vitreous cell

What is the classic description of the Headlight in the fog appearance...

'Headlight in the fog'

The headlight = the white toxo lesion

The fog = the dense overlying vitritis



Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Retinochoroiditis

What is the classic appearance of an inactive toxoplasmosis lesion?

A pigmented chorioretinal scar

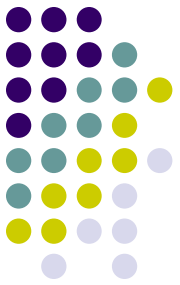
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What is the natural history of active toxo retinochoroiditis in immunocompetent pts?



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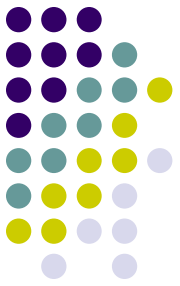
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The news in this regard is mixed. In one sense it is a self-limited condition in that active lesions resolve spontaneously over a couple of months.

Uveitis: *Toxoplasmosis*

Toxoplasmosis: Retinochoroiditis



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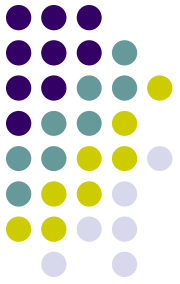
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The news in this regard is mixed. In one sense it is a self-limited condition in that active lesions resolve spontaneously over a couple of months. However, it is also a chronic and progressive condition in that new lesions appear periodically adjacent or near to old scars.

Uveitis: ***Toxoplasmosis***

Diagnosis

How is the diagnosis of ocular toxoplasmosis made?

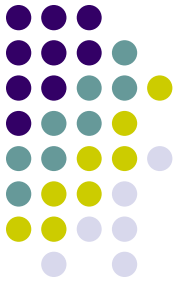


Uveitis: ***Toxoplasmosis***

Diagnosis

How is the diagnosis of ocular toxoplasmosis made?

In most cases, clinically



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Uveitis: *Toxoplasmosis*

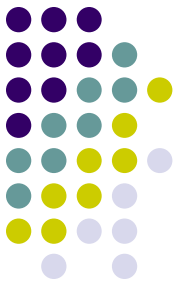
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Uveitis: *Toxoplasmosis*

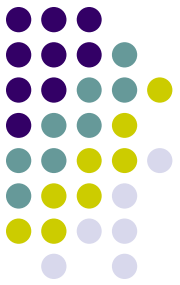
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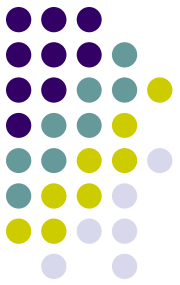
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Uveitis: *Toxoplasmosis*

Diagnosis

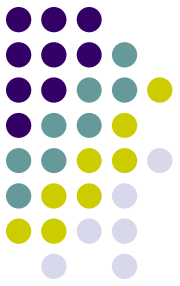
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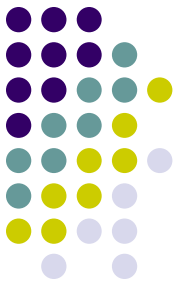
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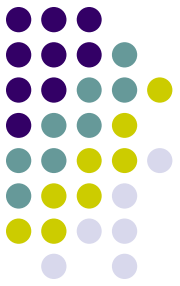
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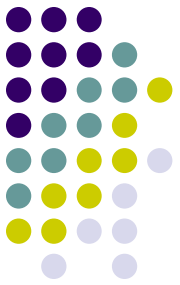
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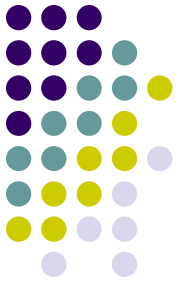
Again, it can be. Maternal IgG antibodies will cross the placenta, so their presence in a newborn is **noncontributory**. In contrast, IgM does **not** cross the placenta, so if a newborn is IgM(+), it is confirmatory of congenital infection.



Uveitis: ***Toxoplasmosis***

Treatment

What are the indications for treating active ocular toxoplasmosis?



Uveitis: *Toxoplasmosis*

Treatment

What are the indications for treating active ocular toxoplasmosis?

This is controversial. Some physicians tx all lesions, whereas other elect to watch small peripheral ones.

That said, **the following clinical scenarios are considered relative indications to tx:**

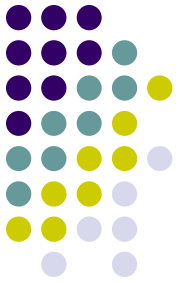
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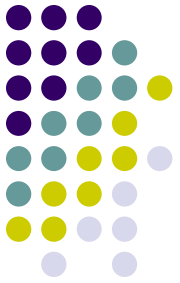
--Lesions in the location or threatening the different location

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Uveitis: *Toxoplasmosis*

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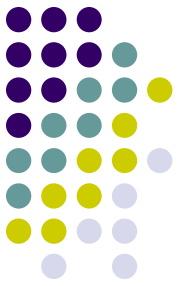
--Lesions in the fovea or threatening the ONH

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Uveitis: *Toxoplasmosis*

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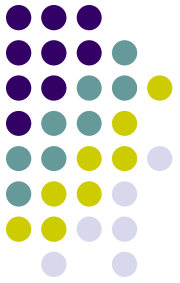
--Lesions associated with decreased

exam
finding

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Uveitis: *Toxoplasmosis*

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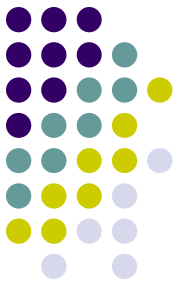
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-- adj. or diff adj. lesions

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--?



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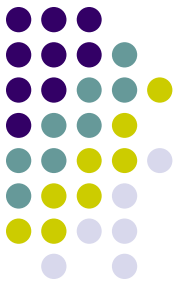
--Lesions in the fovea or threatening the ONH

--Lesions associated with decreased VA

--Large or multifocal lesions

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Uveitis: *Toxoplasmosis*

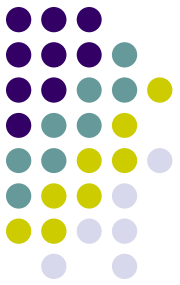
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- Large or multifocal lesions
- A lesion that remains active for amount of time
- ?



Uveitis: *Toxoplasmosis*

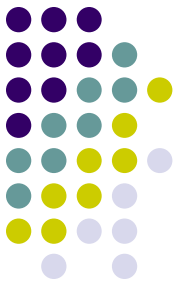
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- ?



Uveitis: *Toxoplasmosis*

Treatment

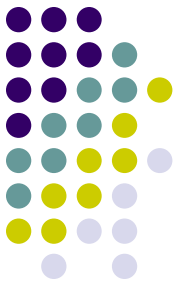
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- Lesions associated with significant

exam finding (two words)



Uveitis: *Toxoplasmosis*

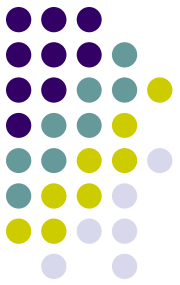
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Uveitis: *Toxoplasmosis*

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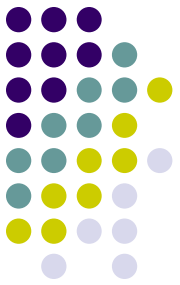
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--



Uveitis: *Toxoplasmosis*

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Uveitis: *Toxoplasmosis*

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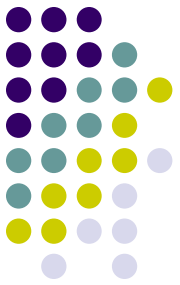
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And most physicians consider the following clinical scenarios **absolute** indications to tx:

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Uveitis: *Toxoplasmosis*

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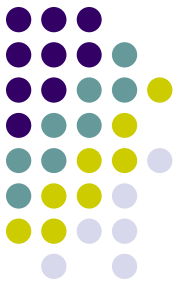
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Uveitis: *Toxoplasmosis*



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How is ocular toxo treated?

Multiple regimens have been developed:

- So-called 'triple therapy' consists of [] + [] + []

Uveitis: *Toxoplasmosis*



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How is ocular toxo treated?

Multiple regimens have been developed:

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Uveitis: *Toxoplasmosis*



Treatment

What are the indications for treating active ocular toxoplasmosis?

This is controversial. Some physicians tx all lesions, whereas other elect to watch small peripheral ones. That said, the following clinical scenarios are considered relative indications to tx:

- Lesions in the fovea
 - Lesions associated with retinal detachment
 - Large or multifocal lesions
 - A lesion that remains active
 - Lesions associated with significant vitritis
- And most physicians treat if:
- If the pt is immunocompromised
 - If the pt is pregnant

Pyrimethamine and sulfadiazine inhibit the metabolism of what vitamin?

How is ocular toxoplasmosis treated?

Multiple regimens have been developed.

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What critical hematopoietic issues can arise if folate metabolism is inhibited?

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Uveitis: *Toxoplasmosis*



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 - Lesions associated with macular edema
 - Large or multifocal lesions
 - A lesion that remains active
 - Lesions associated with vitritis
- And most physicians also treat if:
- If the pt is immunocompromised
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What critical hematopoietic issues can arise if folate metabolism is inhibited?
Leukopenia and thrombocytopenia

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Uveitis: *Toxoplasmosis*



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 - Lesions associated with systemic disease
- And most physicians treat if:
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 - If the pt is pregnant

Pyrimethamine and sulfadiazine inhibit the metabolism of what vitamin?
Folate

What critical hematopoietic issues can arise if folate metabolism is inhibited?
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In order to prevent pyrimethamine/sulfadiazine-induced leukopenia and thrombocytopenia, what med is given along with triple therapy?

How is ocular toxoplasmosis treated?

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Uveitis: *Toxoplasmosis*



Treatment

What are the indications for treating active ocular toxoplasmosis?

This is controversial. Some physicians tx all lesions, whereas others elect to watch small peripheral ones. That said, the following clinical scenarios are considered relative indications to tx:

- Lesions in the fovea
 - Lesions associated with retinal detachment
 - Large or multifocal lesions
 - A lesion that remains active
 - Lesions associated with systemic disease
- And most physicians treat if:
- If the pt is immunocompromised
 - If the pt is pregnant

Pyrimethamine and sulfadiazine inhibit the metabolism of what vitamin?
Folate

What critical hematopoietic issues can arise if folate metabolism is inhibited?
Leukopenia and thrombocytopenia

In order to prevent pyrimethamine/sulfadiazine-induced leukopenia and thrombocytopenia, what med is given along with triple therapy?

Folinic acid (aka *leucovorin*). In addition, pts treated with triple therapy should have their blood count checked weekly.

How is ocular toxoplasmosis treated?

Multiple regimens have been developed.

- So-called 'triple therapy' consists of **pyrimethamine + sulfadiazine** + steroids

Uveitis: *Toxoplasmosis*



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What are the indications for treating active ocular toxoplasmosis?

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- Lesions in the fovea or threatening the ONH
- Lesions associated with decreased VA
- Large or multifocal lesions
- A lesion that remains active for >1 month
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And most physicians consider the following clinical scenarios **absolute** indications to tx:

- If the pt is immunocompromised
- If the pt is pregnant, and has newly-acquired dz

How is ocular toxo treated?

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In terms of route, are steroids given...

--Systemically?

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Pseudomembranous colitis

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- abb. – abb. + is preferred by many for its simplicity, availability and low price

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- [redacted] +/- pyrimethamine is effective as well

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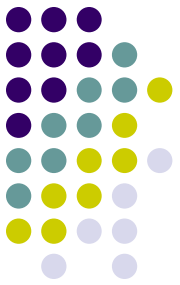
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Which is the most effective tx regimen for ocular toxoplasmosis?

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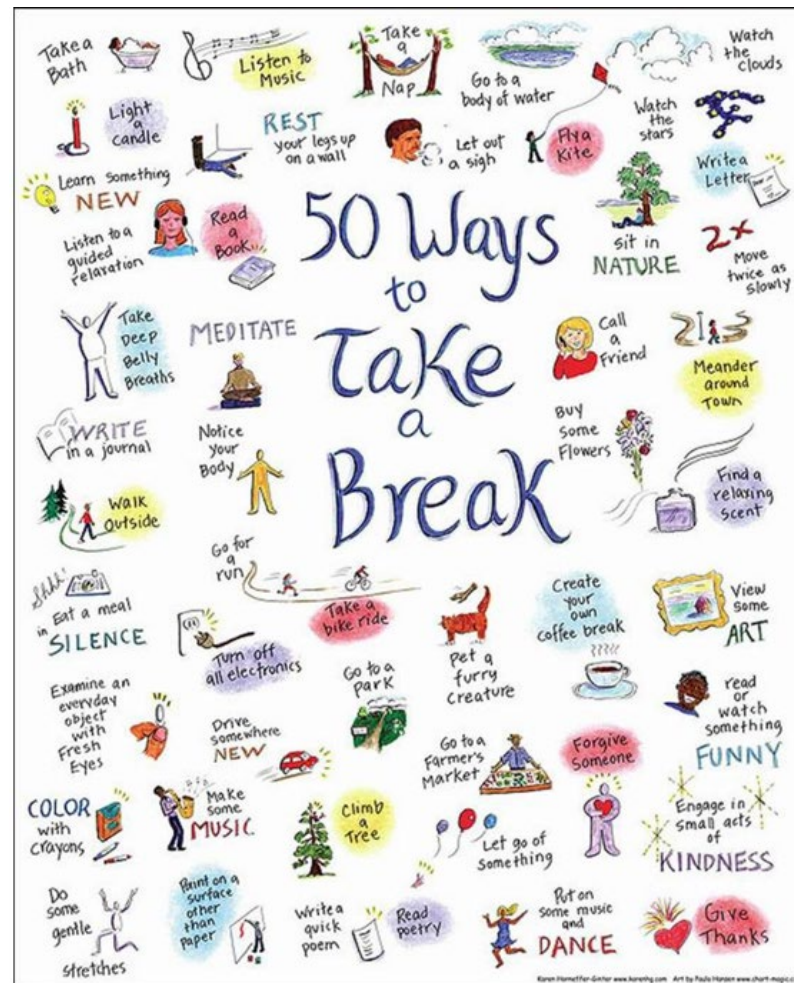
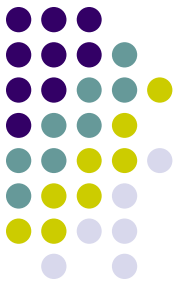
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Which is the most effective tx regimen for ocular toxoplasmosis?

None of the above. That is, while all are employed, none has been shown via clinical trial to be definitively the best.

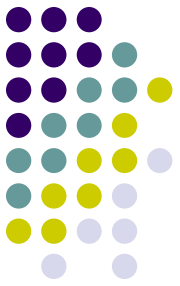


(This is a good point in the set to take a break)

Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Congenital

A woman with a hx of toxoplasmosis becomes pregnant. What is the risk of fetal infection?

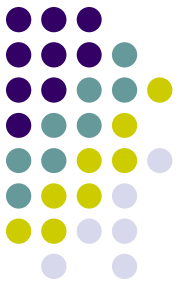


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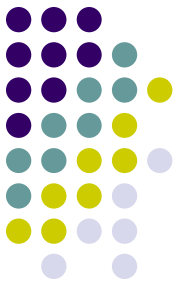
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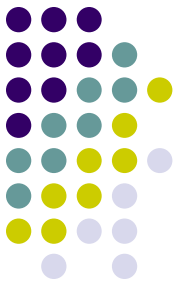
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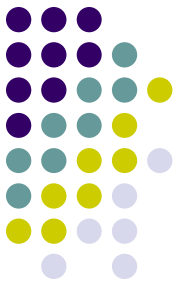
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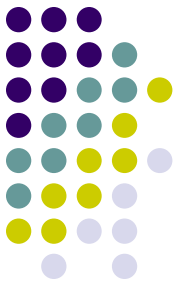
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Well, if she has a hx of toxoplasmosis, there's no 'what if'—she's **definitely** harboring tissue cysts. That said, the risk of fetal transmission is still zero.

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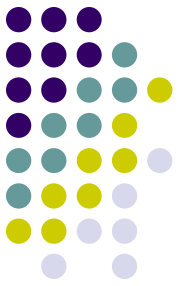
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How might a pregnant woman become primarily infected?

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How might a pregnant woman become primarily infected?

By any of the pathways described earlier—by consuming foodstuffs containing viable tissue cysts, consuming oocysts, or (very rarely) by blood-to-blood transmission of tachyzoites

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How should a pregnant woman go about minimizing her risk of becoming infected?

1) ?

2) ?

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Congenital

A woman with a hx of toxoplasmosis becomes pregnant. What is the risk of fetal infection?

Zero, zilch, nada. Transplacental transmission occurs only if/when a pregnant woman is infected.

What is the risk if she has a recurrence during her pregnancy?

Zero, zilch, nada again. As stated above, transplacental transmission occurs only if/when a pregnant woman is infected.

OK, but what if she's harboring tissue cysts—what's the risk then?

Well, if she has a hx of toxoplasmosis, there's no 'what if'—she's **definitely** harboring tissue cysts.

That said, the risk of fetal transmission is still zero. The only way to transmit the dz transplacentally is if momma has tachyzoites in her bloodstream, and this occurs **only** during initial infection.

How might a pregnant woman become primarily infected?

By any of the pathways described earlier—by consuming foodstuffs containing viable tissue cysts, consuming oocysts, or (very rarely) by blood-to-blood transmission of tachyzoites

How should a pregnant woman go about minimizing her risk of becoming infected?

1) Don't consume

two words

or

three words

2) ?

Uveitis: *Toxoplasmosis*



Toxoplasmosis: Congenital

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How should a pregnant woman go about minimizing her risk of becoming infected?

1) Don't consume undercooked meat or unpasteurized goat's milk

2) ?

Uveitis: *Toxoplasmosis*



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How should a pregnant woman go about minimizing her risk of becoming infected?

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2) Don't handle

two words

Uveitis: *Toxoplasmosis*



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- 2) Don't handle litter boxes

Uveitis: *Toxoplasmosis*



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- 2) Don't handle litter boxes or cats (especially)

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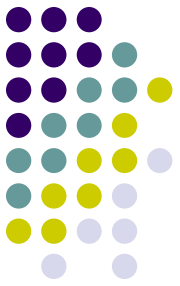
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Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Congenital

What is the classic ocular manifestation of congenital toxoplasmosis?

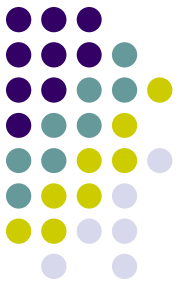


Uveitis: ***Toxoplasmosis***

Toxoplasmosis: Congenital

What is the classic ocular manifestation of congenital toxoplasmosis?

The same as in the acquired version—a retinochoroiditis (either active, or a scar)



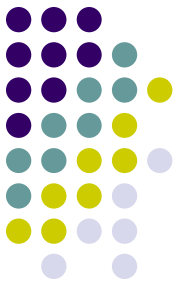
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Toxoplasmosis: Congenital

*What is the classic ocular manifestation of **congenital toxoplasmosis**?*

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Where in the retina are congenital lesions usually found?



Uveitis: ***Toxoplasmosis***

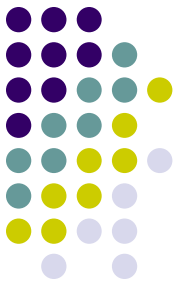
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The macula



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Does congenital toxo present unilaterally, or bilaterally?



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Toxoplasmosis: Congenital

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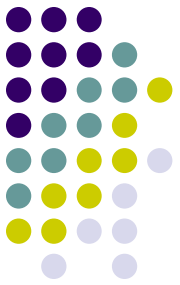
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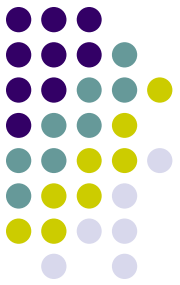
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Uveitis: ***Toxoplasmosis***

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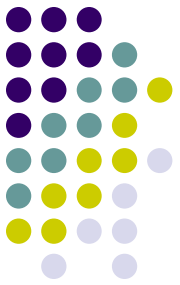
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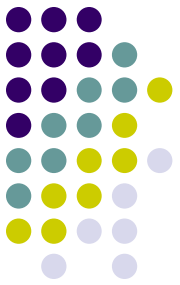
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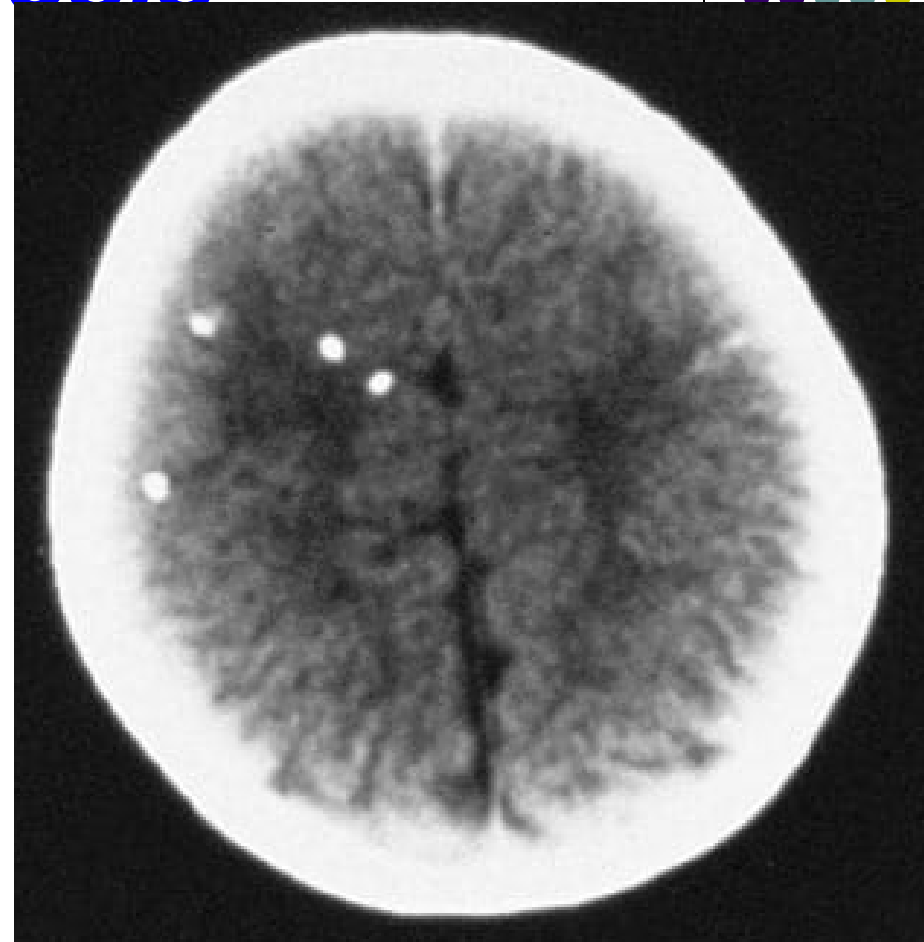
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Uveitis: *Toxoplasmosis*



Hydrocephalus

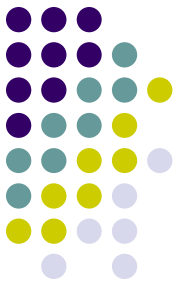


Intracranial calcifications

Congenital toxoplasmosis

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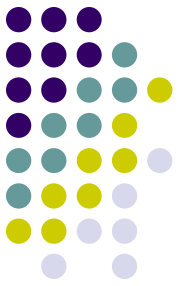
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Note: This is per the *Uveitis* book; the *Peds* book states "Ocular toxo does not require treatment unless it threatens vision." Caveat emptor.



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Toxoplasmosis is not the only infectious agent that presents in this manner when acquired in utero.

What is the well-known mnemonic for the infectious agents?

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--T

--O

--R

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--S

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What is the well-known mnemonic for the infectious agents? What does each letter stand for?

--T

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- Toxoplasmosis (duh)
- Other
- Rubella
- CMV
- Herpesviruses, including
- EBV
- Syphilis

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The *Peds* book uses the mnemonic **TORCH**:

--**T**Oxoplasmosis

--**R**ubella

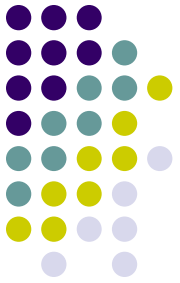
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--**H**erpeseviruses

Uveitis: ***Toxoplasmosis***

In HIV+ pts

Is toxoplasmosis a common opportunistic infection in HIV/AIDS pts?

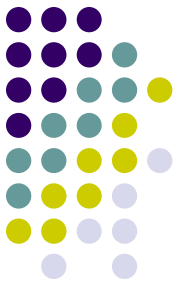


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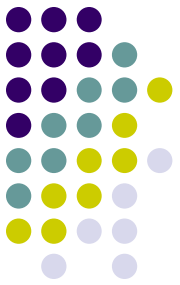
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By the absence or attenuation of the 'fog' aspect—a pt who is profoundly immunocompromised might not be able to generate a significant vitritis



Uveitis: *Toxoplasmosis*



Toxoplasmosis in AIDS. Note how clear the pic is, ie, there's no 'fog.' This is due to an absence of the normal vitritis.

Uveitis: *Toxoplasmosis*

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Toxo retinochoroiditis presentation in HIV/AIDS pts differs in several other respects as well. What are they?

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--?



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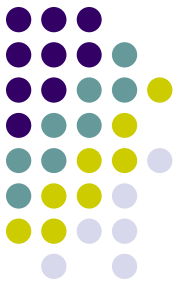
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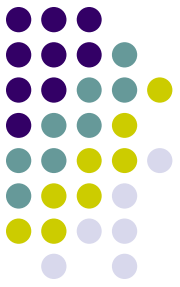
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Toxo retinochoroiditis presentation in HIV/AIDS pts differs in several other respects as well. What are they?

- The dz may be multifocal (ie, >1 active lesion present)
- The lesion(s) tend to be s/w larger than in immunocompetent pts
- The lesion is much more likely to be de novo, ie, to not be associated with an old CR scar



Uveitis: *Toxoplasmosis*



Same pic of toxoplasmosis in AIDS. This time, note
1) the multifocality, and 2) the absence of a CR scar.

Uveitis: *Toxoplasmosis*

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In what key way might the presentation of toxo retinitis in an HIV+ pt deviate from the classic

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By the absence or attenuation of the 'fog' aspect—a pt who is profoundly immunocompromised might not be able to generate a significant vitritis

Toxo retinochoroiditis presentation in HIV/AIDS pts differs in several other respects as well. What are they?

--The dz may be multifocal (ie, >1 active lesion present)

--The lesion(s) tend to be s/w larger than in immunocompetent pts

--The lesion is much more likely to be de novo, ie, to not be associated with an old CR scar

In what ways does the management of toxo retinitis differ in the immunocompromised population?

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Uveitis: *Toxoplasmosis*

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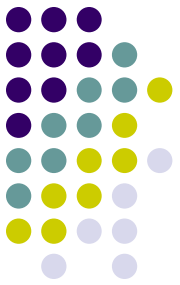
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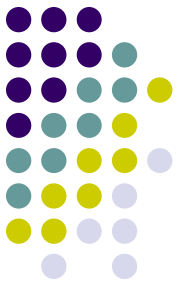
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Why must all toxo retinochoroiditis be treated in HIV/AIDS pts?

Because unlike in immunocompetent pts, dz in HIV/AIDS pts does **not** resolve spontaneously—instead, it is relentlessly progressive



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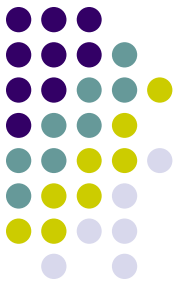
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Toxo retinochoroiditis presentation in HIV/AIDS pts differs in several other respects as well. What are they?

--The dz may be *Why do immunocompromised pts with toxo retinitis need brain imaging?*

--The lesion(s)

--The lesion is

In what ways d

--Whereas in im

the macula, ON

lesions are treat

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Uveitis: *Toxoplasmosis*



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Toxo retinochoroiditis presentation in HIV/AIDS pts differs in several other respects as well. What are they?

- The dz may be bilateral
- The lesion(s) may be multiple
- The lesion is more peripheral

Why do immunocompromised pts with toxo retinitis need brain imaging?

To assess for CNS involvement

In what ways do

- Whereas in immunocompetent pts, toxo retinitis is typically peripheral, in immunocompromised pts, lesions are treated regardless of location, or severity of vitritis

--In immunocompetent pts, toxo retinitis does not prompt imaging; whereas in immunocompromised pts, a finding of toxo retinitis should prompt

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--The dz may be *Why do immunocompromised pts with toxo retinitis need brain imaging?*

--The lesion(s) *To assess for CNS involvement*

--The lesion is *Is there a strong correlation between ocular and CNS toxo in HIV+ pts?*

In what ways does the presentation differ from the classic population?

--Whereas in immunocompetent pts, the presentation is often threatening

the macula, ONH, or optic nerve; in immunocompromised pts,

lesions are treated regardless of location, or severity of vision

--In immunocompetent pts, toxo retinitis does not prompt imaging; whereas in immunocompromised pts,

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Uveitis: *Toxoplasmosis*



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Toxo retinochoroiditis presentation in HIV/AIDS pts differs in several other respects as well. What are they?

- The dz may be bilateral
- The lesion(s) may be multiple
- The lesion is more likely to be located in the posterior pole

Why do immunocompromised pts with toxo retinitis need brain imaging?

To assess for CNS involvement

Is there a strong correlation between ocular and CNS toxo in HIV+ pts?

Yes—up to 80% of toxo retinitis pts will be found to have CNS involvement

In what ways do lesions differ?

- Whereas in immunocompetent pts, lesions are typically located in the periphery, in HIV+ pts, lesions are more likely to be located in the posterior pole

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Why do immunocompromised pts with toxo retinitis need brain imaging?

To assess for CNS involvement

Is there a strong correlation between ocular and CNS toxo in HIV+ pts?

Yes—up to 50% of toxo retinitis pts will be found to have CNS involvement

In what ways do the presentations differ?

- Whereas in immunocompetent pts, toxo retinitis is typically located in the periphery of the retina, in HIV+ pts, lesions are treated regardless of location, or severity of findings

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What is the classic neuroimaging finding?

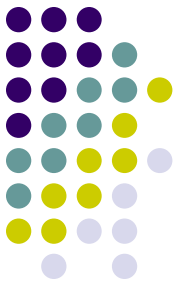
'Ring-enhancing lesions'

In what ways do these lesions differ from those seen in immunocompetent pts?

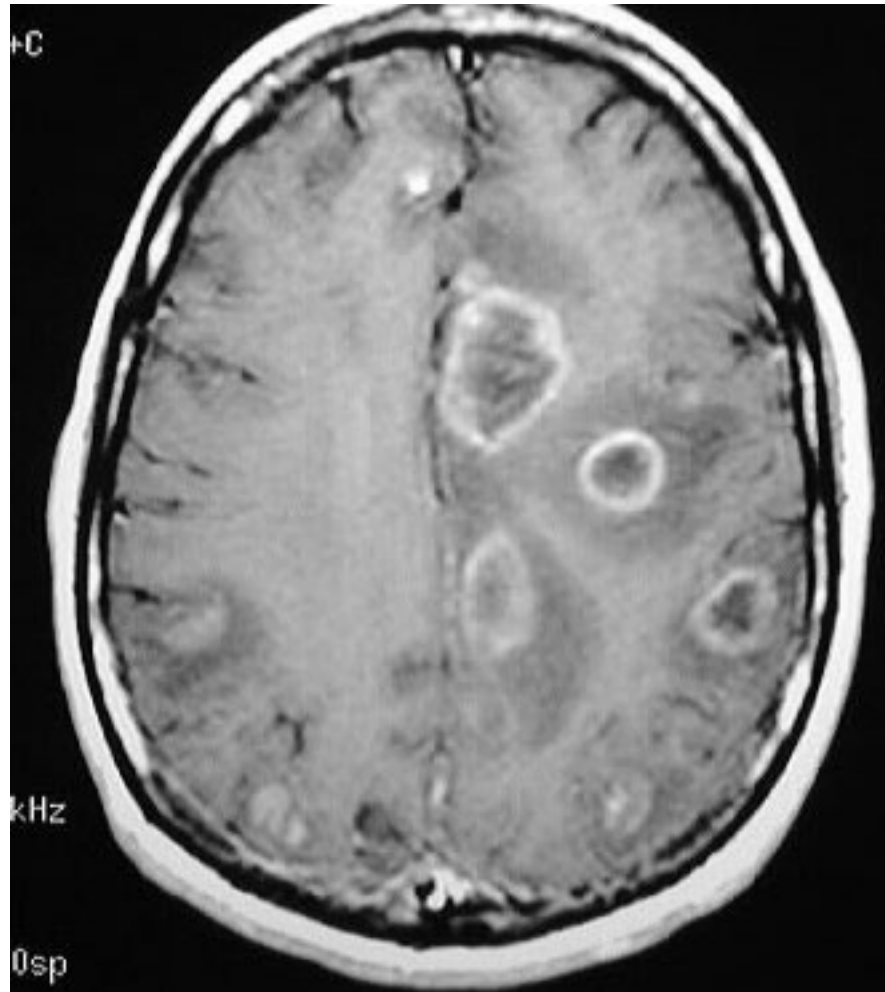
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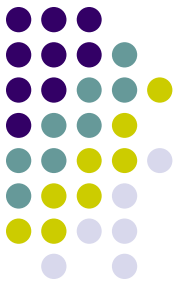
MR imaging of the brain



Uveitis: *Toxoplasmosis*



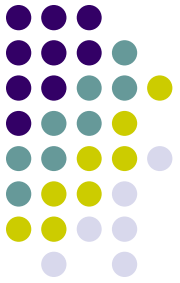
CNS toxo: Ring-enhancing lesions



The following slides comprised a [previous version](#) of the toxo review slide-set. This previous version is, frankly, not as good as the one you just completed, and there's no new info of significance in it. That being said, it might be worth your time to go through it. (Or not—your call.)

Q

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #?

A

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1

Q

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1

In the US, what is the prevalence for toxoplasmosis infection?

A

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1

*In the US, what is the prevalence for toxoplasmosis infection?
20-25%*

Q

Toxoplasmosis



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Of Americans who are infected, what percent have ocular dz?

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Of Americans who are infected, what percent have ocular dz?
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Toxoplasmosis



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What country has the highest toxoplasmosis prevalence rate?

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Brazil, at about 85% (France is really high as well)

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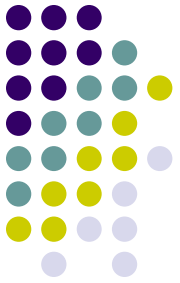
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Is ocular toxoplasmosis known to present with anterior segment signs?

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Toxoplasmosis



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They are typically granulomatous in appearance. However, toxoplasmosis is known to produce one word KP as well.

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When the anterior segment is involved, what appearance is typical for the KP?

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Which four uveitides are associated with stellate KP?

--?

--?

--?

--Toxoplasmosis

A

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Which four uveitides are associated with stellate KP?

- FHI
- HSV
- VZV
- Toxoplasmosis

Q

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1
- Classic description of the posterior pole exam in toxoplasmosis:

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Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1
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Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1
- Classic description of the posterior pole exam in toxoplasmosis: **'Headlight in the fog'**

In terms of the Headlight in the fog appearance...
The headlight =
The fog =

A

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1
- Classic description of the posterior pole exam in toxoplasmosis: **'Headlight in the fog'**

In terms of the Headlight in the fog appearance...
The headlight = the white toxo lesion
The fog = the dense overlying vitritis

Q

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1
- Classic description of the posterior pole exam in toxoplasmosis: 'Headlight in the fog'
- The toxo organism is an

obligate vs
facultative

A

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intra- vs
extracellular

A

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- Classic description of the posterior pole exam in toxoplasmosis: 'Headlight in the fog'
- The toxo organism is an obligate intracellular

bug-host
relationship

A

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1
- Classic description of the posterior pole exam in toxoplasmosis: 'Headlight in the fog'
- The toxo organism is an obligate intracellular parasitic

class of bug

A

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1
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What is the full name of the organism?

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Toxoplasma gondii

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The cat

Q

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1
- Classic description of the posterior pole exam in toxoplasmosis: 'Headlight in the fog'
- The toxo organism is an obligate intracellular parasitic protozoan
- Can represent re-activation of disease, or newly-acquired infection

refers to a stage of life

A

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1
- Classic description of the posterior pole exam in toxoplasmosis: 'Headlight in the fog'
- The toxo organism is an obligate intracellular parasitic protozoan
- Can represent re-activation of congenital disease, or newly-acquired infection



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- Classic description of the posterior pole exam in toxoplasmosis: 'Headlight in the fog'
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It had long been thought that virtually all cases of ocular toxo represented reactivation of congenital disease. However, recent research indicates a sizeable proportion of cases are acquired post-natally, with many experts now convinced that the **majority** of cases are acquired in this fashion.

Q

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of postnatal infection? *What is the typical DFE finding in congenital toxoplasmosis?*
- Classic findings in toxoplasmosis exam
- The toxoplasmosis is a *parasitic* *molecular*
- Can represent re-activation of *congenital* disease, or newly-acquired infection

A

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior uveitis? **Q114**
- Classic finding in toxoplasmosis: **What is the typical DFE finding in congenital toxoplasmosis?**
A chorioretinal scar
- The toxoplasma parasite is a **unicellular** parasite.
- Can represent re-activation of **congenital** disease, or newly-acquired infection

Q

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior uveitis? Q114
- Classic finding in toxoplasmosis exam
 - What is the typical DFE finding in congenital toxoplasmosis?
A chorioretinal scar
 - Where in the retina is the C-R scar usually found?
- The toxoplasma parasite is a unicellular parasite.
- Can represent re-activation of congenital disease, or newly-acquired infection

A

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior uveitis? **Q114**
- Classic finding in toxoplasmosis? **exam**
 - What is the typical DFE finding in congenital toxoplasmosis?*
A chorioretinal scar
 - Where in the retina is the C-R scar usually found?*
The macula
- The toxoplasma parasite is a **reticular** parasite.
- Can represent re-activation of **congenital** disease, or newly-acquired infection

Q

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior uveitis?

What is the typical DFE finding in congenital toxoplasmosis?

A chorioretinal scar

- Classic finding on fundus exam in toxoplasmosis?

Where in the retina is the C-R scar usually found?

The macula

- The toxoplasmosis lesion is usually macular?

Are the lesion usually unilateral, or bilateral?

- Can represent re-activation of congenital disease, or newly-acquired infection

A

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior uveitis?

What is the typical DFE finding in congenital toxoplasmosis?

A chorioretinal scar

- Classic finding in toxoplasmosis exam

Where in the retina is the C-R scar usually found?

The macula

- The toxoplasmosis macular

Are the lesions usually unilateral, or bilateral?

They are bilateral in the majority of cases

- Can represent re-activation of congenital disease, or newly-acquired infection

Q

Toxoplasmosis



- Where does toxoplasmosis rank as a cause of posterior segment infection? #1
- Classic description of the posterior pole exam in toxoplasmosis: 'Headlight in the fog'
- The toxo organism is an obligate intracellular parasitic protozoan
- Can represent re-activation of congenital disease, or **newly-acquired infection**

What is the principal means by which newly-acquired toxoplasmosis is transmitted?



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What is the principal means by which newly-acquired toxoplasmosis is transmitted?

Via ingestion of the infectious cysts in:

-- two words ; or in

-- three words ; or in

-- three words



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What is the principal means by which newly-acquired toxoplasmosis is transmitted?

Via ingestion of the infectious cysts in:

- Undercooked meat; or in
- contaminated fruits/veggies; or in
- unpasteurized milk

A

Toxoplasmosis



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What is the principal means by which newly-acquired toxoplasmosis is transmitted?

Via ingestion of the infectious cysts in:

- Undercooked meat; or in
- contaminated fruits/veggies; or in
- unpasteurized goat's milk

Q

Toxoplasmosis



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- Classic description of the posterior pole exam in toxoplasmosis: 'Headlight in the fog'
- The toxo organism is an obligate intracellular parasitic protozoan
- Can represent re-activation of congenital disease, or newly-acquired infection
- fraction

 of AIDS patients with ocular toxo will have

non-eye
locale

 lesions

A

Toxoplasmosis



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- 1/2 of AIDS patients with ocular toxo will have CNS lesions

Q

Toxoplasmosis



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- Classic description of the posterior pole exam in toxoplasmosis: 'Headlight in the fog'
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- Can represent re-activation of congenital disease, or newly-acquired infection
- 1/2 of AIDS patients with ocular toxo will have CNS lesions--they must undergo test (classic finding—three words)

A

Toxoplasmosis



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- Classic description of the posterior pole exam in toxoplasmosis: 'Headlight in the fog'
- The toxo organism is an obligate intracellular parasitic protozoan
- Can represent re-activation of congenital disease, or newly-acquired infection
- 1/2 of AIDS patients with ocular toxo will have CNS lesions--they must undergo MRI (classic finding—ring-enhancing lesions)

Q

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...

●	structure/area 1
●	structure/area 2
●	structure/area 3

A

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...
 - macula
 - ONH
 - major retinal vessels



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...
 - macula
 - ONH
 - major retinal vessels
 - ...or in cases of severe

A

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...
 - macula
 - ONH
 - major retinal vessels
 - ...or in cases of severe vitritis

Q

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...
 - macula
 - ONH
 - major retinal vessels
 - ...or in cases of severe vitritis

What is the natural course of untreated ocular toxoplasmosis?

A

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...
 - macula
 - ONH
 - major retinal vessels
 - ...or in cases of severe vitritis

*What is the natural course of **untreated** ocular toxoplasmosis?*

It is a self-limited disease in the immunocompetent--lesions will begin healing within a month or two

Q

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...
 - macula
 - ONH
 - major retinal vessels
 - ...or in cases of severe vitritis
 - Treat with
 - 1) antibiotic
 - 2) anti-malarial, actually
 - 3)

A

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...
 - macula
 - ONH
 - major retinal vessels
 - ...or in cases of severe vitritis
 - Treat with
 - 1) Sulfadiazine
 - 2) Pyrimethamine
 - 3)

Q

Toxoplasmosis



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 - Treat active infection if threatening the...
 - macula
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 - ...or in cases of severe vitritis
 - Treat with
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 - 2) Pyrimethamine
 - 3)

(administration schedule)
Give a [] , then [] until resolved (usually takes [] time)

A

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...
 - macula
 - ONH
 - major retinal vessels
 - ...or in cases of severe vitritis
 - Treat with
 - 1) Sulfadiazine
 - 2) Pyrimethamine
 - 3)
- (administration schedule)
- Give a loading dose, then qd until resolved (usually takes 4-6 weeks)

Q

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...
 - macula
 - ONH
 - major retinal vessels
 - ...or in cases of severe vitritis
 - Treat with
 - 1) Sulfadiazine
 - 2) Pyrimethamine

(administration schedule)

Give a loading dose, then qd until resolved (usually takes 4-6 weeks)

Side effect: serious, systemic
 - 3)

A

Toxoplasmosis



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 - Treat active infection if threatening the...
 - macula
 - ONH
 - major retinal vessels
 - ...or in cases of severe vitritis
 - Treat with
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 - 2) Pyrimethamine

(administration schedule)

Give a loading dose, then qd until resolved (usually takes 4-6 weeks)

Side effect: Bone-marrow suppression

 - 3)

Q

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...
 - macula
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 - ...or in cases of severe vitritis
 - Treat with
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(administration schedule)
Give a loading dose, then qd until resolved (usually takes 4-6 weeks)

Side effect: Bone-marrow suppression; to prevent, give...
 - 3)

two words

A

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...
 - macula
 - ONH
 - major retinal vessels
 - ...or in cases of severe vitritis
 - Treat with
 - 1) Sulfadiazine
 - 2) Pyrimethamine

(administration schedule)

Give a loading dose, then qd until resolved (usually takes 4-6 weeks)

Side effect: Bone-marrow suppression; to prevent, give...
 - 3) Folinic acid

Q

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...
 - macula
 - ONH
 - major retinal vessels
 - ...or in cases of severe vitritis
 - Treat with
 - 1) Sulfadiazine
 - 2) Pyrimethamine

(administration schedule)
Give a loading dose, then qd until resolved (usually takes 4-6 weeks)

Side effect: Bone-marrow suppression; to prevent, give...

 - 3) Folinic acid
 - 3) anti-inflammatory

Not a typo!

A

Toxoplasmosis



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(administration schedule)
Give a loading dose, then qd until resolved (usually takes 4-6 weeks)

Side effect: Bone-marrow suppression; to prevent, give...

 - 3) Folinic acid
 - 3) Prednisone

Not a typo!

Q

Toxoplasmosis



- Treatment of ocular toxoplasmosis:
 - Treat active infection if threatening the...

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- ONH
- major retinal vessels

- ...or in cases of severe vitritis

- Treat with

1) Sulfadiazine

2) Pyrimethamine

Side effect: Bone-ma

3) Folinic acid

3) Prednisone

(administration schedule)

Give a loading dose, then qd until resolved (usually takes 4-6 weeks)

With respect to treating ocular toxoplasmosis, this combo of meds is known as the classic...what?

A

Toxoplasmosis



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 - 1) Sulfadiazine
 - 2) Pyrimethamine
 - 3) Folinic acid
 - 3) Prednisone

(administration schedule)

Give a loading dose, then qd until resolved (usually takes 4-6 weeks)

With respect to treating ocular toxoplasmosis, this combo of meds is known as the classic...what? 'Triple therapy'

Q

Toxoplasmosis



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 - Side effect: Bone-ma
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 - 3) Prednisone

(administration schedule)

Are alternative therapies available?



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(administration schedule)

Are alternative therapies available?

Yes, the following have been found to be efficacious alternatives:

--?

--?

--?

A

Toxoplasmosis



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(administration schedule)

Are alternative therapies available?

Yes, the following have been found to be efficacious alternatives:

--Trimethoprim-sulfamethoxazole

--Azithromycin

--Clindamycin

Q

Toxoplasmosis



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 - macula
 - ONH
 - major retinal vessels
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Do HIV/AIDS pts require long-term suppressive therapy?

A

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Q

Toxoplasmosis

Does treatment eradicate the infection?

- Treat with

1) Sulfadiazine

2) Pyrimethamine

Side effect: Bone-ma

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Toxoplasmosis

Does treatment eradicate the infection?

No

Why not? Is the toxo bug not susceptible?

● Treat with

1) Sulfadiazine

2) Pyrimethamine

Side effect: Bone-ma

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3) Prednisone

(administration schedule)

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A

Toxoplasmosis

Does treatment eradicate the infection?

No

Why not? Is the toxo bug not susceptible?

The active bug (the *tachyzoite*) is quite susceptible. However, the bradyzoite form (aka *tissue cyst*) is impervious to the anti-infectives; thus, the infection is incurable.

● Treat with

1) Sulfadiazine

2) Pyrimethamine

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Does treatment prevent recurrences?

● Treat with

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2) Pyrimethamine

Side effect: Bone-ma

3) Folinic acid

3) Prednisone

(administration schedule)

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What is the purpose of anti-infective treatment, then?

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Does treatment prevent recurrences?

No

What is the purpose of anti-infective treatment, then?

Practically speaking, the purpose of treatment is to allow for the administration of steroids (to reduce inflammation) without fear of exacerbating the infection itself

● Treat with

1) Sulfadiazine

2) Pyrimethamine

Side effect: Bone-ma

3) Folinic acid

3) Prednisone

(administration schedule)

Are alternative therapies available?

Yes, the following have been found to be efficacious alternatives:

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Yes

Q

Toxoplasmosis

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1) Sulfadiazine

(administration schedule)

Are alternative therapies available?

The triple therapy includes prednisone. Is it appropriate to use peri- or intraocular steroids instead?

Side effect: Bone-ma

--Azithromycin
--Clindamycin

3) Folinic acid

3) Prednisone

Do HIV/AIDS pts require long-term suppressive therapy?
Yes

A

Toxoplasmosis

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Practically speaking, the purpose of treatment is to allow for the administration of steroids (to reduce inflammation) without fear of exacerbating the infection itself

● Treat with

1) Sulfadiazine

(administration schedule)

Are alternative therapies available?

The triple therapy includes prednisone. Is it appropriate to use peri- or intraocular steroids instead?

No! Peri/intraocular steroids can result in inflammation so severe as to cause loss of the eye!

Side effect: Bone-ma

--Azithromycin

--Clindamycin

3) Folinic acid

3) Prednisone

Do HIV/AIDS pts require long-term suppressive therapy?

Yes

Q

Toxoplasmosis

Does treatment eradicate the infection?

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Does treatment prevent **recurrences**?

No

When recurrence occurs, what relationship usually holds between the new lesion and the original one?

Practically speaking, the purpose of treatment is to allow for the administration of steroids (to reduce inflammation) without fear of exacerbating the infection itself

● Treat with

1) Sulfadiazine

2) Pyrimethamine

Side effect: Bone-ma

3) Folinic acid

3) Prednisone

(administration schedule)

Are alternative therapies available?

Yes, the following have been found to be efficacious alternatives:

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Yes

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The active bug (the *tachyzoite*) is quite susceptible. However, the bradyzoite form (aka *tissue cyst*) is impervious to the anti-infectives; thus, the infection is incurable.

Does treatment prevent **recurrences**?

No

When recurrence occurs, what relationship usually holds between the new lesion and the original one?

The recurrence will occur at the border of the original lesion (which is now a scar)

Practically speaking, the purpose of treatment is to allow for the administration of steroids (to reduce inflammation) without fear of exacerbating the infection itself

● Treat with

1) Sulfadiazine

2) Pyrimethamine

Side effect: Bone-ma

3) Folinic acid

3) Prednisone

(administration schedule)

Are alternative therapies available?

Yes, the following have been found to be efficacious alternatives:

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Yes