

Diagnosis of uveitis

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Uveitis, Medical Retina, General Comprehensive

20 July 2020



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No financial disclosures



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Aims

- Definition
- Classification & descriptors
- Common uveitic syndromes
- Retinal imaging in uveitis



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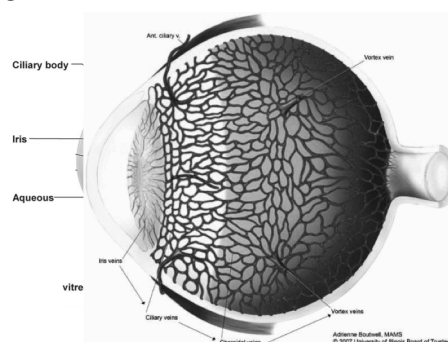


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What is uveitis?

“*uvea*” (Latin) meaning grape

“-itis” meaning inflammation



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Causes of uveitis

- Infective
 - Bacteria, fungi, virus, protozoa
- Immune-mediated
 - With or without systemic disease
- Masquerade, i.e. secondary to another cause
 - e.g. retinal detachment, lymphoma
- “Undifferentiated”



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Standardization of Uveitis Nomenclature for Reporting Clinical Data. Results of the First International Workshop

THE STANDARDIZATION OF UVEITIS NOMENCLATURE (SUN) WORKING GROUP



SUN Working Group. Am J Ophthalmol 2005; 140:509-516
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TABLE 1. The SUN* Working Group Anatomic Classification of Uveitis		
Type	Primary Site of Inflammation [†]	Includes
Anterior uveitis	Anterior chamber	Iritis Iridocyclitis Anterior cyclitis
Intermediate uveitis	Vitreous	Pars planitis Posterior cyclitis Hyalitis
Posterior uveitis	Retina or choroid	Focal, multifocal, or diffuse choroiditis Chorioretinitis Retinochoroiditis Retinitis Neuroretinitis
Panuveitis	Anterior chamber, vitreous, and retina or choroid	

*SUN = Standardization of uveitis nomenclature.
[†]As determined clinically. Adapted from the International Uveitis Study Group anatomic classification in reference 1.

TABLE 2. The SUN* Working Group Descriptors of Uveitis		
Category	Descriptor	Comment
Onset	Sudden Insidious	
Duration	Limited Persistent	≤3 months duration >3 months duration
Course	Acute Recurrent Chronic	Episode characterized by sudden onset and limited duration Repeated episodes separated by periods of inactivity without treatment ≥3 months in duration Persistent uveitis with relapse in <3 months after discontinuing treatment

*SUN = Standardization of uveitis nomenclature.

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Most uveitides can be characterised by...

- **Anatomic** location
- **Morphology**
- **Onset:** sudden vs insidious
- **Laterality:** unilateral vs unilateral alternating vs bilateral (asynchronous vs simultaneous)
- **Course:** acute, recurrent, chronic
- **Host/systemic disease**
 - Child vs adult
 - Immunocompetent vs immunocompromised







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TABLE 1. Major Uveitic Diseases			
Anatomic Location	Infectious	Systemic Disease	No Systemic Disease
Anterior uveitis	Cytomegalovirus anterior uveitis Herpes simplex anterior uveitis Varicella zoster anterior uveitis Syphilis	HLA-B27-associated uveitis Juvenile idiopathic arthritis-associated uveitis Behçet disease Sarcoidosis	Fuchs uveitis syndrome
Intermediate	Syphilis Lyme disease	Multiple sclerosis-associated uveitis Sarcoidosis	Pars planitis
Posterior uveitis	Toxoplasmic retinitis Cytomegalovirus retinitis Acute retinal necrosis Progressive outer retinal necrosis Diffuse unilateral subacute neuroretinitis Syphilis Lyme disease Tuberculosis Bartonella neuroretinitis	Sarcoidosis	Serpiginous choroiditis Acute posterior multifocal placoid pigment epitheliopathy Multiple evanescent white dot syndrome Birdshot chorioretinitis Multifocal choroiditis with panuveitis Punctate inner choroiditis Relentless placoid choroiditis ("ampiginous")
Panuveitis	Syphilis Lyme disease	Behçet disease Vögt-Koyanagi-Harada disease Sarcoidosis	Sympathetic ophthalmia

Jabs and Busingye. Am J Ophthal 2013; 156:228-236

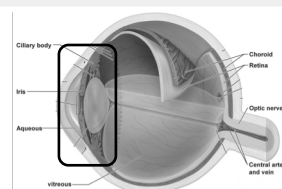

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Anterior uveitis syndromes

- HLA-B27-associated anterior uveitis
- Fuchs' heterochromic iridocyclitis
- Posner-Schlossman syndrome
- Herpetic anterior uveitis
- JIA-associated uveitis
- Idiopathic/undifferentiated

Anterior uveitis (AU) - symptoms

Acute	Chronic
Redness	None
Pain	Blurred vision
Photophobia	
Blurred vision	



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Anterior uveitis - signs

- Ciliary flush
- Keratic precipitates
 - Fine, stellate, mutton-fat (granulomatous)
 - Inferior (Arlt triangle) vs pan-corneal
- Anterior chamber cells, flare, fibrin, hypopyon
- Posterior synechiae/pigment on anterior lens capsule
- Pupillary miosis
- Iris nodules
- Iris transillumination
- Anterior vitreous cells
- Increased or decreased intraocular pressure



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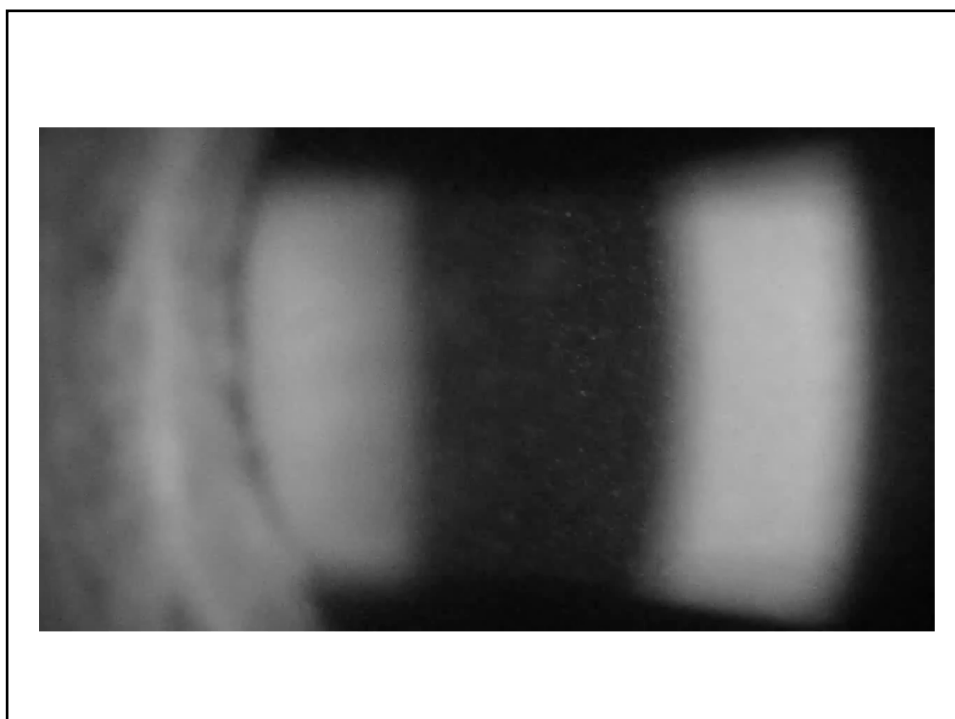
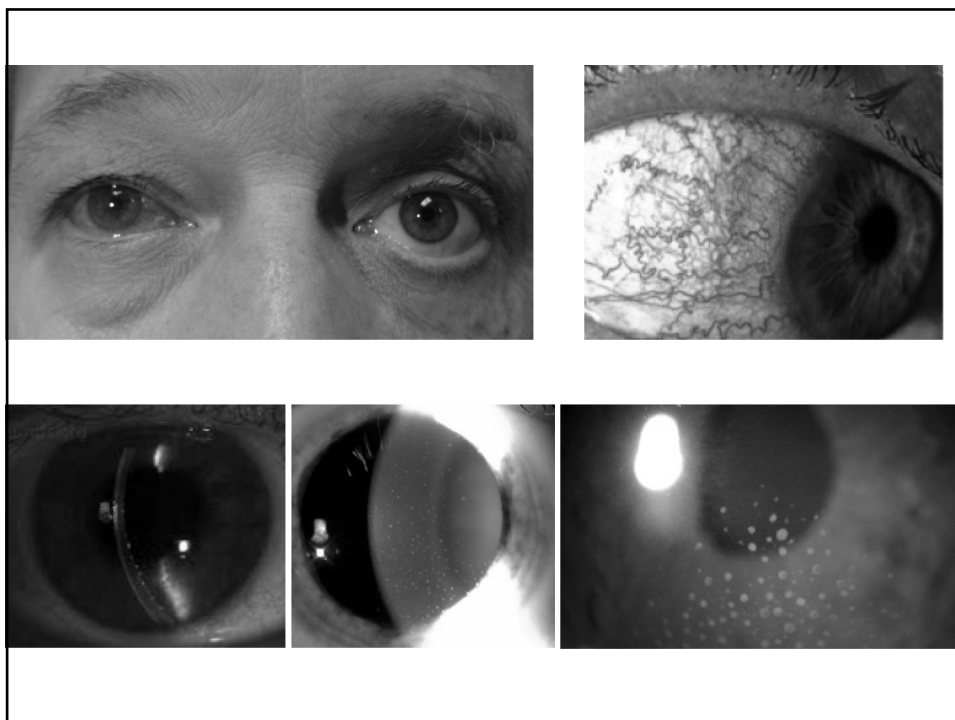


TABLE 3. The SUN* Working Group Grading Scheme for Anterior Chamber Cells

Grade	Cells in Field†
0	<1
0.5+	1-5
1+	6-15
2+	16-25
3+	26-50
4+	>50

*SUN = Standardization of uveitis nomenclature.
†Field size is a 1 mm by 1 mm slit beam.

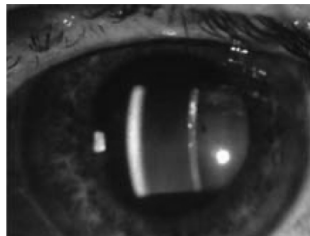




TABLE 4. The SUN* Working Group Grading Scheme for Anterior Chamber Flare


Grade	Description
0	None
1+	Faint
2+	Moderate (iris and lens details clear)
3+	Marked (iris and lens details hazy)
4+	Intense (fibrin or plastic aqueous)


Adapted from reference 12.
*SUN = Standardization of uveitis nomenclature.






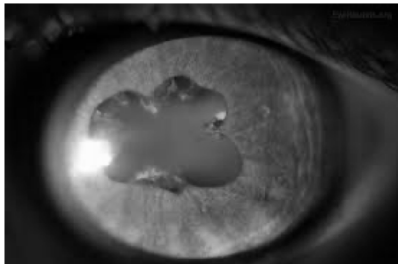
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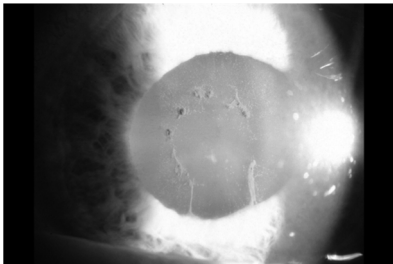


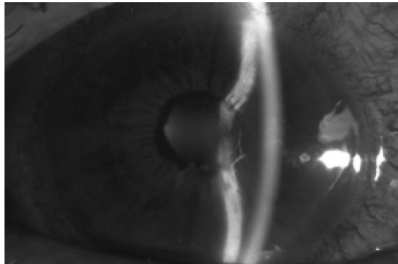


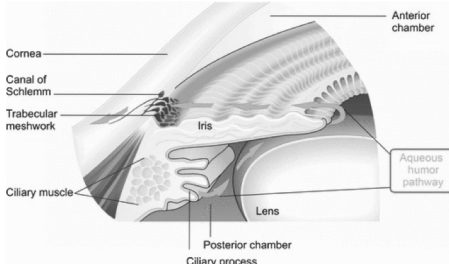


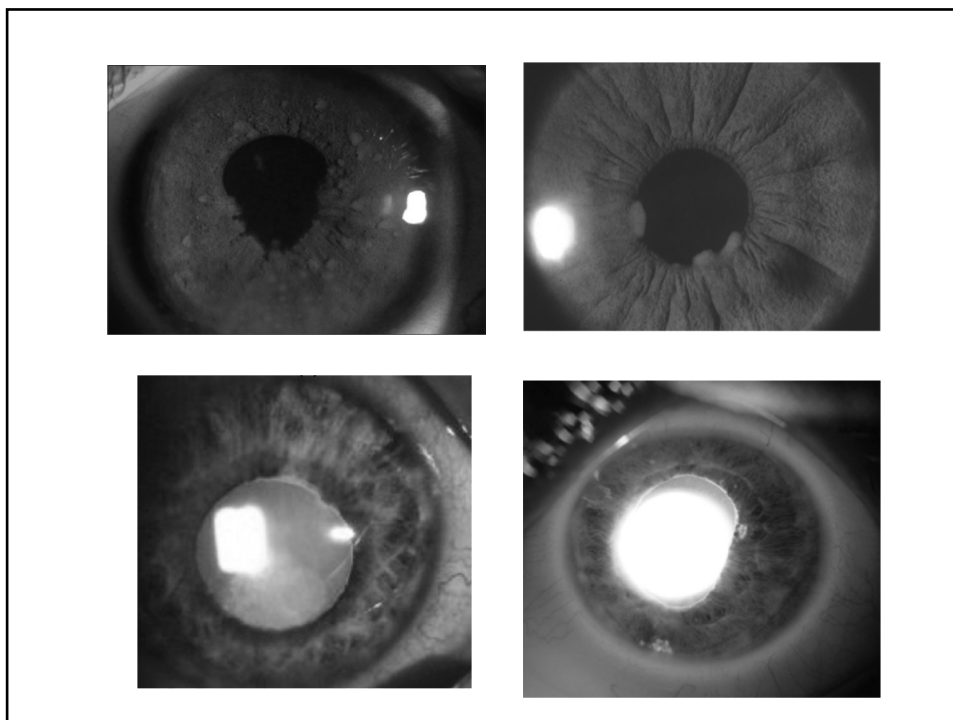
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Anterior uveitis – chronic signs/complications

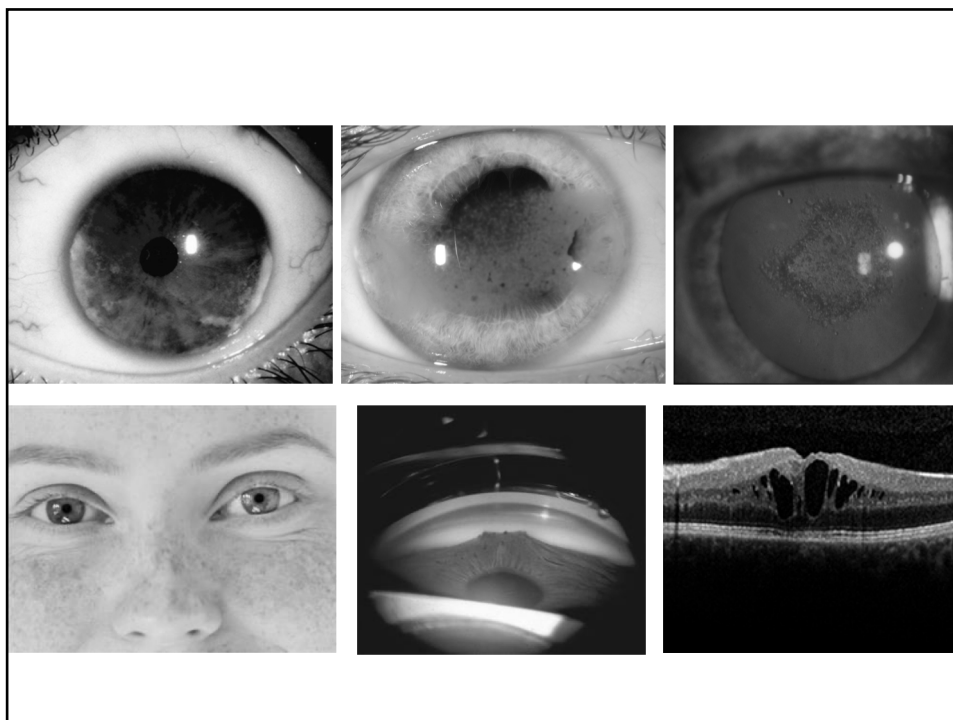
- Band keratopathy
- Pigmented keratic precipitates
- Posterior subcapsular cataract
- Heterochromia
- Peripheral anterior synechiae
- (cystoid macular oedema)




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Fuchs' heterochromic iridocyclitis

Symptoms	Signs
Lack of symptoms Occasionally floaters/blurred vision 	Heterochromia White eye Small stellate KPs, diffuse, pan-corneal AC \pm anterior vit cells Diffuse iris atrophy "moth-eaten" Fragile iris vessels "Amsler sign" Koeppe nodules Cataract Glaucoma Do not get CMO



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Posner-Schlossman syndrome

Symptoms	Signs
Mild discomfort Halos around lights Blurred vision (slight)	Corneal epithelial oedema IOP 40-80 mmHg AC minimal reaction Few KPs (1-3) Diffuse iris atrophy in 1/3 rd



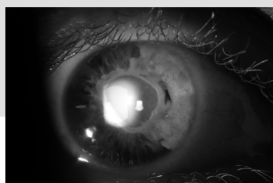
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Herpetic iritis

Symptoms	Signs
Discomfort Photosensitivity Blurred vision Hx of HZO rash/cold sores	Corneal anaesthesia AC cells – mild-to-moderate KPs – stellate, granulomatous, non-granulomatous Sectoral/diffuse iris transillumination Iris haemorrhage Raised intraocular pressure Keratouveitis



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Juvenile idiopathic arthritis-associated uveitis

Symptoms	Signs
Lack of symptoms Occasionally floaters/blurred vision	White eye AC cells Posterior synechiae Chronic inflammation - Band keratopathy - Cataract - CMO Glaucoma



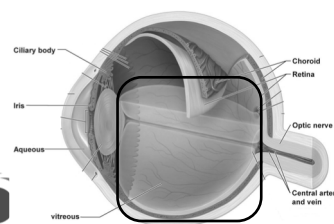
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Intermediate uveitis (IU) - symptoms

- Blurred vision
- Floaters



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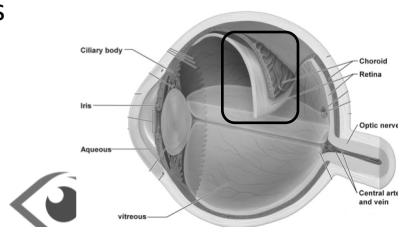


Posterior uveitis - symptoms

Retinitis	Choroiditis
Floaters	Photopsias
Blurred vision	Coloured swirling lights
Reduced field of vision	Visual field defects

Can also get associated anterior uveitis

- Red eye
- Pain
- Photophobia



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Imaging

- **OCT**
 - Cystoid macular oedema
 - Subretinal fluid
 - Retinitis/choroiditis
 - Choroidal thickness
 - (vitritis)
 - Disc swelling
- **B-scan ultrasound**
 - Scleral thickness (choroidal thickness)
- **Fluorescein angiography**
 - Vasculitis
 - Cystoid macular oedema
 - Optic disc leakage
- **Indocyanine green**
 - Choroidal lesions
 - Choroidal vessels
- **Autofluorescence**
 - RPE dysfunction
 - Active areas

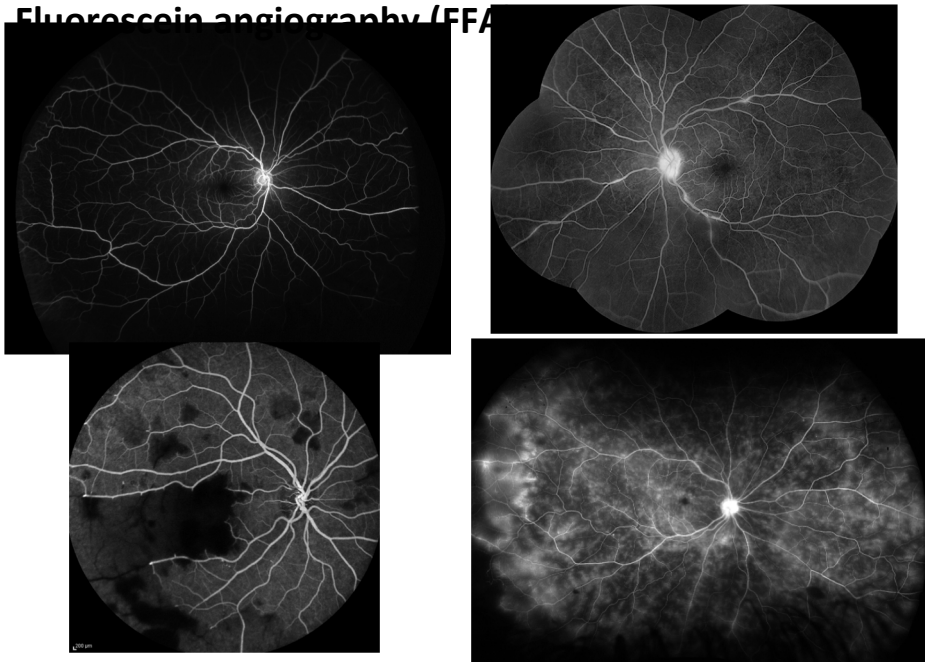


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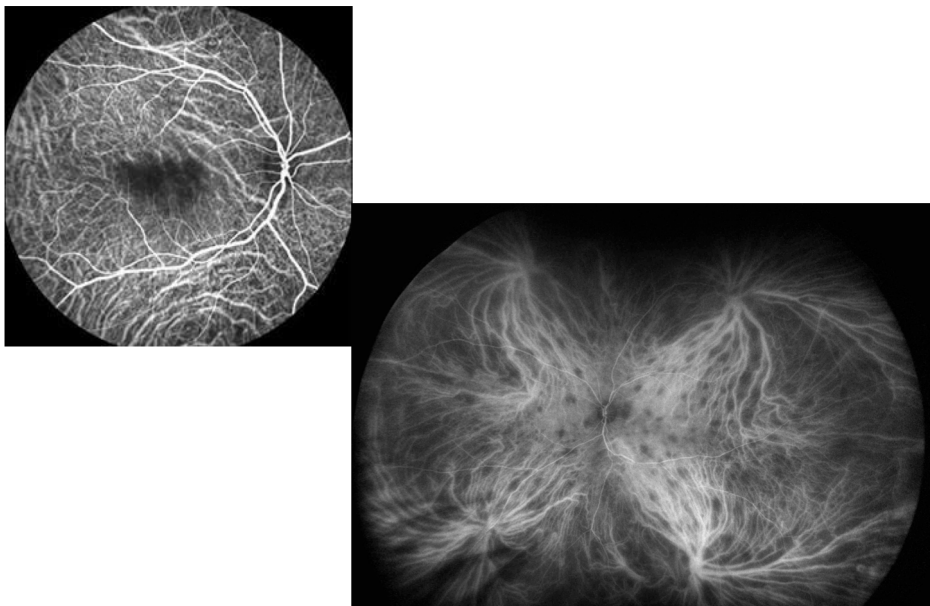


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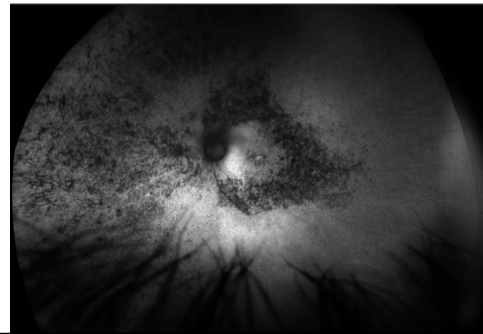
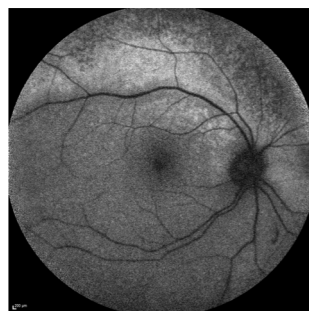
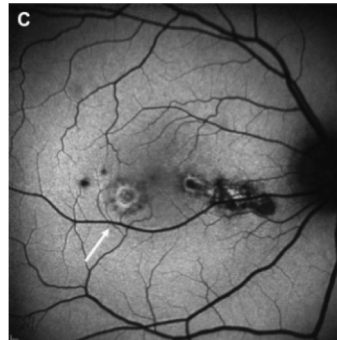
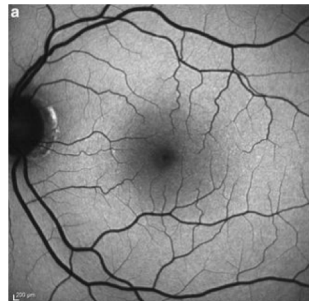
Fluorescein angiography (FFA)



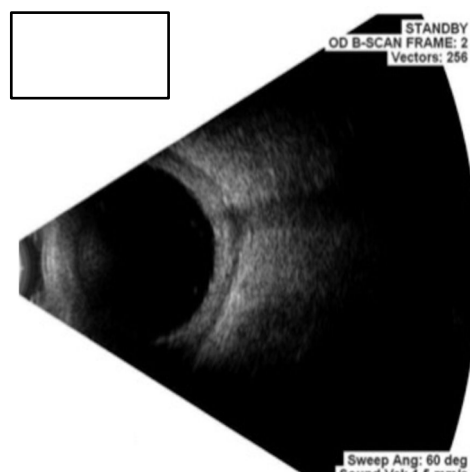
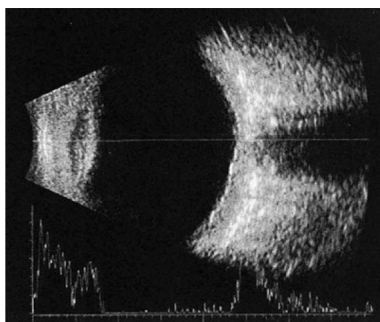
Indocyanine green (ICG)



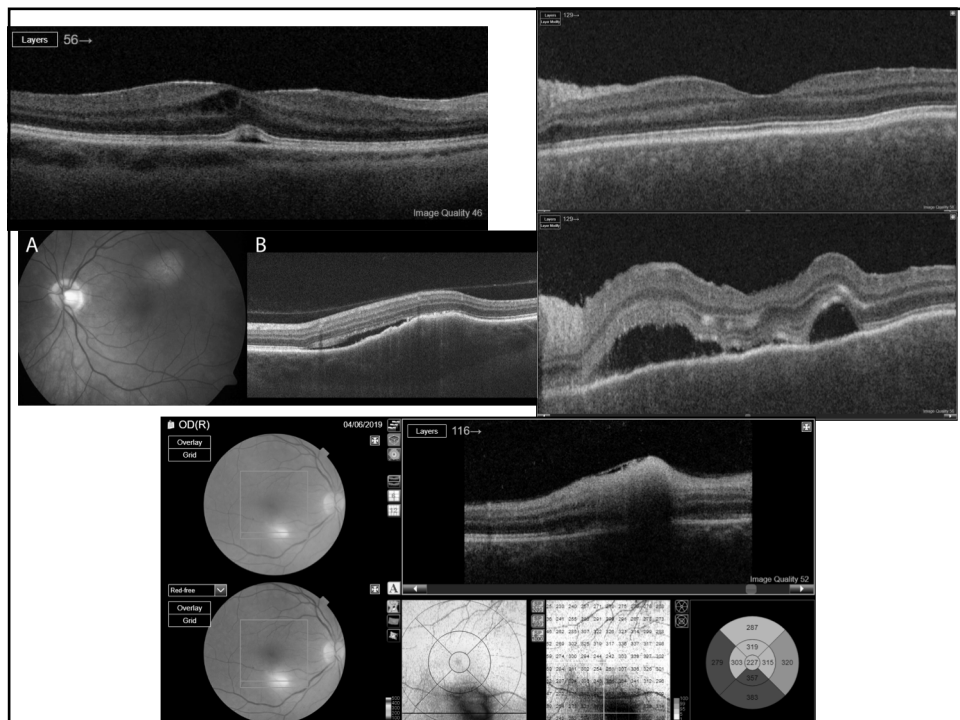
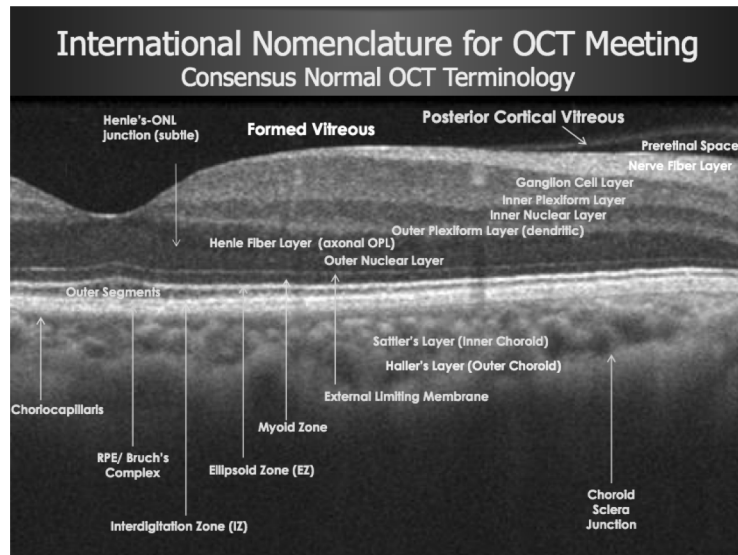
Autofluorescence



B-scan ultrasound



OCT



Take home messages

- Uveitis is a big topic...but don't be scared. Look at the SUN. (actually, please don't)
- Consider if inflammation is anterior, intermediate, posterior, or panuveitis
- Anterior uveitis syndromes
- OCT findings in uveitis



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Thank you

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