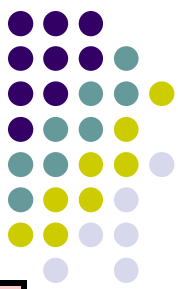
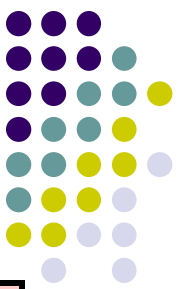


A

Corneal ectasias: Fill in the table



	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip



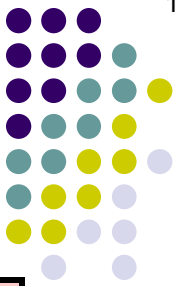
Q

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>			

A

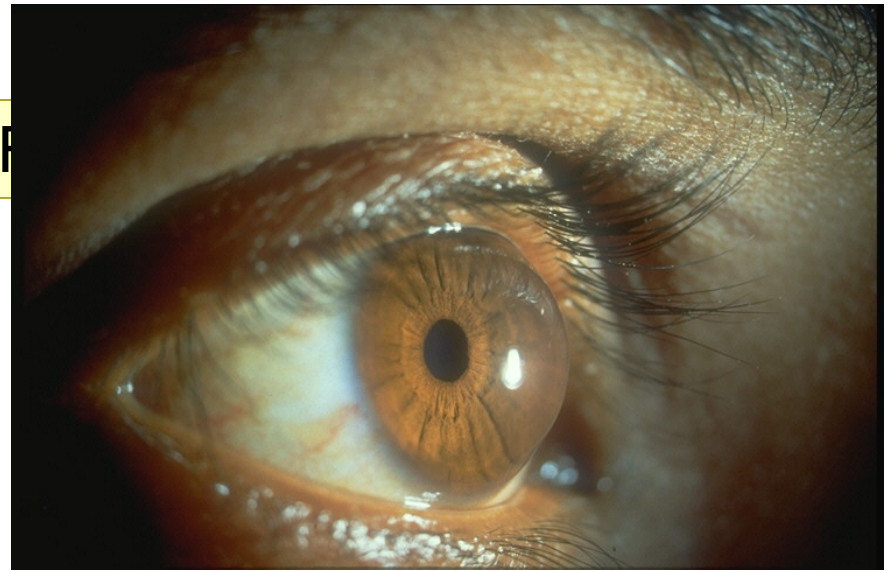
Corneal ectasias: Fill in the table



	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>	At thinning	Global	Above thinning

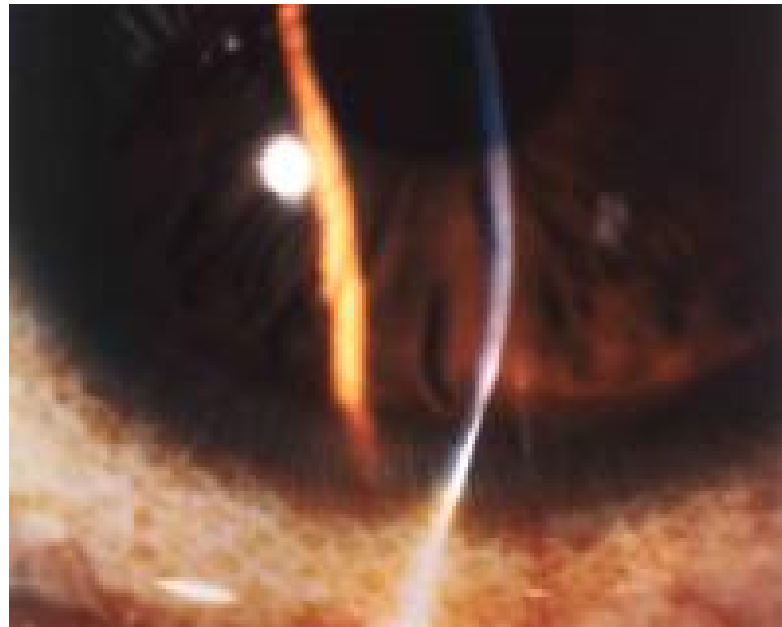


ias: P

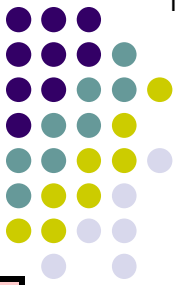


KCN: Protrudes at thinned area

Keratoglobus: Protrudes globally



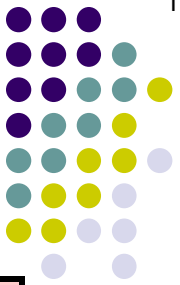
Pellucid: Protrudes *above* thinned area



Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>	At thinning	Global	Above thinning

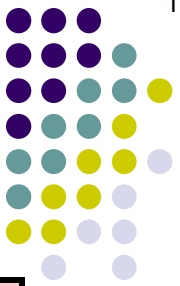
Make sure you take note of this! It is literally the only ectasia-related factoid that authors of the *Cornea* book felt was worthy of mention in the *Highlights* section of the ectasia/dystrophy chapter!



Q

Corneal ectasias: Fill in the table

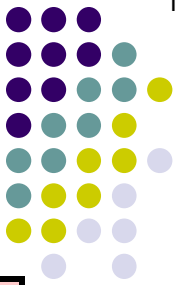
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>			



A

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes



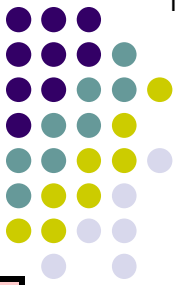
Q

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>What is the eponymous name of the iron line in KCN?</i>			Uncommon
			20-40
			Inferior peripheral strip
			Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes

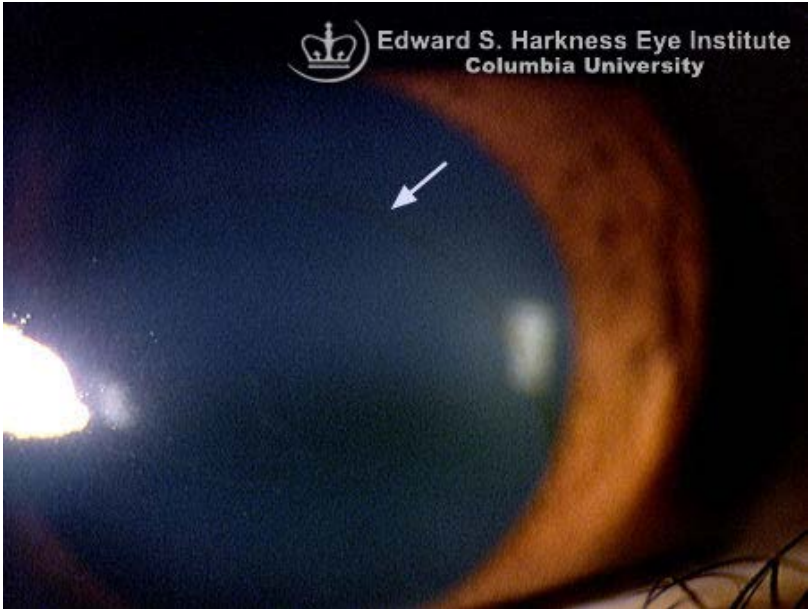
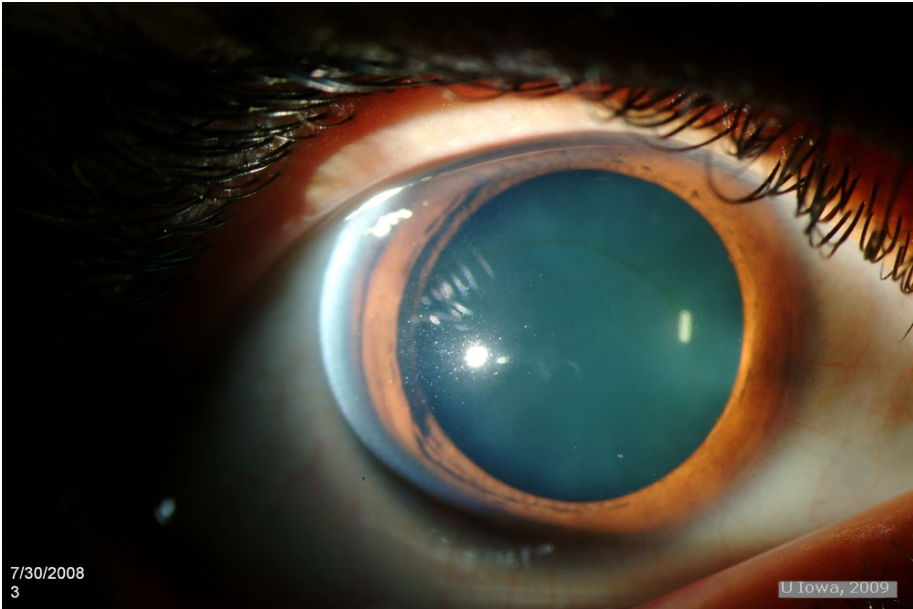
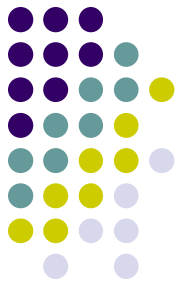
A

Corneal ectasias: Fill in the table



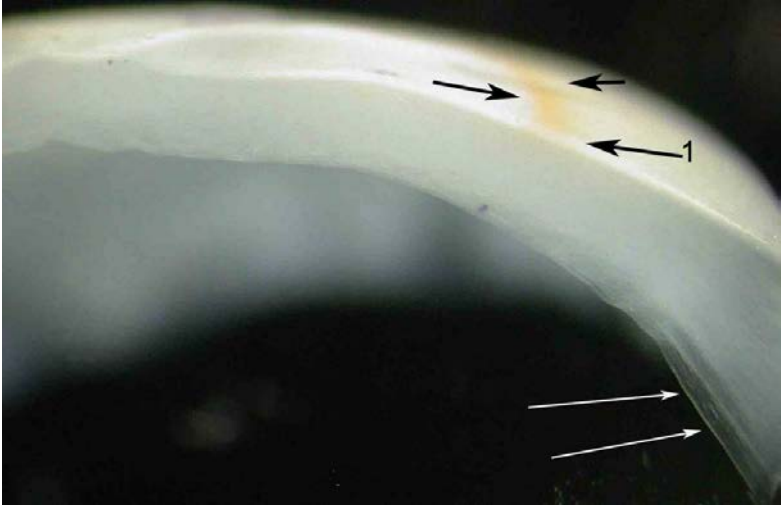
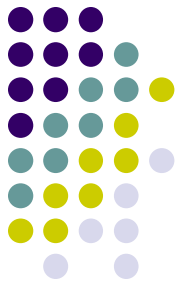
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>What is the eponymous name of the iron line in KCN?</i>			
Fleischer ring			Uncommon
			20-40
			Inferior peripheral strip
			Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes

Corneal ectasias: Fill in the table



KCN: Fleischer ring

Corneal ectasias: Fill in the table



Gross photo. The brown pigment is oxidized iron within the epithelium, constituting the Fleischer ring. (The white arrows show Descemet's membrane.)

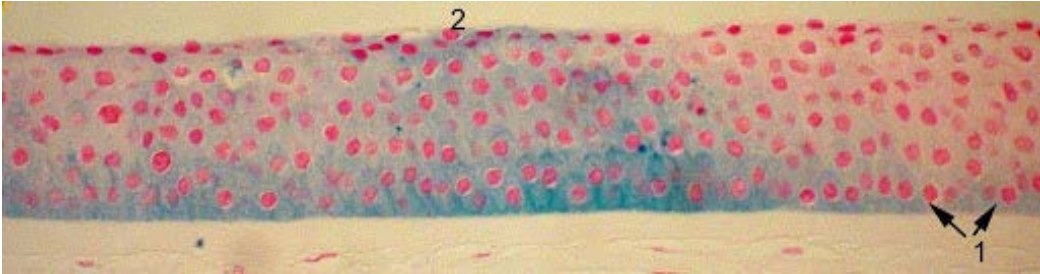
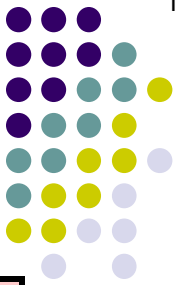


Image shows iron (blue staining at 1) in the basal layer of the epithelium, which transitions to involve the entire epithelium in long standing and severe cases (2).

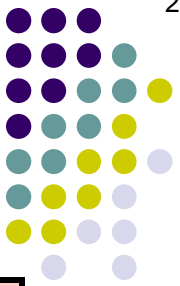
KCN: Fleischer ring



Q

Corneal ectasias: Fill in the table

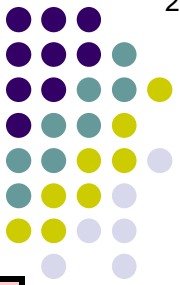
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>What is the eponymous name of the iron line in KCN?</i>			
Fleischer ring			Uncommon
<i>Where (relative to the cone) is the Fleischer ring typically found?</i>			20-40
			Inferior peripheral strip
			Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes



A

Corneal ectasias: Fill in the table

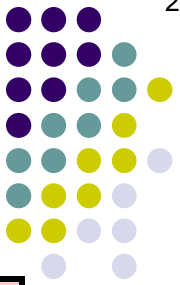
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>What is the eponymous name of the iron line in KCN?</i>			
Fleischer ring			Uncommon
<i>Where (relative to the cone) is the Fleischer ring typically found?</i>			20-40
Along its inferior extent			Inferior peripheral strip
			Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes



Q

Corneal ectasias: Fill in the table

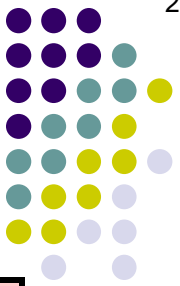
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>What is the eponymous name of the iron line in KCN?</i>			
Fleischer ring			Uncommon
<i>Where (relative to the cone) is the Fleischer ring typically found?</i>			20-40
Along its inferior extent			Inferior peripheral strip
<i>What simple slit-lamp exam maneuver can one do to enhance the visibility of a Fleischer ring?</i>			Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes



A

Corneal ectasias: Fill in the table

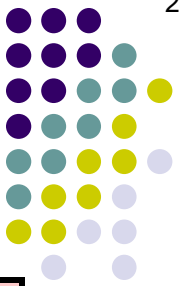
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<p><i>What is the eponymous name of the iron line in KCN?</i> Fleischer ring</p>			Uncommon
<p><i>Where (relative to the cone) is the Fleischer ring typically found?</i> Along its inferior extent</p>			20-40
<p><i>What simple slit-lamp exam maneuver can one do to enhance the visibility of a Fleischer ring?</i> Examine the cornea using the cobalt-blue light</p>			Inferior peripheral strip
			Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes



Q

Corneal ectasias: Fill in the table

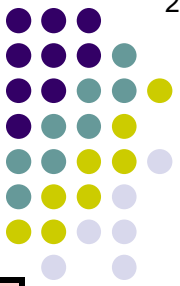
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous rupture?</i>			



A

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous rupture?</i>	Very rare	Very common	Less rare



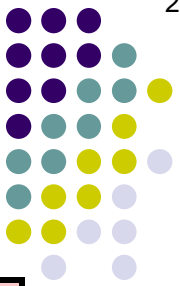
Q

Corneal ectasias: Fill in the table

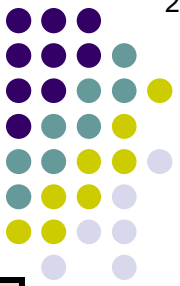
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age</i>	In the present context, what is acute hydrops?		
<i>Thin</i>			
<i>Protrusion</i>			
<i>Iron lines</i>			
<i>Spontaneous rupture?</i>	Very rare	Very common	Less rare

Q/A

Corneal ectasias: Fill in the table



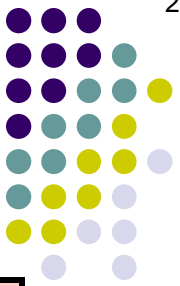
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age</i>	<p><i>In the present context, what is acute hydrops?</i> The sudden development of severe <input type="text" value="two words"/> 2ndry to a break in <input type="text" value="eponym"/></p>		
<i>Thin</i>			
<i>Protrusion</i>			
<i>Iron line</i>			
<i>Spontaneous rupture?</i>			



A

Corneal ectasias: Fill in the table

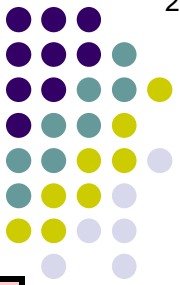
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age</i>	<p><i>In the present context, what is acute hydrops?</i> The sudden development of severe corneal edema 2ndry to a break in Descemet's</p>		
<i>Thin</i>			
<i>Protrusion</i>			
<i>Iron lines</i>			
<i>Spontaneous rupture?</i>			



Q

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age</i>	<p><i>In the present context, what is acute hydrops?</i> The sudden development of severe corneal edema 2ndry to a break in Descemet's</p> <p><i>With which ectasia is it most closely associated?</i></p>		
<i>Thin</i>			
<i>Protrusion</i>			
<i>Iron line</i>			
<i>Spontaneous rupture?</i>			

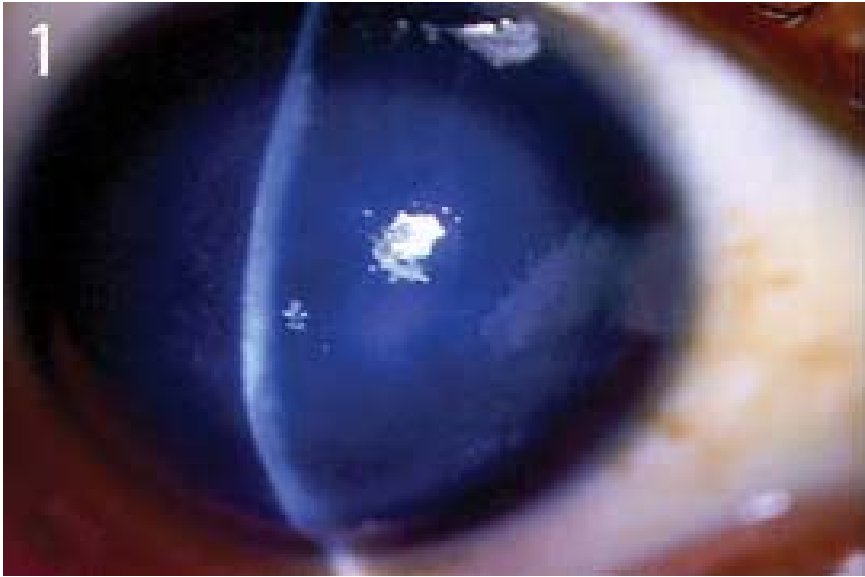
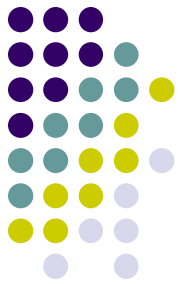


A

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age</i>	<p><i>In the present context, what is acute hydrops?</i> The sudden development of severe corneal edema 2ndry to a break in Descemet's</p> <p><i>With which ectasia is it most closely associated?</i> KCN</p>		
<i>Thin</i>			
<i>Protrusion</i>			
<i>Iron line</i>			
<i>Spontaneous rupture?</i>			

Corneal ectasias: Fill in the table



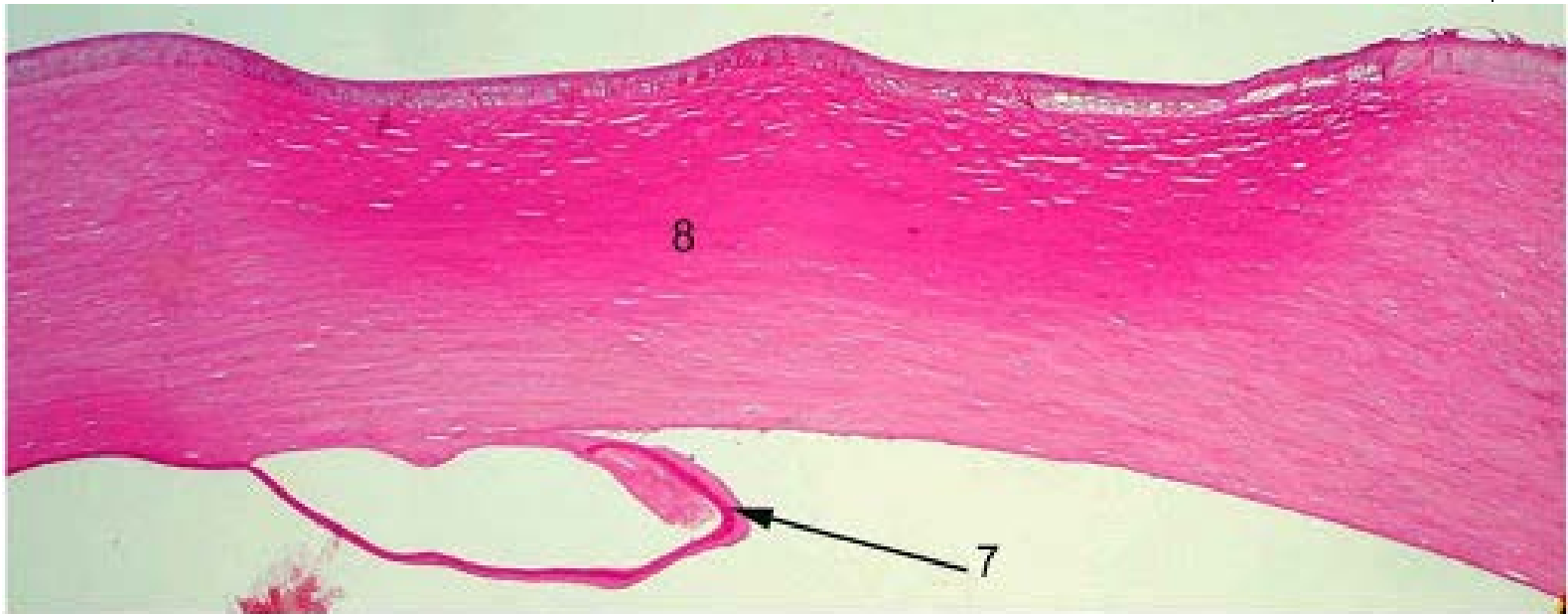
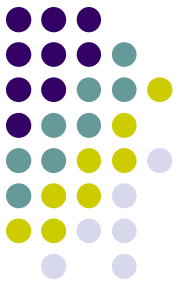
3 days after break



Scarring, same eye, 2 months+ later

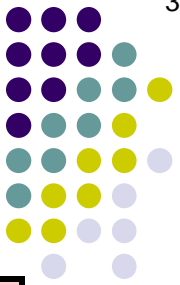
KCN: Acute hydrops

Corneal ectasias: Fill in the table



Corneal hydrops. Descemet's membrane is disrupted and folded back to rejoin the cornea in the wrong orientation (7) . There is marked stromal scarring (8).

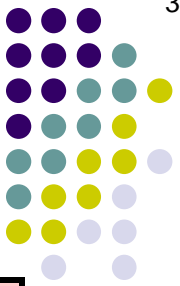
KCN: Acute hydrops



Q

Corneal ectasias: Fill in the table

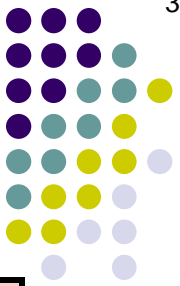
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age</i>	<p><i>In the present context, what is acute hydrops?</i> The sudden development of severe corneal edema 2ndry to a break in Descemet's</p> <p><i>With which ectasia is it most closely associated?</i> KCN</p> <p><i>Can it occur in keratoglobus and/or PMD?</i></p>		
<i>Thin</i>			
<i>Protrusion</i>			
<i>Iron line</i>			
<i>Spontaneous rupture?</i>			



A

Corneal ectasias: Fill in the table

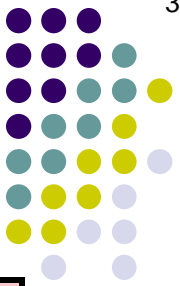
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age</i>	<p><i>In the present context, what is acute hydrops?</i> The sudden development of severe corneal edema 2ndry to a break in Descemet's</p> <p><i>With which ectasia is it most closely associated?</i> KCN</p> <p><i>Can it occur in keratoglobus and/or PMD?</i> Yes, but it is much less likely</p>		
<i>Thin</i>			
<i>Protrusion</i>			
<i>Iron line</i>			
<i>Spontaneous rupture?</i>			



Q

Corneal ectasias: Fill in the table

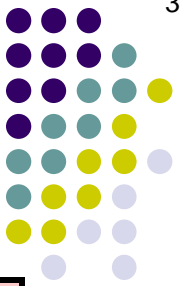
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous rupture?</i>	Very rare	Very common	Less rare
<i>Steepens where?</i>			



A

Corneal ectasias: Fill in the table

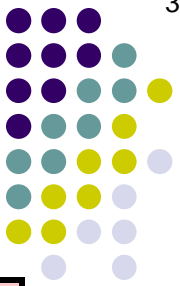
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous rupture?</i>	Very rare	Very common	Less rare
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly



Q

Corneal ectasias: Fill in the table

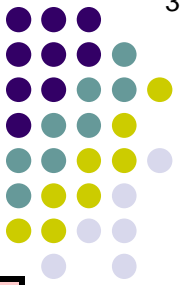
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous rupture?</i>	Very rare	Very common	Less rare
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly
<i>Munson sign?</i>			



A

Corneal ectasias: Fill in the table

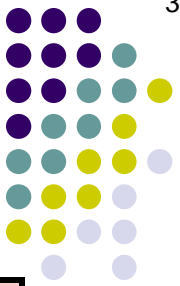
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous rupture?</i>	Very rare	Very common	Less rare
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly
<i>Munson sign?</i>	Yes	?Yes?	Yes



Q

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous</i>	What is Munson sign?		
<i>Steeper</i>			
Munson sign?	Yes	?Yes?	Yes



A

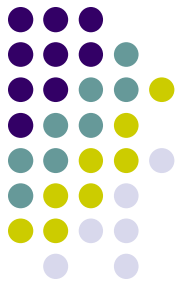
Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>Thins where?</i>	Inferior paracentral	Global, especially peripheral	Inferior peripheral strip
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous</i>			are
<i>Steepe</i>			arly
Munson sign?	Yes	?Yes?	Yes

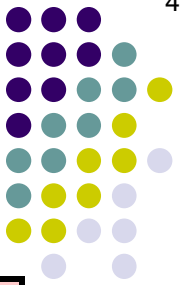
What is Munson sign?

Displacement of the central lower lid by the protruding cornea when the eye is in downgaze

Corneal ectasias: Fill in the table



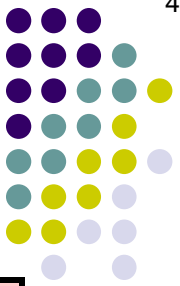
Munson's sign in KCN



Q

Corneal ectasias: Fill in the table

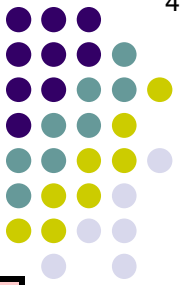
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	<i>Of the three, which has the strongest hereditary component?</i>		
<i>Age at onset</i>			
<i>Thins where?</i>			
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous rupture?</i>	Very rare	Very common	Less rare
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly
<i>Munson sign?</i>	Yes	?Yes?	Yes



A

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Of the three, which has the strongest hereditary component? KCN		
<i>Age at onset</i>			
<i>Thins where?</i>			
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous rupture?</i>	Very rare	Very common	Less rare
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly
<i>Munson sign?</i>	Yes	?Yes?	Yes



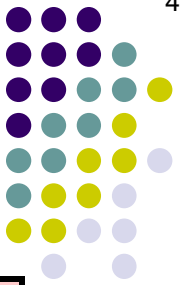
Q

Corneal ectasias: Fill in the table

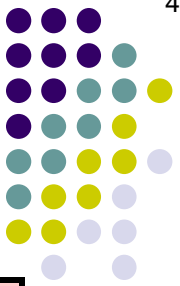
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Of the three, which has the strongest hereditary component? KCN		
<i>Age at onset</i>			
<i>Thins where?</i>			
	How strong is the hereditary component of KCN?		
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous rupture?</i>	Very rare	Very common	Less rare
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly
<i>Munson sign?</i>	Yes	?Yes?	Yes

Q/A

Corneal ectasias: Fill in the table



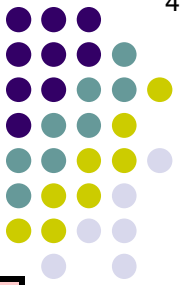
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Of the three, which has the strongest hereditary component? KCN		
<i>Age at onset</i>			
<i>Thins where?</i>			
	How strong is the hereditary component of KCN? Not very--family hx is positive in only about <input type="text" value=""/> % of cases (but that's still higher than in either keratoglobus or PMD)		
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous rupture?</i>	Very rare	Very common	Less rare
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly
<i>Munson sign?</i>	Yes	?Yes?	Yes



A

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	<p><i>Of the three, which has the strongest hereditary component?</i> KCN</p> <p><i>How strong is the hereditary component of KCN?</i> Not very--family hx is positive in only about 7% of cases (but that's still higher than in either keratoglobus or PMD)</p>		
<i>Age at onset</i>			
<i>Thins where?</i>			
<i>Protrudes where?</i>	At thinning	Global	Above thinning
<i>Iron line present?</i>	Yes	No	Sometimes
<i>Spontaneous rupture?</i>	Very rare	Very common	Less rare
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly
<i>Munson sign?</i>	Yes	?Yes?	Yes



Q

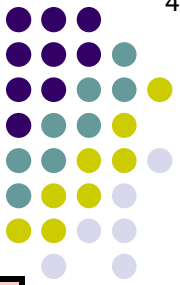
Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
How common			
Age at onset			
Thins where			
Protrudes where			
Iron line present			
Spontaneous rupture			
Steepens where?	Below thinning	Globally	Inferiorly
Munson sign?	Yes	?Yes?	Yes

Keratoglobus has two strong syndromic associations--what are they?

--

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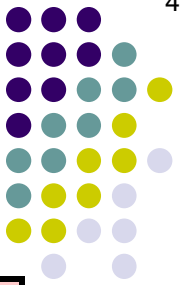


A

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common</i>			
<i>Age at onset</i>			
<i>Thins where</i>			
<i>Protrudes where</i>			
<i>Iron line present</i>			
<i>Spontaneous rupture</i>			
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly
<i>Munson sign?</i>	Yes	?Yes?	Yes

Keratoglobus has two strong syndromic associations--what are they?
 --Osteogenesis imperfecta (OI)
 --Ehlers-Danlos syndrome (EDS)



Q

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
How common			
Age at onset			
Thins where			
Protrudes where			
Iron line present			
Spontaneous rupture			
Steepens where?	Below thinning	Globally	Inferiorly
Munson sign?	Yes	?Yes?	Yes

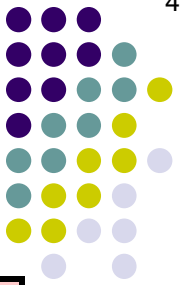
Keratoglobus has two strong syndromic associations--what are they?

--Osteogenesis imperfecta (OI)

--Ehlers-Danlos syndrome (EDS)

In two, hyphenated words, what sort of disorder are OI and EDS?

They are disorders



A

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
How common?			
Age at onset?			
Thins where?			
Protrudes where?			
Iron line present?			
Spontaneous rupture?			
Steepens where?	Below thinning	Globally	Inferiorly
Munson sign?	Yes	?Yes?	Yes

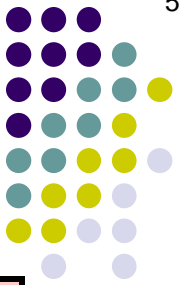
Keratoglobus has two strong syndromic associations--what are they?

--Osteogenesis imperfecta (OI)

--Ehlers-Danlos syndrome (EDS)

In two, hyphenated words, what sort of disorder are OI and EDS?

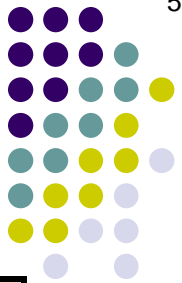
They are connective-tissue disorders



Q

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
How common?		Keratoglobus has two strong syndromic associations--what are they?	
Age at onset?		--Osteogenesis imperfecta (OI) --Ehlers-Danlos syndrome (EDS)	
Thins where?		In two, hyphenated words, what sort of disorder are OI and EDS? They are connective-tissue disorders	
Protrudes where?		Briefly, what are the main nonocular findings in each?	
Iron line present?		OI:	
Spontaneous rupture?		EDS:	
Steepens where?	Below thinning	Globally	Inferiorly
Munson sign?	Yes	?Yes?	Yes



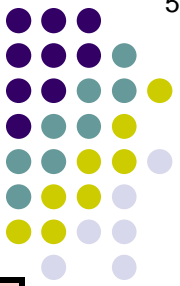
Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
How common			
Age at onset			
Thins where			
Protrudes where			
Iron line present			
Spontaneous rupture			
Steepens where?	Below thinning	Globally	Inferiorly
Munson sign?	Yes	?Yes?	Yes

Keratoglobus has two strong syndromic associations--what are they?
 --Osteogenesis imperfecta (OI)
 --Ehlers-Danlos syndrome (EDS)

In two, hyphenated words, what sort of disorder are OI and EDS?
 They are connective-tissue disorders

Briefly, what are the main nonocular findings in each?
 OI: Fragile ; deafness
 EDS:



A

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
How common			
Age at onset			
Thins where			
Protrudes where			
Iron line present			
Spontaneous rupture			
Steepens where?	Below thinning	Globally	Inferiorly
Munson sign?	Yes	?Yes?	Yes

Keratoglobus has two strong syndromic associations--what are they?

--Osteogenesis imperfecta (OI)

--Ehlers-Danlos syndrome (EDS)

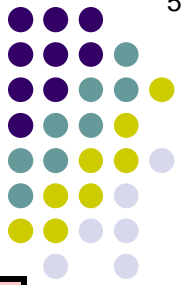
In two, hyphenated words, what sort of disorder are OI and EDS?

They are connective-tissue disorders

Briefly, what are the main nonocular findings in each?

OI: Fragile bones ; deafness

EDS:



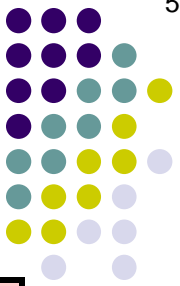
Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
How common			
Age at onset			
Thins where			
Protrudes where			
Iron line present			
Spontaneous rupture			
Steepens where?	Below thinning	Globally	Inferiorly
Munson sign?	Yes	?Yes?	Yes

Keratoglobus has two strong syndromic associations--what are they?
 --Osteogenesis imperfecta (OI)
 --Ehlers-Danlos syndrome (EDS)

In two, hyphenated words, what sort of disorder are OI and EDS?
 They are connective-tissue disorders

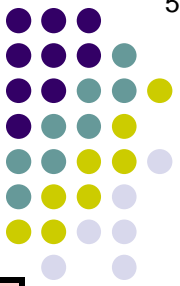
Briefly, what are the main nonocular findings in each?
 OI: Fragile bones ; deafness
 EDS: Fragile ; hyperextensible joints



A

Corneal ectasias: Fill in the table

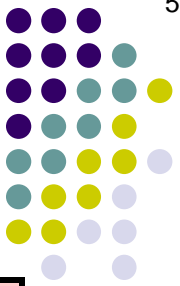
	KCN	Keratoglobus	Pellucid Marginal Degeneration
How common?		<i>Keratoglobus has two strong syndromic associations--what are they?</i>	
Age at onset?		--Osteogenesis imperfecta (OI) --Ehlers-Danlos syndrome (EDS)	
Thins where?		<i>In two, hyphenated words, what sort of disorder are OI and EDS?</i> They are connective-tissue disorders	
Protrudes where?		<i>Briefly, what are the main nonocular findings in each?</i>	
Iron line present?		OI: Fragile bones ; deafness EDS: Fragile skin ; hyperextensible joints	
Spontaneous rupture?			
Steepens where?	Below thinning	Globally	Inferiorly
Munson sign?	Yes	?Yes?	Yes



Q

Corneal ectasias: Fill in the table

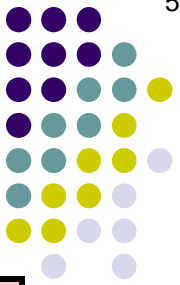
	KCN	Keratoglobus	Pellucid Marginal Degeneration
How common?		Keratoglobus has two strong syndromic associations--what are they?	
Age at onset?		--Osteogenesis imperfecta (OI) --Ehlers-Danlos syndrome (EDS)	
Thins where?		In two, hyphenated words, what sort of disorder are OI and EDS? They are connective-tissue disorders	
Protrudes where?		Briefly, what are the main nonocular findings in each?	
Iron line present?		OI: Fragile bones ; deafness; easy ...	
		EDS: Fragile skin ; hyperextensible joints; easy ...	
They share another finding related to vascular manifestations of abnormal connective tissue--what is it?			
Steepens where?	Below thinning	Globally	Inferiorly
Munson sign?	Yes	?Yes?	Yes



A

Corneal ectasias: Fill in the table

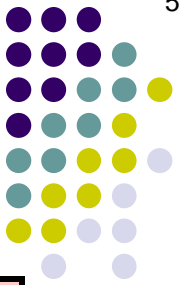
	KCN	Keratoglobus	Pellucid Marginal Degeneration
How common?		Keratoglobus has two strong syndromic associations--what are they?	
Age at onset?		--Osteogenesis imperfecta (OI) --Ehlers-Danlos syndrome (EDS)	
Thins where?		In two, hyphenated words, what sort of disorder are OI and EDS? They are connective-tissue disorders	
Protrudes where?		Briefly, what are the main nonocular findings in each?	
Iron line present?		OI: Fragile bones ; deafness; easy...bruising/bleeding EDS: Fragile skin ; hyperextensible joints; easy...bruising/bleeding	
They share another finding related to vascular manifestations of abnormal connective tissue--what is it? Easy bruising/bleeding			
Steepens where?	Below thinning	Globally	Inferiorly
Munson sign?	Yes	?Yes?	Yes



Q

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
How common?		<i>Keratoglobus has two strong syndromic associations--what are they?</i>	
Age at onset?		--Osteogenesis imperfecta (OI) --Ehlers-Danlos syndrome (EDS)	
Thins where?		<i>In two, hyphenated words, what sort of disorder are OI and EDS?</i> They are connective-tissue disorders	
Protrudes where?		<i>Briefly, what are the main nonocular findings in each?</i>	
Iron line present?		OI: Fragile bones ; deafness; easy... bruising/bleeding	
Spontaneous rupture?		EDS: Fragile skin ; hyperextensible joints; easy... bruising/bleeding	
Steepens where?	Below thinning	Globally	Inferiorly
Munson sign?	Yes	?Yes?	Yes



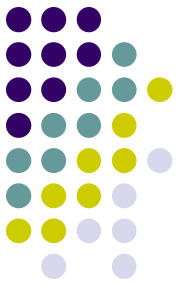
A

Corneal ectasias: Fill in the table

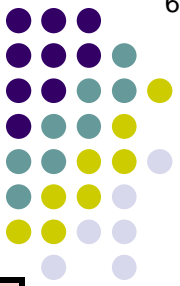
	KCN	Keratoglobus	Pellucid Marginal Degeneration
How common?		Keratoglobus has two strong syndromic associations--what are they?	
Age at onset?		--Osteogenesis imperfecta (OI) --Ehlers-Danlos syndrome (EDS)	
Thins where?		In two, hyphenated words, what sort of disorder are OI and EDS? They are connective-tissue disorders	
Protrudes where?		Briefly, what are the main nonocular findings in each?	
Iron line present?		OI: Fragile bones ; deafness; easy... bruising/bleeding	
Spontaneous rupture?		EDS: Fragile skin ; hyperextensible joints; easy... bruising/bleeding	
Steepens where?	Below thinning	Globally	Inferiorly
Munson sign?	Yes	?Yes?	Yes

What colorful eye finding is associated with both OI and EDS?
Blue sclera

Corneal ectasias: Fill in the table



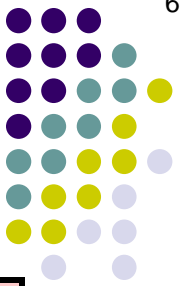
Blue sclera in OI



Q

Corneal ectasias: Fill in the table

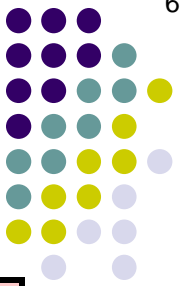
	KCN	Keratoglobus	Pellucid Marginal Degeneration		
<i>How common?</i>	Quite	Rare	Uncommon		
<i>Age at onset</i>	Teens	Birth	20-40		
	<p><i>What iatrogenic ectasia is becoming more and more prevalent?</i></p>				
				erior	eral strip
<i>Pr</i>				thinning	
<i>Irc</i>				etimes	
<i>Spor</i>	s rare				
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly		
<i>Munson sign?</i>	Yes	?Yes?	Yes		



A

Corneal ectasias: Fill in the table

	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>What iatrogenic ectasia is becoming more and more prevalent? Ectasia after keratorefractive surgery</i>			Superior peripheral strip
<i>Pr</i>			thinning
<i>Irc</i>			etimes
<i>Spor</i>			s rare
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly
<i>Munson sign?</i>	Yes	?Yes?	Yes



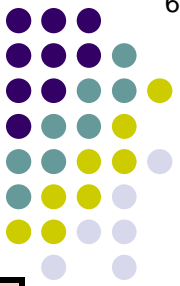
Q

Corneal ectasias: Fill in the table

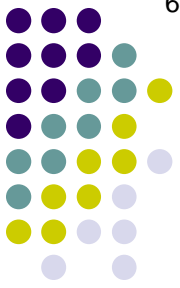
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>What iatrogenic ectasia is becoming more and more prevalent?</i> Ectasia after keratorefractive surgery			Superior peripheral strip
<i>Pr</i> --			thinning
<i>Irc</i> --			etimes
<i>Spor</i> --			s rare
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly
<i>Munson sign?</i>	Yes	?Yes?	Yes

A

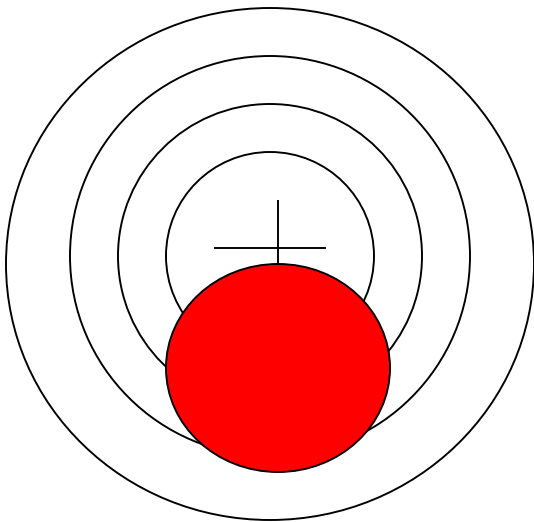
Corneal ectasias: Fill in the table



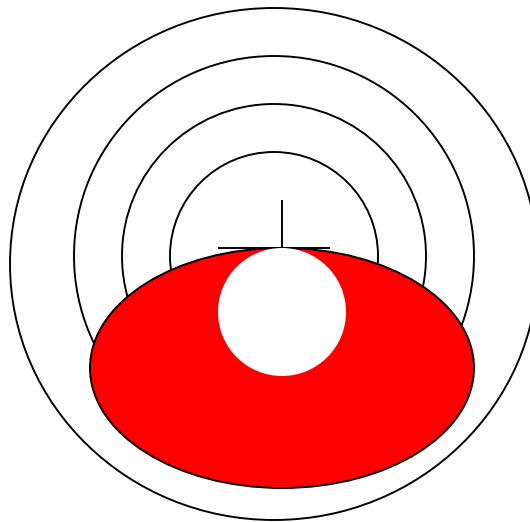
	KCN	Keratoglobus	Pellucid Marginal Degeneration
<i>How common?</i>	Quite	Rare	Uncommon
<i>Age at onset</i>	Teens	Birth	20-40
<i>What iatrogenic ectasia is becoming more and more prevalent?</i> Ectasia after keratorefractive surgery			Superior peripheral strip
<i>Pr</i> <i>What are the risk factors for post-LASIK ectasia?</i> --KCN or forme fruste KCN			Peripheral thinning
<i>Irc</i> --Thin post-op stromal bed --Thin pre-op central corneal thickness			Sometimes
<i>Spor</i> --High myopia --Age <30 years			Is rare
<i>Steepens where?</i>	Below thinning	Globally	Inferiorly
<i>Munson sign?</i>	Yes	?Yes?	Yes



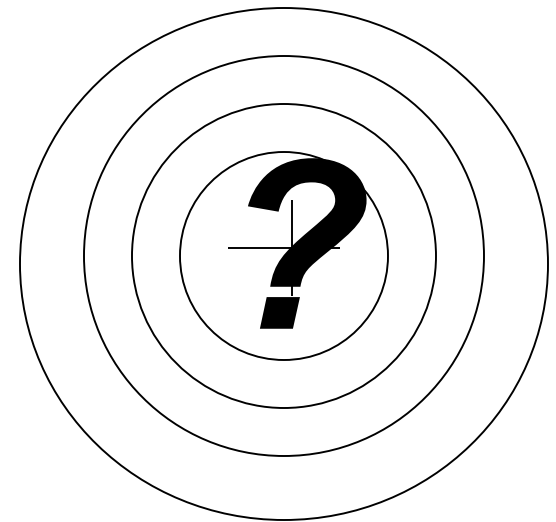
Corneal ectasias: Topography



Condition?

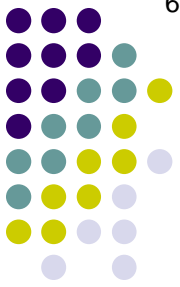


Condition?

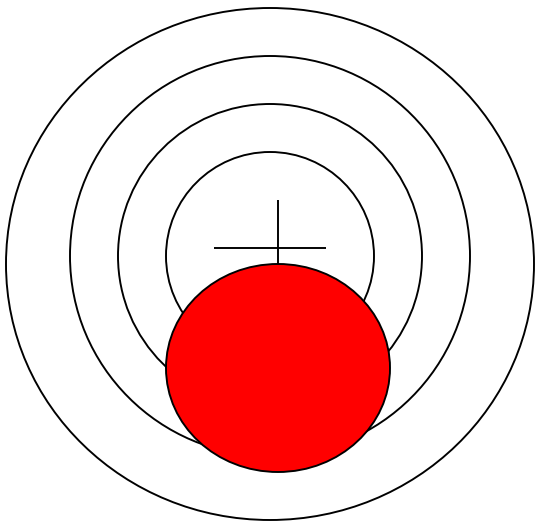


Condition?

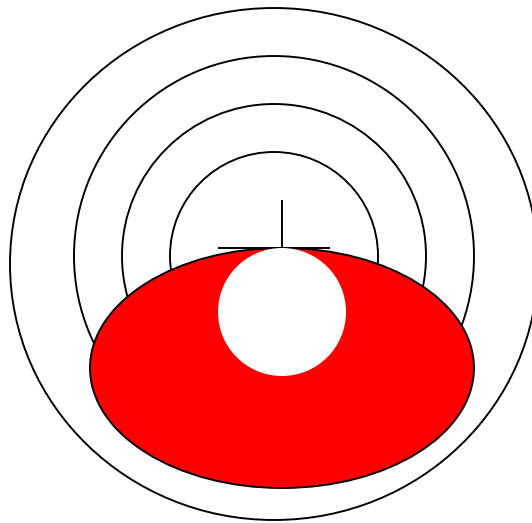
These drawings represent typical corneal topography maps for keratoconus, keratoglobus and pellucid marginal degeneration. (The '?' map indicates this condition's topography has yet to be well described.) Which is which?



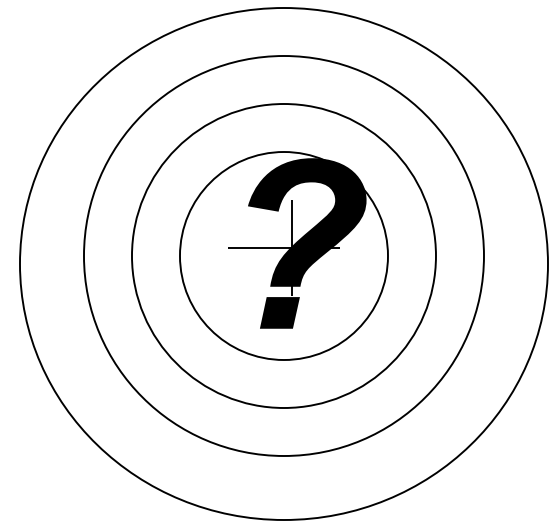
Corneal ectasias: Topography



Keratoconus

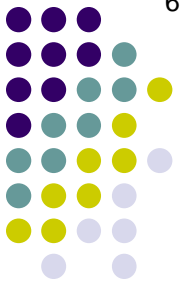


Pellucid marginal degeneration



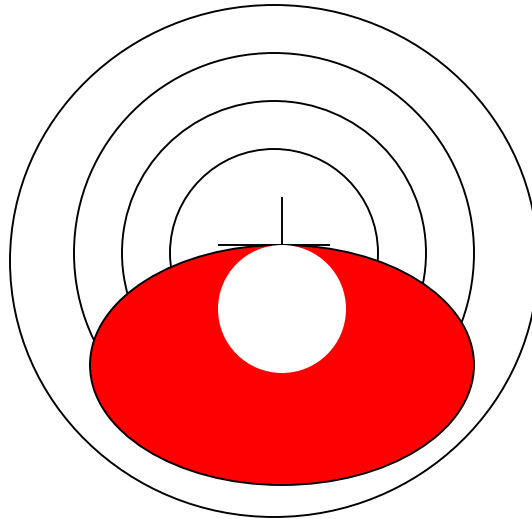
Keratoglobus

These drawings represent typical corneal topography maps for keratoconus, keratoglobus and pellucid marginal degeneration. (The '?' map indicates this condition's topography has yet to be well described.) Which is which?



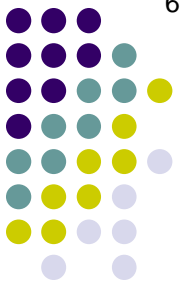
Corneal ectasias: Topography

‘Lobster claw’



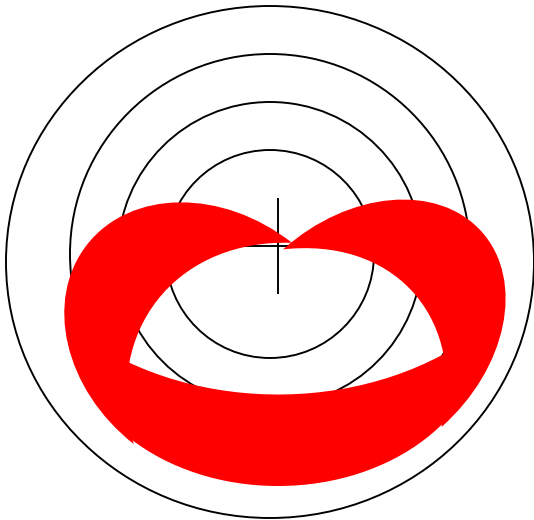
Pellucid marginal degeneration

This PMD topography pattern is called the ‘lobster claw.’
What other, similar maps are also seen in PMD?

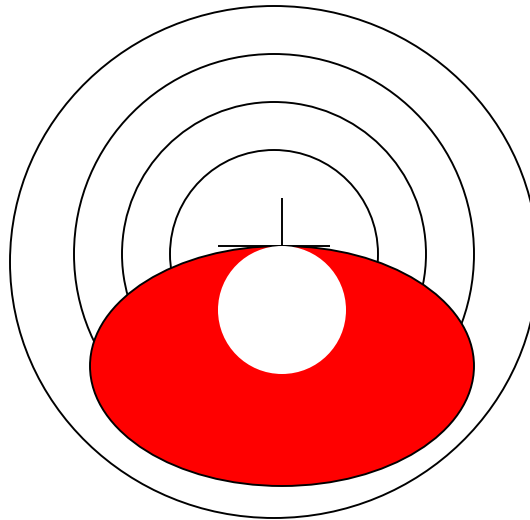


Pellucid marginal degeneration: Corneal topography patterns

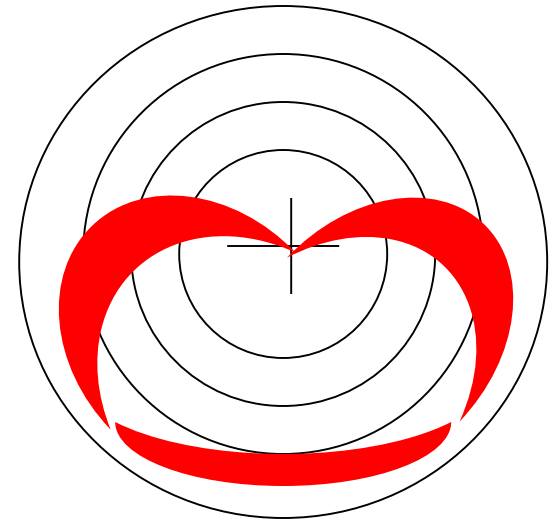
'Kissing doves'



'Lobster claw'



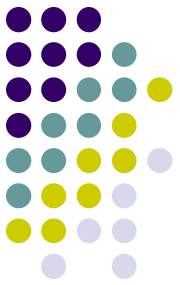
'The moustache'



**Pellucid marginal degeneration
(All 3)**

Other terms used to describe topography in PMD:
--'The butterfly'
--'The teardrop'

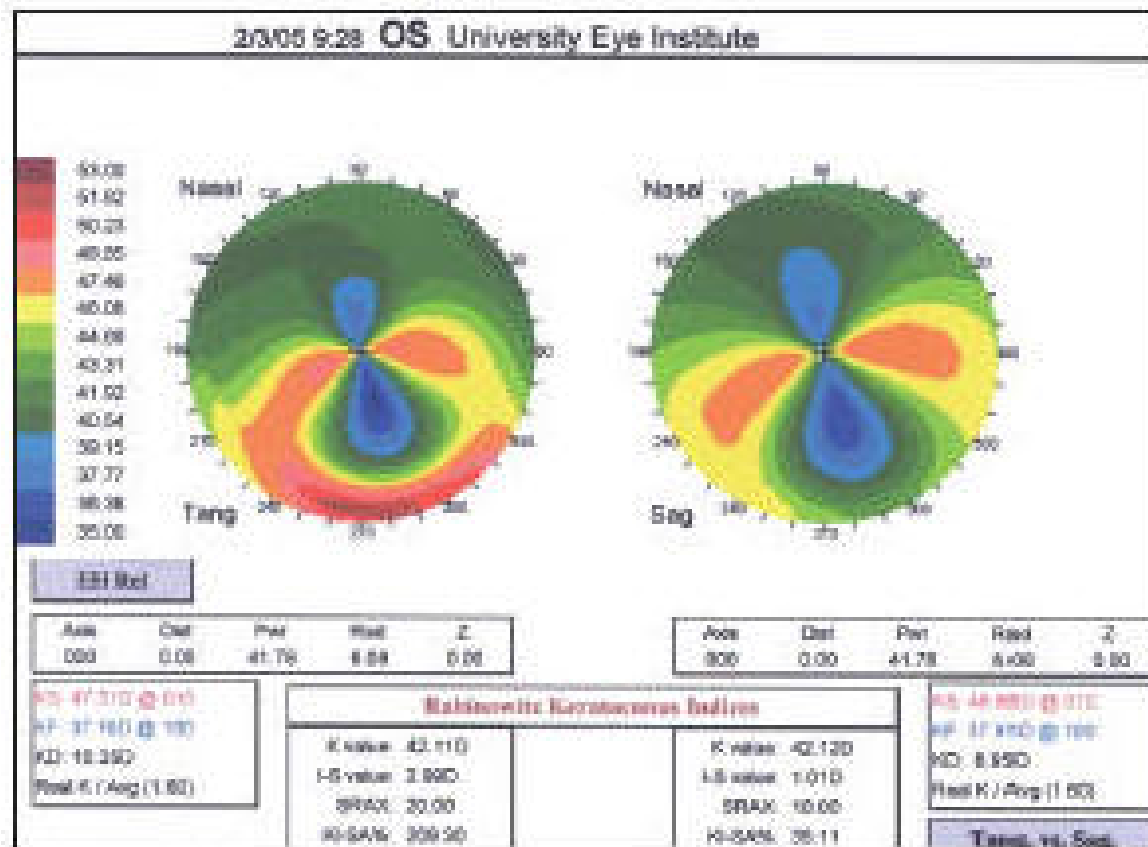
Pellucid marginal degeneration: Corneal topography patterns

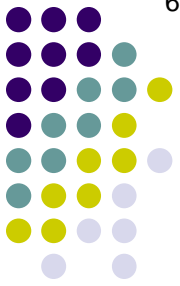


‘Kissing doves’

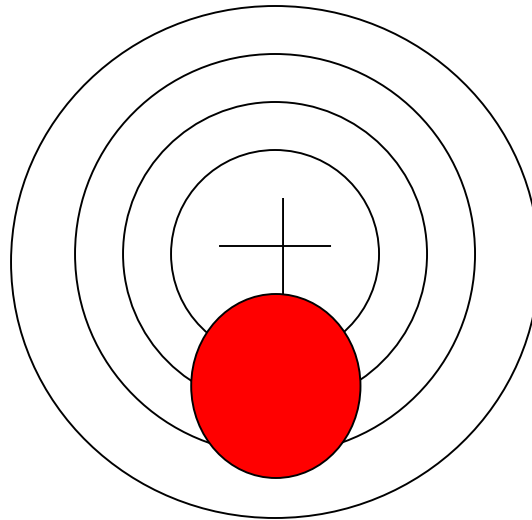
‘Lobster claw’

‘The moustache’



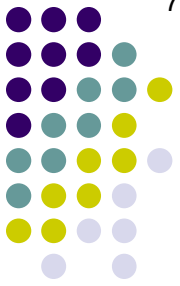


Keratoconus: Corneal topography patterns

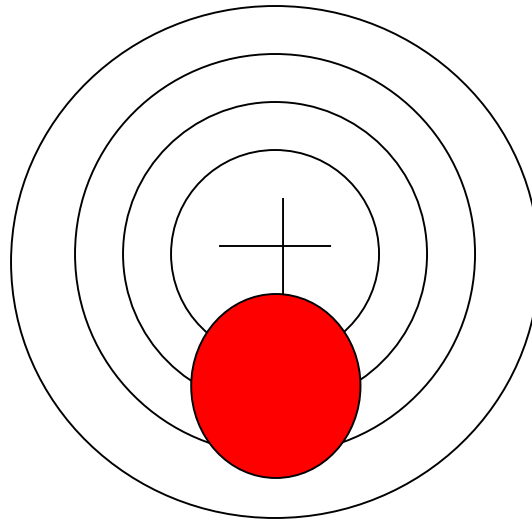


Topography in keratoconus reveals

three words

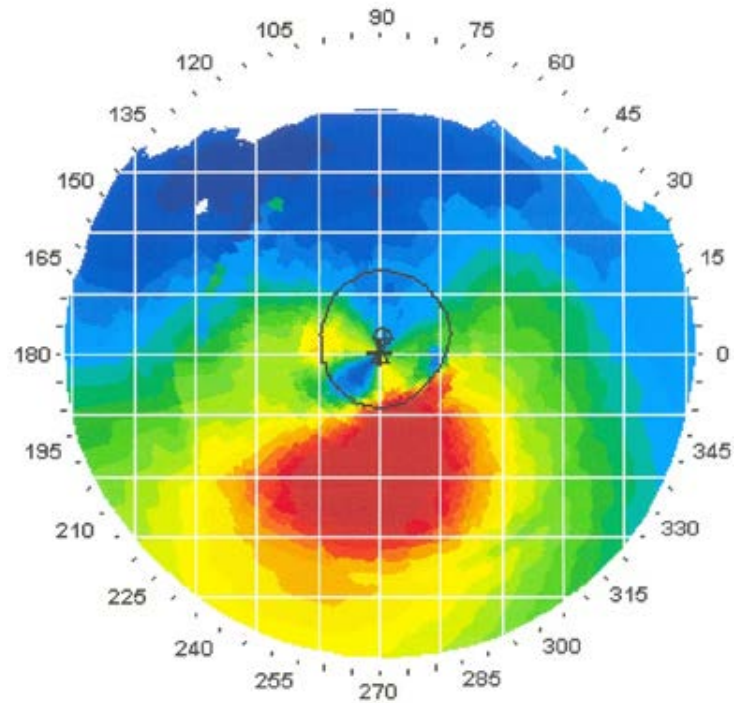
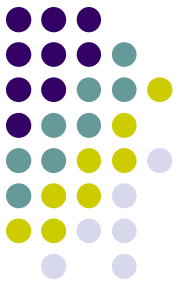


Keratoconus: Corneal topography patterns



Topography in keratoconus reveals
inferior corneal steepening

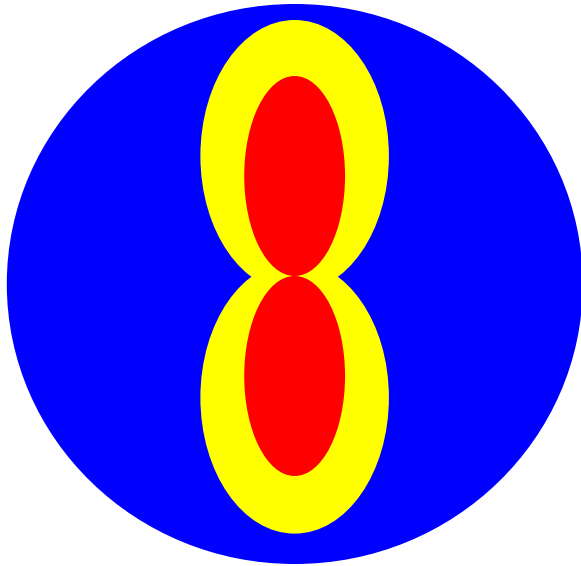
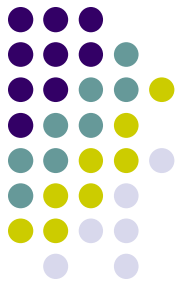
Keratoconus: Corneal topography patterns



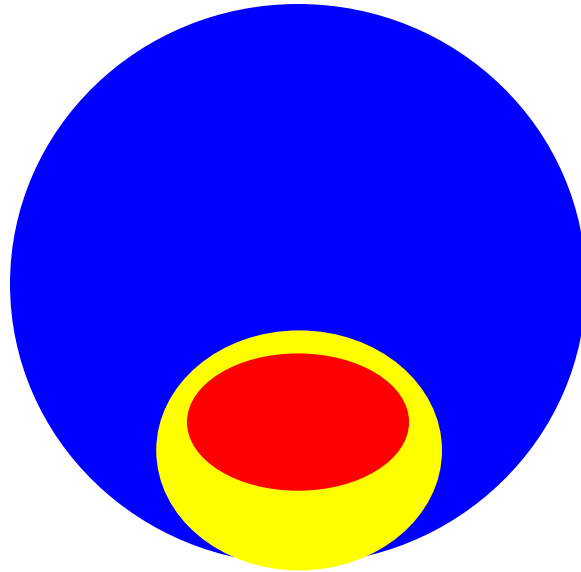
Topography in keratoconus reveals

inferior corneal steepening

Corneal ectasias: Topography

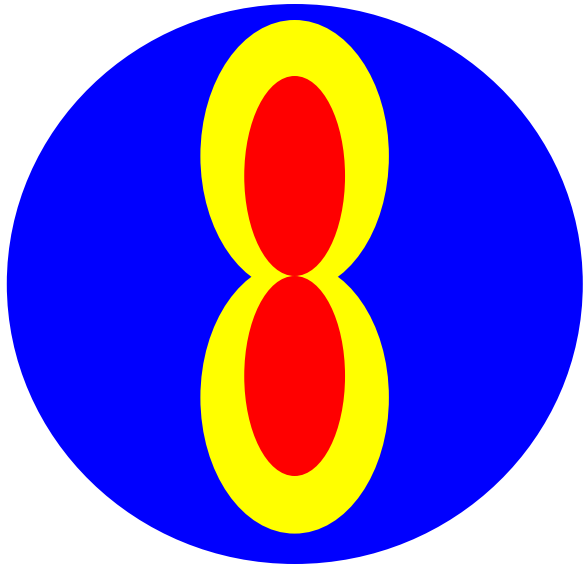
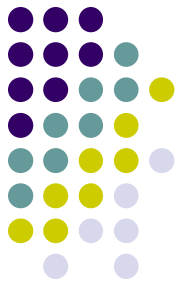


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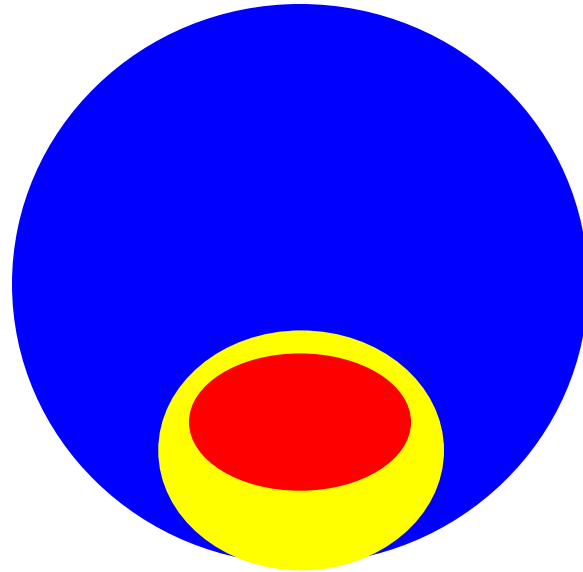


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Corneal ectasias: Topography

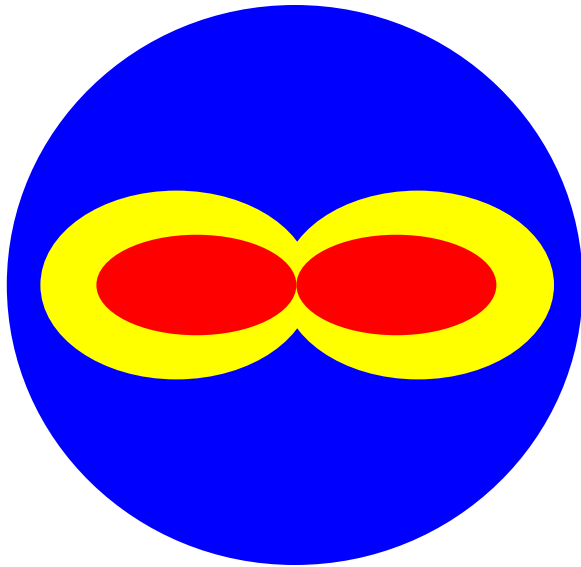
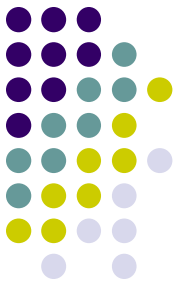


With-the-rule astigmatism

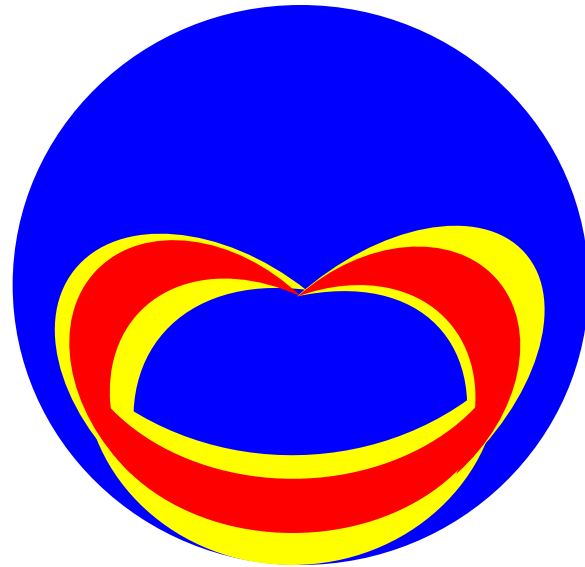


KCN

Corneal ectasias: Topography

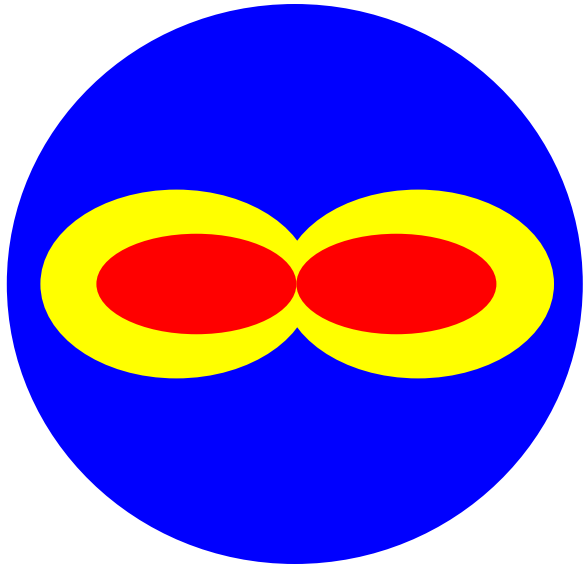
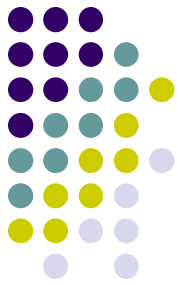


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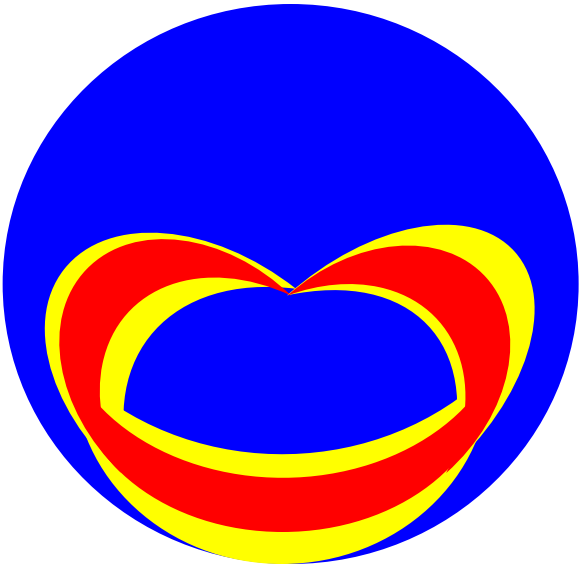


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Corneal ectasias: Topography

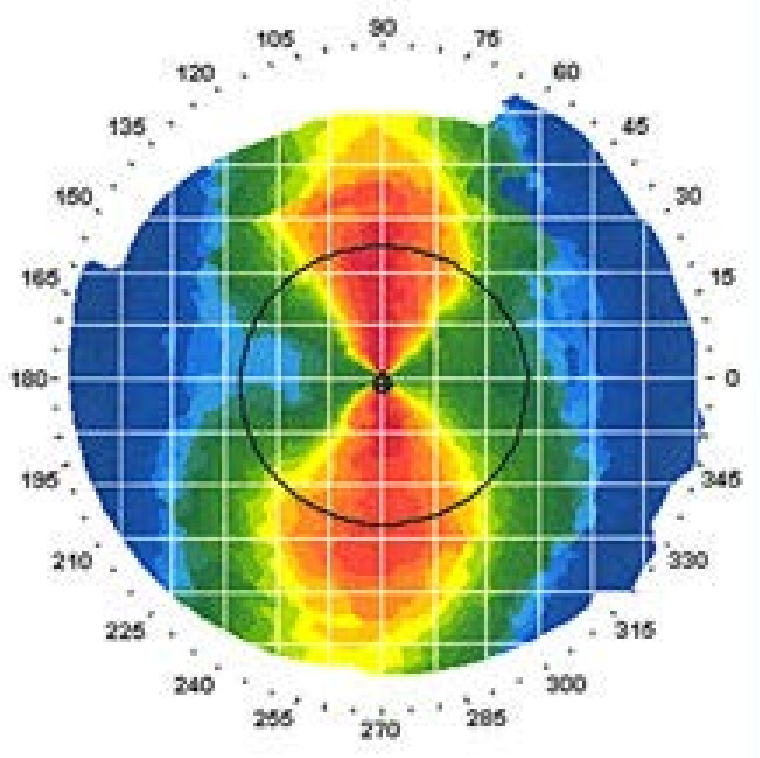
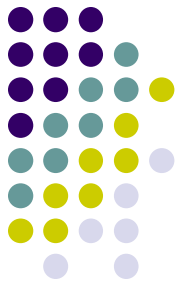


Against-the-rule astigmatism

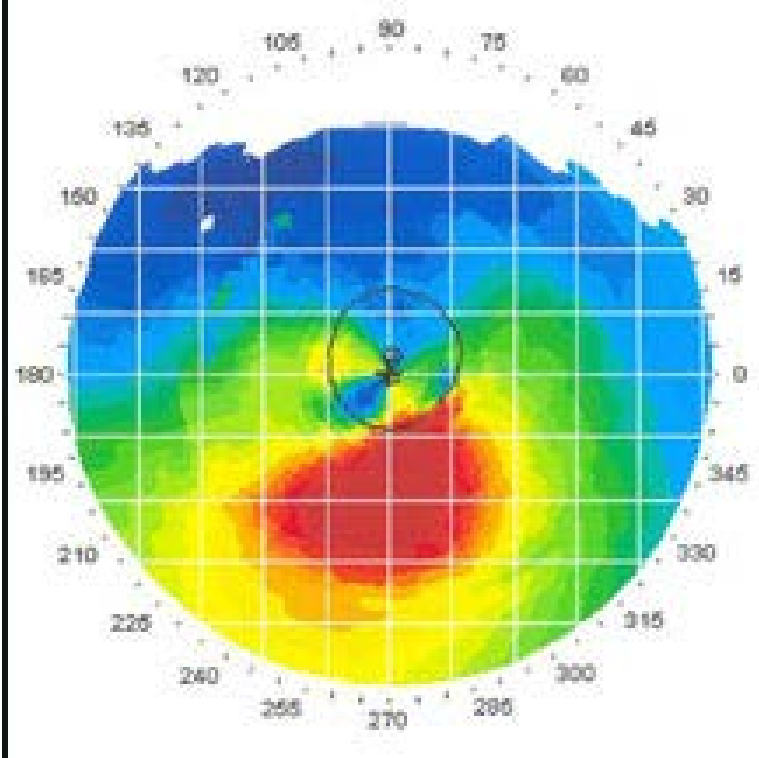


Pellucid

Corneal ectasias: Topography

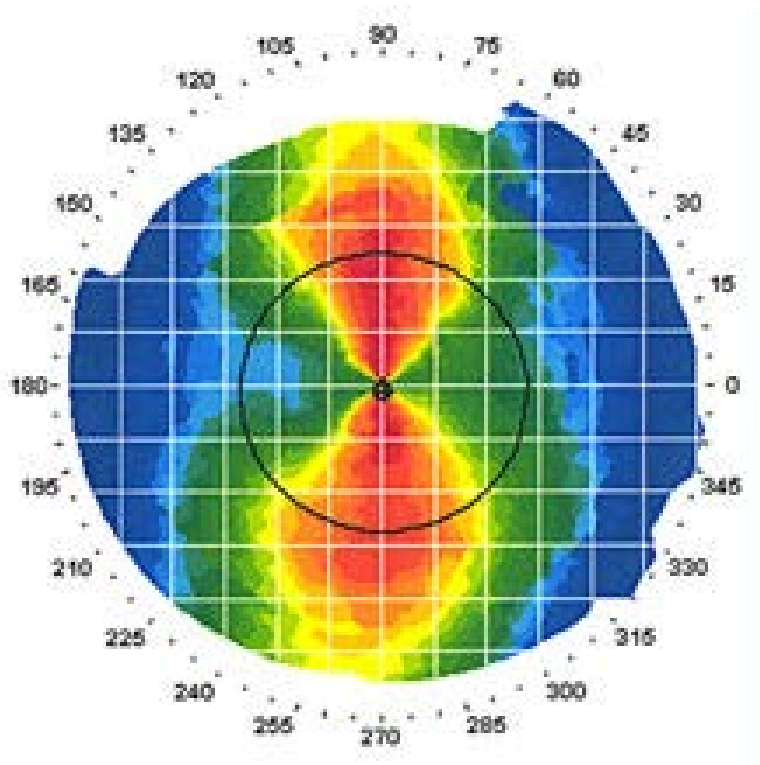
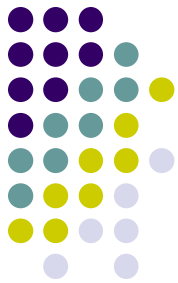


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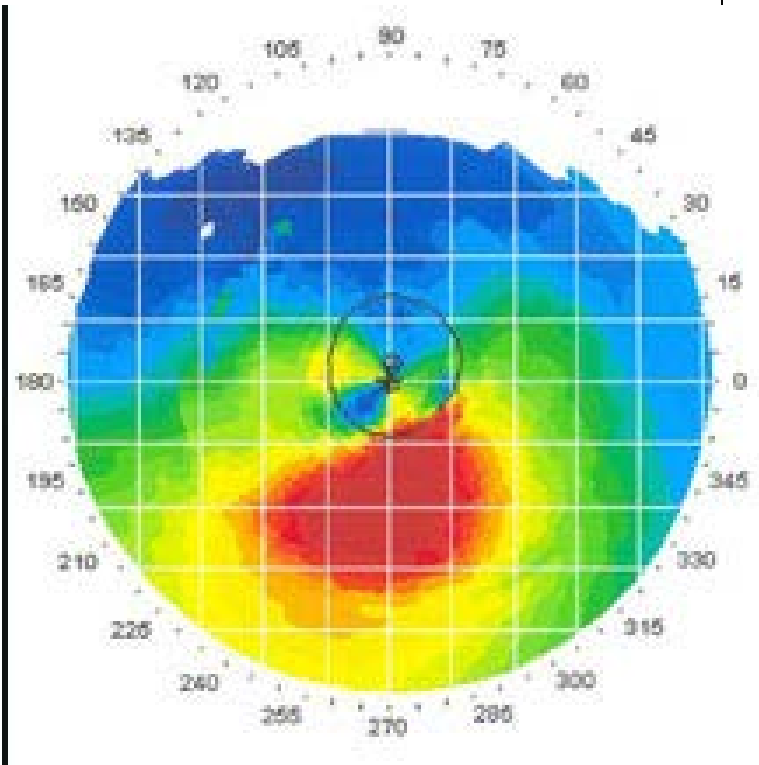


KCN

Corneal ectasias: Topography

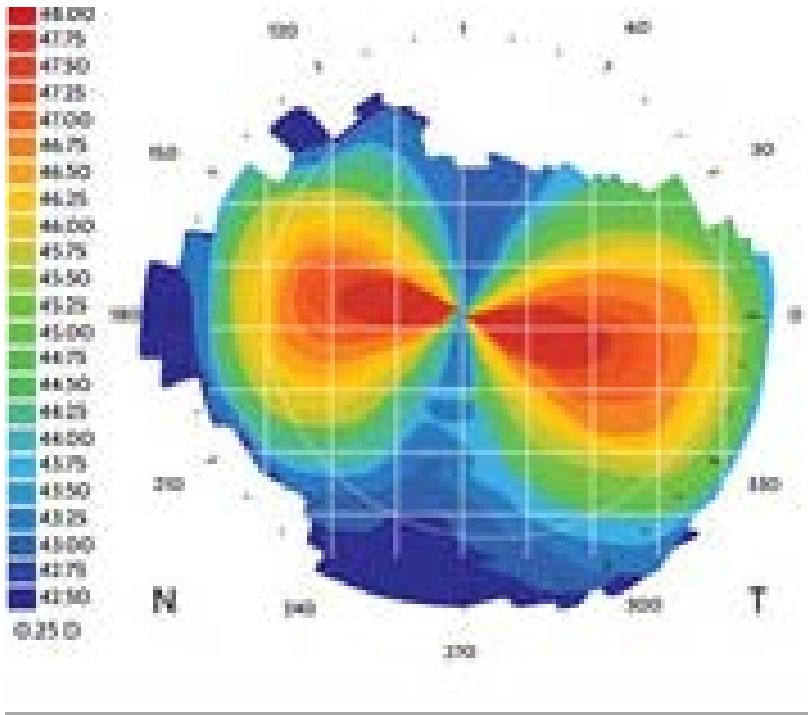
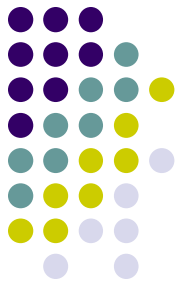


With-the-rule astigmatism

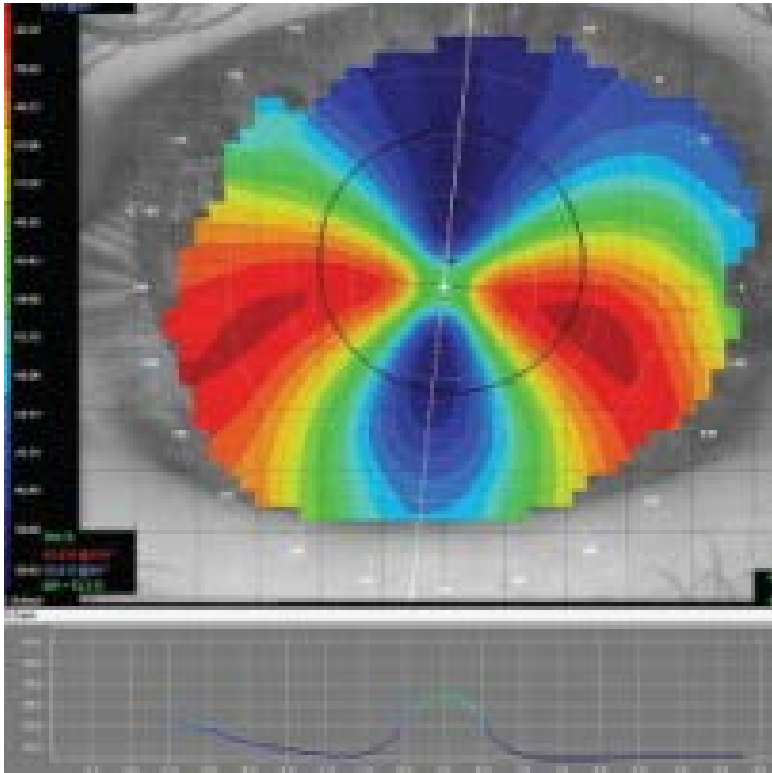


KCN

Corneal ectasias: Topography

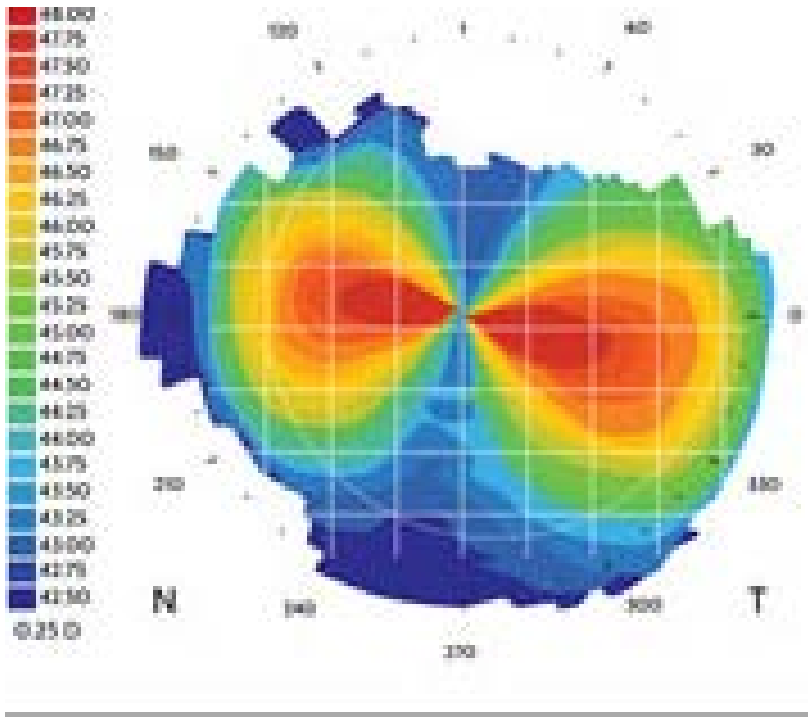
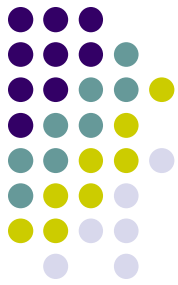


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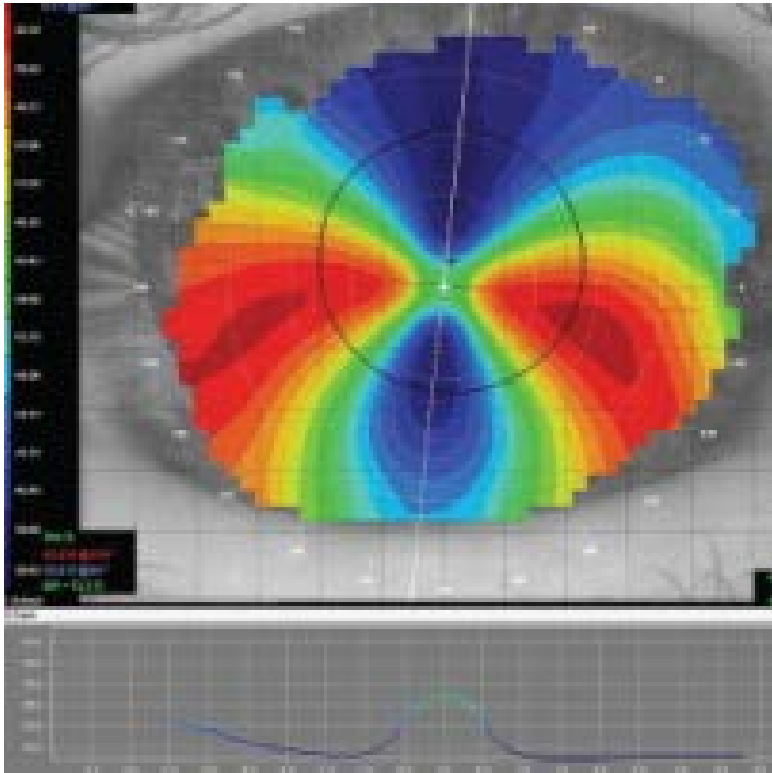


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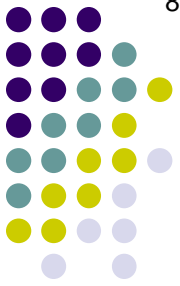
Corneal ectasias: Topography



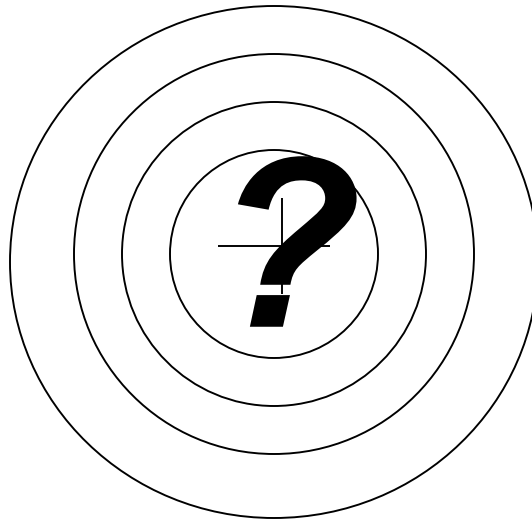
Against-the-rule astigmatism



Pellucid

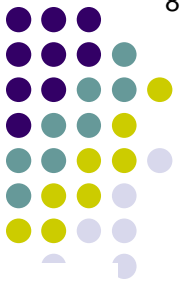


Keratoglobus: Corneal topography patterns



Corneal topography in keratoglobus has not been well delineated, and thus I would not expect to see such a map on the OKAP and/or Boards!

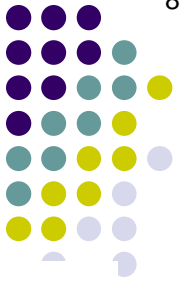
Koncerning Keratoconus



- What are the 7 classic associations of keratoconus?

-
-
-
-
-
-

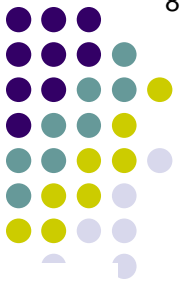
Mnemonic is...



- What are the 7 classic associations of keratoconus?
 - **F**
 - **L**
 - **A**
 - **M**
 - **E**
 - **D**

*Mnemonic is...**FLAMED***

Koncerning Keratoconus



- What are the 7 classic associations of keratoconus?
 - **F**loppy eyelid syndrome
 - **L**eber's congenital amaurosis
 - **A**topic disease (including **A**KC)
 - **M**itral valve prolapse
 - **E**hlers-Danlos
 - **D**own syndrome

*Mnemonic is...**FLAMED***