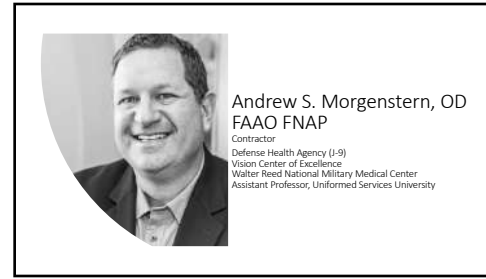
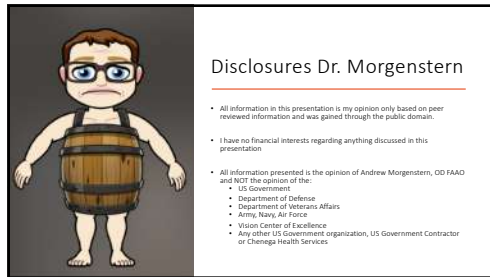




1



2



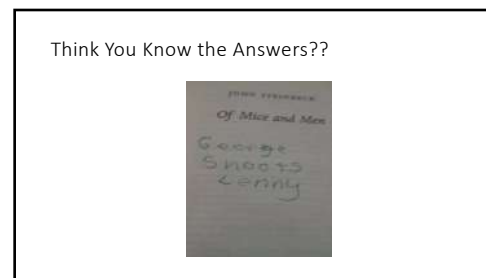
3



4



5



6



We Need to Remember that the Eye is a Direct Extension of the Brain

7

Top 15 Things You Should Never Miss!

1. Women's Eye and Systemic Health
2. Diabetes
3. Depression
4. The Face and Skin
5. Glaucoma
6. IOP
7. CTX
8. Transient Vision Loss
9. Thyroid Eye Disease
10. Traumatic Brain Injury
11. Keratoconus
12. Herpes
13. Eye Color

8

Trader Joe's Phenomenon

9

THE GAME CHANGER

Change the reflex because we diagnose what we look for.

10

If I Randomly Pulled 250 Charts From Your Office

I Would Likely See The Same 10 Diagnoses in 75-85% of Them

11

Case of Vague Difficulty Seeing

28 yo male complains of difficulty seeing

The doctor down the street gave him a new glasses rx that really hasn't helped

You ask to see it:

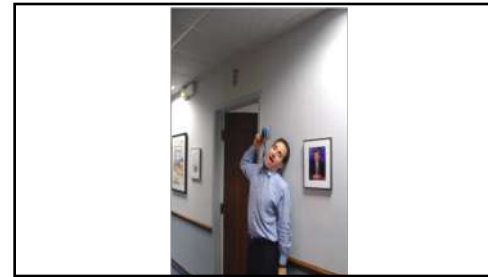
$-0.25 - 0.25 \times 180 \quad 20/20 +$

$-0.50 - 0.25 \times 175 \quad 20/15$

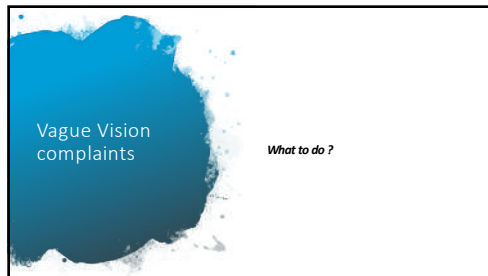
12



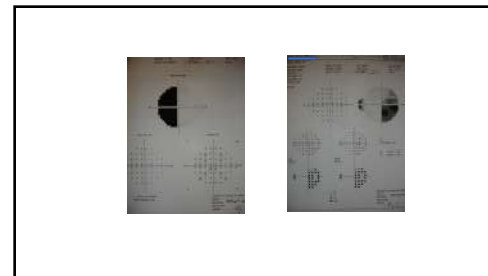
13



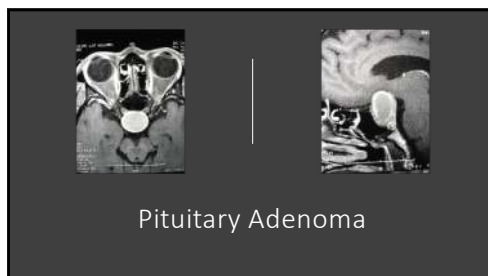
14



15



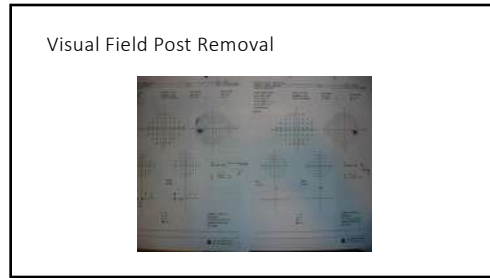
16



17



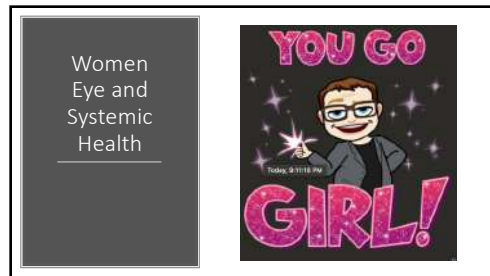
18



19



20



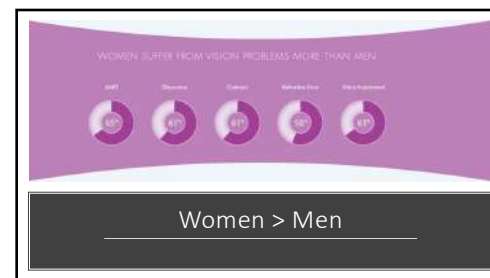
21



22



23



24



25



26



27

Pregnancy and Eye Health

- Cornea
 - Water Retention
 - Change in Curvature
 - Change in Thickness
 - Decrease in Corneal Sensitivity
 - **Contact Lens Risk**
 - Change in Refraction
 - Usually returns by 2 months postpartum
- <https://www.aaao.org/eyenet/article/ocular-changes-during-pregnancy>

28

Pregnancy and Eye Health

- IOP
 - Decrease in IOP (More in 2nd half of pregnancy term)
 - Greater decrease in Ocular Hypertension
 - Increased aqueous outflow
 - Decreased episcleral venous pressure
 - Decreased scleral rigidity
 - Generalized acidosis during pregnancy

29

Pregnancy and Eye Health

- Adnexa
 - Chloasma
 - Hormonally mediated increase in pigmentation around the eyes and cheeks
 - Benign spider angiomas
 - Commonly develop on the face and upper body
 - Ptosis
 - Often unilateral, can occur during or after pregnancy, most likely as a result of defects that develop in the levator aponeurosis from fluid, hormonal, and stress-related changes of labor and delivery

30

Pregnancy Specific Eye Disease

- Preeclampsia and Eclampsia
- Central Serous Choroidretinopathy
- Occlusive Vascular Disorders

31

Gestational Diabetes

Gestational diabetes mellitus (GDM) refers to any degree of glucose intolerance with onset or first diagnosis during the second or third trimester of pregnancy that is not clearly overt diabetes prior to gestation. It is now recommended that high-risk women be screened for diabetes during their initial prenatal visit in the first trimester receive a diagnosis of overt, not gestational, diabetes.

GDM is caused by the hormones secreted during pregnancy or by a shortage of insulin. It occurs predominantly in African American, Hispanic, and American Indian women, as well as women who are obese or have a family history of type 2 diabetes.

Glucose tolerance typically returns to normal within 6 weeks after pregnancy ends, but women who have had GDM have a 35 to 65 percent chance of developing type 2 diabetes in the subsequent 10 to 20 years. In addition, babies born to mothers with GDM also have a higher risk of developing type 2 diabetes in their teen or early adulthood.

American Optometric Association Evidence Based Clinical Practice Guideline, "Eye Care of the Patient with Diabetes Mellitus, 2nd Ed."

32

Diabetes Mellitus

American Optometric Association
Evidence Based Clinical Practice Guideline
Eye Care of the Patient with Diabetes Mellitus, 2nd ed.

33

Diabetes Prevalence

- From 2001 to 2020, diabetes prevalence significantly increased among US adults 18 or older.
- **37.3 million** people have diabetes—that's 11.3% of the US population.
- **28.7 million** people have been diagnosed with diabetes.
- **8.5 million** people who have diabetes have not been diagnosed and do not know they have it.

34

Diet and Physical Activity



Intentional Adults Aspects of Health: Intentional adults are those who have a clear understanding of their health and are actively working to improve it. This includes taking steps to prevent disease, manage chronic conditions, and live a healthy lifestyle.

Behavioral Goals: Identify specific behavioral goals that are measurable, achievable, and time-bound. Examples include: "I will exercise for 30 minutes, 3 times per week" or "I will eat a diet rich in fruits and vegetables."

Behavioral Interventions: Identify specific behavioral interventions that can help achieve the behavioral goals. Examples include: "I will use a pedometer to track my steps" or "I will use a food diary to track my eating habits."

Behavioral Support: Identify specific behavioral support strategies that can help achieve the behavioral goals. Examples include: "I will ask my doctor for a referral to a dietitian" or "I will join a support group for people with chronic conditions."

Behavioral Monitoring: Identify specific behavioral monitoring strategies that can help track progress. Examples include: "I will use a pedometer to track my steps" or "I will use a food diary to track my eating habits."

Behavioral Evaluation: Identify specific behavioral evaluation strategies that can help assess the effectiveness of the interventions. Examples include: "I will track my weight and blood pressure" or "I will track my mood and energy levels."

35

Lifestyle Intervention

The Diabetes Prevention Program (DPP) is a landmark trial showing an intensive diabetes prevention program can significantly reduce the risk of developing type 2 diabetes. The program involved lifestyle changes such as diet and physical activity. The program was based on the Diabetes Prevention Program (DPP) and the Diabetes Prevention Program (DPP).

Diabetes Prevention Program (DPP): A landmark trial showing an intensive diabetes prevention program can significantly reduce the risk of developing type 2 diabetes. The program involved lifestyle changes such as diet and physical activity.

Diabetes Prevention Program (DPP) Goals: Reduce the risk of developing type 2 diabetes by 58% in people with prediabetes. The program was based on the Diabetes Prevention Program (DPP) and the Diabetes Prevention Program (DPP).

Diabetes Prevention Program (DPP) Components: The program included lifestyle changes such as diet and physical activity. The program was based on the Diabetes Prevention Program (DPP) and the Diabetes Prevention Program (DPP).

Diabetes Prevention Program (DPP) Outcomes: The program significantly reduced the risk of developing type 2 diabetes. The program was based on the Diabetes Prevention Program (DPP) and the Diabetes Prevention Program (DPP).

Diabetes Prevention Program (DPP) Implications: The program has important implications for the prevention of type 2 diabetes. The program was based on the Diabetes Prevention Program (DPP) and the Diabetes Prevention Program (DPP).

36

How Many of Your Patients Take Anti-Psychotic Medications?



- Depression
- Bipolar Disorder
- Mood Disorders
- Anxiety
- And the list goes on....

43


What if those Medications Had Side Effects Like...

- Dry Eye
- Ocular Surface Disease

44

These Individuals Need an OSDI Score & DES OSD Evaluation

Higher risk of DES and OSD for those on these medications



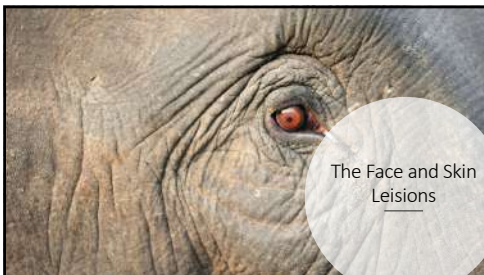
<http://www.itsdetroit.org/papers@papers.scribd.com/doc/113113636>

45

Referral Point for Help

- We all have a referral to
 - Retina
 - Cornea
 - Glaucoma
 - Pediatrics
 - Neuro
 - Oculoplastics
- ...But do we have a referral to Mental Health

46



The Face and Skin Lesions

47



Whatever.

Skin Lesion

WHATEVER... NOT MY JOB
I'm an Optometrist


48

Skin Lesions

WHO HAS TIME FOR THIS STUFF?

49


Normal Exam...See You Next Year



50

Where Does the Eye End and the Cheek Begin???
Is That Our Turf Too???

51



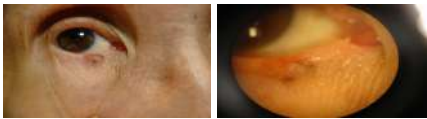
But Wait???

- Is That a Non-Lid Skin Lesion?
- What Do I do?

52

Lid Skin Cancer

Refer? Refer?

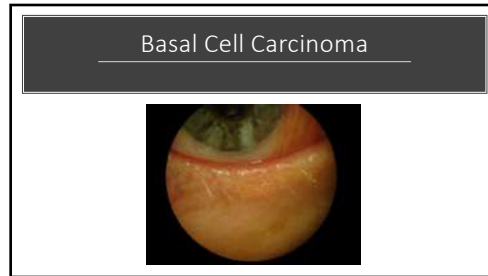


53

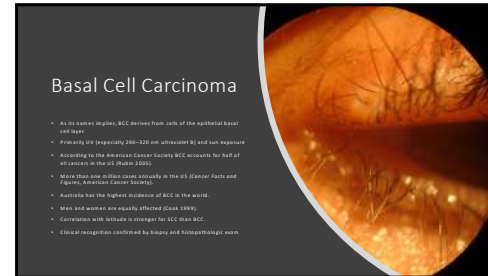
What's Wrong Here? Is that a Basal Cell? What Do I Document?



54



55



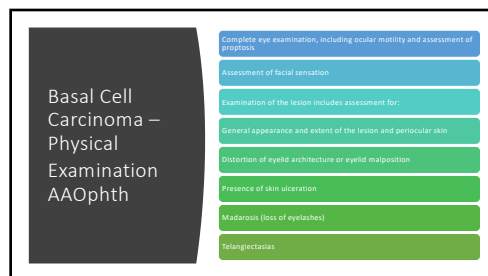
56



57



58



59



60



61



62



63



64

Squamous Cell Carcinoma

- SCC is malignant epidermal carcinoma.
- SCC is the second most common eyelid malignancy, accounting less than 5% of malignant eyelid neoplasms.
- Basal cell carcinoma is up to 40 times more common than SCC.

65

Squamous Cell Carcinoma – Physical Diagnosis

- Complete eye examination, including ocular motility and assessment of proptosis
- Assessment of facial sensation
- Palpation of regional lymph nodes: preauricular and submandibular
- Examination of the lesion includes assessment for:
 - General appearance of the lesion and periocular skin
 - Distortion of eyelid architecture or eyelid malposition
 - Presence of skin ulceration
 - Madarosis (loss of eyelashes)
 - Telangiectasias

66



67

What Was I Initially Thinking??

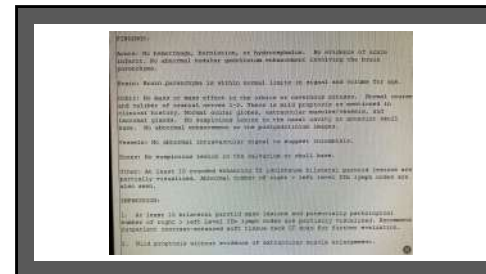
Thyroid??
 Retro-orbital Mass
 Other

68

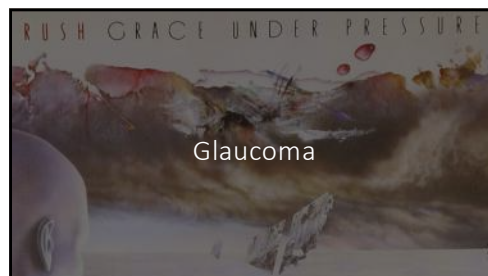
The Findings and the History

- Vision
- Lids
- Pupils
- EOM's
- CVF's
- Refraction
 - How did he perform in the phoropter
- Medical History
 - Weight Loss
 - Upset Stomach

69



70



71

**Malpractice and Optometry:
 Video (Not So) Grand Rounds**

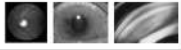
John G. Classé, OD, JD
 UAB School of Optometry
 Birmingham, Alabama
 jclass@uab.edu

72

What is the #1 Reason Why Optometrists Get Sued?


Glaucoma is the number one cause (in terms of numbers) of large claims:

- Open-angle glaucoma
- Angle closure glaucoma
- Secondary glaucoma




The principal reasons that optometrists misdiagnose open-angle glaucoma are:

- Failure to detect indications of disease involving the optic nerve (asymmetry, changes in C/D)
- Not checking or recording IOPs
- Failing to follow-up on suspicious findings with a field test




73

Pressure Induced Stromal Keratitis (PISK)



74

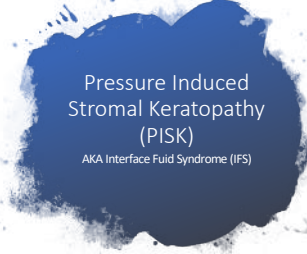
2 Uncommon LASIK Flap Complications



75

Pressure Induced Stromal Keratitis (PISK)

AKA Interface Fluid Syndrome (IFS)



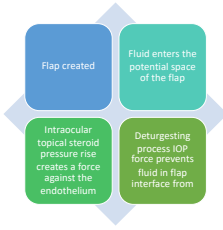
76

PISK

- Common post operative medications for LASIK
 - Anti-infective
 - Steroid
- Post LASIK complication
- Can happen from microkeratome or femtosecond flap
- Fluid enters potential space of flap
- +/- Diffuse Lamellar Keratitis (DLK)
- Commonly Misdiagnosed as DLK
 - Hazy appearance
- Misdiagnosis leads to DLK treatment
 - Aggressive Topical Corticosteroids
 - Pred Forte
 - Durezol
- *Common timeline of resolution for DLK is 5-7 days

77

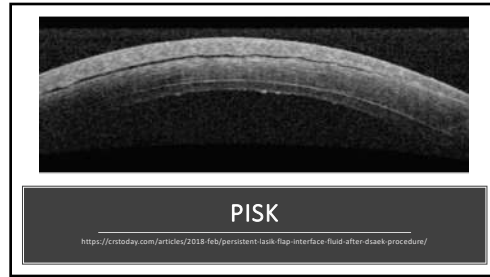
PISK Mechanism of Action



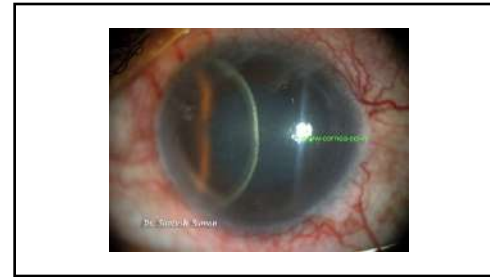
```

    graph TD
      A[Flap created] --> B[Fluid enters the potential space of the flap]
      C[Intraocular topical steroid pressure rise creates a force against the endothelium] --> D[Disturbing process IOP force prevents fluid in flap interface from]
      B --- D
    
```

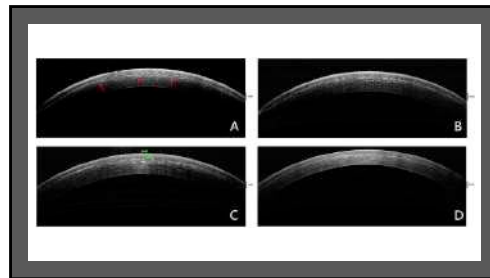
78



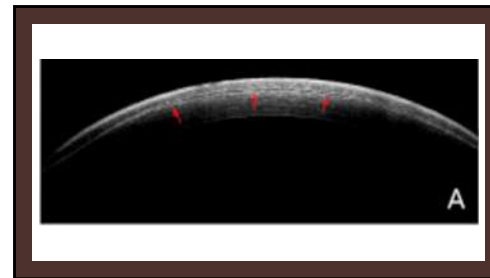
79



80



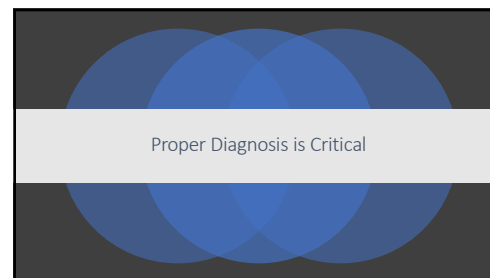
81



82



83



84

HHS Public Access
 Author manuscript
 / Refract Surg. Author manuscript; available in PMC 2016 January 22.
 Published in final edited form as:
 / Refract Surg. 2012 June 1;30(6):378-379. doi:10.1093/irfs/30.6.378. PMID: 22651740.

Glaucomatous Damage from Pressure induced Stromal Keratopathy After LASIK

J. Bradley Randleman, MD and Robert Lesser, MD

85

Severe glaucomatous damage can occur

Permanent loss of vision can occur

PISK PISK PISK

86

PISK
 Differential Diagnosis

87

Interface Corneal Edema Secondary to Steroid-induced Elevation of Intraocular Pressure Simulating Diffuse Lamellar Keratitis

Ahmed Galal, MD, PhD, Alberto Ariola, MD, PhD, Jose Belido, MD, PhD, Jose Rodriguez-Pesta, MD, PhD, Pascual Claremonte, MD, PhD, Antonio Sánchez, MD, PhD, Oscar Ruiz-Moreno, MD, PhD, Jesús Merayo, MD, PhD, Jorge Alió, MD, PhD.

88

Methods and Conclusions Galal et al.

METHODS: Retrospective observational case series. Diffuse interface edema secondary to steroid-induced elevation of IOP was observed after LASIK simulating diffuse lamellar keratitis (DLK) in 13 eyes. Mean patient age was 31.4 ± 5.3 years. Patients were divided into two groups according to preoperative myopia: DLK group (group 1) comprised 11 eyes and infection group (group 2) comprised 2 eyes (interfacial keratitis). Mean follow-up was 8.1 ± 0.5 weeks.

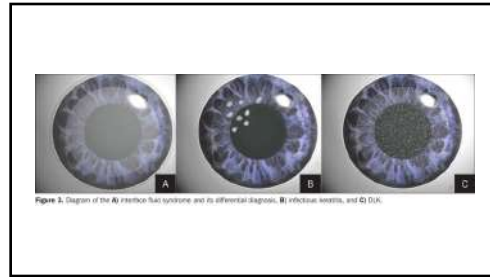
CONCLUSIONS: Interface fluid syndrome secondary to steroid-induced elevation of IOP might develop in steroid responders after LASIK with a misleading clinical picture simulating DLK or infectious keratitis. Management includes stopping topical steroids and starting topical anti-glaucoma therapy. *J Refract Surg.* 2006;22:461-467

89

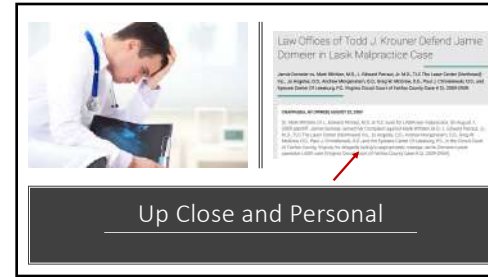
TABLE
Differential Diagnosis of Interface Fluid Syndrome

	Interface Fluid Syndrome	DLK	Diffuse Keratitis
Onset	3 to 7 days	1 to 2 days	2 to 3 days
Increase of visual acuity	++++	+++	+
Corneal haze	Diffuse and central	Diffuse and central	Localized to certain areas
Corneal edema	+++	++	±
Flare pattern	Present	Absent	Absent
Particles at interface	++	++	++
White granular leukocytes	Few at periphery	Many, diffuse, more at center	Many in focal areas, collection, fluffy more than one cell type
Intraocular pressure	Elevated	Normal	Normal
Response to steroids/antibiotics	None	Response	Response
Refracting	Not required	Required in stage II	Required

90



91



92

My Experience

- Patient uncomplicated LASIK treatment in Michigan
- Post op care in Virginia with 2 private practice OD's
- Diagnosed with DLK, on steroids for 3 weeks with no resolution
- Spoke with Me via phone call
- I asked for the patient to see me today
- Checked IOP 37/39
- Discontinued Steroid, started timoptic and brimonidine
- Patient told to stay in office until IOP reduced 30% or under 20 mmHg

93



94

Central Toxic Keratopathy (CTK)

95

OPEN ACCESS

What is central toxic keratopathy syndrome if it is not diffuse lamellar keratitis grade IV?

Hazin, Ribhi; Daoud, Yassine; Khalifa, Youssuf.
 Middle East African Journal of Ophthalmology, Riyadh Vol. 17, Iss. 1, (Jan 2010): 60-2.
 DOI:10.4103/0974-9233.61218

96

CTK

Rare (0.0076-0.016%), acute, non-inflammatory complication of LASIK

Fraenkel and colleagues first described CTK in 1989 as being inflammatory in nature but the condition has subsequently been recognized as a non-inflammatory process.

http://eyewiki.aao.org/Central_Toxic_Keratopathy

97

This is NOT DLK

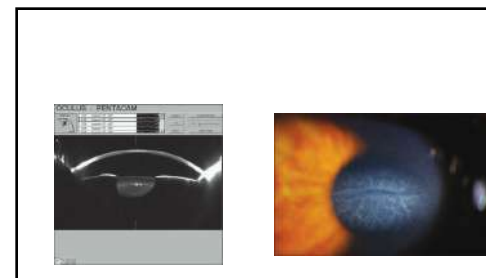
98

DO NOT LIFT THESE FLAPS

Irrigating beneath the flap in CTK can be deleterious insofar as it may exacerbate existing tissue necrosis, precipitate a buttonhole of the flap, increase the chance for epithelial ingrowths, and lead to keratocyte apoptosis in the stromal bed

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2880375/>

99



100

CTK Signs

- Dense central corneal opacification
- Stromal tissue loss
- Striae
- Significant hyperopic refractive shift

101

- ### CTK Differential Diagnosis
- Diffuse Lamellar Keratitis
 - Infectious keratitis
 - Interface fluid
 - Corneal haze secondary to increased IOP
 - Superficial punctate keratitis
 - Epithelial ingrowth
 - Trauma

102

Commonly Misdiagnosed and Mismanaged

✓ CTK typically resolves spontaneously within 18 months with minimal complications or permanent sequelae

⚠ Most complications, however, that arise in the setting of CTK typically occur as a result of mismanagement with steroids or other similar medications that can exacerbate preexisting refractive or anatomic alterations in this patient population

103

CTK Prognosis



THE PROGNOSIS FOR CTK IS EXCELLENT.



IN MOST CASES, THE CONDITION RESOLVES WITHIN 18 MONTHS OF THE INCITING REFRACTIVE PROCEDURE.



LOTS OF PATIENT COMMUNICATION, FOLLOW-UP AND MAINTENANCE IS REQUIRED

104

Transient Vision Loss

- Must Be

105

Dry Eyes

106

Transient Vision Loss

- But What if the patient was a 78 yo F
- During the history, she noted 5-8 seconds of flickering vision
- Does that change the way you approach the case?

107

What if it was the Same Case

- But now it is a 78 yo Male with 5-8 seconds of flickering vision AND a headache (of any shape or form)
- What is in your differential list?
- What questions do you want to ask?

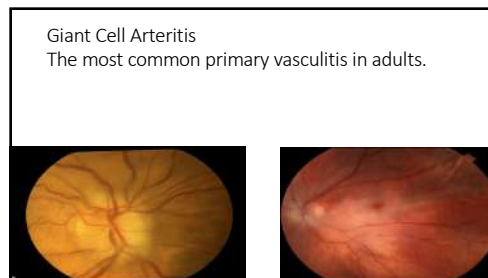
108



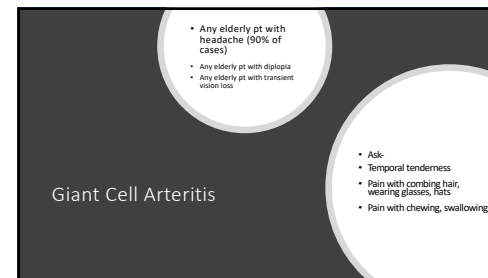
109



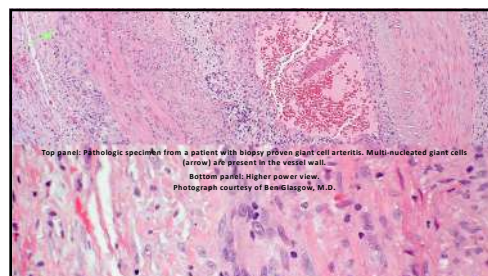
110



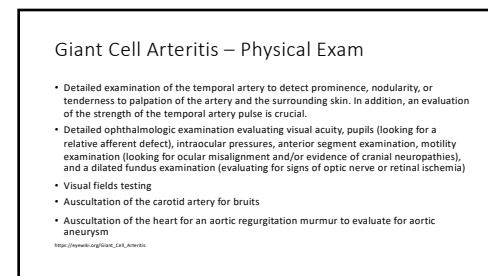
111



112



113



114

Low Vision
New Devices, New Diseases and New Technology

115

Thyroid Eye Disease (TED)
If Its Red...It Might Be TED!

116

Thyroid Medications

- Insert image of thyroid medications here
- How many women take thyroid medications example

117


Itchy Burning Eyes

- Must Be More Dry Eyes

118

Case of Irritated Burning Eyes

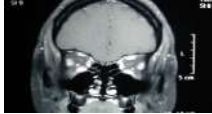

- 35 yo female with 6 weeks of eye irritation
- Gets somewhat better with antibiotic drops only to recur



119

Case of Irritated Burning Eyes

Thyroid eye disease



120


Red Swollen Eyes

- Must Be Allergic Conjunctivitis

121

Case Of The Red Irritated Swollen Eye

- 50 yo female with 4 week history of redness irritated tearing eyes
- Otherwise healthy hasn't ever seen an eye doctor




122

red puffy swollen eyes

.....or perhaps she has seen
6 other doctors

- 55yo F dx as chronic conjunctivitis with a 3 month history of red eyes and tearing after trials of :
 - Artificial tears
 - Antibiotic drops
 - Steroid drops
 - Antibiotic steroid combination drops
 - Stopping all drops
 - Ointments
 - Lid scrubs
 - Hot compresses
 - Cold compresses
 - Luke warm chamomile tea and honey compresses
 - Acupuncture, acupressure, meditation



if its red consider TED

123


Thyroid Eye Disease



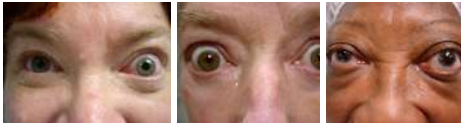

124

Goodlick's Rule

- When you have swollen eyes
 - Severe
 - Bilateral
 - Unilateral
- If its not infectious
- If its not viral
- If its not allergic
- Think Thyroid Eye Disease



125



Thyroid Orbitopathy Classic Elevator Diagnosis

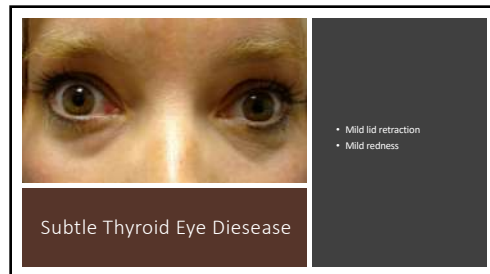
126



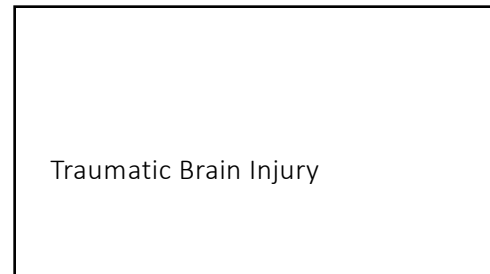
127



128



129



130



131



132

Basic-Type Vision Exam	16 Revised Color Vision Tests
<p>History:</p> <ul style="list-style-type: none"> • Vision acuity • Refractive error measurement • Visual evoked potentials • Pupillary testing • Psychophysical testing (HMP, Humphrey) • Contrast sensitivity testing • Field testing • Tonometry • OCT and tomography; anterior segment, retina, macula, and optic nerve • Biomicroscopy (funduscopy, OCT with color, OCT angiography) <p>Discussion:</p> <p>The development of a test of color vision is a complex task. The test must be able to detect color vision deficiencies in a sufficient number of cases. It must also be able to detect color vision deficiencies in a sufficient number of cases. It must also be able to detect color vision deficiencies in a sufficient number of cases.</p> <p>References:</p> <ul style="list-style-type: none"> • "Color Vision Deficiency: A Review of the Literature." <i>Journal of the American Optometric Association</i>, 2012. • "Color Vision Testing: A Review of the Literature." <i>Journal of the American Optometric Association</i>, 2012. 	<p>16 Revised Color Vision Tests</p> <p>The 16 Revised Color Vision Tests are a series of tests designed to detect color vision deficiencies. They are based on the Munsell color system and are designed to be more accurate than the traditional tests.</p> <p>The tests are:</p> <ol style="list-style-type: none"> 1. 15-Hue Test 2. 100-Hue Test 3. 48-Plate Test 4. 48-Plate Test (Revised) 5. 48-Plate Test (Revised) (Revised) 6. 48-Plate Test (Revised) (Revised) (Revised) 7. 48-Plate Test (Revised) (Revised) (Revised) (Revised) 8. 48-Plate Test (Revised) (Revised) (Revised) (Revised) (Revised) 9. 48-Plate Test (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) 10. 48-Plate Test (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) 11. 48-Plate Test (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) 12. 48-Plate Test (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) 13. 48-Plate Test (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) 14. 48-Plate Test (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) 15. 48-Plate Test (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) 16. 48-Plate Test (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised) (Revised)

133

Supplemental Testing for Oculomotor Dysfunction
<p>Discussion:</p> <p>Discussion cover test - unilateral and alternate free space?</p> <p>How cover test - unilateral and alternate free space?</p> <p>Version: EOMs and/or pursuit?</p> <p>References:</p> <ul style="list-style-type: none"> • "Cover Test: A Review of the Literature." <i>Journal of the American Optometric Association</i>, 2012. • "Version: A Review of the Literature." <i>Journal of the American Optometric Association</i>, 2012.

134

Condition/Prescription	Additional Testing and Diagnostic Considerations	Management Considerations	Referral Considerations
<p>Reading Difficulties:</p> <ul style="list-style-type: none"> • Eye strain • Difficulty with near vision • Headaches • Loss of reading place • Loss of sustained reading ability • Words appear to jump when reading 	<p>Additional Testing and Diagnostic Considerations:</p> <ul style="list-style-type: none"> • Phorias and vergence • Accommodative testing • Convergence cover and alternate cover testing • Phorias testing • Vergence testing • Developmental eye movement testing • King-Devick testing • Eye movement recording study • Ocular motility testing 	<p>Management Considerations:</p> <ul style="list-style-type: none"> • Prescriptions adjustment • Spectacles with or without prism • Change in testing • Vision therapy 	<p>Referral Considerations:</p> <ul style="list-style-type: none"> • Oculomotor rehabilitation clinic • Pediatric ophthalmologist • Neurologist

Abbreviations: ET = exotropia; NT = near vision; HMP = Humphrey; OCT = optical coherence tomography; PHT = physical therapy

135

Condition/Prescription	Management Considerations
<p>Acute Presbyopia:</p> <ul style="list-style-type: none"> • Overcorrection • Excessive near vision • Excessive accommodation • Excessive convergence • Excessive accommodation-convergence <p>Management Considerations:</p> <ul style="list-style-type: none"> • Spectacles adjustment • Change in testing • Vision therapy 	<p>Referral Considerations:</p> <ul style="list-style-type: none"> • Oculomotor rehabilitation clinic • Pediatric ophthalmologist • Neurologist

136

Keratoconus

137

Global Consensus on Keratoconus and Ectatic Diseases

Jose A. P. Gomes, MD, PhD; David J. Tan, MD, PhD; Christopher J. Rapuano, MD; Michael W. Bell, MD; Joseph A. Romano, Jr, MD, PhD; Jose L. Garcia, MD; Francisco Alvarez, MD, PhD; Essi Vekic, MD, PhD; and Thomas S. Seung, MD; the Group of Praction for the Global Digital Proof of Keratoconus and Ectatic Diseases

138

Purpose of the Project

- Desire to reach consensus
 - Keratoconus
 - Ectatic diseases
- Focus on
 - Definition
 - Concepts
 - Clinical Management
 - Surgical Treatments

139

Design and Organization

140

Conclusions

- Resulted in the diagnosis and management of keratoconus and other ectatic diseases via worldwide insight
- Conclusion resulted in
 - Definitions
 - Statements
 - Recommendations

141

Selection of Expert Panel

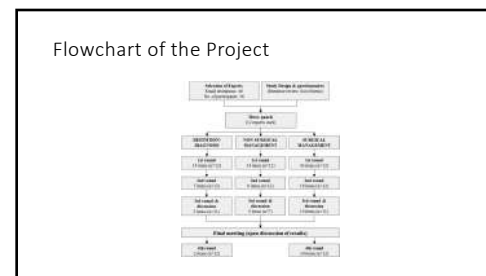
- Ophthalmologists with experience in the management of keratoconus and ectatic diseases
- Authorship of scientific publications in high-impact medical journals
- Wide recognition by the specialized medical community
- Willing to comply with the initial question rounds, face-to-face meeting, and project timelines

142

Selection

- Worldwide geographic distribution
- Represent 4 Ophthalmological Cornea societies
 - Asia Cornea Society (Asia)
 - Cornea Society (USA and international)
 - EuCornea (Europe)
 - PanCornea (Latin America, USA and Canada)
- Each society had 4 experts plus coordinators

143



144

Definition and Diagnosis

145

Mandatory Findings to Diagnose Keratoconus

- Abnormal POSTERIOR Ectasia
 - Abnormal Corneal Thickness Distribution
 - Clinical Non-inflammatory corneal thinning
- Values and reference points vary based on device used for screening

146

Ectatic Disease List

- Keratoconus
- Pellucid Marginal Degeneration (PMD)
- Keratoglobus
- Post Refractive Surgery Ectasia

147

Non-Ectatic Corneal Diseases

- Terrien Marginal Degeneration
- Dellen
- Inflammatory Melts

148

Initial Consensus Statements

- Keratoglobus and Keratoconus are different clinical entities
- True unilateral keratoconus DOES NOT EXIST
- Thinning, location and pattern are aspects that distinguish Keratoconus, PMD and Keratoglobus

149

Best way to distinguish Keratoconus from PMD

- Full corneal thickness map
- Slit lamp exam
- Anterior curvature map
- Anterior tomographic elevation map

150

Least Reliable Indicator or Determinant

- Central Pachymetry

This is because Keratoconus can be present in a cornea of normal thickness

151

Consensus on Tests to Diagnose Early or Sub-Clinical Keratoconus

- Tomography (Scheimpflug or OCT)*

**Posterior corneal elevation abnormalities must be present to
diagnose mild or sub-clinical keratoconus**

*Best and Most Widely Available tests

152

Definition of Ectasia Progression

- Consistent change in at least 2 of the 3 following parameters
 - Steepening of the anterior corneal surface
 - Steepening of the posterior corneal surface
 - Thinning and/or an increase in the rate of corneal thickness change from the periphery to the thinnest point
- Changes need to be consistent over time and above normal variability

153

Ectasia Progression

- A change in both UCVA and BSCVA is NOT required to document progression
- Testing for progression should be SHORTER for younger patients
- The same measurement platform should be used in sequential examinations

154

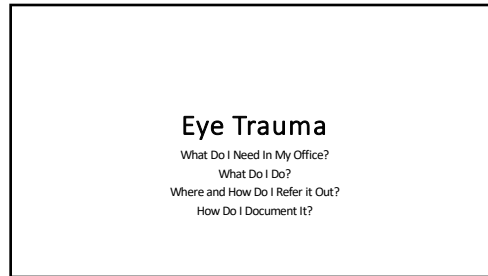
CDC and FDA Warnings

Time to Get on The Blast Email List!

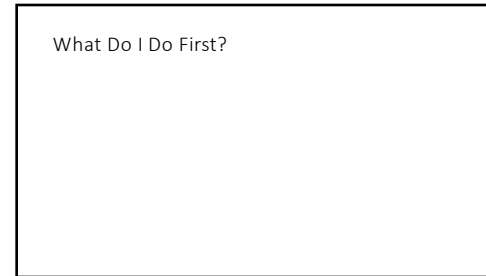
155

Herpes

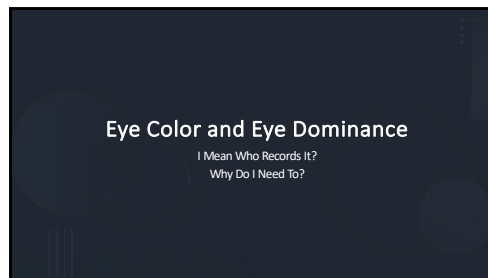
156



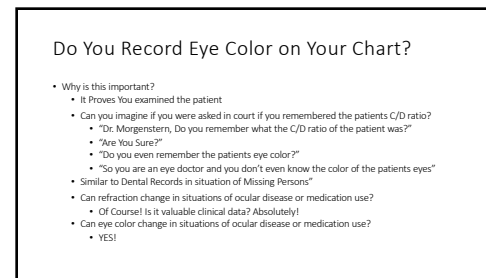
157



158



159



160



161