Virtual Clinical Encounter (VCE): Meridional Amblyopia

Stephanie L. Adams, OD, PhD, and Elizabeth Wyles, OD, FAAO.

Ref: A Novel Approach to Improving Clinical Performance through Remote Learning.

Optometric Education, Fall 2020.

Case content and patient script

Demographics

15-year-old Caucasian male; high school student; likes basketball

Chief complaint

Broken glasses; newly adoptive parents (Elyse & Bruce) brought patient in; Will has been living with them for 2 weeks; they found broken glasses in his belongings

School performance: B and C with an occasional D

Briefly wore glasses when first received 6 years ago, they have been broken since.

History of present illness

Character/signs/symptoms: blur at distance and near

Location: OU

Severity: moderate

Nature of onset: unknown; but long standing

Duration: years

Frequency: constant

Exacerbations/remissions: none

Relationship to activity or function: makes school work difficult and difficulty seeing score

board

Accompanying signs/symptoms: headaches afterschool and while doing homework

Headache located around eyes; frequency daily, less on weekends; onset x years, associated with videogames and homework; pain level "I don't know;" relieved by nothing/going to sleep;

Secondary complaints/symptoms

None



Patient ocular history

Last eye exam 6 years ago according to medical record file, glasses prescribed at that time, but patient has not worn them in over 5 years; they are broken but with him today

Family ocular history

Mother: unknown

Father: unknown

Patient medical history

Exercise induced asthma

Medications used by patient

Albuterol before physical activity

Patient allergy history

NKDA

Family medical history

Father: unknown Mother: unknown



Review of systems

Constitutional/general health: denies

Ear/nose/throat: denies Cardiovascular: denies

Pulmonary: denies

Dermatological: denies
Gastrointestinal: denies
Genitourinary: denies
Musculoskeletal: denies

Neuropsychiatric: mild headache

Endocrine: denies
Hematologic: denies
Immunologic: denies

Mental status

Orientation: oriented to time, place and person

Mood: appropriate **Affect:** appropriate

Social history

Unremarkable



Clinical findings

Entering unaided VA:	<u>Distance</u>	<u>Pinhole</u>	<u>Near</u>
OD:	20/100	20/40	20/80
OS:	20/100	20/40	20/80

Entering aided (habitual-TF) VA:	<u>Distance</u>	<u>Pinhole</u>	<u>Near</u>
OD:	20/50 ⁻²	20/40	20/40 ⁻²
OS:	20/50 ⁻²	20/40	20/40 ⁻²
OU:	20/50 ⁻¹		20/40 ⁻¹

Lensometry:

OD: +0.50 -5.00 x 010 OS: +0.25 -5.00 x 170

Pupils: PERRL, negative RAPD **EOMs:** full range of motion

Confrontation fields: full to finger counting OD, OS

Cover test cc (habitual-TF):

distance: ortho

near: ~14^{\Delta} exophoria

NPC: patient does not tolerate test due to eye strain/discomfort

Maddox Rod H (TF-habitual): "just to the left of the L"

Maddox Rod V (TF-habitual): "on the light"

Stereo cc (habitual-TF): 500 seconds random dot; 50 seconds randot stereopsis

Stereo cc (manifest-TF): 250 seconds random dot; 40 seconds randot stereopsis

Color: strong protan OD, medium protan OS

Keratometry:

OU: 40.5 @ 180, 48.5 @ 90

Dry retinoscopy (lens bars or phoropter with auxiliary cylinder lenses):

VA Distance

OD: +2.00 -7.00 x 180 20/40⁺¹

OS: $+1.50 - 6.50 \times 180$ $20/40^{+2}$

Working distance: 65 cm

Dry BB subjective refraction: VA Distance (line) (isolated) VA Near

OD: $+1.00 -6.50 \times 003$ $20/30^{-1}$ $20/30^{+2}$ $20/30^{-1}$ OS: $+0.50 -6.00 \times 177$ 20/30 $20/30^{+1}$ 20/30

Trial Frame: patient reports feeling "wonky," counters appear slanted, vision is much

clearer

NRA/PRA: +1.25/-1.00

Minus lens amps: -3.75 OU (including working distance)

Von Graefe at distance: 2^{Δ} exo **Von Graefe at near:** 10^{Δ} exo

Near vergences: BI x/24/18, BO x/12/8

Case content and patient script

Slit lamp:

Lids/lashes/adnexa: unremarkable OD, OS

Conjunctiva/sclera: normal OD, OS

Cornea: clear OD, OS; (-)Munson's sign OU Anterior chamber: deep and quiet OD, OS

Iris: normal OD, OS Lens: clear OD, OS

Vitreous: clear OD, OS

IOP: 15 mmHg OD, 15 mmHg OS @ 9:08 AM by applanation tonometry

Cycloplegic retinoscopy: OD: +2.50 -7.50 x 005 VA Distance 20/30-1

OS: +2.00 -7.00 x 175

20/30-1

Fundus OD:

C/D, macula, posterior pole: see *Image*

periphery: unremarkable

Fundus OS:

C/D, macula, posterior pole: see *Image*

periphery: unremarkable

Additional testing:

Macula OCT: WNL OU

Tomography: high WTR astigmatism, no ectasia OU



Begin VCE with the next page



Will 15-year-old Caucasian Male





Habitual Glasses and Adoptive Parents

Unaided Visual Acuity OD



ZRKDC	20/200
DNCHV	20/160
CDHNR	20/125
RVZOS	20/100
OSDVZ	20/80
NOZCD-	20/63
RDNSK	20/50
OKSVZ	20/40
KSNHO	20/32
HOVSN	20/25
VCSZH ————————————————————————————————————	20/20 20/16
S H R Z C DNOKR	20/12.5

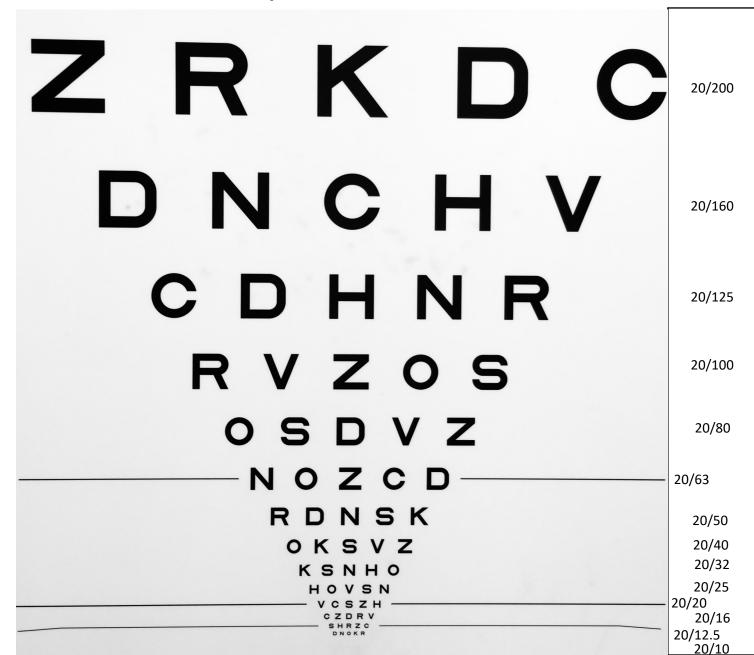
Unaided Pinhole Distance Visual Acuity OD

ZRKDC	20/200
DNCHV	20/160
CDHNR	20/125
RVZOS	20/100
OSDVZ	20/80
NOZCD	20/63
RDNSK	20/50
OKSVZ	20/40
KSNHO	20/32
HOVSN 	20/25 - 20/20
CZDRV SHRZC	20/16
D N O K R	20/12.5 20/10

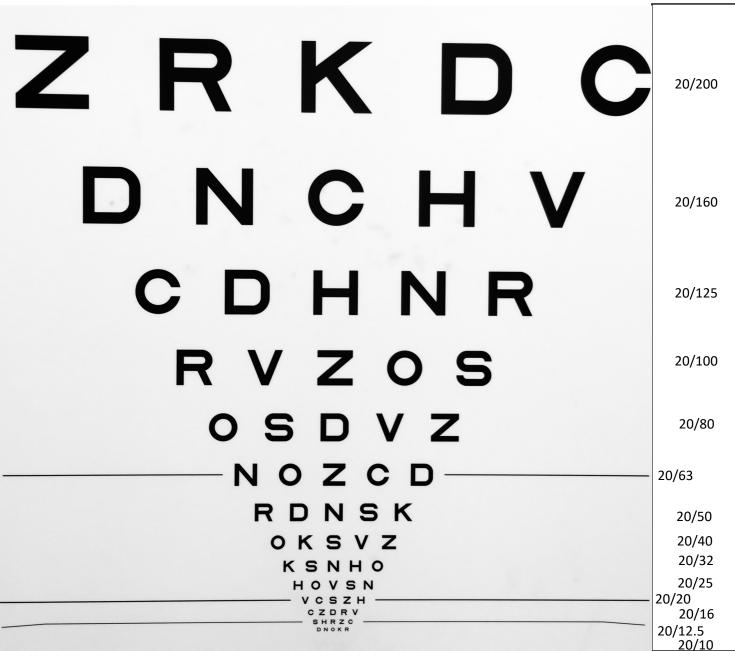


Unaided Visual Acuity OS





Unaided Pinhole Distance Visual Acuity OS

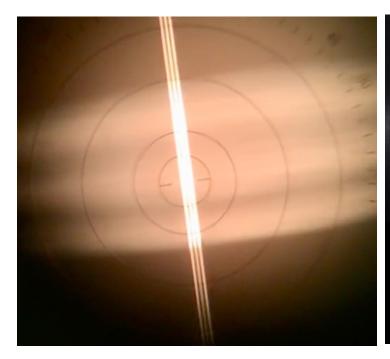




Unaided Visual Acuity OU

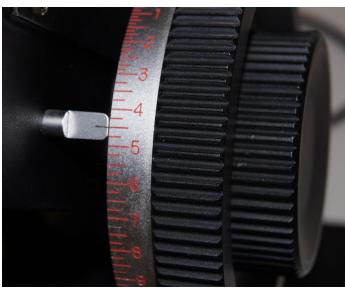


ZRKDC	20/200
DNCHV	20/160
CDHNR	20/125
RVZOS	20/100
OSDVZ	20/80
NOZCD	20/63
RDNSK	20/50
OKSVZ	20/40
KSNHO	20/32
H O V S N	20/25 20/20
C Z D R V SHRZC	20/16
DNOKR	20/12.5 20/10





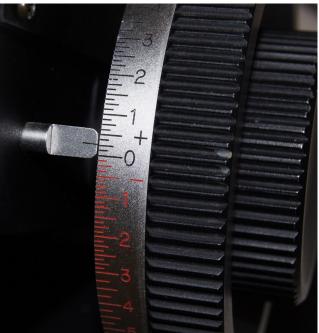




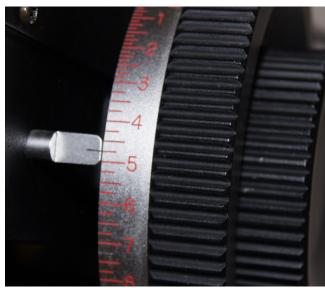


Lensometry OD



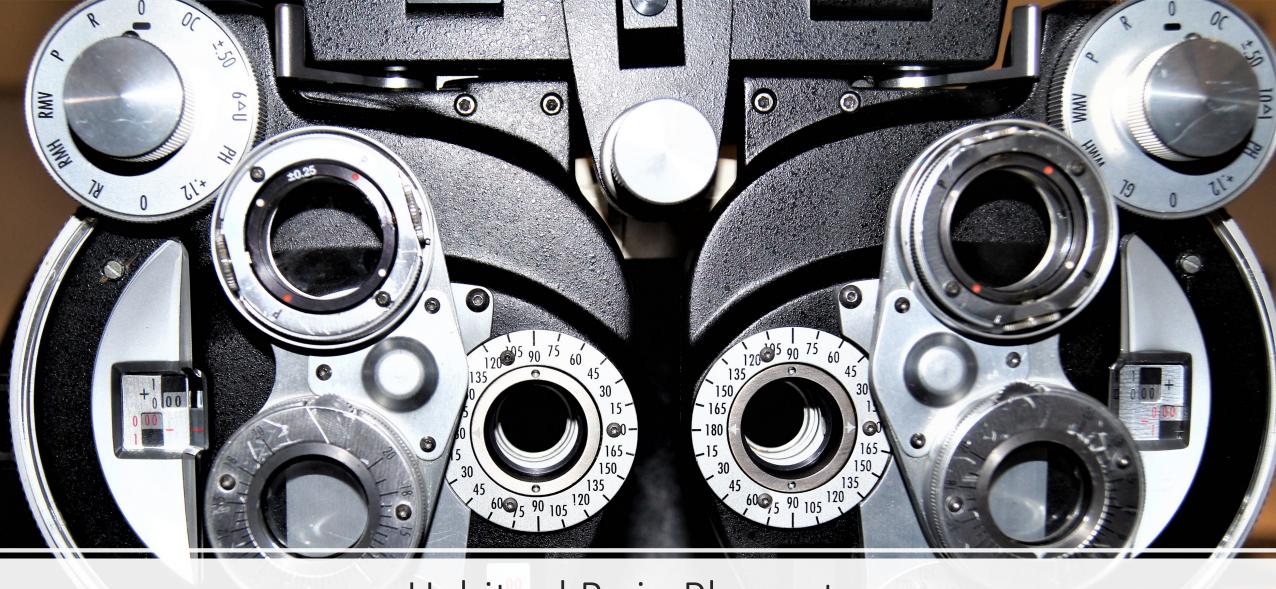








Lensometry OS



Habitual Rx in Phoropter



ZRKDC DNCHV 20/160 CDHNR 20/125 RVZOS 20/100 OSDVZ 20/80 NOZCD 20/63 RDNSK 20/50 OKSVZ 20/40 20/32 KSNHO

HOVSN



20/20 20/16 20/12.5

Aided Distance Visual Acuity OD

ZRKDC	20/200
DNCHV	20/160
CDHNR	20/125
RVZOS	20/100
OSDVZ	20/80
NOZCD-	20/63
RDNSK	20/50
OKSVZ	20/40
KSNHO	20/32
HOVSN	20/25 20/20
C Z D R V	20/16
DNOKR	20/12.5 20/10



Aided Pinhole Distance Visual Acuity OD

ZRKDC	20/200
DNCHV	20/160
CDHNR	20/125
RVZOS	20/100
OSDVZ	20/80
NOZCD	20/63
RDNSK	20/50
OKSVZ	20/40
KSNHO	20/32 20/25
HOVSN vcszh	20/20
CZDRV SHRZC DNOKR	20/16 20/12.5
	20/12.3



Aided Distance Visual Acuity OS

ZRKDC	20/200
DNCHV	20/160
CDHNR	20/125
RVZOS	20/100
OSDVZ	20/80
NOZCD	20/63
RDNSK	20/50
OKSVZ	20/40
KSNHO	20/32
HOVSN vcszh	20/25 20/20
CZDRV ————————————————————————————————————	20/16
D N O K R	20/12.5



Aided Pinhole Distance Visual Acuity OS

ZRKDC	20/200
DNCHV	20/160
CDHNR	20/125
RVZOS	20/100
OSDVZ	20/80
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OKSVZ	20/40
KSNHO	20/32
HOVSN vcszh	20/25 20/20
C Z D R V SHRZC	20/16
DNOKR	20/12.5 20/10



Aided Distance Visual Acuity OU

ZRKDC	, 20/200
DNCHV	20/160
CDHNR	20/125
RVZOS	20/100
OSDVZ	20/80
NOZCD	20/63
RDNSK	20/50
OKSVZ	20/40
KSNHO	20/32
HOVSN 	20/25 20/20
C Z D R V SHRZC	20/16
DNOKR	20/12.5 20/10



Aided Near Visual Acuity OD

SCHO VZD NRKE OZRE CHS DKVN 20/50 HCZD NEV KRSE ZDEV OSH RCNK 20/40 KCND VZR HSEO VHSC DEZ DNKR 20/30 CNKO RVD ESHZ ERHZ KDN COVS 20/25			
HCZD NEV KRSE ZDEV OSH RCNK 20/40 KCND VZR HSEO VHSC DEZ DNKR 20/30 CNKO RVD ESHZ ERHZ KDN COVS 20/25 SEON RCH KZDV DVCK ZNE OHSR	sсно	V Z D N	IRKE
ZDEV OSH RCNK 20/40 KCND VZR HSEO VHSC DEZ DNKR 20/30 CNKO RVD ESHZ ERHZ KDN COVS 20/25 SEON RCH KZDV DVCK ZNE OHSR	OZRE	CHS D	
ZDEV OSH RCNK 20/40 KCND VZR HSEO VHSC DEZ DNKR 20/30 CNKO RVD ESHZ ERHZ KDN COVS 20/25			
CNKO RVD ESHZ ERHZ KDN COVS 20/25 SEON RCH KZDV DVCK ZNE OHSR	HCZD	N E V K	RSE
CNKO RVD ESHZ ERHZ KDN COVS 20/25 SEON RCH KZDV DVCK ZNE OHSR	7 D F V	OSH B	CNK
VHSC DEZ DNKR 20/30 CNKO RVD ESHZ ERHZ KDN COVS 20/25 SEON RCH KZDV DVCK ZNE OHSR	2 5 2 4		
VHSC DEZ DNKR 20/30 CNKO RVD ESHZ ERHZ KDN COVS 20/25 SEON RCH KZDV DVCK ZNE OHSR			
VHSC DEZ DNKR 20/30 CNKO RVD ESHZ ERHZ KDN COVS 20/25 SEON RCH KZDV DVCK ZNE OHSR			
20/30 CNKO RVD ESHZ ERHZ KDN COVS 20/25 SEON RCH KZDV DVCK ZNE OHSR	KCND	VZR HSE	0
CNKO RVD ESHZ ERHZ KDN COVS 20/25 SEON RCH KZDV DVCK ZNE OHSR	VHSC		
ERHZ KDN COVS 20/25 SEON RCH KZDV DVCK ZNE OHSR		20	/30
ERHZ KDN COVS 20/25 SEON RCH KZDV DVCK ZNE OHSR			
20/25 SEON RCH KZDV DVCK ZNE OHSR	CNKO	R V D E S H Z	
SEON RCH KZDV DVCK ZNE OHSR	ERHZ		
DVCK ZNE OHSR		20/25	
DVCK ZNE OHSR			
	SEOI	ясн киру	
	DVCI		
20/20		20/20	



Aided Near Visual Acuity OS

sсно	VZD NRKE	
OZRE	CHS DKVN	
HCZD	NEV KRSE	
ZDEV	OSH RCNK	
	20/40	
KCND	VZR HSEO	
vнsс	DEZ DNKR	
	20/30	
CNKO	RVD ESHZ	
ERHZ		
	20/25	
SEON		
	20/20	



Aided Near Visual Acuity OU

SCHO	V Z D	NRKE
OZRE	снѕ	D K V N
HCZD	NEV	KRSE
ZDEV	оѕн	R C N K
		20/40
KCND	VZR	HSEO
vнsс	DEZ	DNKR 20/30
CNKO	RVD	ESHZ
ERHZ	KDN	covs
		20/25
SEO	N RCH	KZDV
DVC		OHSR
		20/20



Unaided Near Visual Acuity OD

sсно	V Z D	NRKE
OZRE	CHS	D K V N 20/50
HCZD	NEV	KRSE
ZDEV	оѕн і	RCNK
		20/40
KCND	VZR HS	EO
vнsс	DEZ DN	KR
		20/30
CNKO	RVD ESH	z
ERHZ	KDN COV	
	20/2	25
SEON		
DVC	ZNE OHSR 20/20	



Unaided Near Visual Acuity OS

SCHO	VZD NRK	E
OZRE	CHS DK	/ N 20/50
HCZD	NEV KRS	E
ZDEV	OSH RCN	
KCND	VZR HSEO	
VHSC	DEZ DNKR 20/30	
CNKO	RVD ESHZ	
	KDN COVS	
	20/25	
S E O I		
	20/20	

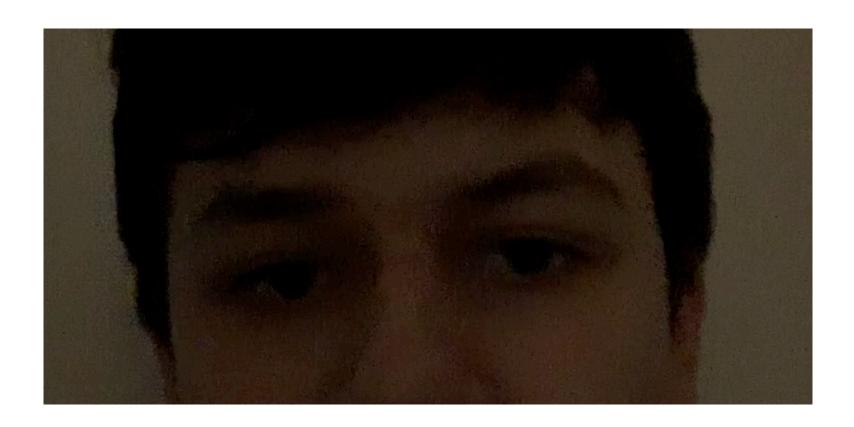


Unaided Near Visual Acuity OU

sсно	VZD NRKE
OZRE	CHS DKVN 20/50
HCZD	NEV KRSE
ZDEV	OSH RCNK 20/40
KCND	VZR HSEO
vнsс	DEZ DNKR 20/30
CNKO	D RVD ESHZ
ERHZ	Z KDN COVS 20/25
SEON	N RCH KZDV
DVCK	к zne онsr 20/20



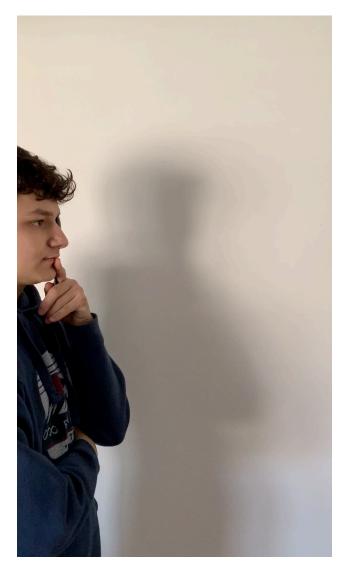
Pupils



EOMs



Confrontation Visual Fields



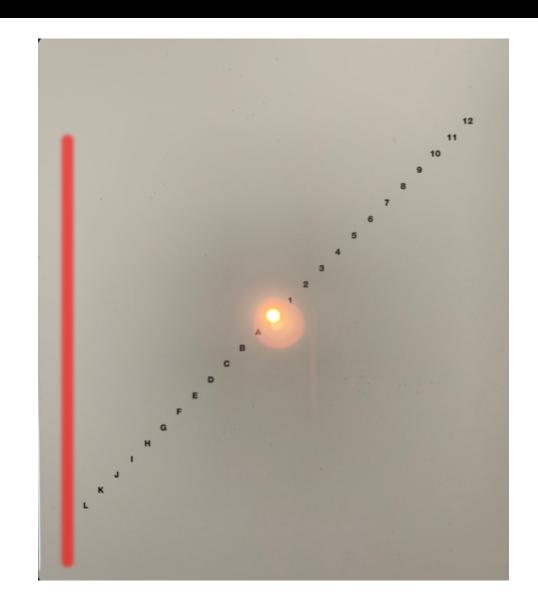
Cover Test at Distance



Cover Test at Near

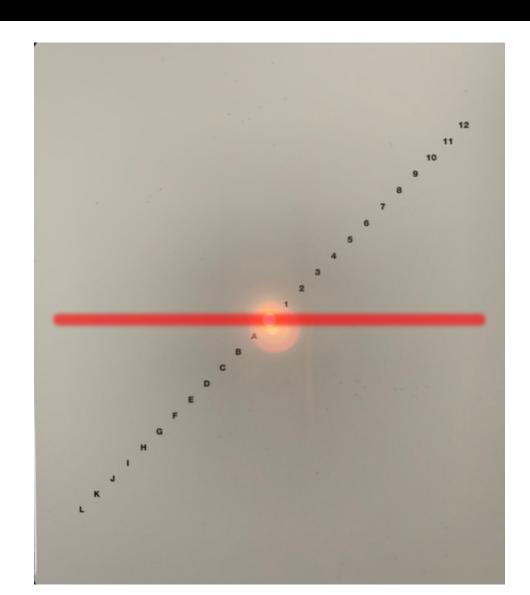


Maddox Rod: Lateral Phoria through Habitual





Maddox Rod: Vertical Phoria through Habitual

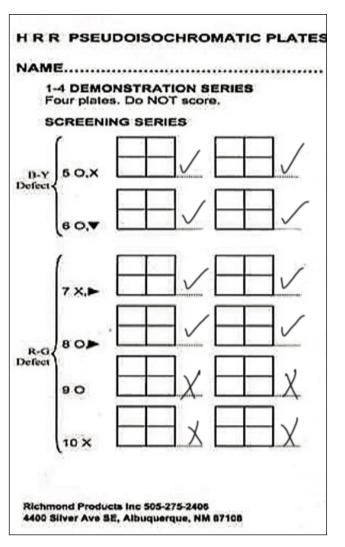


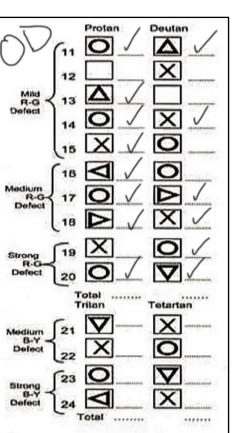


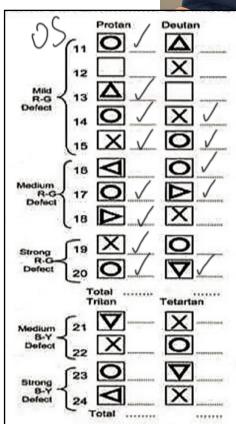
NPC



Color Vision Testing

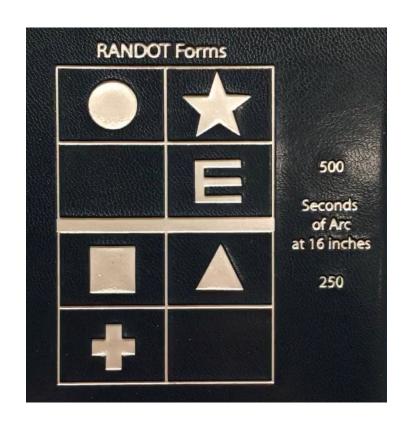








SCORING KEY		Seconds of Arc at 16 inches
1	1	400
1 2 3	L R	200
3	IL.	140
4	M	100
5	R	70
6	M	50
7	L	40
8	R	30
9	M	25
10	R	20

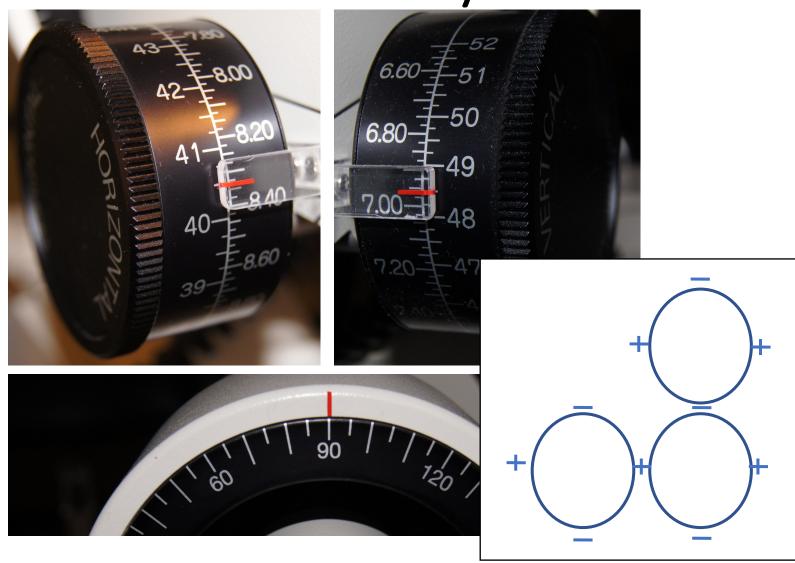




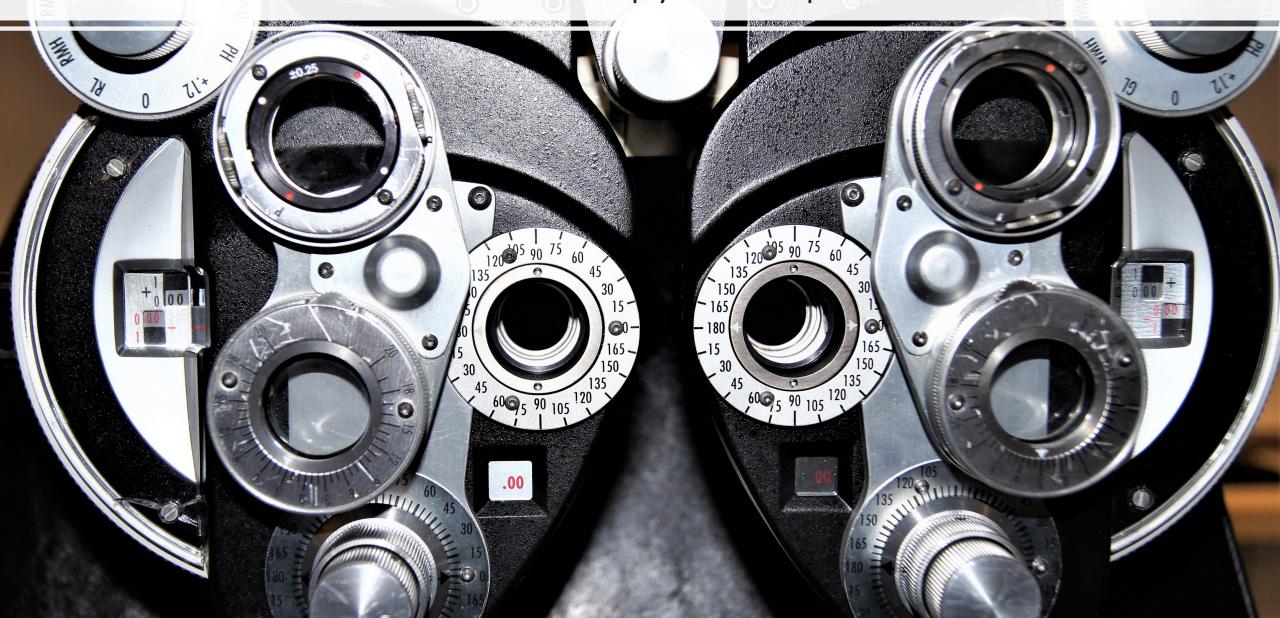
Stereo

Keratometry



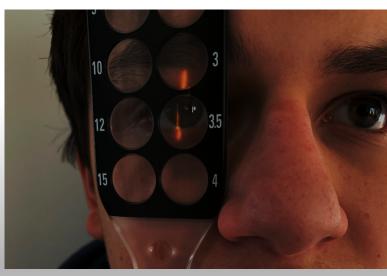


Retinoscopy Attempt

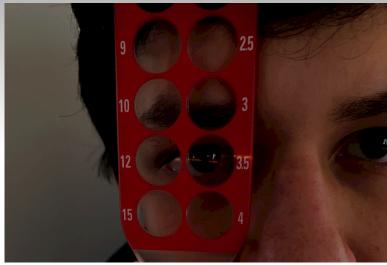


Retinoscopy findings

65cm distance: working (

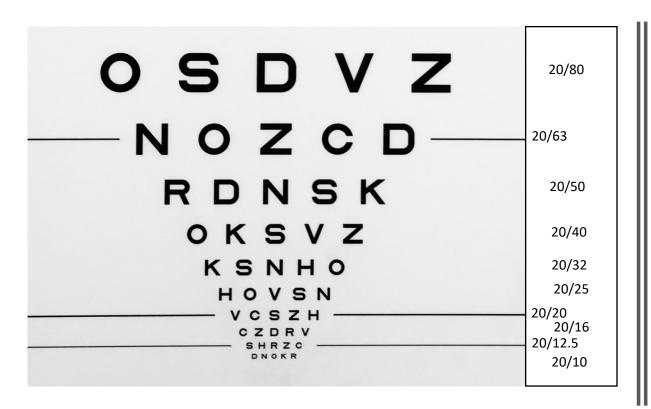




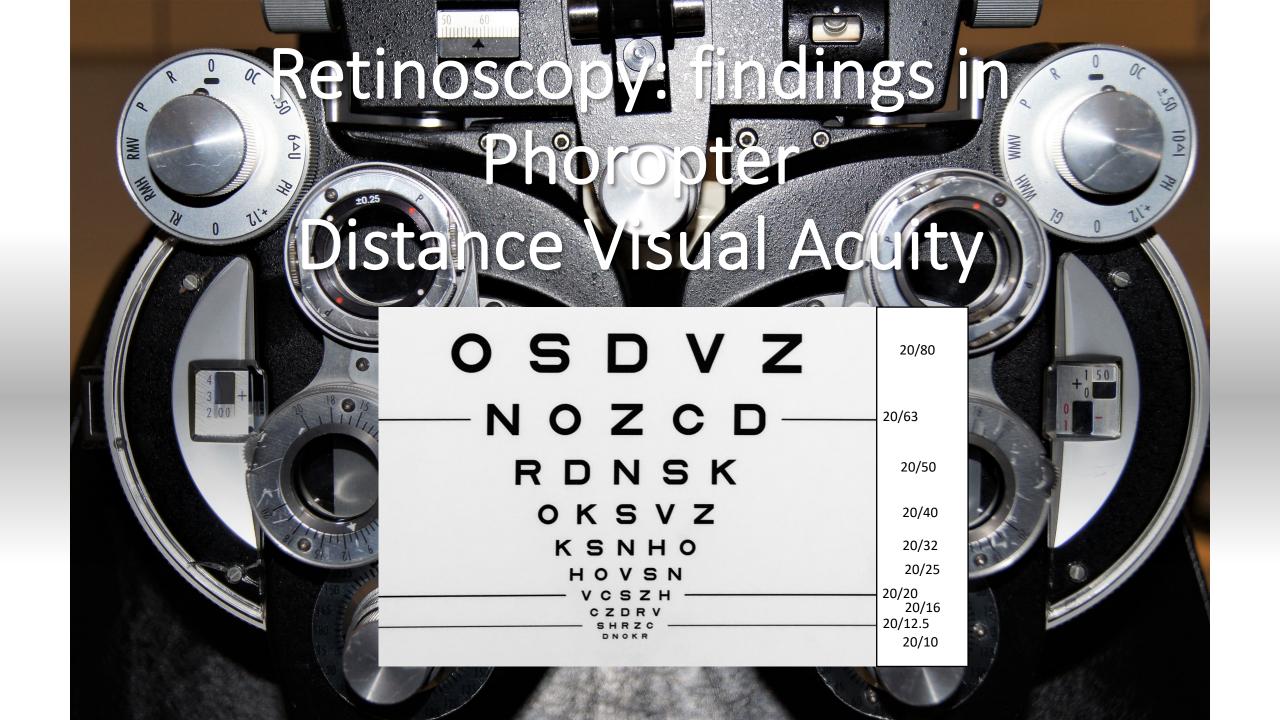


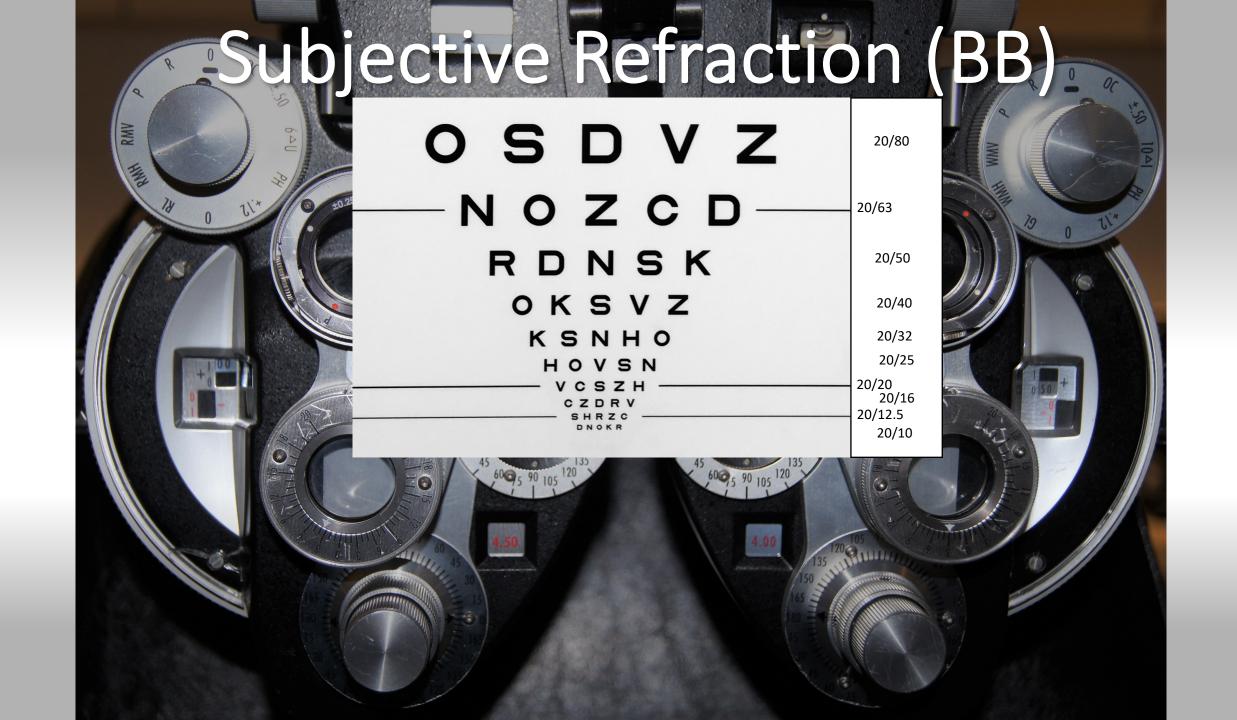


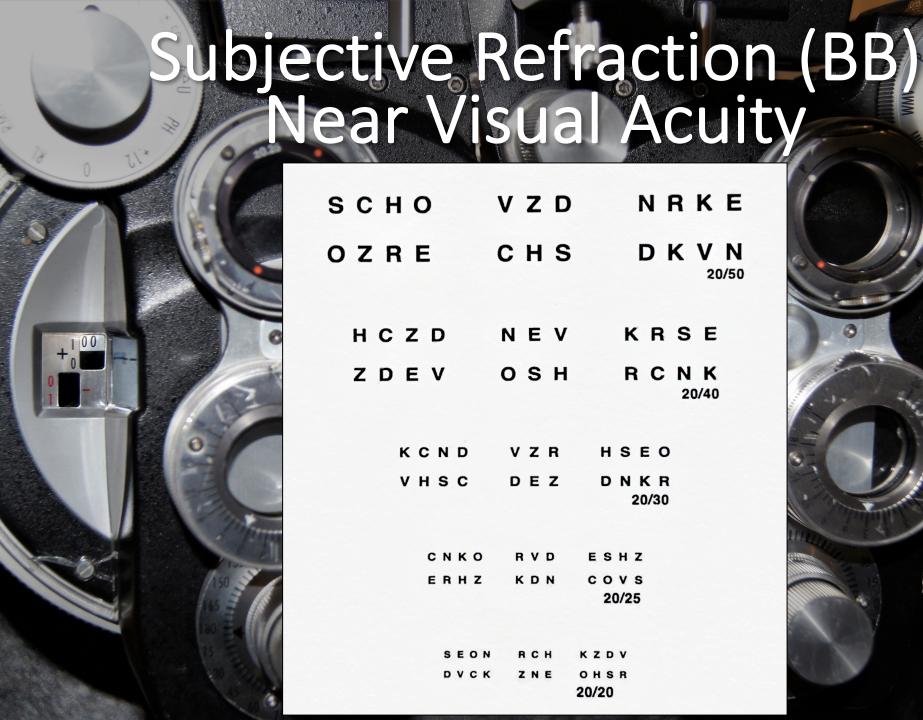
Retinoscopy: Trial Frame Distance Visual Acuity













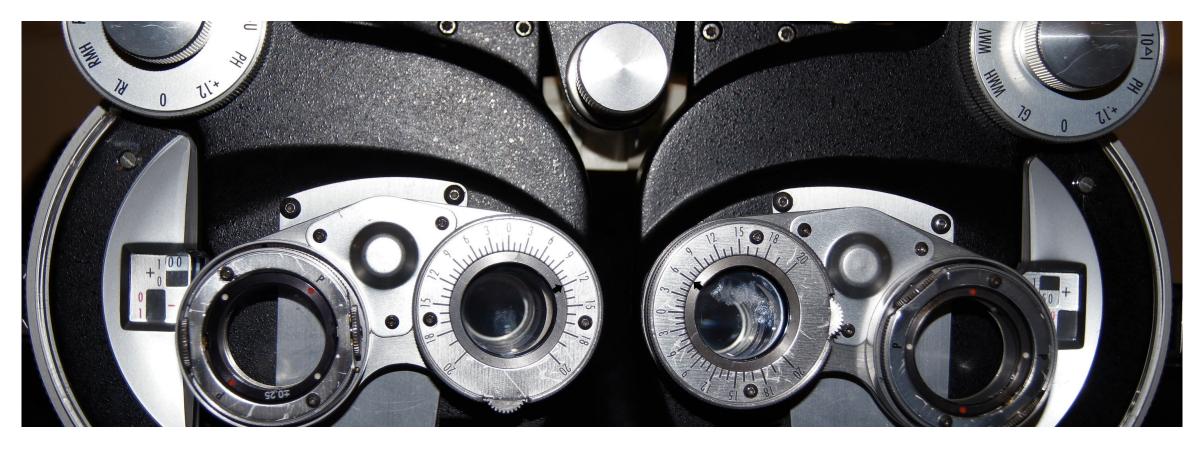




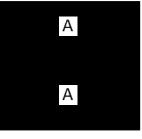
Minus Lens Amps



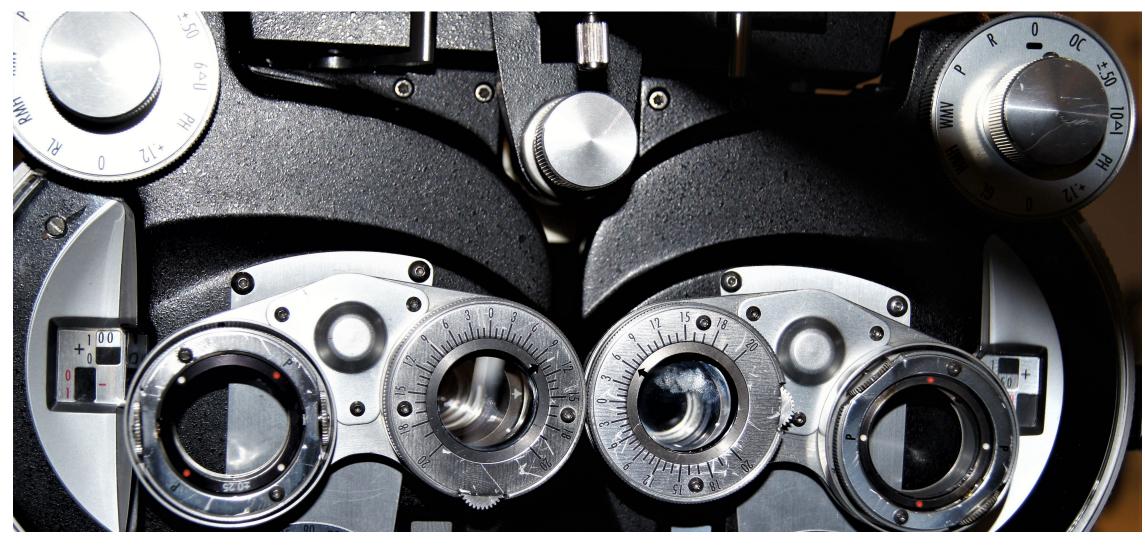




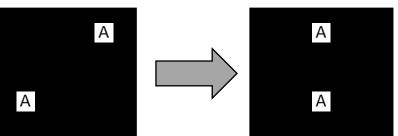
Patient's view:



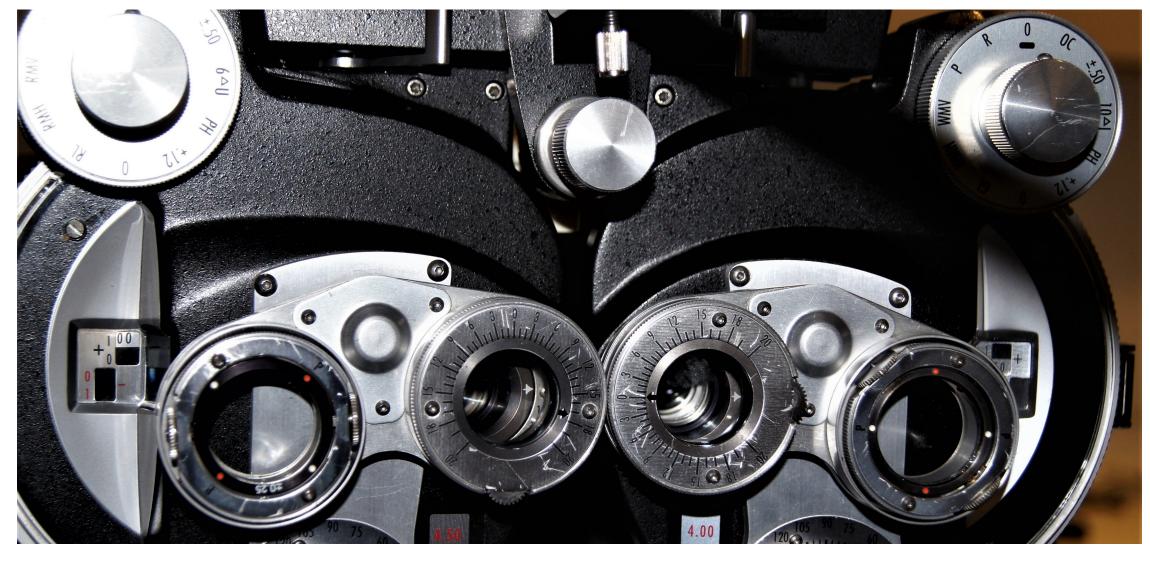
Near Horizontal Phoria Set-up

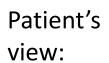


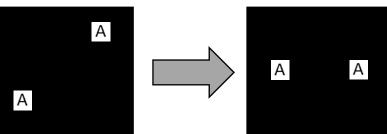
Patient's view:



Near Horizontal Phoria







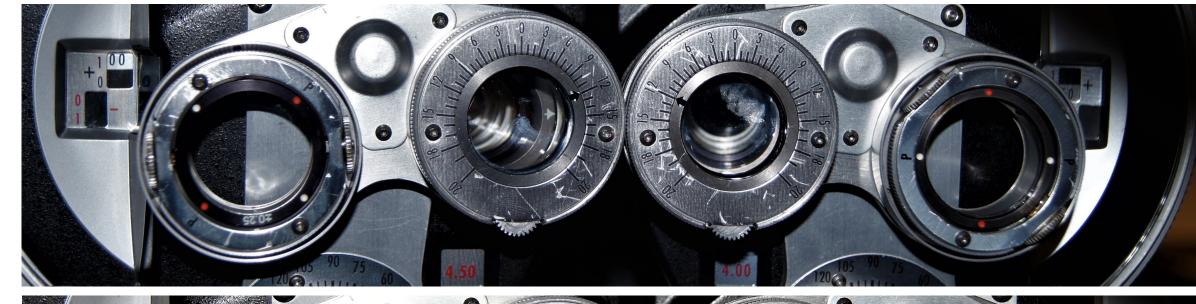
Near Vertical Phoria





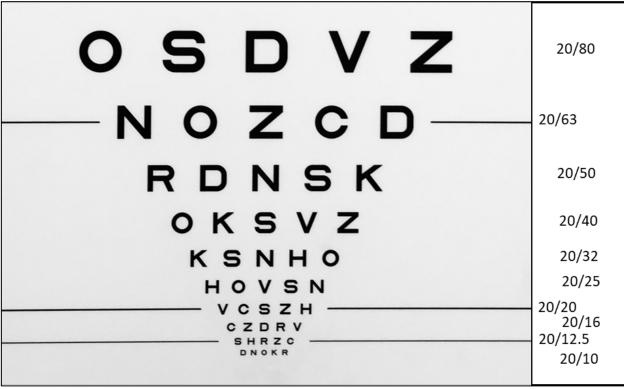




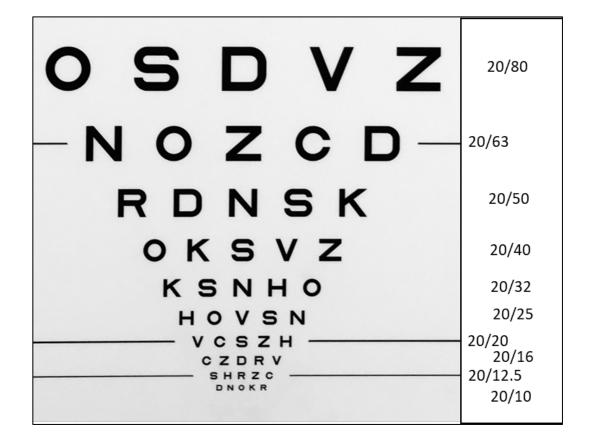






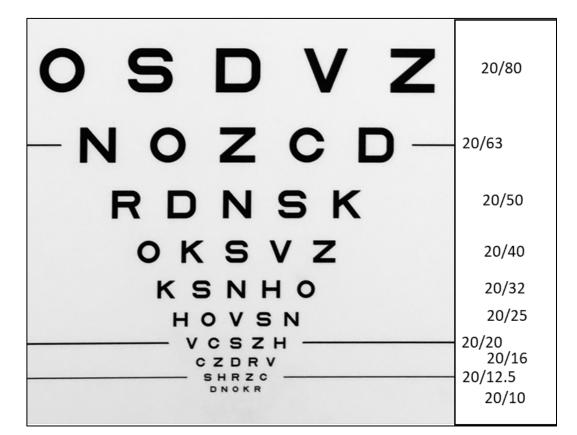


Trial Frame



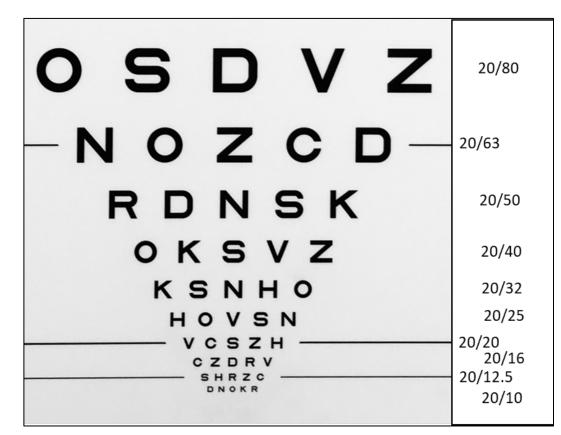


Trial Frame at Distance





Trial Frame at Distance





Trial Frame at Distance





Trial Frame at Near

Slit Lamp: Lids and Lashes





Slit Lamp: Lids and Lashes





Slit Lamp: Conjunctiva OD









Slit Lamp: Conjunctiva OS

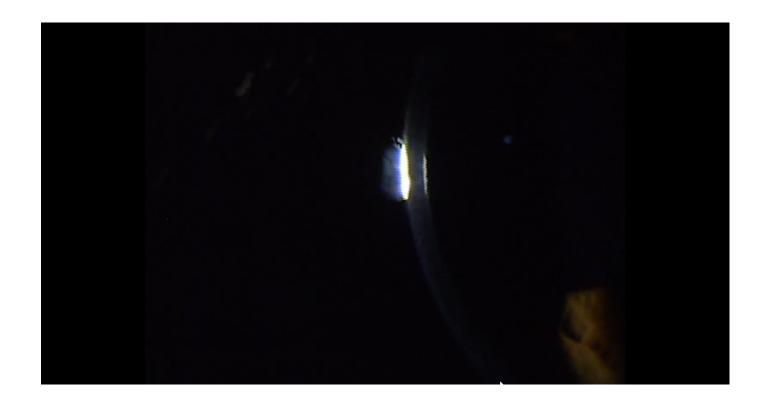




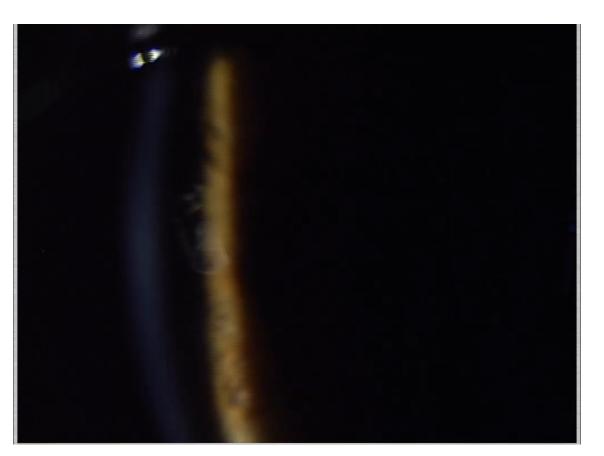




Slit Lamp (findings for both eyes)

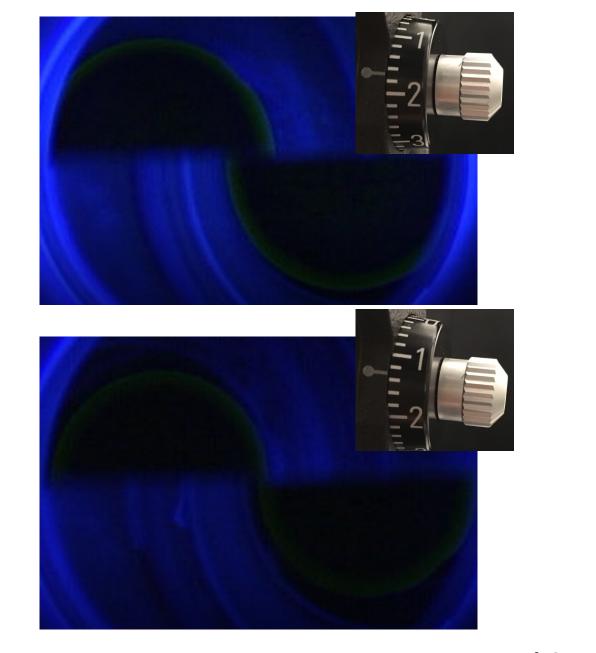


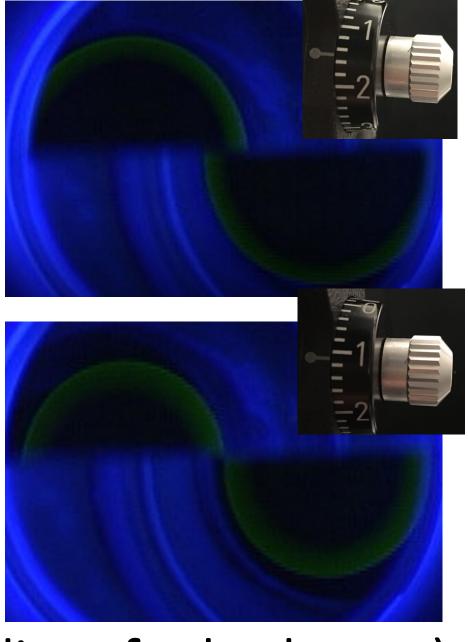




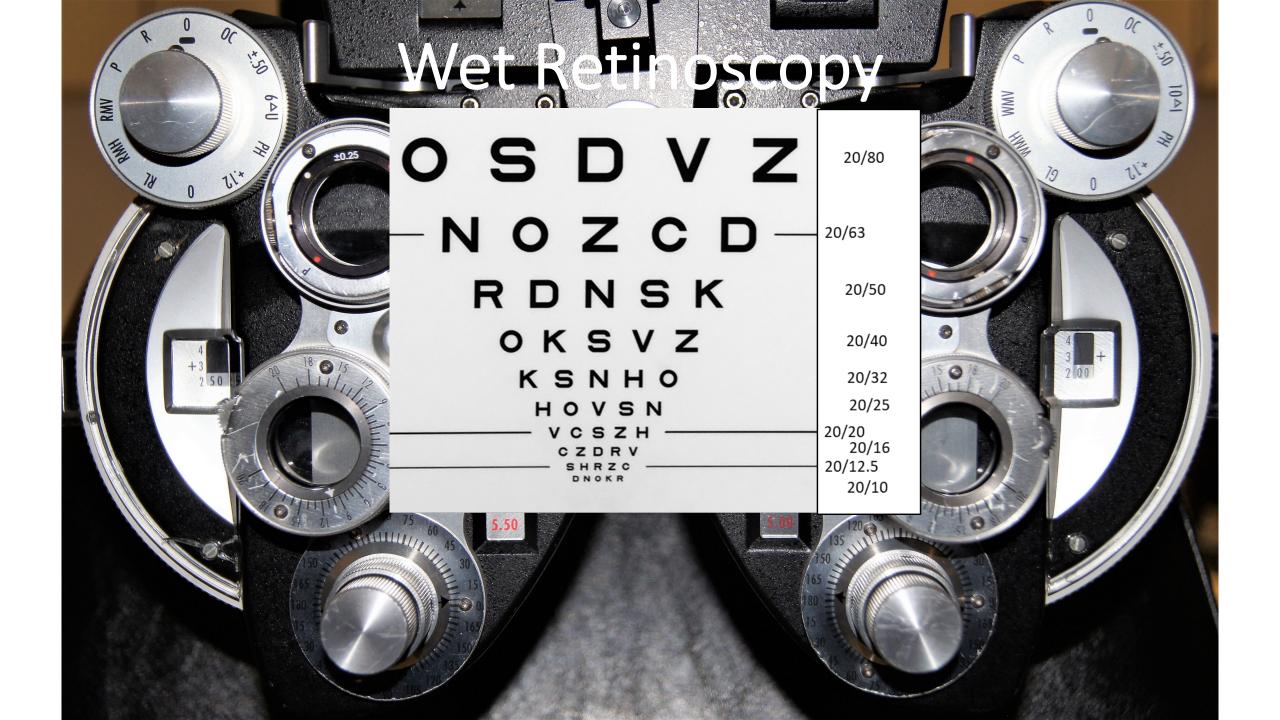
Slit Lamp

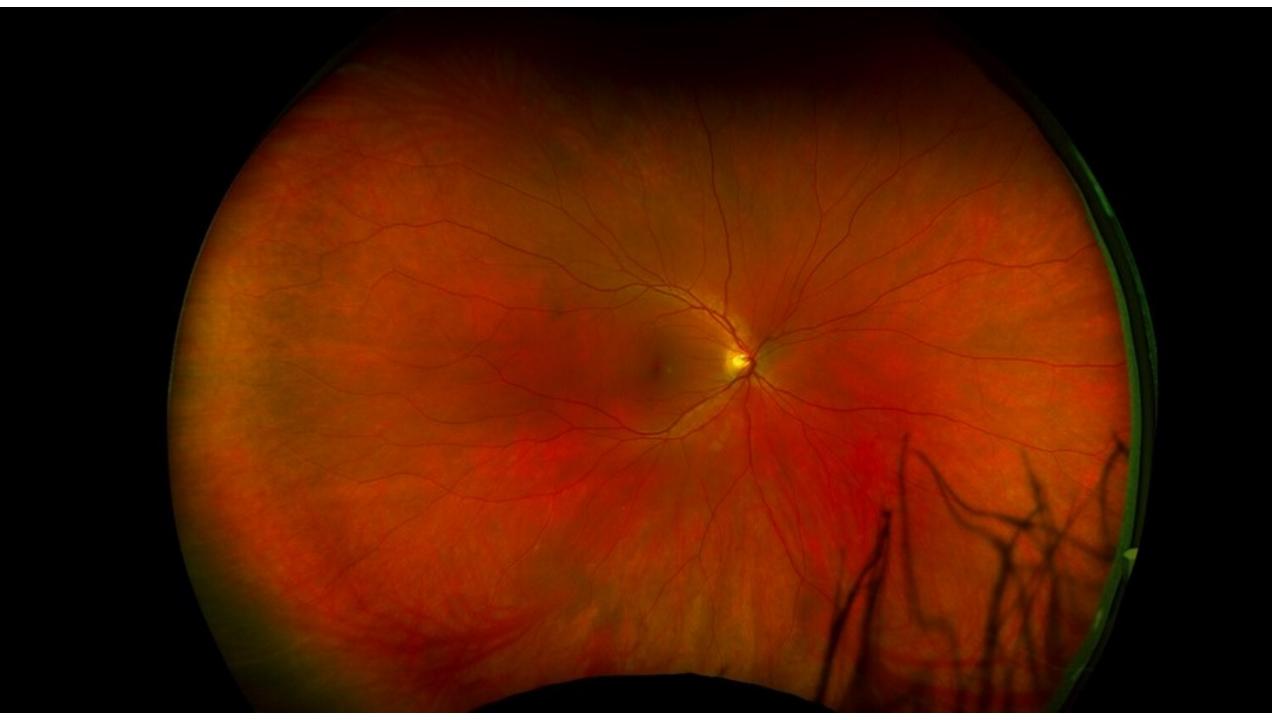
(findings for both eyes)





Mires seen during GAT (findings for both eyes)



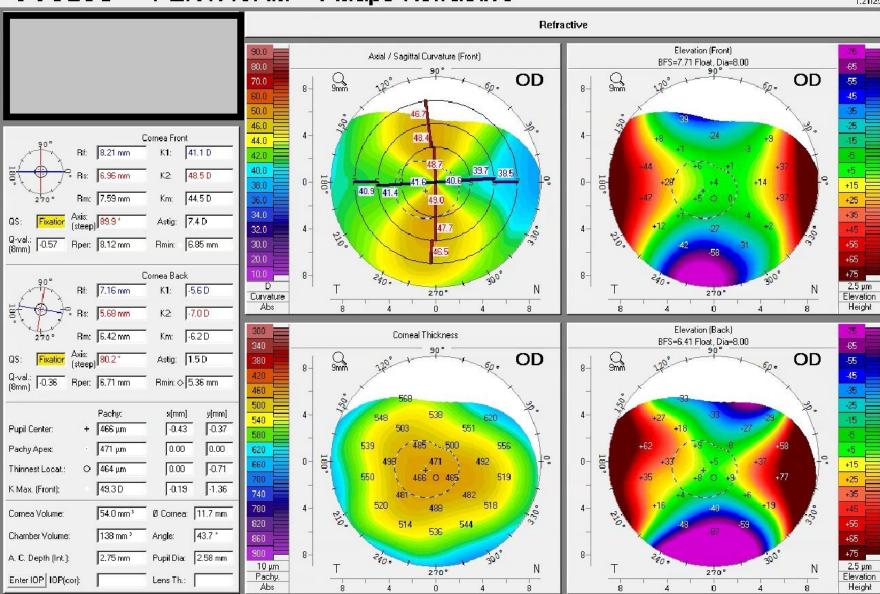






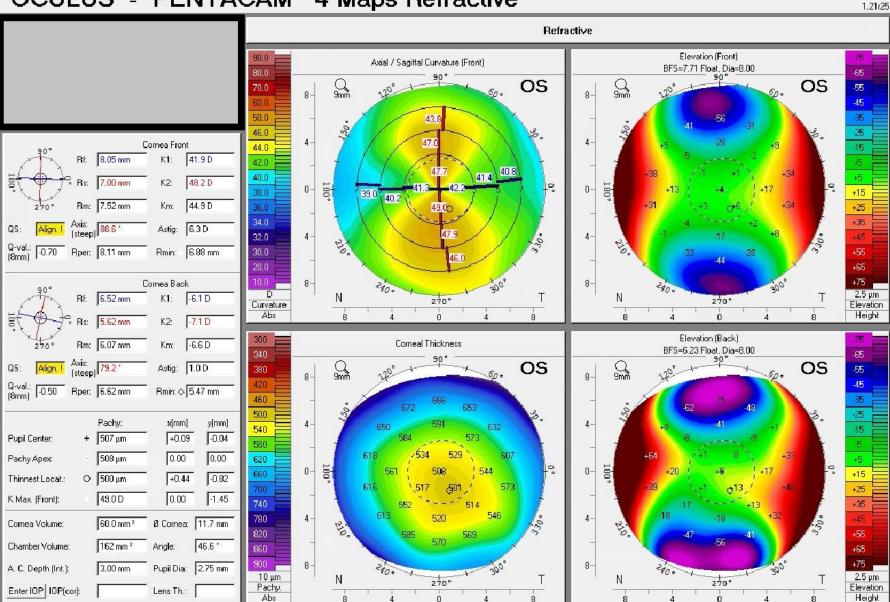
OCULUS - PENTACAM 4 Maps Refractive

1.21r25





OCULUS - PENTACAM 4 Maps Refractive



Macular OCT (findings similar both eyes)

