When Primary Care and Binocular Vision Collide

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Question:

Is there a difference between Primary Care and Binocular Vision?

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Patient 1

JC 65-year-old female

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History-JC

- "Vision is shit". Worse with reading. When doing computer and reading things blur out and become smeared. When she first starts reading it is clear, but slowly becomes blurry. Nothing helps clear it except for breaks. Happens after about 10 minutes of near tasks.
- Has h/o of dry eye has been taking Restasis for over a year. Has had temporary plugs 1.5 years ago and didn't feel they helped. Uses AT BID OU with the Restasis
- H/O physiological cupping, normal pressures, fields have been stable
- HTN, high cholesterol

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Examination Data

Dist. VA	Near VA	Dist CT	Near CT	NPC
20/20 OD, OS, OU	20/20- OD, OS, OU	Ortho	6XP	14/18 cm
Pupils	**Stereo**	**Versions**	**VF**	**MEM**
-APD	20" arc	Smooth and Full	Full	+0.50 OD +0.50 OS

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Examination Data

NRA	PRA	Dry OD	Dry OS
+0.25—over add	-0.75—over add	+3.25-0.75x084 +2.50 add	+3.00-0.50x125 +2.50 add
Vergence Near Smooth	**Ant. Seg OD &OS**	**Posterior OD**	**Posterior OS**
BO X/4/0	Mild SPK TBUT = 5 sec	Normal CD's: 0.65/0.65	Normal CD's: 0.6/0.6

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Assessment and Plan

- Convergence Insufficiency—Ed pt on findings, pt given 1 prism diopter of BI prism. Strong education on patient adaptation to Rx—pt voiced understanding
- Dry Eye—patient is to continue to use Restasis BID OU and use AT at least 4x/day OU
- Large CD ratios—ed patient, pressures normal, fields full, stressed importance of monitoring yearly for any changes.

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Patient 2

WF 6-year-old male

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History-WF

- Patient referred in from family friend
- LEE 4 weeks, received glasses 2 weeks ago and told the child only had a 6 month window of patching to improve his amblyopia
- Patching daily 3 hours without glasses on using pirate patch for the last month
- Starting first grade in 3 days
- No medical problems or issues during pregnancy or after
- What is wrong with this history?

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Examination Data

Dist. VA cc	Near VA	Dist CT	Near CT	NPC
20/125 OD, 20/20 OS Sing. Surr. HOTV	20/125 OD, 20/20 OS Sing. Surr. HOTV	Ortho	9XP	BON
Pupils	**Thorington**	**Stereo**	**Versions**	**VF**
-APD	Not able	+fly No global	Smooth and Full	Full OD, OS

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Examination Data

NPA	MEM	Synoptophore	NRA
Unable	+1.00 OD +0.75 OS	Not done	Unable
PRA	**Vergence Facility**	**Saladin Card Associated Phoria**	**Worth-dot**
Unable	Unable	Unable	Fusion all distances

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Examination Data

Habitual OD	Habitual OS	Wet OD	Wet OS
+6.25-1.50X170	+1.00	+6.50-1.50X170	+1.50
Ant. Seg OD	**Ant. Seg OS**	**Posterior OD**	**Posterior OS**
Normal	Normal	Normal	Normal

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Assessment and Plan

Refractive amblyopia-Pt/Parent education on good ocular health.

Pt/Parents education on typical progression, benefit of full-time spectacle correction and overall prognosis for treatment.

Continue use of full time SRx wear and patching 2-4 hours/day 7 days a week. Pt/parent ed on do's and dont's of patching. 1 box of adhesive patches provided.

RTC 6 weeks for amblyopia follow-up.

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6 week Follow-up exam

- Patient wearing glasses full-time.
- PTP 2-4 hours every day except 2 days where they missed
- No new complaints
- VA: 20/63- OD 20/20 OS
- CT unchanged
- Stereo only local (Fly)
- Worth-dot: still fusion all distances all conditions

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Follow-Up Assessment and Plan

- CPM with PTP 2-4 hours qD, RTC 6-8 weeks for amblyopia follow-up

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OS Visual Acuity and Stereo each visit between 6-10 weeks

- 3rd 20/50 Stereo local, +RDS
- **4th 20/50** Stereo local 100 secs, +RDS
- 5th 20/30- Stereo local 100 secs, +RDS
- 6th 20/40 Stereo local 70 secs, +RDS
  - Switched to EDTRS
- 7th 20/40 Stereo local 70 secs, +RDS
  - Increased PTP 6 hours
- Most recent 20/40 Stereo 70 secs, +RDS
  - Considering VT

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Evidence approach to treatment of moderate amblyopia

- Spectacle correction and follow every 6-10 weeks until no further improvement
- If amblyopia persists, start 2 hours PTP, weekend A1% or Bangerter filter. Follow every 6-10 weeks until no further improvement
- If amblyopia persists, consider increasing PTP to 6 hours QD and follow every 6-10 weeks
- When maximum acuity achieved, taper or stop treatment and monitor for amblyopia recurrence

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Patient 3

JK 15-year-old male

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History-JK

- Patient in for routine eye exam. Patient complains of distance blur after doing near work. Patient also has near blur that worsens the longer he does near work. Patient having headaches for about 4-5 months. Saw primary care physician and was given relaxation techniques to make them better. Patient feels that they have not been helping.
- He is a sophomore at the New Technology High School in Bloomington
- No medical issues, no medical allergies no family history

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Examination Data

Dist. VA	Near VA	Dist CT	Near CT	NPC
20/20 OD, OS, OU	20/15 OD, OS, OU	Ortho	4EP	BON
Pupils	**Thorington**	**Stereo**	**Versions**	**VF**
-APD		20" arc	Smooth and Full	Full

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Examination Data

NPA	MEM	PRA	NRA
5/4/6 cm	+0.50 OD +0.50 OS	-1.25	+2.00
Near Phoria	Vergence Near Smooth	**Associated Phoria**	
6BO	BO 6/10/6 BI X/8/6	1 EP Near	

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Examination Data

Dry OD	Dry OS	Wet OD	Wet OS
+0.25-0.75x15	+0.25-0.75X010	+0.75-0.75x008	+0.75-0.75x010
Ant. Seg OD	**Ant. Seg OS**	**Posterior OD**	**Posterior OS**
Normal	Normal	Normal	Normal

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Assessment and Plan

- Accommodative Disorder and basic esophoria—No Spec Rx written-educate pt and Mom on todays findings and educate that a BV evaluation was needed to address patient complaints. Ed pt on VT and or glasses may be necessary to help with complaint. Pt/Mom voiced understanding.
- Ocular health-normal state

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History-JK

- Patient f/u from Primary Care for esophoria and accommodative disorder. Pt still complains of reading and focusing up close.
- He is a sophomore at the New Technology High School in Bloomington
- No medical issues, no medical allergies no family history

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Examination Data

Dist. VA	Near VA	Dist CT & Near CT	Near Phoria	NPC
20/20 OD, OS, OU	20/15 OD, OS, OU	4EP	6 EP	10 cm
Pupils	**Stereo**	**Versions**	**VF**	
-APD	20" arc	Smooth and Full	Full	

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Examination Data

NPA	MEM	Accom Facility	NRA
8/8/10 cm	+1.00 OD +1.00 OS	+/-2.00 8/9/8 cpm	+2.25
PRA	**Vergence Dist Step**	**Vergence Near Step**	**Associated Phoria**
-1.25	X/8/4 BO X/8/4 BI	X/8/6 BO X/6/4 BI	Ortho Near

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Assessment and Plan

- Esophoria with accommodative issues— Parent/pt ed on VT vs other treatment options. Both agree to RTC 1-2 weeks for VT.
- Start with Brock sting, Accommodative Bi-ocular facility, Accommodative push up, VTS-3 vergence Simultaneous perception targets, synoptophore

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Patient 4

AH 13-year-old female

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History-AH

- 13 year old female complains of intermittent exotropia in right eye. She is here for a comprehensive eye exam. The timing of the XT is described as mostly at night, possibly more frequent during the day now per mother. Context is reported as worse when tired. Relief is experienced from closing an eye.
- Hx of ET at a young age with surgery to correct at age 2
- No medical concerns, no HA

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Examination Data

Dist. VA	Near VA	Dist CT	Near CT	NPC
20/50 OD 20/30 OS 20/25 OU	20/50 OD 20/30 OS	20 XT	4 XT	Suppression
Pupils	**Thorington**	**Stereo**	**Versions**	**VF**
-APD		500" arc	Smooth and Full	Full

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Examination Data

NPA	MEM	PRA	NRA
4/4/4cm	-0.75 OD -0.75 OS	-1.25	+2.00
Near Phoria	Vergence Dist & Near Smooth	**Associated Phoria**	
Unable	Diplopia	Suppression	

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Examination Data

	Subjective OS	Subjective OD	
	PI-1.00X100 20/30	-0.50-0.75X090 20/20	
Ant. Seg OD	**Ant. Seg OS**	**Posterior OD**	**Posterior OS**
Normal	Normal	Normal	Normal

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Assessment and Plan

- Educated pt/Mom on what is causing the double vision. Pt to be seen in BV/Peds clinic next week.
- Educated pt/Mom that patient will need to wear her glasses that she has been given in the past so they will be able to report to Dr. Lyon if they are working for her or not.
- Educated pt/Mom on the possible options for the double vision. We discussed glasses with prism, VT and the possibility of more surgery. They were educated that these things would be determined after a detailed examination in the BV clinic

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History-AH

- 13-year-old female complains of "double vision. I see double every day starting at about lunch until I go to bed. More at Distance than near. The images are shadowed diagonally. This has been going on for more than a year. Was given glasses about five years ago for double vision (in Indy), but when I put the glasses on the double vision didn't go away
- No HA
- No medical conditions

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Examination Data

Dist. VA SS ETDRS	Near VA	Dist CT	Near CT	NPC
20/70 OD 20/40 OS	20/50 OD 20/30 OS	25 X(T) Control 3 5 BU	4 X(T) Control 3	Suppression
	Pupils	**Stereo**	**Versions**	
	-APD	500" arc Global	Smooth and Full	

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Examination Data

Red Lens comitancy	Bagolini lenses	Hering-Bielschowsky AI	Worth dot
Equal separation midline and inferior increased separation superior	Objective 10 BI Subjective 10 BI	20pd separation at one meter	Fusion all distances Light/Dark No movement on UCT
	Subjective OS	Subjective OD	
	PI-1.00X100 20/30	-0.50-0.75X090 20/20	

Assessment and Plan

- Patient tired today RTC 2-3 weeks for prism evaluation, once patient has glasses. Pt educated on the different options for treatment including prism correction, patching, and surgery. Pt and mother elected to begin with prism correction.
- Pt and mother educated on the motor and sensory mechanisms of the eye turn and diplopia. Pt and mother voiced understanding.

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Prism Evaluation

- Since patient has functional vision and normal correspondence prism correction may be a viable option.
- Attempt to find the prism amount that allows for increased comfort and decreased diplopia
- Unfortunately patient was not able to achieve fusion consistently with prism.
- Mother and patient further educated on VT and surgical options. They elected to return to OMD for consult
- Patient to undergo surgery in September of this year
- Will follow-up with mother and patient once released from post-surgical care

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Patient 5

LS 55-year-old female

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History-LS

- CC: Blurry and double vision, both more common when reading. Symptoms have occurred for last 10 years. Reading is difficult and she avoids reading. Previous eye doctors have recommended that she remain in her current Rx.
  - Current RX OD +1.75-1.25X037
    OS +0.75-0.50X125 Add +1.00
- Reports history of esotropia and amblyopia, since childhood
- Medical Hx: HTN-controlled, IBS, Depression, Anxiety, Sleep Apnea

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Examination Data

Dist. VA	Near VA	Dist CT	Near CT	NPC
20/40 OD 20/20 OS	20/80 OD 20/40 OS 20/40 OU	4 RET	6EP	Not able
Pupils	**Thorington**	**Stereo**	**Versions**	**VF**
-APD	1.5 BU OD Dist and Near	Not able	Smooth and Full	Full

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Examination Data

- Final Rx

OD +1.75-1.25X037 2.5 BO 0.5 BU
OS +0.75-0.50X125 2.5 BO 0.5 BD

Add +2.00

- Habitual Rx

OD +1.75-1.25X037
OS +0.75-0.50X125 Add +1.00

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LS Follow-Up

- Patient is happy with glasses reading efficiency has improved dramatically. Complains of only vertical diplopia more noticeable at near.
- Adjusted Rx to include an additional 1 diopter of vertical prism
- Second Follow-up: Patient is doing much better, only notices vertical diplopia after hours of reading. She informed us that before she got her glasses she was contemplating discontinuing her Ph.D. work due to the difficulties of reading

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LS Clinical Pearls

- Not all presbyopes are created equally.
- Took 10 years to get correct Rx and all that took was a cover test and time trial-framing prism
- Patient's life dramatically improved with glasses
  - Was in tears after first visit because she thought she was going blind or crazy.

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Patient 6

PH 27-year-old male

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Summary of Primary Care Exam- PH

- Was in for regular exam, the year before he had been diagnosed with a Microtropia OS
- Complaint of decreased vision and a shadow on his right side that seemed to be worsening or "creeping into his central vision"
- 4 BO test was inconclusive at time of examination
- FDT had scattered defects
- Referred to BV/Peds for assessment of Microtrope and I suggested to Dr. Lyon the need to run a 24-2 HVF due to the FDT findings.

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History-PH

- Referred from Primary Care Clinic for sensorimotor examination. Diagnosed with amblyopia one year prior due to microstrabismus.
- Cc: noticed vision has been getting worse over last couple years OS>OD was told had amblyopia
- Has unspecified joint pain, previously diagnosed with anxiety, currently on Zoloft

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Examination Data

Dist. VA	Near VA	Dist CT	Near CT	NPC
20/30 OD, 20/70 OS	20/30 OU	4EP	4EP	BON
Pupils	**Color**	**Stereo**	**Versions**	
Grade 1 APD OS	10/10 OD 9/10 OS	20" arc	Smooth and Full	

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Examination Data

4-BO	MEM	Accom Facility	NRA
Inconsistent results	+1.00 OD +1.00 OS	Not done	+1.50
PRA	**Vergence Facility**	**Saladin Card Associated Phoria**	**Worth-dot**
-0.75	Not done	Not done	Inconsistent Results

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Examination Data

Dry OD	Dry OS	Wet OD/ OS	VF 24-2
-2.50-0.50X070	-1.50-0.75X105		Superior defect OD, complete nasal hemianopsia OS
Ant. Seg OD	**Ant. Seg OS**	**Posterior OD**	**Posterior OS**
Normal	Normal	Normal	Normal

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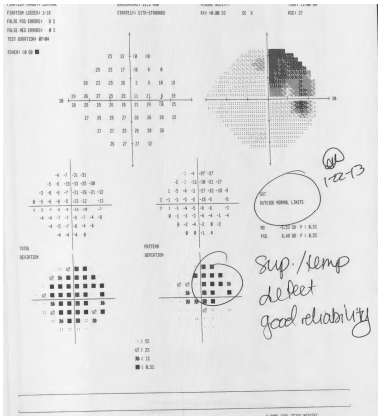
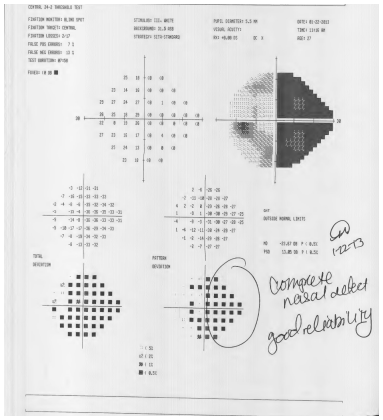
Visual Fields





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Assessment and Plan

- Vision loss unknown origin, results either inconclusive or inconsistent with diagnosis of amblyopia
- Patient education that vision loss may be organic in nature. Recommended MRI. Patient does not have medical insurance and needs to discuss costs with wife prior to referral. Educated further on possible severity and not being imaged or further tested. Gave patient information on Volunteers in Medicine program.
- Patient called next day agreeing and MRI was scheduled.

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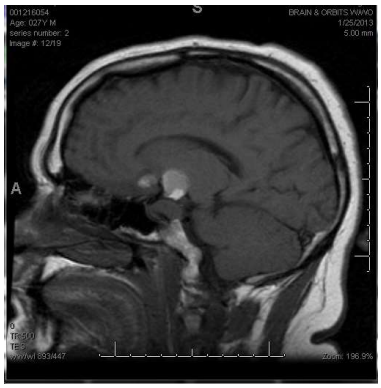
MRI Report



Pituitary prolactinoma, (18mmX23mmX18mm)with severe cisternal optic nerve and chiasmal compression. Subacute hemorrhagic components along left anterior border. Tumoral involvement left cavernous sinus.

Referral to neurologist made

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Neuro report

- Neuro report indicated that patient detailed having problems with his left eye since childhood, told *"was a bad test taker"* for visual fields.
- Discussed treatment options, decision was made to monitor and treat underlying condition by decreasing amount of prolactin in the body

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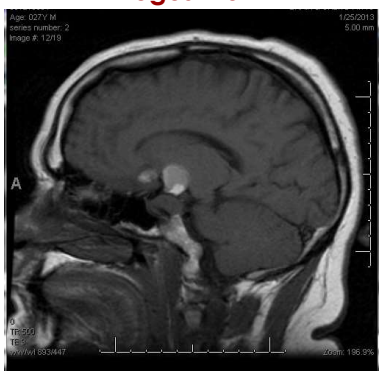
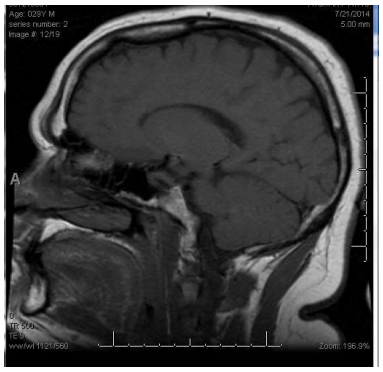
MRI Comparison

August 2011



November 2013



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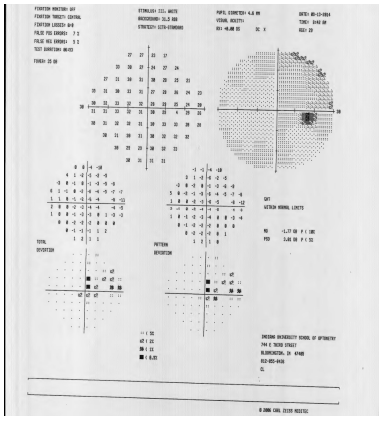
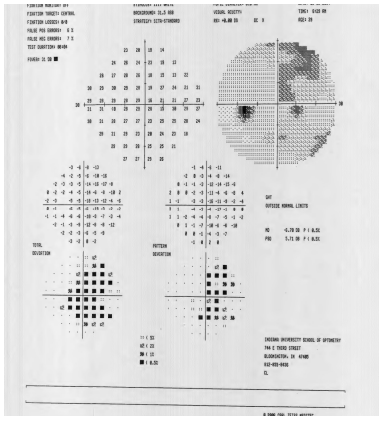
Follow-up VF August 2014





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Follow-Up in BV Clinic

- Patient has returned twice since the diagnosis of pituitary tumor.
- BVA 20/20 OD 20/25 OS
- Patient expressed "this is the best vision he's had"
- Still on medication to control levels to stop tumor from enlarging

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When Primary Care and Binocular Vision Collide

- Realize the two specialties are intertwined
- Know your comfort zone
- Find a sounding board/referral source
- Do not be intimidated

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THANK YOU

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