

Does My Patient Need Vision Therapy? Questions to Ask – Tests to do

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Financial Disclosures

- No financial disclosures

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Other Disclosures

- Everything I will discuss is from the perspective of the processes of vision becoming the **leader and instigator of action**
- Vision is a very powerful resource in everything we do as humans
- Eyes and vision are directly linked to the brain – in reality, a part of the brain
- When there is activity in the brain, that area lights up on scans
- I contend that when there is activity in the brain, the retinoscopic reflex similarly brightens

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Goal

- **This will not be a procedures course as procedures in themselves are not foundational for VT**
- It's not the procedure, it's what you want to accomplish
- So – I am taking the choice of procedure selection off the table and replacing it with determining the patient's foundation in curiosity, attention, and engagement
- The question is: **Do you need to redirect this patient toward better function and behavior and if so, HOW?**
- Often, when the issues of basic visual function are resolved, the developmental and perceptual issues will be resolved

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When does School Readiness Begin?

- Five years - Three years - One year – Birth?
- "School Readiness begins at birth" Zero to Three
- If school readiness begins at birth, then LIFE READINESS also begins at birth - Bubba
- If life readiness begins at birth and vision must emerge as the leader and instigator, then we must begin our examinations at the earliest possible ages
- It is critical for eyecare providers to recognize this and begin discovery and intervention at the earliest times in life

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Peter Menziuso, J&J Vision

- **Our sense of sight is so precious, it is foundational to how we connect and socialize, how we learn, even our self-confidence.**
- Peter Menziuso, Company Group Chairman J&J Vision
- Connect
- Socialize
- Learn
- Self Confidence

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Yet, VT is Simple in Its Complexity

- The “simple” things become foundational for the “complex” things
- All too often, we make it seem so complex that we lose sight of what long-term goals might be, “connection and socialization, ability to learn, and even self-confidence”

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Why the Question?

- What if all routine tests have been classified by the school screening or other doctors as “normal” and the parent still believes something is amiss?
- Do WE often make the determination of whether vision therapy is needed more complicated?
- How WE understand the processes of Vision directs what we do in patient management

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Parent's Comments When Scheduling VT

- “I should have noticed the symptoms earlier”
- “I wish I would have been more diligent about scheduling eye exams”
- “I should have kept looking for someone who knew what the problem was and who could do something about it”
- “I should have paid closer attention to my child's complaints”
- “I didn't think I couldn't afford vision therapy”
- “I have seen such a positive change in my child after we finished vision therapy.”

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What are the Barriers?

- Most children receive eye care screening as a basic assessment within each well-child health exam (Pediatrician, Family Practice or Nurse Practitioner)
- Red reflex and alignment
- EPSDT –Early Periodic Screening, Diagnosis, and Treatment
- The difference between six months and four years is minimal

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Bottom Line

- Our current systems are failing our children – even with the basics
- Kids are not really getting the care they need at any age
- Issues include
 - Access – financial and travel
 - Parental lack of awareness
 - Lack of encouragement from other family members due to cultural issues and historical patterns

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Bottom Line

- More kids need VT than is realized
- The earlier the deviancy, the more complicated the solutions become
- A child with vision issues becomes an adult with vision issues
- Optometry has solutions for many of the cultural issues facing kids today
- Treatment is best when it starts early in life

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The Foundation

- **"The infant is born with visual hunger."**
- "Indeed, so fundamental is the sense of vision that it is the traditional criterion of wakefulness as opposed to sleep."
- **"An infant does not really wake up until he begins to look; and when he ceases to look, he goes to sleep."**
 - Quotes from *Developmental Diagnosis* – 1941 – Arnold Gesell
- This is so critical for us to understand as we interact with our child patients regarding the need for VT

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How Do We know This is Important?

- Other groups use LOOKING ability as a primary criteria:
 - To what do they attend - interests
 - How long they attend – sustained attention
 - How many times they come back to the same target
 - How they manage social contact – looking others in the eyes
 - Gaze following in language development
 - Gestures in communication development
 - Overall Looking Behavior
 - Milestones such as social, emotional, cognitive, language

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Today's Child

- Expectation in the classroom is becoming more sophisticated
 - Does our testing need to become more sophisticated?
- Evolution of technology-based learning
 - Must have their own personal laptop by fourth grade or earlier
 - Call from school principal concerned that parents were demanding use of iPad
 - In three-year kindergarten
 - This was 10 years ago

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Our Responsibility

- Identify patients at risk of developing vision problems that compromise daily activities and expectations
- Accurately diagnose and manage
- Improve the quality of care rendered to patients with diagnosed conditions
- Minimize the adverse effects of the diagnosed conditions
- Redirect and restore function to those who have not yet developed necessary function or restore function to those who have lost it

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Our Responsibility

- Preserve the gains obtained through treatment and guidance
- Inform and educate parents, patients, and other health care practitioners about the visual complications of the diagnosed conditions and the availability of treatment.
 - Adapted from language in the AOA Clinical Practice Guidelines
- It's not that parents don't care – it's that they don't know
- And it is our job to inform them.

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Pearls to Guide Evaluation and Care

- What does this early stuff have to do with VT?
- Refraction and visual acuity are only single parts of vision – look deeper in any patient that has academic problems
- Engage actions through all "senses" – looking-attending-focusing-identifying, and engaging
- With younger children you have more time
- It's OK to consult with another profession or a colleague

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Vision is More Than Seeing

- The result is a pattern of **visual foraging** that is likely to support efficient explorations of complex environments by facilitating the inspection of new locations in real time."
- **Visual Foraging** – I love this term
- Attentional Dynamics of Infant Visual Foraging; Robertson, Watamurab, Wilbourn Salk Institute 2012
- Developing children are fed through the extent of their visual foraging

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Neural Firing

■ Where attention goes, neural firing flows, and neural connection grows.

- Excerpted from *Mind: A Journey to the Heart of Being Human* by Daniel J. Siegel, copyright © 2017 by Mind Your Brain, Inc.,
- Neural connections become the patterns used for action
- Vision is so critical in the processes of development
- We can observe visual development from the moment of birth
- How do we best judge "attention?"
- Through where and how they LOOK!

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Neural Firing

- **Where attention goes, neural firing flows, and neural connection grows.**
- Excerpted from *Mind: A Journey to the Heart of Being Human* by Daniel J. Siegel, copyright © 2017 by Mind Your Brain, Inc.,
- This is consistent throughout development but also applies in Vision Therapy and Brain injury
- There is a series of patterns that must be redirected to establish new neural connections

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Vision – The Looking Process

- **"Gaze is accurate in order to see clearly; not because targets can be seen clearly"** - One fixates accurately *in order to see clearly not because one sees clearly.*
- Robert Steinman, Zygmunt Pizlo, Tatiana I. Foronova and Julie Epelboim – Spatial Vision: 2002
- Do you only look at something if it is "clear?"
- Or have you learned to make it "clear" when you LOOK at it?
- This applies in Vision Therapy – learning to LOOK-ATTEND-FOCUS-IDENTIFY-ENGAGE –
- Think of the need to redirect the process of LOOKING

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Vision is for More Than Seeing

- **"Our visual system is not there to faithfully and simply record the image outside. It is there to give us the necessary information for us to behave appropriately."**
- Basic Vision-An Introduction to Visual Perception; Snowden, Thompson, and Troscianko; Oxford University Press – 2012
- Vision Therapy must be directed toward ACTION, not passive "seeing."
- Developing children must establish foundations in how they perceive and respond

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Where Do We Start?

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History

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Signs and Symptoms

- Some signs and symptoms resolve during development, and some do not.
- Each of these signs and symptoms must be carefully monitored to ensure proper and appropriate development
- For those that do not, early intervention is necessary and important to allow the child to reach full potential
- Children in kindergarten are expected to begin major copying from the chalkboard
- Parent comment - "He's starting Kindergarten in 4 weeks, and he does not know all of his letters and he has to begin writing in a journal."

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Signs and Symptoms

- What about those more subtle signs and symptoms – those not so obvious, e.g., CI and accommodative issues?
- History become so very important because often testing in these areas is limited or non-existent
- Must involve the parent - and - trust the parent
- Match the sign with the symptoms
- If there is not a match, probe deeper with history or with testing

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What are the Signs and Symptoms?

- There are questions to be asked and tests to do that are very revealing to help make this determination
- COVD Quality of Life Checklist
 - Give to parent to complete – not the patient

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Headaches with near work
Words run together reading
Burn, itch, watery eyes
Skips/repeats lines reading
Head tilt/close one eye when reading
Difficulty copying from chalkboard
Avoids near work/reading
Omits small words when reading
Writes up/down hill
Misaligns digits/columns of numbers
Reading comprehension down
Holds reading too close
Trouble keeping attention on reading
Difficulty completing assignments on time
Always says "I can't" before trying
Clumsy, knocks things over
Does not use his/her time well
Loses belongings/things
Forgetful/poor memory

OTHER COMMENTS:

Strategies in Vision Checklist

18 Items (COVD) QOL Checklist (Questions)

Check the boxes which best represent the occurrence of each symptom

Item	Never	Seldom	Sometimes	Frequently	Always
1. Headaches with near work					
2. Words run together reading					
3. Burn, itch, watery eyes					
4. Skips/repeats lines reading					
5. Head tilt/close one eye when reading					
6. Difficulty copying from chalkboard					
7. Avoids near work/reading					
8. Omits small words when reading					
9. Writes up/down hill					
10. Misaligns digits/columns of numbers					
11. Reading comprehension down					
12. Holds reading too close					
13. Trouble keeping attention on reading					
14. Difficulty completing assignments on time					
15. Always says "I can't" before trying					
16. Clumsy, knocks things over					
17. Does not use his/her time well					
18. Loses belongings/things					
19. Forgetful/poor memory					

Other Comments: _____

Completed by: _____

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Evaluating the Responses

- Very helpful in directing focus in the examination and management
- Checklists raise awareness of problems the parent may have never recognized as being related to vision – a communication tool and more than simple history questions
- How much is the parent engaged with the child?

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Bubba's Three Important Questions

- Regardless of how you get the information, there are three important questions I always ask:
 1. Does the parent think there is a problem?
 2. Does the child understand better when the parent reads to them or when the child reads by themselves?
 3. When asked to do a timed math sheet, do they fail to complete the page, but all the answers entered are correct?
 - a. 60% answered but all are correct versus
 - b. 60% answered correctly but completed the entire page.

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The Examination

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Ocular Motility

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Ocular Motility

- In addition to the routine eye movement testing, monitor the quality of tracking (Maples NSUCO test)
- Observe
 - Head movement
 - Loss of fixation
 - Energy required to maintain fixation
 - Retinoscopy while following

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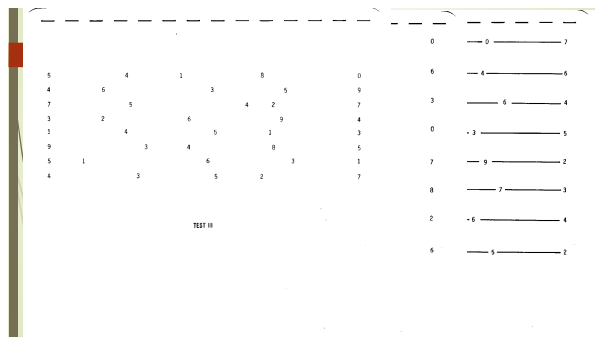
Observations

- Manner of pointing
- "Looking" as determined by observation
- "Looking" as determined by adding observations using a retinoscope
- Quality versus quantity
- Looking versus LOOKING

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Scoring for K-D Test

	Age	Average Time (by age)			Total
		I	II	III	
Time	6	30.98	37.05	51.00	119.03
Deviation	6	10.10	12.96	19.39	40.92
Time	7	26.71	31.12	43.06	100.89
Deviation	7	5.97	8.75	15.36	29.16
Time	8	22.98	24.89	31.26	79.13
Deviation	8	6.37	7.75	11.59	27.35
Time	9	21.02	22.89	29.53	73.44
Deviation	9	7.20	7.50	10.82	26.03
Time	10	19.72	20.79	27.76	68.27
Deviation	10	6.08	7.37	10.21	26.22
Time	11	17.58	18.95	20.39	56.92
Deviation	11	4.60	4.51	7.45	13.85
Time	12	16.94	17.68	19.42	54.04
Deviation	12	3.60	4.43	5.31	13.51
Time	13	16.29	16.96	18.98	52.23
Deviation	13	2.52	2.72	3.26	7.50
Time	14	14.86	16.87	18.73	50.46
Deviation	14	2.40	2.33	2.49	5.84

TIME I II III Total EF

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Developmental Eye Movement Test - DEM

- Patient timed while reading vertical and horizontal numbers that are intermittently spaced
- Norm referenced for age
- Good test to determine if automaticity of number recognition is the problem or if it is related to vision
- https://www.bernell.com/product/DEM/Visual_Non-Visual

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Developmental Eye Movement Test - DEM

- Because the DEM incorporates a subtest of naming speed that isolates eye movement skill for a more specific clinical diagnosis, it's use is preferred.

■ AOA CPG on Learning Related Vision Problems

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TEST A			TEST B		
3	4	6	7	7	
7	5	3	9	9	
5	2	3	3	3	
9	1	9	9	9	
8	7	1	2	2	
2	5	7	1	1	
5	3	4	4	4	
7	7	6	7	7	
4	4	5	6	6	
6	8	2	3	3	
1	7	5	2	2	
4	4	3	5	5	
7	6	7	7	7	
6	5	4	4	4	
3	2	8	6	6	
7	9	4	3	3	
9	2	5	7	7	
3	3	2	5	5	
9	6	1	9	9	
2	4	7	8	8	

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3	7	5		9	8
2	5		7	4	6
1		4	7	6	3
7	9		3	9	2
4	5		2		1
5		3	7	4	8
7	4	6	5		2
9	2		3	6	4
6	3	2	9		1
7			4	6	5
5	3	7		4	8
4		5	2		1
7	9	3		9	2
1		4		7	6
2	5	7		4	6
3	7	5		9	8

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AGE	VERTICAL TIME (seconds)	HORIZONTAL TIME (seconds)	ERRORS	RATIO (H/V)
	MEAN (S.D.)	MEAN (S.D.)	MEAN (S.D.)	MEAN (S.D.)
6.0-6.11	63.11 (16.59)	98.26 (32.61)	15.22 (11.49)	1.58 (.45)
7.0-7.11	54.83 (9.30)	87.94 (28.18)	12.50 (12.93)	1.60 (.41)
8.0-8.11	46.76 (7.89)	57.73 (12.32)	4.61 (6.91)	1.24 (.18)
9.9.11	42.33 (8.20)	51.13 (13.30)	2.17 (4.10)	1.21 (.19)
10.0-10.11	40.28 (7.43)	47.64 (10.11)	1.91 (2.68)	1.19 (.17)
11.0-11.11	37.14 (5.42)	42.62 (7.61)	1.68 (2.34)	1.15 (.13)
12.0-12.11	35.14 (5.87)	39.35 (8.11)	1.11 (1.17)	1.12 (.10)
13.0-13.11	33.75 (6.53)	37.56 (7.23)	1.61 (2.15)	1.12 (.12)

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KD versus DEM

- Which is better?
- I use BOTH as they give different information

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Elements of an Examination

- History
- Ocular Motility
- Binocular Function
- Refraction
- Visual Acuity
- Ocular Health

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Binocular Function


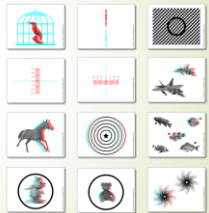
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Levels of Fusion

- Worth Four Dot – only appropriate for early development
- Functional Binocular Assessment Test (FBAT)
- Randot
- Phorias/vergences
- +/- 2.00 Flipper
- 6BI/12BO Flipper

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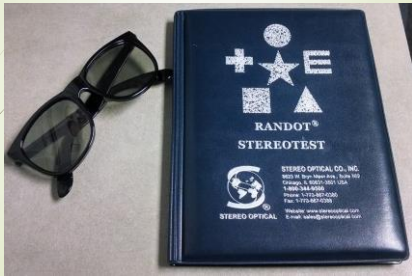
The Functional Binocular Assessment Test (FBAT)

https://www.barnet.com/product/BCFBAT1/Assessments_New

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The Randot Test



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Phorias and Vergences

- Phorias (expecteds)
 - Far – 0-1 exo
 - Near – 5-7 exo
- Vergences - Near (expecteds)
 - Base Out – 21/15
 - Base In – 22/16

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6 BI/12BO FACILITY

- Expect 12 cycles per minute at school age
- Watch for decrease in speed of clearing during the minute
- Watch for suppression on the Bernell #9 slide (polarized lines)
- Also observe with retinoscope – discussed later

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Accommodation

- Push up amp – never trust a kid until you can trust a kid
- PRA/NRA
- +/- 2.00 flippers
 - Expect 12 cycles per minute
 - Monitor with a retinoscope
 - Controls for diplopia and suppression?
 - \pm 2.00 Flippers with Polaroid control using Vectogram #9

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Phoropter – PRA/NRA

- Watch for changes in vocal response during the test
- Take blur-out and recovery
- Watch for diplopia on both
 - Increased esophoria/esotropia on minus phase
 - Increased exophoria on plus phase

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Keep it Simple

- Most changes you see are not the result of refractive changes but the result of **ACTIONS** the patient is taking to engage in the task
- Decrease in motion
- Increase in brightness
- Changes in astigmatism
- Changes in anisometropia
- Observe the changes as you probe with lenses, i.e., does the reflex move toward expected patterns or away from expected patterns

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Accommodative Facility with ± 2.00 Flippers

- 12 cycles per minute needed at school age
- Watch for decrease in quality of clearing during the time observed
- Watch for suppression on the Bernal #9 slide (polarized lines)
- Observe changes with your retinoscope – discussed later
- Most importantly, what is the **QUALITY** of response
- Do they come to a point of neutrality and can they hold that

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Accommodation

- In children, accommodation is more accurate and less variable when performing a sustained near task with increased cognitive demand.
- Also, children with increased uncorrected hyperopia have less stable accommodative responses.
 - Accommodation during Sustained Near Tasks in Emmetropic and Hyperopic Children and Adults March 2018 issue of *Optometry & Vision Science* Tawna L. Roberts, Ruth E. Manny, Julia S. Benoit, and Heather A. Anderson
- Children in kindergarten are expected to begin reading and copying from the chalkboard

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ing ± 2.00 and 6BI/12BO



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Accommodative Facility

- I observe with my **retinoscope** when using ± 2.00 flippers with small letters
- Assessing the **QUALITY** of the patient's response to the target
- Can the patient **make** a motor movement sufficient for the task?
 - Remember – making a move to focus is an **ACTION** or motor movement

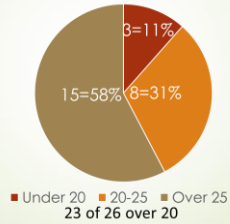
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Accommodative Facility

- Can they **sustain** over the time expected?
- Number of cycles (quantity) is not as important as accuracy and sustainability (quality)
- Retinoscopy observations provide so much more information whether during an examination or in the therapy room

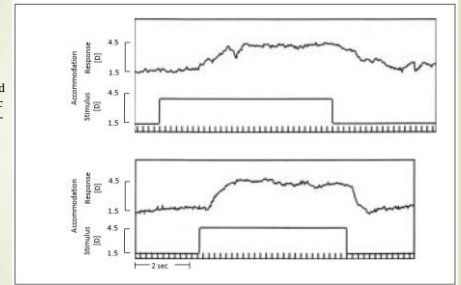
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COVID QoL Survey with those not clearing +/-2.00 facility n=26



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Cliffreda KJ. The scientific basis for and efficacy of optometric vision therapy in non-strabismic accommodative and vergence disorders. Optometry 2002;73:735-62.



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Just Look Retinoscopy

- What would you expect in classroom performance in the before and after VT in the previous patient?
- What would you expect in the previous patients on Just Look Retinoscopy
- What would you predict brain function would be in each instance
- From birth through school and beyond, the progression and sophistication of the visual process is critical in all stages of development.
- If patients are not ready and prepared, classroom performance and life in general will suffer

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Significance Of Retinoscopy Observations

- So many links and so much we can observe with Just Look Retinoscopy
- Just Look Retinoscopy is a binocular procedure – observe what is happening in both eyes simultaneously
- What do changes in brightness, color, and motion mean?
- In prescribing, try to ensure balance in reflex patterns between eyes rather than simple monocular refraction
- What you observe is HOW the patient is going about looking at the task presented

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Refraction

- Keep it simple – refraction is usually not the most important piece, especially with younger children
- Listen to the parent
- Where is the child's general environment?
- If nearpoint or reading complaints, -0.25 is not going to solve the issue and delays intervention
- Comparing near retinoscopy finding to distance finding

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Refraction

- Have stringent control over accommodation
- Understand what you are asking the child to do – LOOK
- LOOK is a visual reach – difference between hearing and listening – how well do they LOOK?

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Just Look Retinoscopy

- Always link the retinoscopy reflex to functions in the brain – Bubba
- Do we really believe that eyes are extensions of the brain or even a part of the brain itself?
- Look beyond the eye and simple eye exam to find ways to guide children in their development
- Actions, including lenses, that calm the retinoscopy reflex will also likely calm the brain – observe chaos to calm - Bubba

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Visual Acuity

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Visual Acuity

- With today's insistence on technology, distance visual acuity is becoming even less important
- Be sure to evaluate near visual acuity and near efficiency
- Observe the quality of response – it may be correct but takes significant effort
- Reading the letters out of order
- Record your notes, not just a number

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Why Important?

- Why is the previous information important?
- I want you to understand where I am coming from so the management becomes less complex
- If we are starting from the same place, we are more in harmony

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Supplemental Testing

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Supplemental Testing

- Why might this be important?
- History – COVID Checklist
- All can be performed by staff
- Testing can take place while you are engaged elsewhere in the office and your consultation can be done when the para is finished, or it can be rescheduled – be consistent

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Supplemental Testing

- The tests like:
 - Wold Digit Symbol
 - Monroe Visual III
 - Gardner Reversal Frequency
- These tests demonstrate the impact of binocular complex of human function and performance
- There are many so will highlight Monroe Visual III

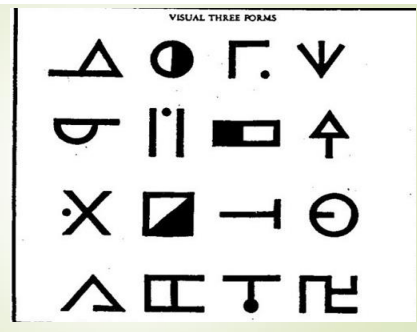
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Monroe Visual III

- Short term visual memory
- Look at the four symbols on the line for 10 seconds, then reproduce – repeat for each line
- Norm referenced for age
- Purchase at:
 - <https://www.gesell-yale.org/products/monroe-visual-iii-cards>

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Monroe Visual III - Test



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VISUAL THREE FORMS



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Monroe Visual III - Norms

Age	Score
5	3.5
5 ½	4.5
6	5.7
6 ½	6.8
7	7.6
8	8.8
9	10.4
10	11.2

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Assessment

- Does the patient show disruptions in visual function?
- Is this recent or long-standing?
- Do the patient symptoms relate to your test results?
- How long can they sustain on the task?
- Is this adequate for their needs?

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Decision-making time

- What should be referred and what can wait?
 - How long?
- What to do on follow-up visit
- **DON'T WAIT TOO LONG!!**
- OR do you just refer anyway?

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Bubba's Methods for Prescribing

- Prescribe from a developmental perspective
- Observe reflex – how active and regulated (stable)
- Estimate the amount of movement
- Add lens power until first brightening or until reflex is calmed
- Begin prescribing there in order to let the process of development take over
- If development is delayed or the child does not respond to lenses, initiate daily looking activities

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Bubba's Methods for Prescribing

- Follow-up - How often do you see them for follow-up
- Monitor frequently – not simply "See you in a year."
- May need to modify power depending on the response

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Relationships with Consulting Doctors

- Who does the follow-up?
- Who makes the glasses?
- When are they released back to the referring OD?
- Make sure these things are understood

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Guidance and Rehabilitation

- Understanding the processes during development is first – these are foundational
- Earliest Identification and Intervention
- Getting the earliest start on rehabilitation provides the patient with an opportunity to reach higher degrees of overall function and sophistication.
- Lack of intervention(s) causes the child/patient to develop an substitute pattern which for them becomes chaotic and difficult.
- **VISION MUST EMERGE AS THE LEADER**

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Guidance and Rehabilitation

- Address the basics first:
 - Ocular motility
 - Binocular Function
 - Accommodation
- If you initiate management at higher stages without addressing the basics, it is **less likely** to provide a stable and secure foundation for ensuing stages

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Guidance and Rehabilitation

- Procedures are available from many sources
- I started in practice using Flippers with +/- 2.00 and 6 BI/12 BO, Vectograms, and a wand target for ocular motility.
- Be careful with digitized print as pixels demand less focus for clarity than printed targets
- Monitor changes for quality with your retinoscope in the therapy room – objective responses and changes versus subjective responses and changes

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Cases to Demonstrate These Concepts

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T.K.- Age 10

- Referred from local OD
- King-Devick 79 secs/68 secs expected
 - Add 11 seconds to every minute of the school day – 660 sec per hour times 7-hour school day = 4620 seconds or 77 minutes – you see how there is potential to get behind
- DEM – V 45/40 average H 51/47 average
- ± 2.00 - Could not clear 20/25 letters
- 6BI/12BO – could not clear 20/25 letters

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T.K.- Supplemental Testing Age 10

- Monroe Visual III –
 - Score 12 - 11.2 is expected
 - Accuracy 79% - 74% is expected

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Plan – T.K.

- Office Vision Therapy – 24-30 visits
- Emphasis on binocularity complex
- Lenses for nearpoint
- After completion of therapy, the visual findings were at or above the expected for his age
- More importantly, T.K. was able to perform in the classroom at the same level as his peers

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Case – KB - Age 10

- Referred from local OD
 - VA – 20/20 OD and OS 20/15 OU
 - Phorias – Far 1 exo near 5 exo
 - PRA - -0.25/+0.25
 - NRA - +1.00/+0.50
 - Near Stereo – 2/9

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Case K.B. – Age 10

- History
 - Tired eyes at the end of the day
 - In resource in the fourth grade
 - Loses place often when reading – c/o words running together
 - Does well in one on one

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Supplemental Testing KB

- King-Devick – score 102 seconds /expected 68 seconds
- DEM
 - V – 75/40 expected
 - H – 61(skips two lines)/47 expected
- ± 2.00 – could not read 20/25 letters
- 6BI/12BO – could not read 20/25 letters
- Symptoms of “finger diplopia” when reading
- Just Look Retinoscopy – marked with – already had +0.75 from referring doctor

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PLAN K.B.

- Continue +0.75 for all nearpoint activities
- Vision Therapy – 24-30 visits emphasis on accommodation and binocular functions
- On completion of therapy, all tests were within normal expecteds
- More importantly, K.B. was able to perform in the classroom on the same level as his peers

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JRB – Age 10

- Seen in 2009
 - Alternating Esotropia with preference for OD fixation
 - +0.25 on cycloplegic exam
 - The doctor counseled that esotropia was due to muscle problem and not accommodative so glasses not necessary
 - Recommended surgery consult so it would not become constant
 - Not covered on insurance so did not go for surgery

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JRB – Age 10

- Returned to SCO in 2014
 - Constant Left Esotropia
 - +0.25 on dry
 - EOM – OS tracks when OD covered
 - VA OD: 20/20 OS: 20/25
 - On Just Look Retinoscopy, JRB comes to alignment with +1.50
 - Maintains 20/20 OU at distance through +1.50

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JRB – Age 10

- What are the issues?
- Not accommodative – determination made from cycloplegia since no near testing done
- TRY LENSES!!!
- Does this patient need VT?
- Absolutely

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Cases JA – 5 years old

- Patient 1 – 5 yo m
- Paul Harris patient – Rx +4.00 with +2.00 add one year ago
- Student was finding more plus on near ret - +7.00 (they look at only one eye at a time)
- With Paul's Rx, the patient was showing alignment and slight with motion at nearpoint
- Used +6.00 and +7.00 in flipper – equal slight with motion with +6.00 and alignment, however;
- With +7.00, the patient went into a marked exotropia.

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RO – 9yo - male

- "Blurry distance vision" – 9yom - School problems per parent
- Distance VA: 20/25 OD, OS, OU Near VA: 20/25
- Stereo – 70 sec
- Just Look: Shows lots of with to start then shows slight with when looking at target – pushes up to +2.25 – balanced and equal with +0.75
- +0.75 – 20/20 distance and near
- +0.75 - 25 sec on stereo

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RO – 9yo - male

- Runs up to +3.75 on cycloplegia
- If you get to the point of cycloplegia and don't know whether this is a patient that will run up in plus, you haven't been paying attention all along
- Rx +0.75 for school and device

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SP

- Esotropia - +0.25
- No increase in plus on cycloplegia so assumed it was not an accommodative ET and referred for surgery
- Came back two years later. Did not have surgery due to finances
- Distance refraction holding at +0.25

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SP

- Just Look showed slight with and ET
- +1.50 – moved to aligned position – Distance VA 20/20 with +1.50
- What if the patient had followed the recommendation for surgery?
- JUST LOOK!!
- Pay careful attention to your observations beyond the actual clinical findings themselves

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SP

- What would have happened if the Rx had been changed based on the additional with motion observed monocularly??? –
- Or cycloplegia??
- Does the additional plus take them beyond intention and is not related to intentional action?

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Summary

- Simple to complex
- These three things – ocular motility, binocular function, and accommodation are critical in all aspects of development from establishing patterns and foundations to full engagement with minimal effort
- When not activated or misdirected at an early age, overall development and the ability to reach full potential is restricted

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Summary

- When the processes of vision are working properly, developing children can more easily complete tasks that set the foundation for the next phases of development.
- When they do not or cannot complete the foundational tasks, the next phases do not have a sufficient underpinning for tasks at that stage.
- Each foundation is built upon previous foundations.

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Summary

- When a previous foundation is incomplete or insufficient, ensuing actions will be insufficient for the more sophisticated tasks the developing child will face throughout life.
- Both sufficient and insufficient PATTERNS can be observed during Just Look Retinoscopy if we take the time to Just LOOK!
- Take the time to LOOK!

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Summary

- Stop! Look! Listen
- Assess more than refraction
- May start with guidance with short follow-up
- Always have a set of guidance activities ready
- Follow the patient on a more frequent basis
- Develop resources from OD resources within your local community
- Above all – ensure the best for the patient

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