



Great Vision Testing for Little Eyes

Hayley McDonald
hayley.mcdonald@flinders.edu.au



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Learning Objectives

- LO1: Identify new or modified testing methods for preverbal and/or preliterate children.
- LO2: Reflect upon communication strategies to improve paediatric engagement in the consulting room.

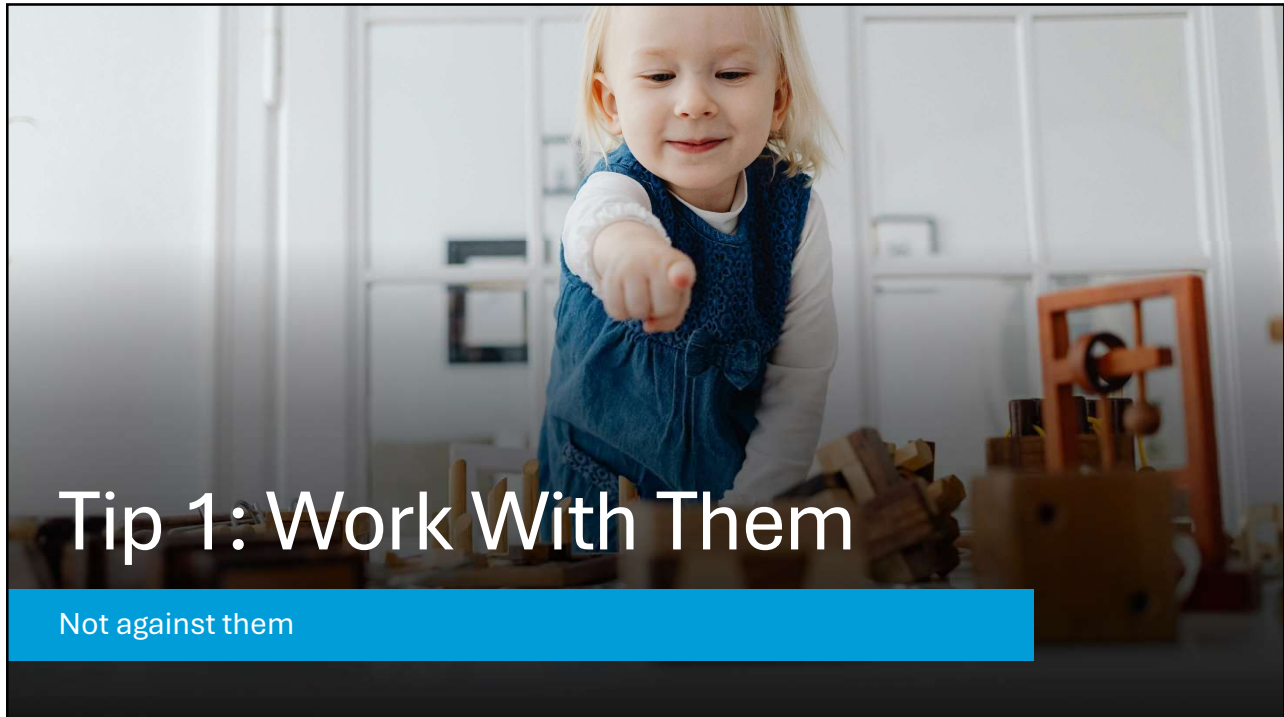
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Demographic

- Preschool children
 - Especially <3yo

A photograph of a young child with curly hair, wearing a light-colored t-shirt, looking off to the side. The background is blurred, suggesting an outdoor setting with trees and sunlight.

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A photograph of a young child with blonde hair, wearing a blue dress over a white long-sleeved shirt, pointing towards the camera. The child is standing in a room with white walls and wooden toys on the floor.

Tip 1: Work With Them

Not against them

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Go to the Child

- The consult chair isn't the only place to test



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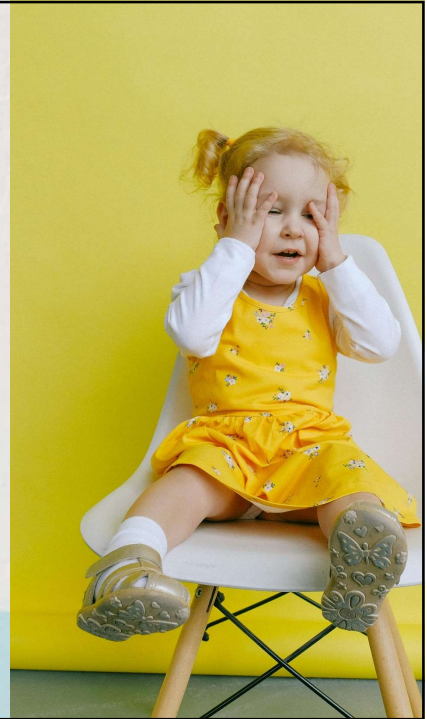
Be Flexible with the Process

- Children will respond better to some than tests
- Build the relationship
- Find interests
- Circle back to “tricky” tests later

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Work Fast

- "Attention Points"
- Balance between number of tests and thoroughness of results



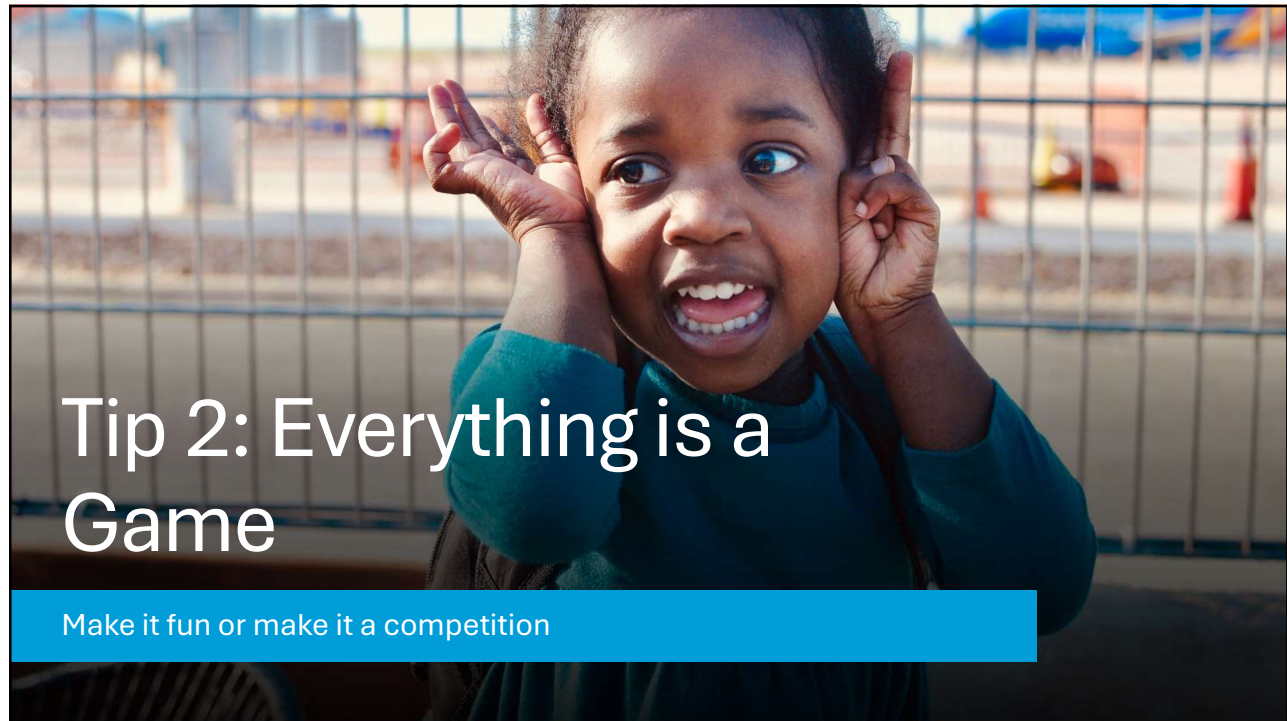
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Monkey See, Monkey Do

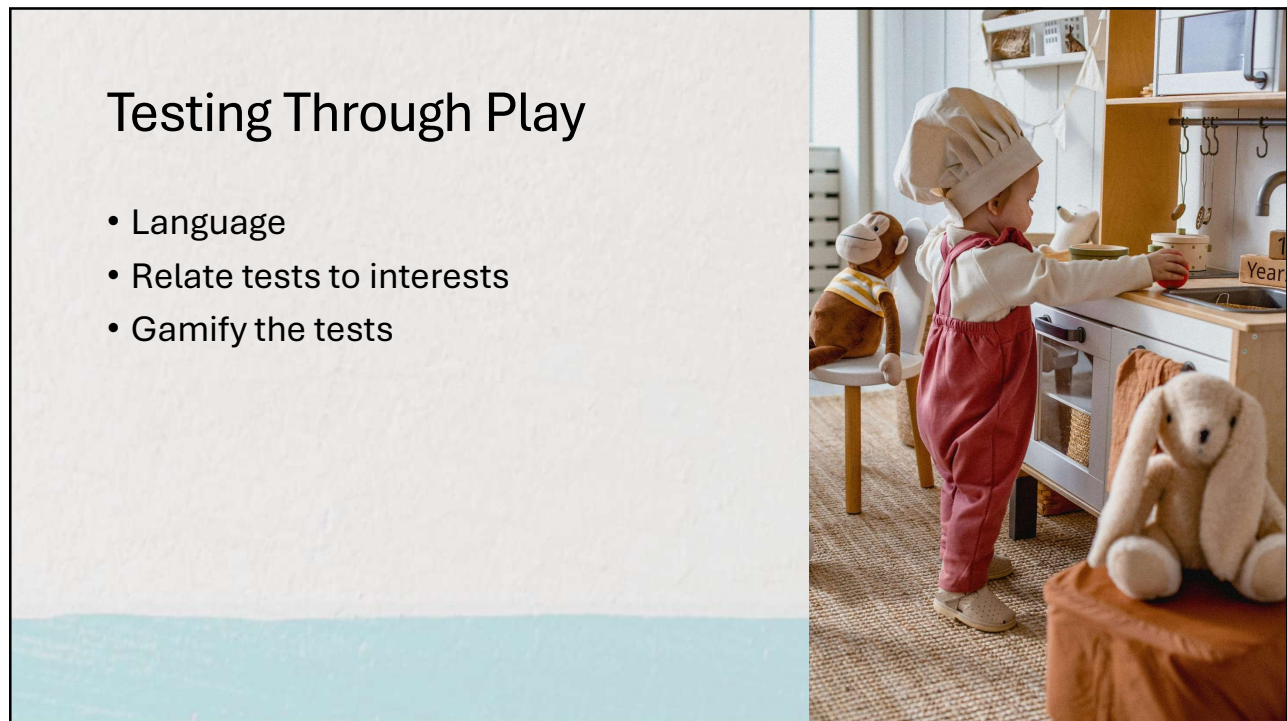
- Test their toys eyes
- Test their parents/siblings
- Let them test your eyes



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Gamify Examples

- Matching game
- Tracing
- Peek-a-boo
- Have an adult "fail" a task for them to fix



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Tip 3: Assessment of Vision

The 3 Rs

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Reflexes

- Pupils
- Fixation
- Menace reflex
- Resistance to occlusion
- Optokinetic nystagmus



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Resolution

- Preferential looking tests
 - Teller's & Keeler acuity cards
 - Lea gratings
 - Cardiff acuity cards
- 100s & 1000s



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Recognition

- Lea symbols
- Kay pictues
- Patti Pics
- Allen cards
- Modified letter charts
 - Eg tumbling E
- Crowding

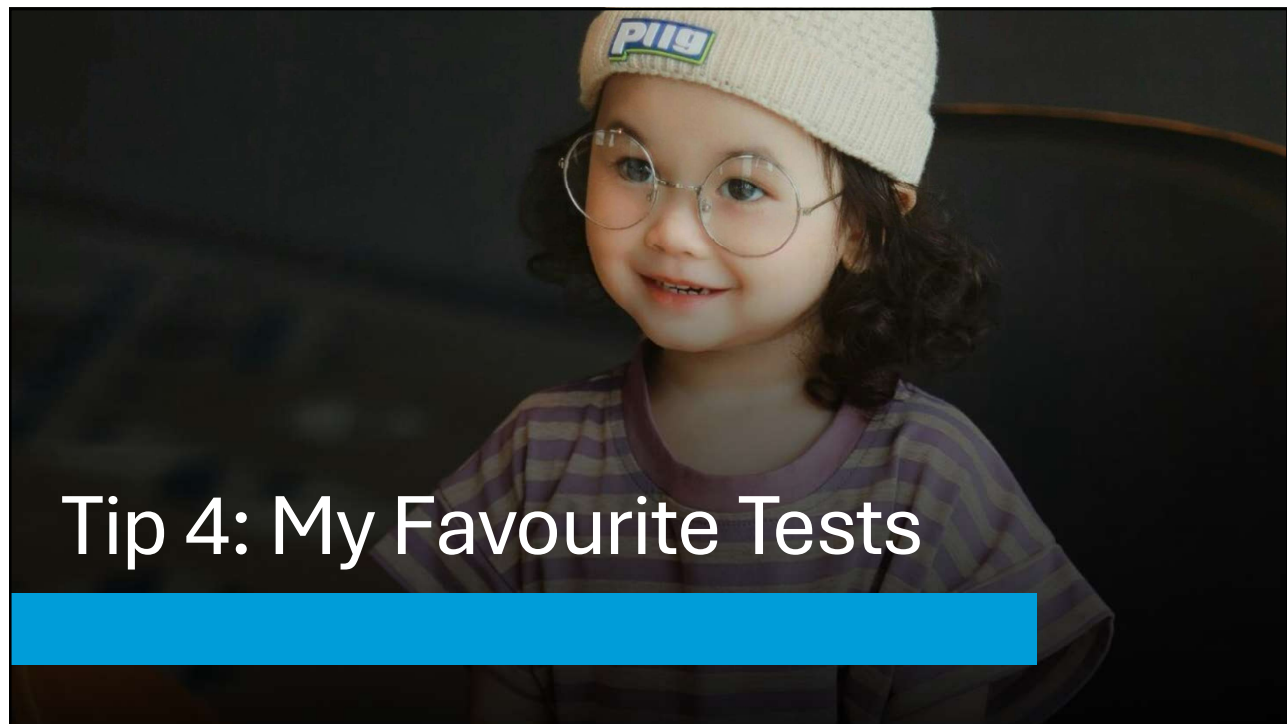


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Expectations

Age (years)	Monocular Cardiff Acuity	Monocular Lea Symbols	Binocular logMAR (basic letters)
1-1.5	6/15-6/48		
1.5-2	6/7.5-6/30		
2-2.5	6/7.5-6/19	6/18	6/19
2.5-3	6/6-6/12	6/9.5	
3		6/6	6/12
4			6/9
5			6/7.5
6			6/6

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Cover Test

- Near assessment often easier
- Fun targets
- Check for
 - Fixation
 - Resistance to occlusion
 - Misalignments
 - Gross external health assessments
 - Engagement with play/targets

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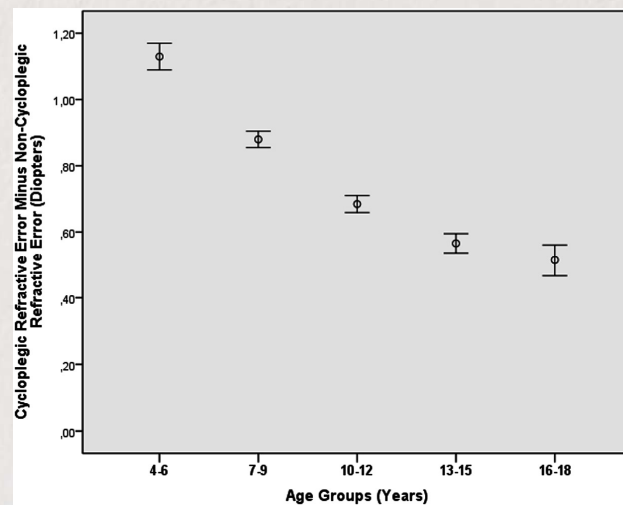
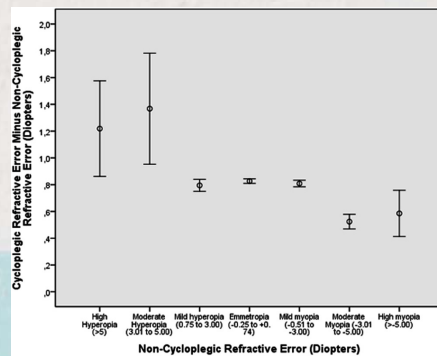
Retinoscopy

- Is the reflex even?
- Is the reflex red?
- Gross assessment of refractive error
 - Consider how many attention points you want to spend
- Targets

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Cycloplegia

- Concentrations
 - 0.5% cyclopentolate
 - Infants under 6 months of age
 - 1% cyclopentolate
 - Children 6 months and over
 - 1% tropicamide
 - Children with Down syndrome, cerebral palsy and other central nervous system disorders
- Instillation strategies



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Stereopsis

- Easy to gamify
- Quick overview of binocular function
- Good across several age groups
- Good for non-verbal & non-literate

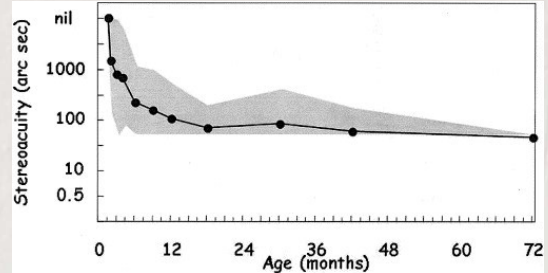


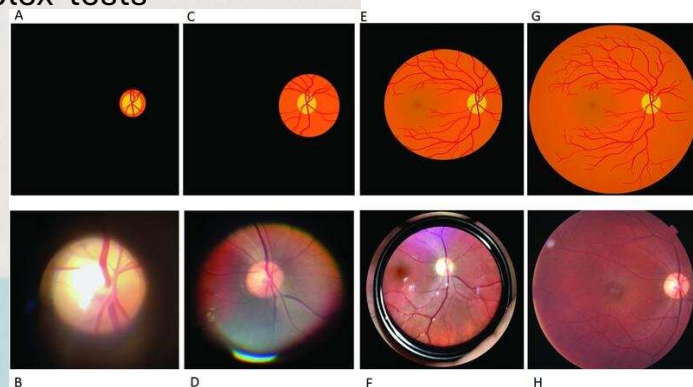
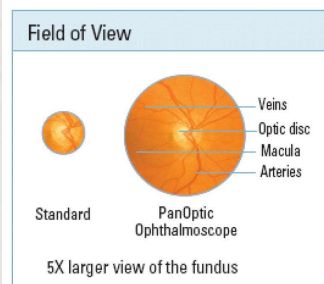
Table 4.—75%-Point* Proposed Norms for Stereoacuity

Age, yr	Stereoacuity Measures, Seconds of Arc						
	Frisby	Random-Dot E			Titmus Circles		
		Randot Circles	This Study	Reinecke and Simons, ¹ 1974	TNO	Romano et al., ¹⁴ 1975	Tatsumi and Tahira, ¹¹ 1972
3	250	70	168†	138	120	200	200
4	250	70	126‡	110	120	140	100
5	250	70	126‡	138§	120	100	100
Adult	250*	20	92 #	...	30	40**	40**

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Health Assessment

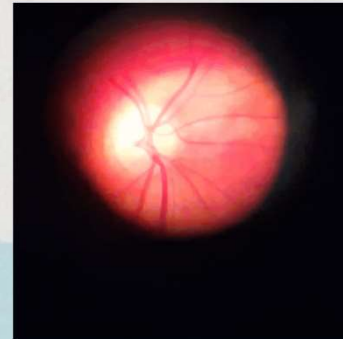
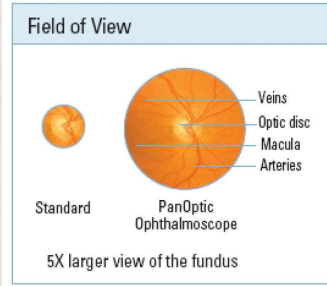
- Red reflex
- MIO vs Direct or BIO
- Don't rule out 'more complex' tests
 - Fundus photography
 - iCare



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Health Assessment

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Spectacle Prescribing

Consider prescribing if:

Age	Hyperopia	Myopia	Astigmatism	Anisometropia
Up to 1y	>5.00D	>5.00D	>2.50DC	
1y+	>3.50D	>2.00D	>2.00DC	>1.00D monitor >3.00D prescribe
4y+	>2.50D	>1.00D	>1.50DC	>1.00D (hyperopic) >2.00D (myopic) >1.50D (astigmatic)
Exceptions	Amblyopia, strabismus etc			

**CLINICAL AND EXPERIMENTAL
OPTOMETRY**

REVIEW

To prescribe or not to prescribe? Guidelines for spectacle prescribing in infants and children

Clin Exp Optom 2011; 94: 6: 314-327 DOI:10.1111/j.1444-0938.2011.00600.x
 Susan J Leat BSc PhD FCCOptom FRCO This paper discusses the considerations for prescribing a refractive correction in infants

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