

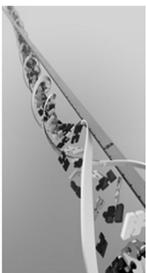
Definition

Autism - a group of developmental brain disorders characterized by problems in social interaction, communication and sensory processing as well as repetitive, stereotyped behaviors
Symptoms usually start before age 3 yrs

Prevalence –
1 out of 110
88 68 children

Cause

- Unknown etiology, but evidence does not support vaccines
- Complex interaction between environmental stressors, genetic mutations, and biological factors including inflammatory processes



Characteristics of autism

Common Core Characteristics
Delays in both understanding and using language (receptive/expressive) including nonverbal communication

Difficulties with social interactions
deficits in socio-emotional reciprocity; deficits maintaining, understanding relationships

Restrictive patterns of behavior
Unusual responses to sensory stimuli
Resistance to change and insistence on routines
Repetitive patterns of behavior including stereotyped or repetitive motor movements
Highly restricted, fixated interests



Autism Spectrum Disorder

Categories from DSM-IV

Autistic Disorder

Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS)
individuals have some but not all of characteristics

Aspergers Syndrome
Symptoms milder, later onset
Are verbal- single words before age 2 or 3 years
Struggle with social interaction- problems with non-verbal cues, understanding own or others emotions
Over focus on narrow topics of interest



Autism Spectrum Disorder

DSM V Changes Released May 2013

Why? - overcome inconsistencies/improve reliability in how ASD is diagnosed

Who? APA's Neurodevelopmental Disorders Work Group- committee of experts with input from community, (families, people on the spectrum, scientists, and clinicians, and advocacy organizations)

What?

- Eliminates separate categories- Autistic disorder, PDD-NOS, Asperger's syndrome
- Two domains– social communication impairment and repetitive/restricted behaviors.



AUTISM SPECTRUM DISORDER

HIGH-FUNCTIONING AUTISM	AUTISM	SEVERE AUTISM
LEVEL 1 Needs support Patient's social and communication skills and repetitive behaviors are only noticeable without support.	LEVEL 2 Needs substantial support Patient's social and communication skills and repetitive behaviors are still obvious to the casual observer, even with support in place.	LEVEL 3 Needs very substantial support Patient's social and communication skills and repetitive behaviors severely impair daily life.



Autism Spectrum Disorder

Anxiety

Result of sensory processing problem
Manifests as:
Decreased cooperation
Inattention
Impair ability to interact
Effects daily living skills



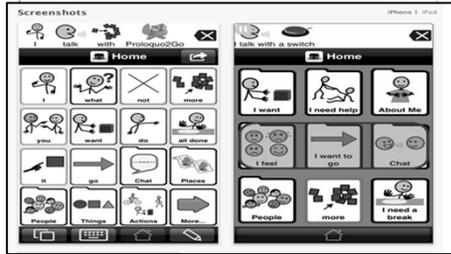
Autism Spectrum Disorder

Therapy

Occupational
Fine/ Gross Motor Skills
Speech
Group/Individual Social



Proloquo2go

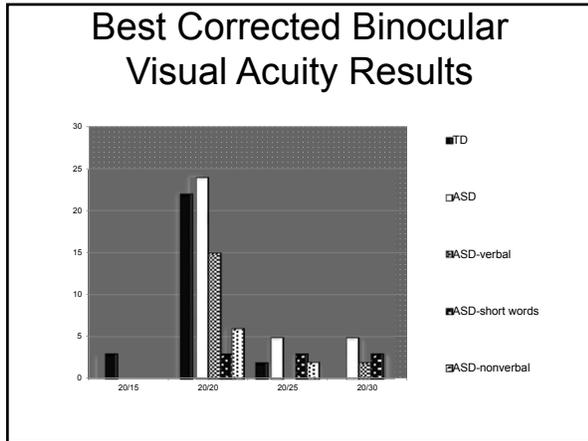



Simple Mind




Eye Examination Study

- **Objective:** Compare vision testing in an eye examination protocol for ASD patients to that of TD peers.
- Designed an eye protocol to accommodate the communication and sensory challenges associated with ASD; used tests minimizing tactile sensitivity issues and incorporated visual, sensory, and communication supports.
- **Recruitment** N= 61 children and adolescents aged 9 to 17 years; TD (n=27) ASD (n=34) were recruited; not differ by age (p-value 0.54), gender (p-value 0.53), or ethnicity (p-value 0.22)
- **Intake visit** - Prior to the eye examination, patients' parents provided information regarding verbal communication level (nonverbal, minimally verbal, or verbal).



Eye and Vision Examination Study: Testability and Findings

- Most patients with ASD can complete most tests within an eye examination protocol.
- Testability of intraocular pressures is reduced, particularly for nonverbal and minimally verbal patients.
- Patients with ASD are more likely to have significant uncorrected refractive error, poorer corrected binocular visual acuity, reduced convergence, and less accurate eye movements.

Visual Profile of the Patient with ASD

Visual pathway
 Visual acuity- poorer binocular and monocular
 Refraction- distribution similar to typical population
 Eye health- may or may not have more pathologies including nystagmus, ptosis, ROP, cataracts

Visual skills
 Strabismus/Amblyopia- may or may not be more frequent
 Convergence – higher frequency of reduced convergence
 Stereoacuity- less evidence; may be reduced
 Accommodation- little known

Study Design: Prescribing

PRESCRIBING GUIDELINE USED

Hyperopia	≥ 1.75 D Sphere
Myopia	≥ 0.50 D Sphere
Astigmatism	≥ 1.25 D
Anisometropia	≥ 1.00 D aniso in DS equivalent OR > 1.50 D meridional difference

1. Wong CY, Fan DS, Yu CB, Lam DS. Topical Mydriatic and Cycloplegic Spray for Chinese Children. J Ped Ophthal Strab 2003 Nov-Dec;40(6):349-52

STUDY DESIGN: Data Collection

1. Is your child wearing the glasses?
2. If so, # of hours per week? _____
3. Is your child willing to wear glasses?
4. Does your child complain about wearing glasses?
5. What was the complaint?
6. Does your child complain while wearing glasses?
7. What was the complaint?
8. Do you prompt your child to wear the glasses?
9. Is your child concerned about appearance?

9
QUESTION
S

Results: population comparison

TD Group	ASD Group
7 needed spectacle correction 3 of 7 not worn previously	15 of 34 needed spectacle correction 12 had not worn previously
Average age 11.9 years	Higher average age 12.5 years
None required replacement	2 required placement within the 4 months
More highly educated parents	More likely white
	More likely to live in suburban community

No statistically significant difference in refractive error
 No significant difference in gender, grade in school, ethnicity