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The AAP Autism Screening Guidelines

Integrating Screening Guidelines In Primary Care Practice

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Preventive Services Improvement Project
Learning Session
January 21-22, 2011

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Autism Spectrum Disorder

- Includes Autistic Disorder, Asperger Syndrome, and PDD (Pervasive Developmental Disorder) nos
- Current prevalence: 6 per 1000 or 1 in 166
- Male : Female Ratio: 2:1 to 6.5:1, even higher in high-functioning ASD and Aspergers
- If an older sibling has ASD, the recurrence risk is 5-6%

ASD: Key Features

- Qualitative impairment in reciprocal **social interaction**
- Qualitative impairment in **communication**
- **Restricted, repetitive, and stereotyped** patterns of behavior, interests, and other activities

Impairment in social relatedness

- Marked impairment of non-verbal behaviors (eye contact, gestures)
- Failure to develop age appropriate peer relationships
- Lack of social-emotional reciprocity (empathy)
- Lack of spontaneous seeking to share interests, achievement or enjoyment

Communication Impairment

- Absent/delayed language without attempts to compensate
- Marked impairment in ability to sustain conversation
- Stereotypic or repetitive use of language
- Lack of make-believe, social imitative play

Restricted/Repetitive Behaviors

- Restricted interests, abnormal in focus/intensity
- Inflexible, non-functional routines
- Pre-occupation with parts of objects
- Stereotypic motor mannerisms
- Insistence on sameness

ASD: Defining Characteristics

- Joint Attention
- Theory of Mind
- Symbolic Play
- Reciprocal Imitation

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ASD: Etiology

- Mainly genetic in origin, and genetic mechanisms are complex
- Environmental factors may modulate phenotypic expression. Probably during fetal brain development.
- Implicated genetic sites on chromosomes 2, 3, 6, 7, 13, 15, 16, 17, 22

ASD subtypes

- **Idiopathic**: meet criteria for ASD with no comorbid medical condition known to cause autism. Most ASD. Less likely to have GDD/MR or dysmorphic features.

- **Secondary**: have an identifiable syndrome or medical disorder known to be associated with autism. Less than 10% of ASD.

Asperger's Syndrome

- Separate from high-functioning autism
- Impaired social skills
- Restricted,repetitive patterns of behavior/interests

BUT

- Relatively normal language development
- No significant cognitive deficits
- V IQ>P IQ
- Older age at diagnosis

Secondary ASD

- Fragile X
- Tuberous Sclerosis
- Phenylketonuria
- Fetal Alcohol Syndrome
- Angelman Syndrome
- Rett Syndrome
- Smith-Lemli-Opitz Syndrome

The goal of
General
developmental
screening
&
Autism screening
Is
Early identification

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AAP Policy Statements: Key Points

2001 statement:

Developmental surveillance is an important method of detecting delays. Moreover, the **use of standardized developmental screening tools at periodic intervals will increase accuracy**. Successful early identification of developmental disabilities requires the pediatrician to be skilled in the use of screening techniques, **actively seek parental concerns about development, and create links with available resources in the community.**

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AAP Policy Statements: Key Points

2006 statement

- Developmental surveillance should be a component of every preventive care visit. **Standardized developmental screening tools should be used** when such surveillance identifies concerns about a child's development & for children who appear to be at low risk of a developmental disorder at the **9-, 18-, and 30-month* visits.**
- Establish **working relationships** with **state and local programs**, services, and resources.
- Use a **quality-improvement model** to **integrate surveillance and screening into office procedures** and to monitor their effectiveness and outcomes

**Note: Because the 30-month visit is not yet a part of the preventive care system and is often not reimbursable by third-party payers at this time, developmental screening can be performed at 24 months of age. In addition, because the frequency of regular pediatric visits decreases after 24 months of age, a pediatrician who expects that his or her patients will have difficulty attending a 30-month visit should conduct screening during the 24-month visit.*

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PEDIATRICS November 2007

- Identification and Evaluation of Children with Autism Spectrum Disorders, Chris Plauche Johnson, Scott M. Myers, and the Council on Children with Disabilities.

- Management of Children with Autism Spectrum Disorders, Scott M. Myers, Chris Plauche Johnson, and the Council on Children with Disabilities

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AAP Policy Statements
Autism 2007

- Surveillance at every visit
- Four risk factors for surveillance
- Routine ASD screen at 18 months and 24 months

AAP Policy Statements Autism 2007 (cont.)

Surveillance factors

- Sibling with ASD
- Parent concern, inconsistent hearing, unusual responsiveness
- Other caregiver concern
- Pediatrician concern

If 2 or more, refer for EI, ASD Evaluation, and Audiology simultaneously.

If 1 and child at least 18 mos old, use screening tool.

When screen is positive, refer for EI, ASD Evaluation, and Audiology

The Role of Primary Care for Early Identification

- ASD is presumably present at birth, with onset of symptoms before 36 months
- Accurate diagnosis possible at 18-24 months, maybe earlier (Early Sibs studies)
- Parents first voice concerns around 18 months, but diagnosis is typically not until 3 years or older
- Huge potential benefits of early treatment

Myths about Autism

- The child with autism…
  - Is not affectionate
  - Does not form attachments
  - Never makes eye contact
  - Does not communicate
  - Engages in self-stimulatory and repetitive behaviors all the time
- All children with repetitive behaviors have autism
- All children with poor social skills have Asperger syndrome

How early can ASD be identified?

- Home movies research 12-18 months *(Palomo et al, 2006)*
  - Less pointing to share an interest
  - Less eye contact as part of an integrated communicative act
  - Less communicative babbling, lack of response to name
  - Experts unable to detect autism in children <12 months
  - Confirms the reality of regression subset (33-39%)
- Research on baby siblings *(Mitchell et al, 2006)*
  - By 12 months, differences in gesture and receptive language
  - 15 of 97 siblings had ASD by age 2 years

Autism Screening Tool for Primary Care

The MCHAT

Modified Checklist for Autism in Toddlers: MCHAT

- For 16-48 months
- Sensitivity: 85% Specificity: 93%
- Questionnaire completed by parent
- 5-10 minutes to complete (parent)
- Simple Scoring
- Download form and scoring

  www.firstsigns.org/downloads/mchat.PDF

  www.firstsigns.org/downloads/mchat_scoring.PDF

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M-CHAT: Sample Items

Parent report

- Does your child take an interest in other children?
- Does your child ever use his/her index finger to point, to indicate interest in something?
- Does your child ever seem oversensitive to noise?
- Does your child imitate you?

MCHAT Information

- MCHAT Follow-up Interview: clarifying questions that can be used to increase positive predictive value of a positive screen.

- Translations of MCHAT in 14 languages

http://www2.gsu.edu/~psydlr/Diana_L._Robins,_Ph.D..html

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Joint Attention is Key

- Protoimperative pointing: 12- 14 months of age
- Protodeclarative pointing: 14 – 16 months of age

"Red Flags" for ASD in 2nd year

ASD red flags

- Regression
- "In his own world"
- Lack of showing, sharing interest or enjoyment
- Using the caregivers hands to obtain needs
- Repetitive movements with objects
- Lack of appropriate gaze
- Lack of response to name
- Unusual prosody/pitch of vocalizations
- Repetitive movements or posturing of body

Wetherby and Woods (2003) esi.fsu.edu

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Does Screening Mean Becoming an Expert in Evaluating a Child's Development? NO…

Screening is looking at the whole population to **identify those at risk**. Identified children are referred for assessment. Assessment determines the existence of delay or disability which generates a decision regarding intervention.

Screening is optimized by ***Surveillance*** *……periodic screening gives a longitutidinal perspective of a child's developmental progress.*

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The Office Systems Approach

- Organizational tool: Getting Started Worksheet
- Multidisciplinary: involves practice staff at all levels
- Networking: guides practice in building relationships with community partners

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Using a Preventive Services Prompting Sheet

Name				DOB		Chart #				**Place X in box when done.** (or date in box if off schedule)				
Visit	1 wk	1 mo	2 mo	4 mo	6 mo	9 mo	12 mo	15 mo	18 mo	2 yr	30 mo	3 yr	4yr	5yr
Date														
length/ht														
wt														
hc														
bmi														
bp														
hearing						or			or					
vision														
Edinburgh														
ASQ									or					
autism risk?														
MCHAT														
lead														
hgb														
dental var														
TB ?'s														
ROR book														

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Coding & Billing

- Screening code: 96110
- 0.25 RVU's
- Reimbursement variable

Role of the Medical Home

- Screening & surveillance
- Partnering with parents as experts on their child
- Providing information and resources for parents
- Networking with community resources
- Facilitate linkages for families with Part C, preschools, and other diagnostic and treatment resources.

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AAP Autism Toolkit

- CD ROM
- Identification, including descriptions of Level 1 (for primary care) and Level 2 screening tools
- Referrals
- Physician Fact Sheets
- Family Handouts

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When the MCHAT or Surveillance is Positive

AAP Recommendation is for simultaneous referral for:

- Evaluation and diagnosis
- Early Intervention services
- Audiologic evaluation

Referrals for Positive MCHAT

- Evaluation and Diagnosis:

  Also, if concern re global delays, intellectual disability, or suspect Genetic or neurologic disorder:

  D&B Pediatrician/Geneticist/Neurologist
- Early Intervention Services (Part C)
- Audiologic Evaluation: Pediatric Audiologist

Autism Diagnosis Tools

- **CARS (Childhood Autism Rating Scale):** For > 2 yrs. old; 15-item, direct observation; 5-10 minutes.

- **ADOS (Autism Diagnostic Observation Schedule):** For toddlers to adults; direct observation, 30-45 minutes.

- **ADI-R (Autism Diagnostic Interview):** For mental age > 2 yrs.; structured interview; 1.5 – 2.5 hours.

Goals of Treatment

- Minimize core features
- Maximize functional independence
- Maximize quality of life
- Maximize family function

Treatment is Comprehensive

- Intervention as soon as diagnosis suspected; do not wait for definitive diagnosis
- 25 hours per week, 12 months per year in "systematically planned, developmentally appropriate educational activities."
- Low student:teacher ratio.
- Inclusive experience with typically developing peers.

Educational Interventions are Foundation of Treatment

- Applied Behavioral Analysis
- Structured teaching – TEACCH
- Developmental
- Relationship focused
- Speech and Language Therapy, including use of augmentative and alternative communication
- Social Skills Instruction – joint attention
- OT (Sensory Integration) Therapy – evidence base not yet established

Common Behavioral Issues

☐ Disruption/aggression	15-64%
☐ Self-injurious	8-38%
☐ Eating	25-52%
☐ Sleeping	36%
☐ Toileting	40%

Problems correlate with rigidity/restricted interests/need for sameness

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Behavioral Treatment

Positive Behavioral Support

- Proactive arrangement of the physical environment to prevent occurrence of problem behavior
- Routine curriculum incorporates social skill development
- Functional behavioral analysis used for individualized behavior management plans

Medical Management

- Challenges in routine health care due to difficulties with social interaction, communication, and negotiating a new and unfamiliar environment.
- Average visit requires twice as much time as for a child without an ASD.
- Strategies in the office to promote familiarity

Associated Medical Conditions

- Gastrointestinal: chronic constipation/diarrhea, recurrent abdominal pain. Studies inconsistent, with rates of 9% to 70%
- Seizures: 11 – 39%. More likely with co-morbid severe global delays and motor deficits.
- Sleep problems

Psychopharmacology

- Goal is to minimize core symptoms and associated behaviors, and facilitate interventions.
- Be sure environmental and behavioral strategies are in place
- Pharmacotherapy is not the primary treatment

PHARMACOTHERAPY

Target Behavior	Medication	Studies to Support	Comments
ADHD behaviors	methylphenidate	Y, limited	
	atomoxetine	Y, limited	
	clonidine/guanfacine	very limited data	modest effect
	beta blockers	not supported	
	amantadine	Y, limited	
agitation/overarousal agression	risperidone	Y (FDA approved)	risks:obesity, hyper-lipidemia, metabolic syndrome
	other atypicals	N	
compulsions and anxiety	fluoxetine	Y	
	other SSRI's	limited	
	buspirone	no data	
sleep disruption	melatonin	Y	circadian rhythm dis
	hypnotics	not well studied	
severe mood disorder	risperidone	Y	risks:obesity, hyper-lipidemia, metabolic syndrome
	valproate	Y	
	lamotrigine	not supported	
	other AED's	no data	
	lithium	Y, limited	
self injury	risperidone	Y	
	naltrexone	Y	

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Complementary & Alternative Medicine

- 52 – 92 % of parents of children with autism report using CAM for their children
- NIH budget for CAM research - $120M
- PCP needs to: be knowledgeable, provide balanced information, maintain communication, help families know how to evaluate information, evaluate CAM studies by clinical research standards.

CAM

	Studies Support	Promising Studies	No Studies	Comment
BIOLOGIC				
Immunoglobulin	Y&N			pos & neg sm studies
				invasive & expensive
Antivirals			X	
Antifungals			X	endoscopic studies-
				no yeast overgrowth
Chelation			X	2 deaths
Secretin	N			>12 studies
Yeast-free diet			X	
Gluten-free diet		1 study		NIH studies in progress
Vit B6	N			
Vit C		1 study		improved sensorimotor
Magnesium	N			
Dimethylglycine	N			
Omega 3's		1 study		may help hyperactivity
NON-BIOLOGIC				
Auditory Integration	N			
Behavioral			X	
Optometry				
Craniosacral			X	
Manipulation				
Dolphin-assisted			X	
Music therapy		X		Improved communica-
				tion
Facilitated	N			
Communication				

Resources for Clinicians and Families

NC

- TEACCH www.teacch.com
- FSN (Family Support Network) http://fsnnc.med.unc.edu

National

- www.firstsigns.org
- www.aap.org
- www.cdc.gov/ncbddd/autism/screening
- www.cdc.gov/ncbddd/autism/actearly
- www.nichd.nih.gov/autism
- www.ibis-network.org
- www.autismspeaks.org

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