

*Lewis County Autism Coalition*  
*Friday, November 2<sup>nd</sup>, 2012*

# **Update: Autism Spectrum Disorder**

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# Outline:

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- Autism spectrum disorder (ASD)
- Prevalence data (2008)
- DSM-V + ICD-10 diagnostic criteria
- Early diagnosis
- IEP eligibility
- Autism insurance mandated benefits

# Autism: Practice Parameters

## 2000

P.A.Filipek, MD, et al. Practice Parameter: Screening and Diagnosis of Autism. *Neurology*, 55:468-479, 2000. (101 references)

## 2007

C. P. Johnson, S. M. Meyers, and the AAP Council on Children with Disabilities. Identification and Evaluation of Children with Autism Spectrum Disorders. *Pediatrics*, 120:1183-1215, 2007 (334 references).

## 2007

S. M. Meyers, C. P. Johnson, and the AAP Council on Children with Disabilities. Management of Children with Autism Spectrum Disorders. *Pediatrics*, 120:1162-1182, 2007 (245 references).

## 2008

Schafer and Mendelsohn. Genetics evaluation for the etiologic diagnosis of autism spectrum disorders. *Genetics in Medicine*, Vol 10 (1):4-12 (2008).

## 2009

Caring for Washington Individuals with Autism Task Force. Autism Guidebook for Washington State. Revised/printed: 2009.

## 2010

J. H. Miles, MD, PhD, et al. Autism Spectrum Disorders. GeneReviews. 13 Apr 2010. <http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=gene&part=autism-overview>

# Autism Spectrum Disorder

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- Common **neurobiological** disorder with impairments in social interaction, communication, and repetitive and stereotypic behaviors.
- Multi-factorial causation (genetic + ??)
- Gender differences (males 4:1-13:1)
- Variable expression (spectrum)
- Positive treatment responses

# DSM-IV-TR: Autism Spectrum Disorder

## 1. Social interaction:

- Non-verbal behaviors
  - eye contact
  - expressions
  - body postures
- Forming peer relationships
- Sharing interests with others
- Social/emotional reciprocity

- *Two (2) or more of the above present*
- *Total of six (6) items for 1, 2, and 3.*
- *Onset prior to three (3) years of age*
- *Not Rett or CDD*

## 2. Communication:

- Delayed spoken language
- Conversational speech
- Repetitive use of idiosyncratic language
  - Echolalia
- Social imaginative play

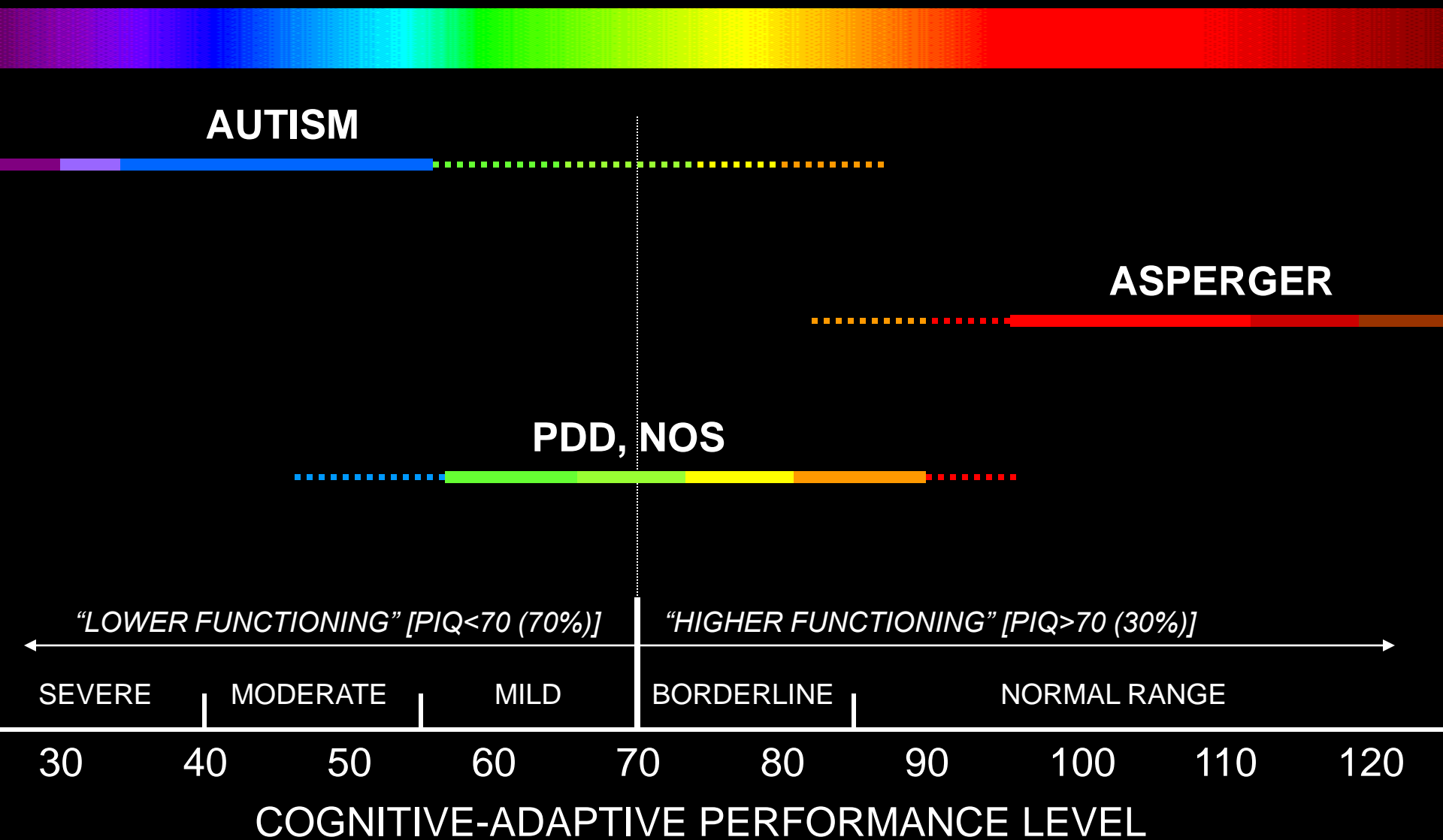
- *One (1) or more of the above present*

## 3. Repetitive behavior:

- Preoccupation with behavior(s)
- Nonfunctional rituals or routines
- Repetitive motor mannerisms
  - hand-flapping
  - spinning
- Preoccupations with parts of objects

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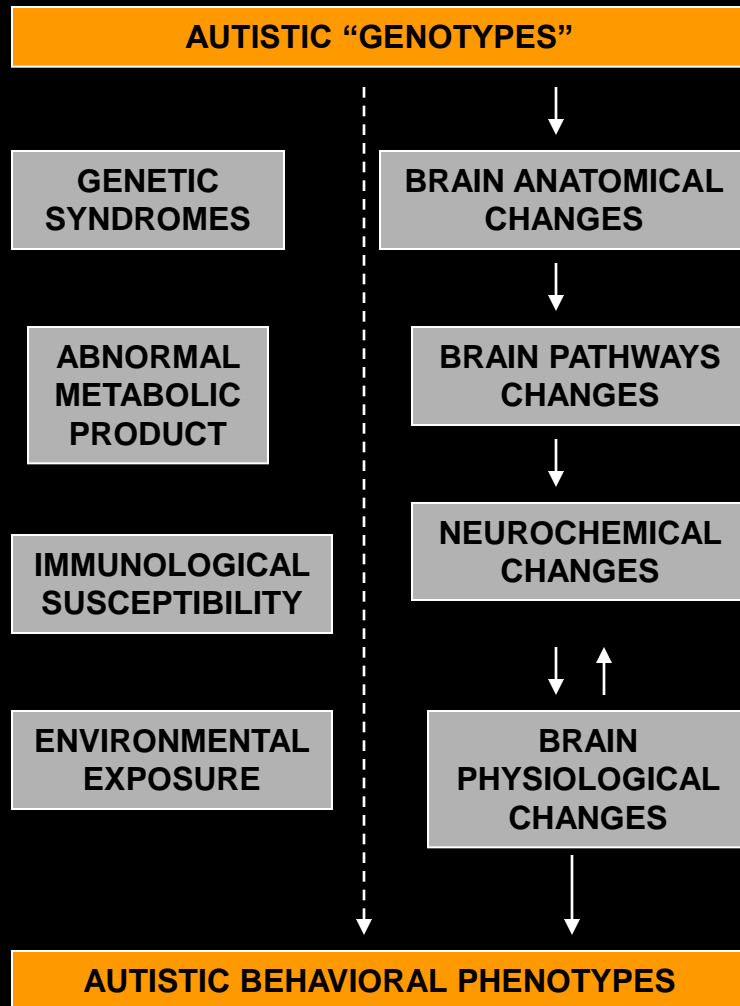
# Autism Spectrum Disorders



# Autism: Coding Classifications

ICD-9-CM	DSM-IV-TR	ICD-10-CM	DSM-V
<b>299.0x (0, 1)</b> Autistic Disorder Infantile Psychosis	<b>299.00</b> Autistic Disorder	<b>F84.0</b> Autistic Disorder Infantile Psychosis	<b>A 05</b> Autism spectrum disorder
<b>299.1x (0, 1)</b> Childhood Disintegrative Disorder	<b>299.10</b> Childhood Disintegrative Disorder	<b>F84.2</b> Rett Syndrome	
<b>299.8x (0, 1)</b> Other Pervasive Devel Disorders Asperger Disorder Atypical Child Psychosis Borderline Child Psychosis	<b>299.80</b> Asperger Disorder Rett Syndrome Pervasive Devel Disorder NOS	<b>F84.3</b> Childhood Disintegrative Disorder Dementia Infantilis Symbiotic Psychosis	
<b>299.9x (0, 1)</b> Pervasive Devel Disorders NOS Childhood psychosis NOS Schizophrenia, child NOS		<b>F84.5</b> Asperger Disorder Autistic Psychopathy Schizoid Disorder, Child	
		<b>F84.8</b> Other Pervasive Devel Disorder "Overactive Disorder with MR and Stereotyped Movements"	
		<b>F84.9</b> Pervasive Devel Disorder NOS	

# Autism: Genetic factors



## •Multiple candidate genes

- Embryogenesis (midbrain, cerebellum)
- Neuron proliferation/determination
- Neuron migration/synapse formation
- Neurotransmitter systems

*Miles, J. and McCathren, R. Autism Overview. GeneReviews. 04/13/10*

*"The nature of the genetic risk for ASD is not well understood; whatever is transmitted from parents to children is not "classic autism", but rather a **risk for social, communication, and behavioral difficulties** that may manifest as autism, PDD-NOS, or Asperger syndrome, or as less pervasive language delays, social deficits, or restricted interests".*

*Lord, C. Detecting Autism in a Toddler. Medscape. 2007*

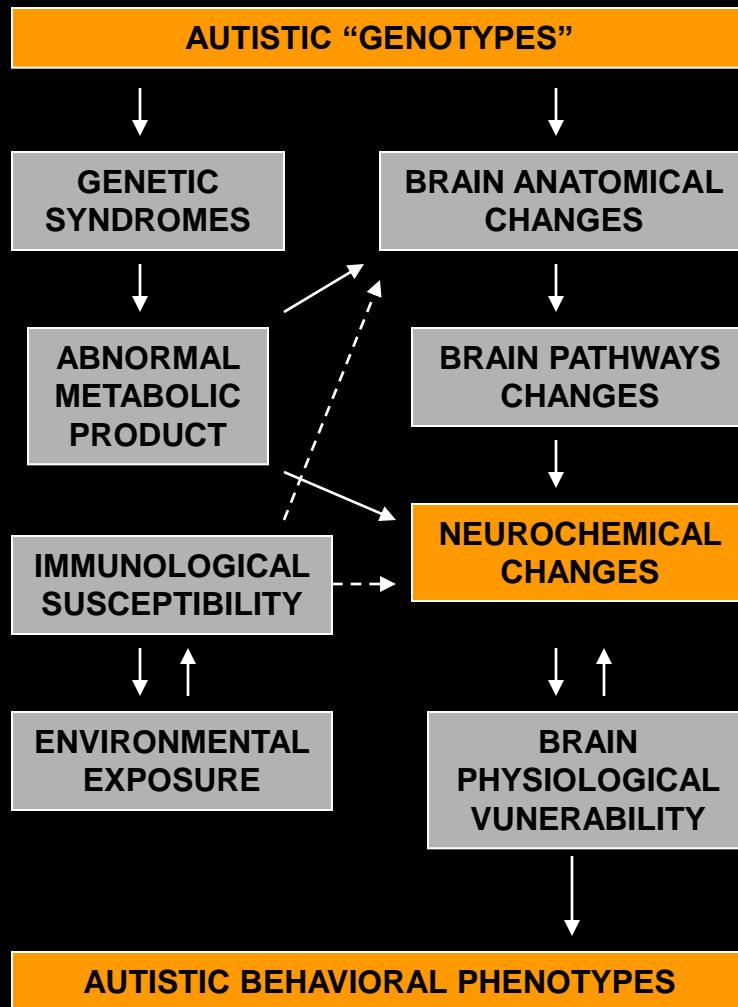
## •Recurrence risk in siblings: **6-18%**

- Idiopathic autism: **6%**
- Broader phenotype: additional **10-18%**

*Miles, J. and McCathren, R. Autism Overview. GeneReviews. 04/13/10*



# Possible Neurochemistry in Autism



- Complex and largely unknown mechanism
- Hypothesized differences in brain neurotransmitter systems:
  - Core autism symptoms
  - Co-existing symptoms:
    - Intellectual impairment (70%)
    - Sleep problems (~60%)
    - Seizures (~30%)
    - Disordered attention
    - Overanxious; OCD ] + tics = TS?
    - Sensory/emotional regulation
    - Mood disorders
    - Aggressive, self-injury

# Autism: Medical Evaluation

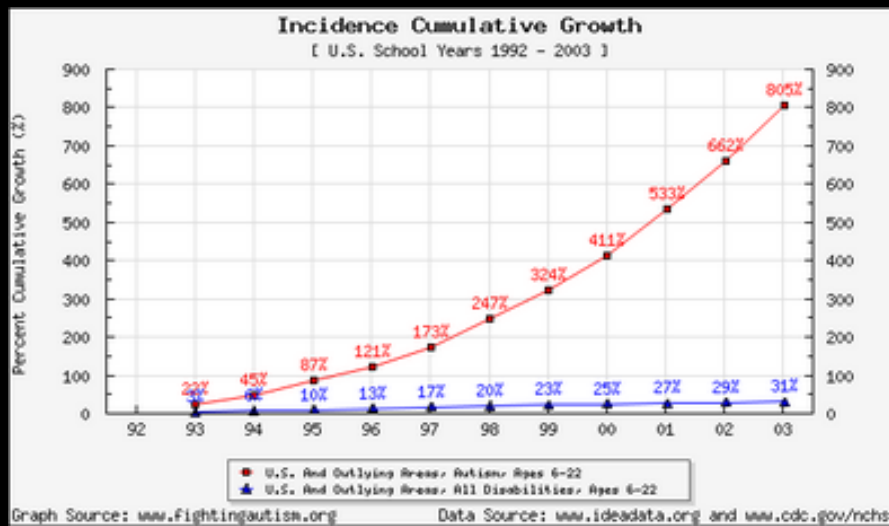
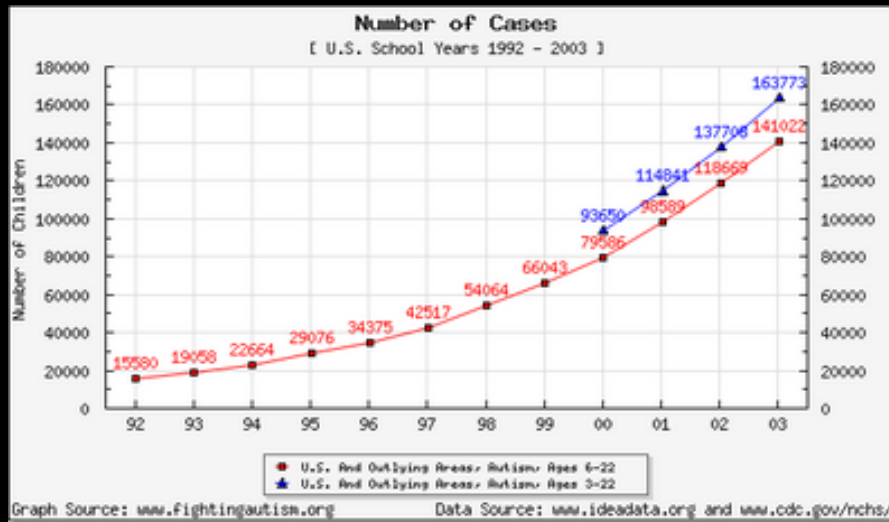
- Family history:
  - Three generation pedigree (language, social, psychiatric)
- Clinical examination:
  - Growth parameters
    - Height, weight, head circumference (macrocephaly, microcephaly)
  - Physical features
    - Autism Dysmorphology Measure (Miles et al, 2008)
  - Skin
    - Woods lamp exam (NF-1; TS complex)
- Genetic studies:
  - Array comparative genomic hybridization (aCGH)
  - FMR1 molecular genetic testing
  - Specific molecular genetic testing (FISH)
- Other studies:
  - EEG
    - If clinical signs of seizures or developmental regression
  - Brain MRI
    - Localized brain lesions, TS complex, Joubert syndrome, microcephaly
  - Metabolic testing
    - Limited value in ASD; directed by history and PEx

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# Autism: Increasing Prevalence Rate



Autism Intervention and Treatment Research  
Organization for Autism Research

Autism strikes ~~1 in 156~~ children every year

The challenges last a lifetime.  
Help make sure the solutions do too.

[www.researchautism.org](http://www.researchautism.org)  
(866) 366-9710

150  
110  
88

# Autism & Developmental Disabilities Monitoring Network

## ADDMN Sites



## ASD Prevalence Data (2008)

**Identified Prevalence of Autism Spectrum Disorders**  
 ADDM Network 2000-2008  
 Combining Data from All Sites

Surveillance Year	Birth Year	Number of ADDM Sites Reporting	Prevalence per 1,000 Children (Range)	This is about 1 in X children...
2000	1992	6	6.7 (4.5-9.9)	1 in 150
2002	1994	14	6.6 (3.3-10.6)	1 in 150
2004	1996	8	8.0 (4.6-9.8)	1 in 125
2006	1998	11	9.0 (4.2-12.1)	1 in 110
2008	2000	14	11.3 (4.8-21.2)	1 in 88

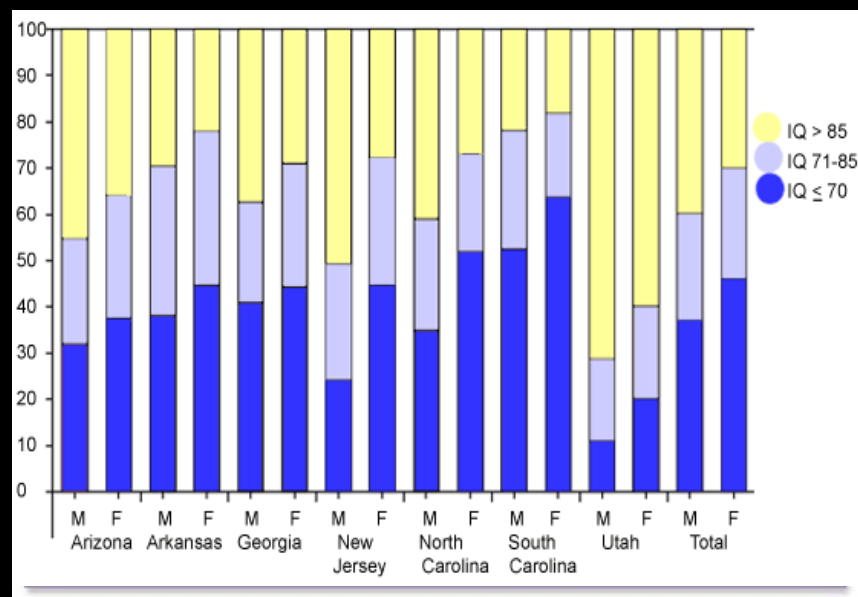
<http://www.cdc.gov/ncbddd/autism/data.html>

# Autism & Developmental Disabilities Monitoring Network

## ADDMN Sites



## ASD + Intellectual impairment



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# DSM-IV-TR: Autism Spectrum Disorder

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# DSM-V: Autism Spectrum Disorder

## **Persistent deficits in social communication and social interaction:**

- Social-emotional reciprocity
- Nonverbal communication used in social interaction
- Developing and maintaining relationships, appropriate for developmental level

*All 3 of the above criteria*

## **Restricted, repetitive patterns of behavior, interests, activities**

- Stereotyped or repetitive speech, motor movements, or use of objects
- Excessive adherence to routines, ritualized patterns of behavior, or excessive resistance to change
- Highly restricted, fixated interests
- Hyper- or hypo-reactivity to sensory input or unusual sensory interests

*At least 2 of the above criteria*

# DSM-V: Autism Spectrum Disorder

Severity Level	Social Communication	Restricted Interests/Repetitive Behaviors (RRB)
3: Very substantial support	Very limited initiation of social interactions and social reciprocity	Marked functional impairment from RRB; marked distress when RRB are interrupted, difficult to redirect or returns to RRB quickly
2: Substantial support	Limited initiation of social interactions and social reciprocity with support	RRB obvious to casual observer, interfere with functioning in multiple contexts. Some distress when RRB are interrupted, difficult to redirect
1: Some support	Noticeable impairments in social interactions and social reciprocity without support	RRB cause significant interference with functioning in one or more contexts. Resists attempts by others to interrupt or redirect RRB

# DSM-V: Social Communication Disorder

- Persistent difficulties with the social use of verbal and nonverbal communication is a naturalistic context that adversely affects social reciprocity and social relationships
- Persistent difficulties in the acquisition and use of spoken, written, and other modalities of language for narrative, expository, and/or conversational discourse
- The low social communication abilities result in functional limitations in effective communication, social participation, academic achievement and/ or occupational performance
- Symptoms present in early childhood but not fully manifest until communication demands exceed capacity
- Rule out autism spectrum disorder

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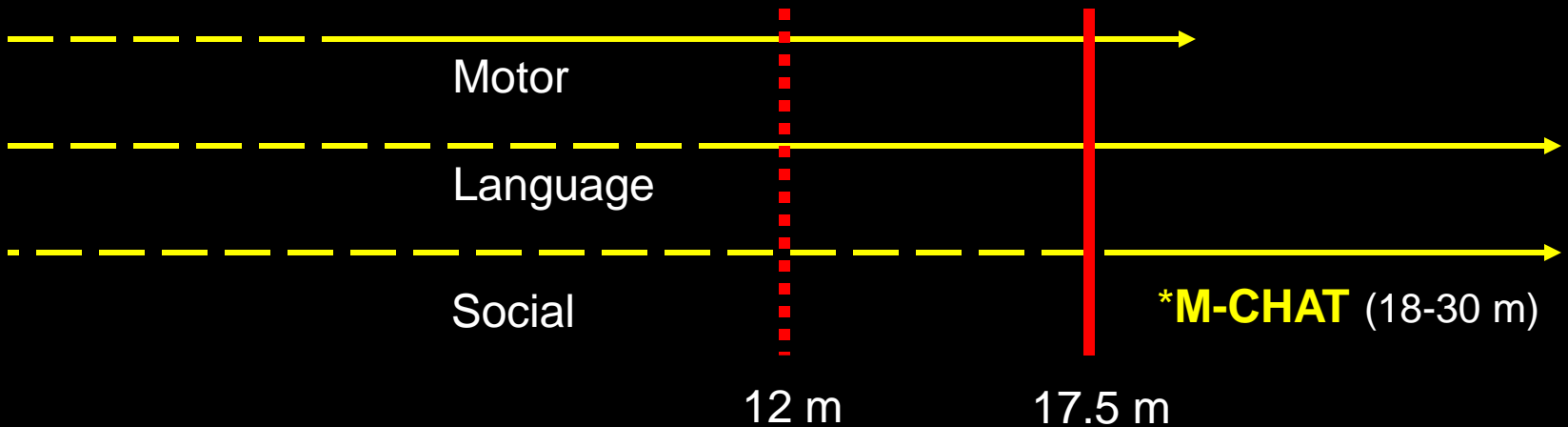
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# Autism: Presentation

B	2	4	6	8	10	12	14	16	18	20	22	24
*	*	*	*	*		*		*	*			*



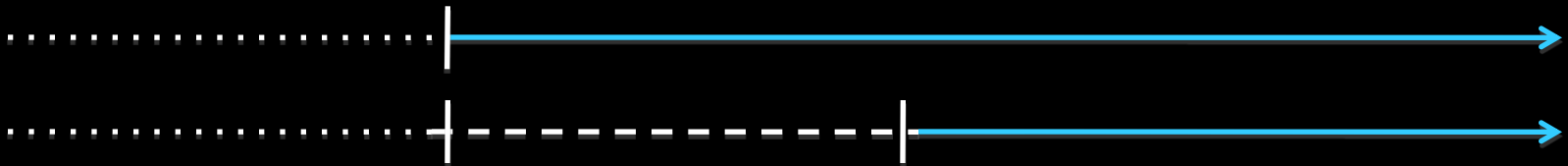
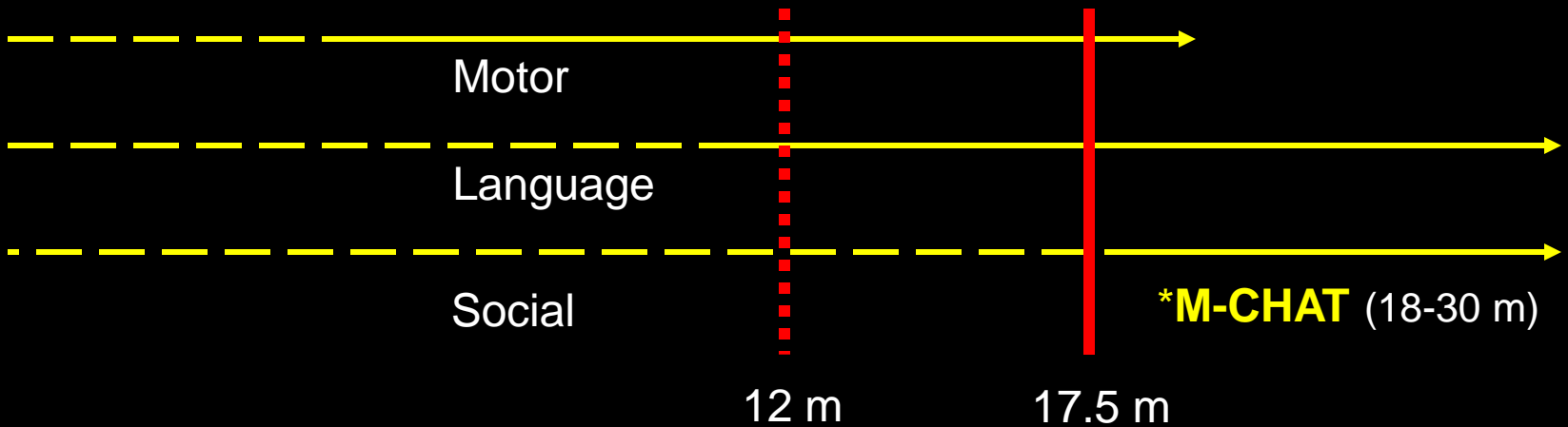
70% *Mixed developmental delays with autistic symptoms*

30% *"Normal" developmental progress*

*Autistic regression (12-18 m)*

# Autism: Presentation

B	2	4	6	8	10	12	14	16	18	20	22	24
*	*	*	*	*		*		*	*			*



# Autism: Early Detection

B	2	4	6	8	10	12	14	16	18	20	22	24
*	*	*	*	*		*		*	*			*

## By 6 months:

- Turn to name
- Smile at person
- Respond to sound with sounds
- Social play (peek-a-boo)

## Red Flags (6 months):

- Lack of eye contact
- Lack of social interest
- Too passive

## By 12 months:

- Use simple gestures (bye-bye)
- Makes consonant sounds
- Imitates actions
- Responds to "no"

- Follows parent pointing (Avg: 10-12 months)

## Red Flags (12 months):

- No babbling
- No pointing/gestures

## By 18 months:

- Simple pretend play ("talk" on telephone)
- Point to out of reach objects (Avg: 12-14 months)
- Bring objects to show parent
- Uses several words
- Spontaneous point to interesting objects (Avg: 14-16 months)

## Red Flags (18-24 months):

- No words by 16 months
- No 2-word phrases by 24 months

**Developmental regression at any age!**



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# Educational Services

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- Individuals with Disabilities Education Act (IDEA)
  - Part C: 0-3 years (IFSP)
  - Part B: 3-21 years (IEP)

*“Children are eligible for a free, appropriate, and adequate public education in the least restrictive environment”*

# Eligibility for Special Education (WAC 392-172A-01035)

## Eligibility categories:

- Developmental delay (3-8)
- Speech or language impairment
- Specific learning disability
- Intellectual disability
- **Autism**
- Emotional behavioral disability
- Hearing impairment
- Visual impairment
- Deaf-blindness
- Other health impairment
- Orthopedic impairment
- Traumatic brain injury
- Multiple disabilities

## Autism spectrum disorder:

Developmental disability that:

- Significantly affects verbal and nonverbal communication + social interaction
- Often associated with repetitive behaviors, stereotyped movements, resistance to change in daily routines, and/or unusual sensory experiences
- Adversely affects educational performance
- Not primarily due to emotional or behavioral disturbance
- May manifest >3 years of age

# IDEA: *Is a medical diagnosis required for any disability category?*

## IDEA: Part B (3-21 yr):

- Evaluation for eligibility for special education:
  - Purpose: determine if a child qualifies as a child with a disability and the nature and extent of the educational needs of the child.
  - Public agency must use a variety of assessment tools and strategies to gather relevant functional, developmental, and academic information.
  - No single measure or assessment can be used as sole criterion.
  - The group of qualified professionals and the parent must draw information from a variety of sources (aptitude, achievement, parent input, teacher recommendations, child's physical condition, social/cultural background, and adaptive behavior).
  - One of the sources of information could be a physician, if determined appropriate, to assess the effect of the child's medical condition on the child's eligibility and educational needs.
- However:
  - There is no explicit requirement in IDEA or Part B regulations to include physician input
  - There is nothing to prohibit a public agency from obtaining a physician input, provided the evaluation is at public expense and there is no cost to the parent.
  - There is nothing to prohibit a State from requiring a physician evaluation, but this needs written notification by the State that is supersedes the requirement of IDEA

# Outline:

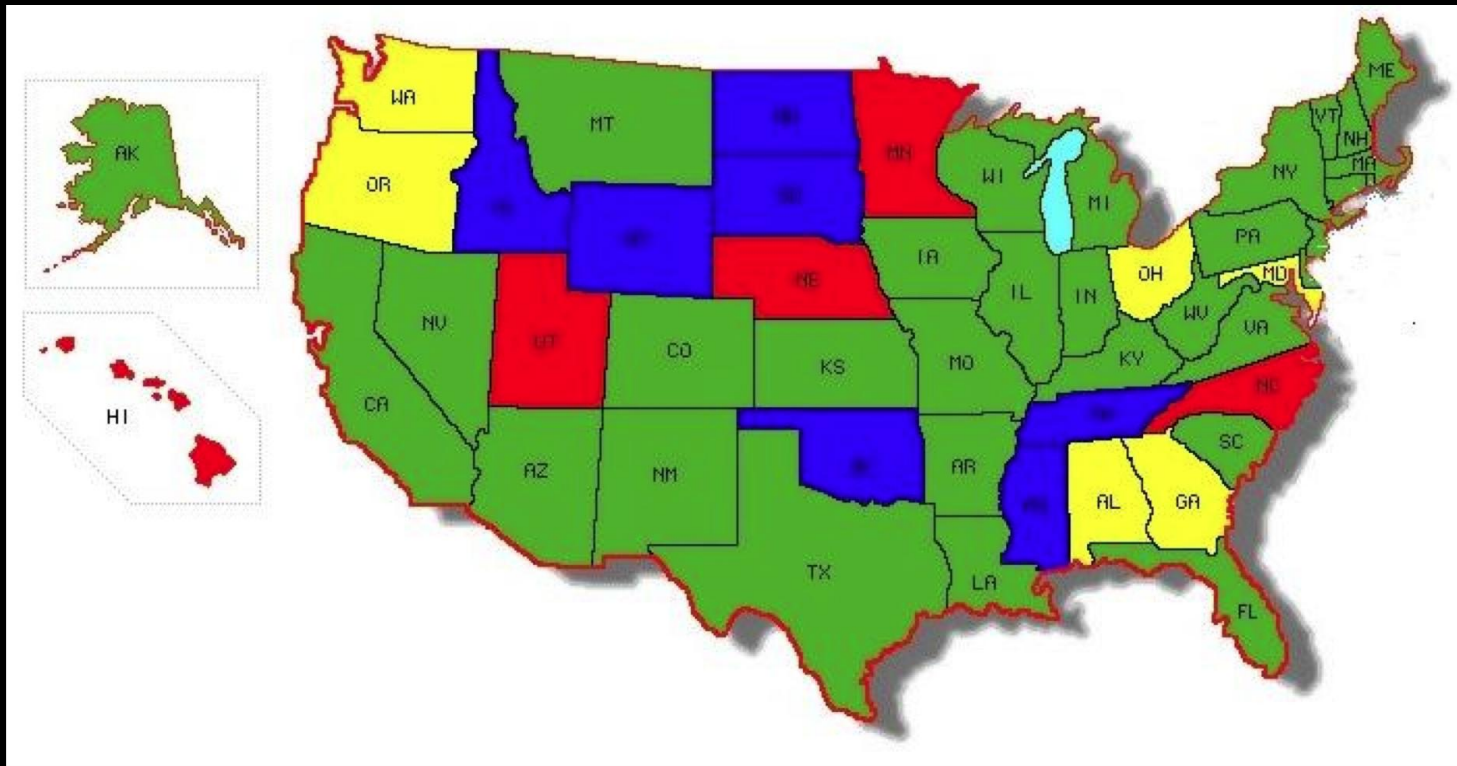
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# Autism Insurance Benefits

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- Behavioral health treatment (ABA)
- Pharmacy care
- Psychiatric care
- Psychological care
- Neurodevelopment therapy (0-18 yr)
  - Speech therapy
  - Occupational therapy
  - Physical therapy



<p><b>States with Autism Insurance Reform Laws (32)</b></p>	<p><b>States with Endorsed Autism Insurance Reform Bills</b></p>	<p><b>States Pursuing Autism Insurance Reform in 2012</b></p>	<p><b>States Not Currently Pursuing Autism Insurance Reform</b></p>
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# Applied Behavior Analysis

- Legislation
  - WA Mental Health Parity Act (2005)
  - “Shayan’s Law”
- Litigation
  - Class action lawsuits (6)
    - Premera, Regence, Group Health
  - “Shayan’s settlement”
    - State Employee’s Regence Health Care Plan [700]
    - Medicaid Apple Health for Kids Program [9100]
- Self-insured employers covering ASD
  - Active military: Tricare Echo
  - AOL, Cisco, Deloitte, Eli Lilly, Fred Hutch Cancer Research, Google, Home Depot, IBM, Intel, Michelin, Microsoft, Oracle, Symantec, Wells Fargo.



