



# Autism Spectrum Disorder: An Overview and Update

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DATE, 2016

Acknowledgements: Courtney Burnette, PHD, Sylvia Acosta, PhD, Maryann Trott, MA, BCBA

# Introduction to Autism Spectrum Disorder (ASD)



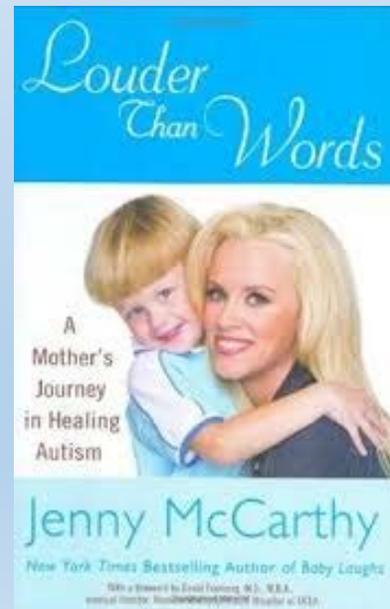
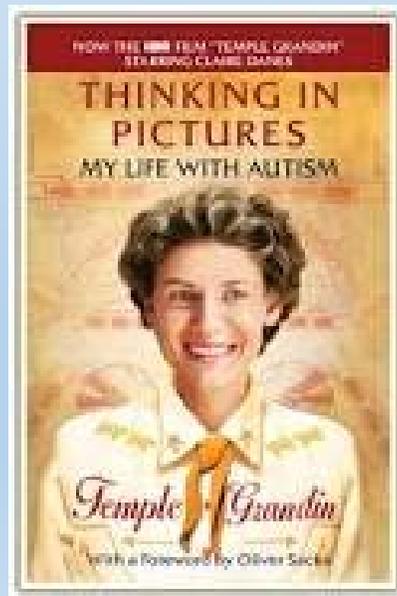
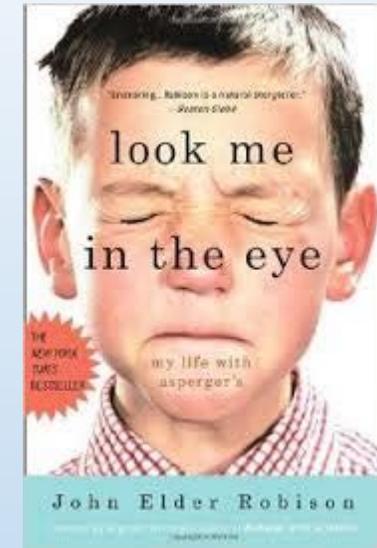
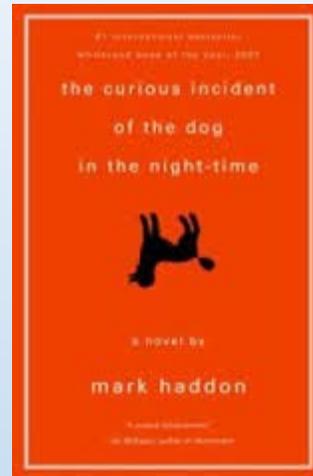
- What is ASD?
  - A complex neurodevelopmental condition
    - Neurologically based- underlying genetic and neurobiological origins
    - Developmental- evident early in life and impacts social development
      - Lifelong- no known cure
  - Core characteristics
    - Impairments in social interaction and social communication
    - Presence of restricted behavior, interests and activities
  - Wide variations in presentation



# DSM-5 Diagnostic Criteria

- Deficits in social communication and social interaction (3)
  - Social approach/interaction
  - Nonverbal communication
  - Relationships
- Presence of restricted, repetitive patterns of behavior, interests, or activities (2)
  - Stereotyped or repetitive motor movements, objects, speech
  - Routines
  - Restricted interests
  - Sensory\*

# From Rain Man To Sheldon Cooper- Autism in the Media



# 1910 Bleuler

- First use of the word autistic
- From “autos”, Greek word meaning “self”

1943

Leo Kanner

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# PATHOLOGY

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To understand and measure emotional qualities is very difficult. Psychologists and educators have been struggling with that problem for years but we are still unable to measure emotional and personality traits with the exactness with which we can measure intelligence.

—ROSE ZELIG in *Glimpses into Child Life*\*

## AUTISTIC DISTURBANCES OF AFFECTIVE CONTACT

By LEO KANNER

SINCE 1938, there have come to our attention a number of children whose condition differs so markedly and uniquely from anything reported so far, that each case merits—and, I hope, will eventually receive—a detailed consideration of its fascinating peculiarities. In this place, the limitations necessarily imposed by space call for a condensed presentation of the case material. For the same reason, photographs have also been omitted. Since none of the children of this group has as yet attained an age beyond 11 years, this must be considered a preliminary report, to be enlarged upon as the patients grow older and further observation of their development is made.

*Case 1.* Donald T. was first seen in October, 1938, at the age of 5 years, 1 month. Before the family's arrival from their home town, the father sent a thirty-three-page typewritten history that, though filled with much obsessive detail, gave an excellent account of Donald's background. Donald was born at full term on September 8, 1933. He weighed nearly 7 pounds at birth. He was

# 1944 Hans Asperger

(Aus der Wiener Universitäts-Kinderklinik [Vorstand: Prof. *Franz Hamburger*])

## Die „Autistischen Psychopathen“ im Kindesalter<sup>1</sup>.

Von

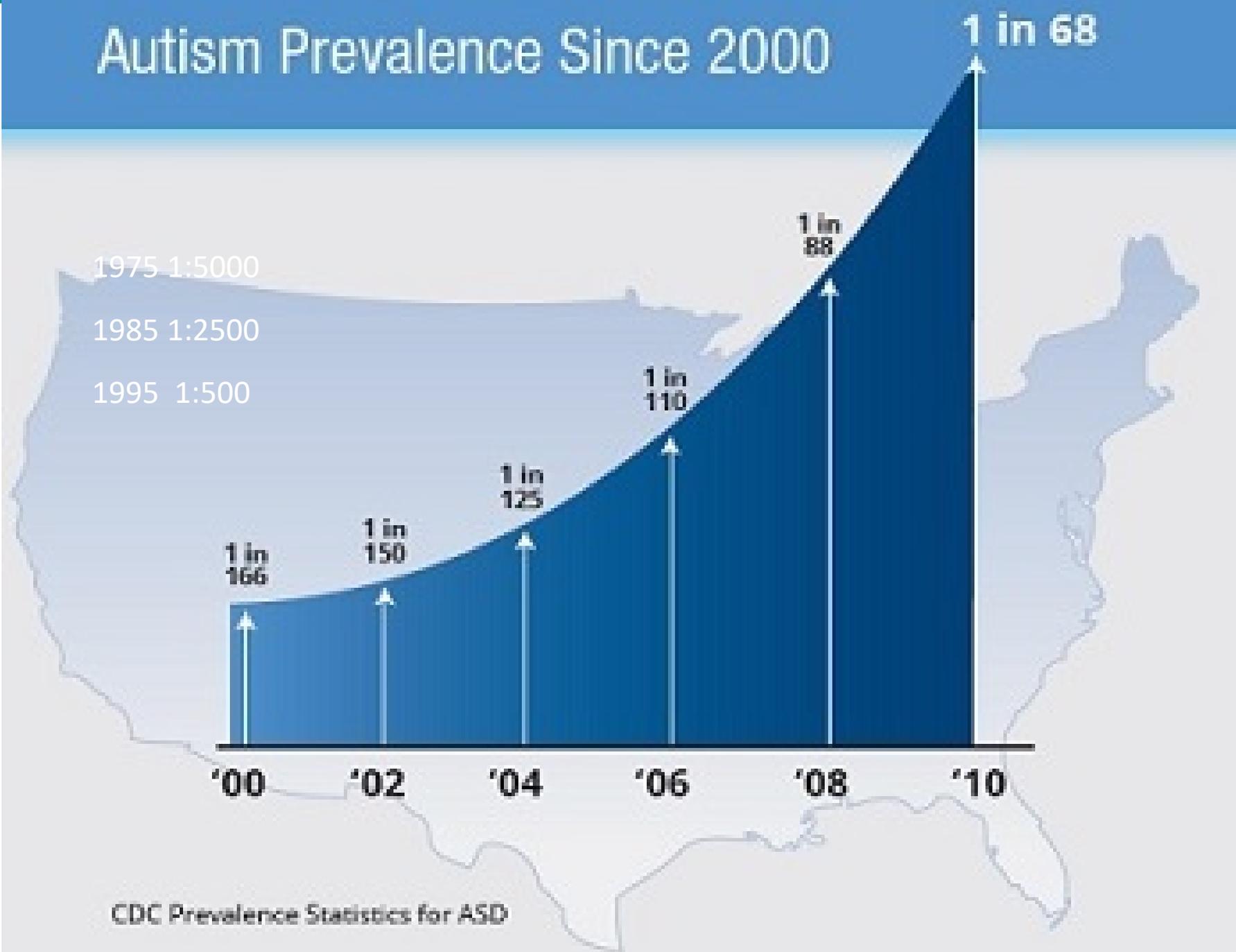
Doz. Dr. Hans Asperger,  
Leiter der Heilpädagogischen Abteilung der Klinik.

(Eingegangen am 8. Oktober 1943.)

### Problemstellung.

Ordnung und Erkenntnis des Aufbaues der Dinge ist eines der letzten Ziele der Wissenschaft. In der Fülle der Erscheinungen des Lebens, die voller Gegensätze sind, die mit verschwimmenden Grenzen in einander übergehen, sucht der denkende Mensch dadurch einen festen Standpunkt zu finden, daß er den einzelnen Erscheinungen einen Namen gibt, sie abgrenzt gegen die anderen Erscheinungen, Zusammenhänge, Ähnlichkeiten und Gegensätze feststellt, kurz, die Dinge in eine Ordnung, in ein

# Autism Prevalence Since 2000



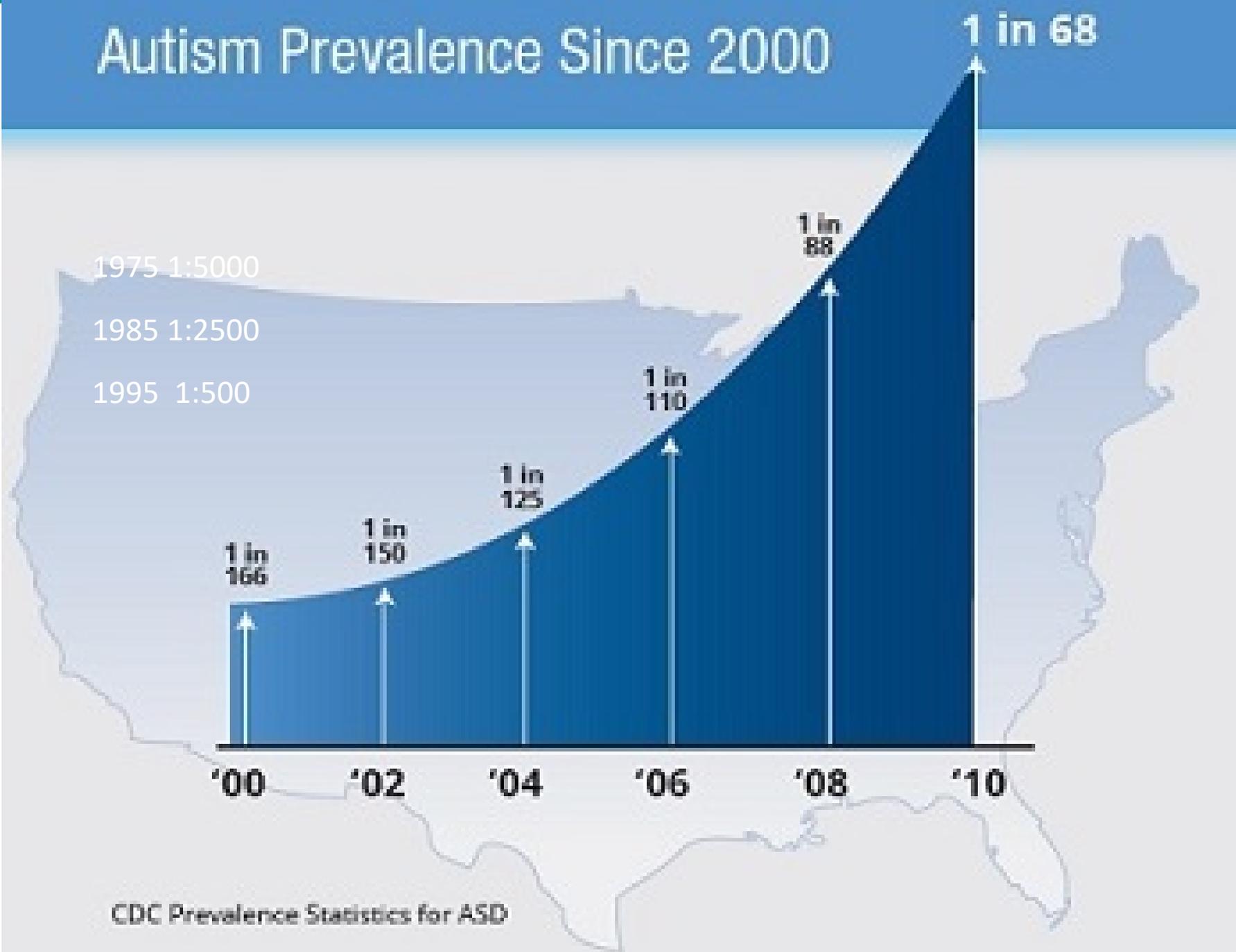
CDC Prevalence Statistics for ASD



“When my brother trained at Children's Hospital at Harvard in the 1970s, they admitted a child with autism, and the head of the hospital brought all of the residents through to see. He said, 'You've got to see this case; you'll never see it again.'”

--Thomas Insel, director of National Institute of Mental Health  
May 7, 2006, Time Magazine

# Autism Prevalence Since 2000

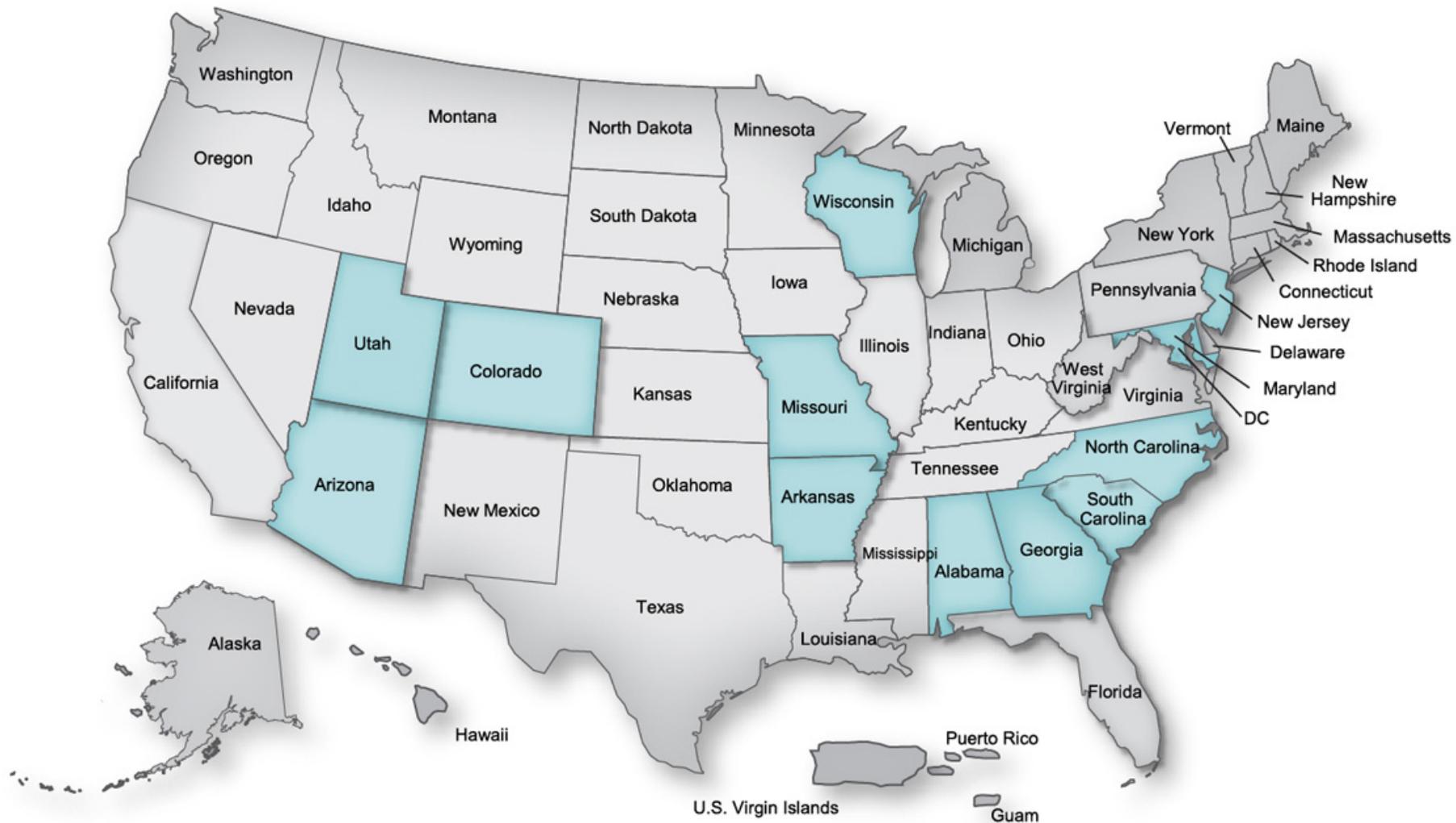


CDC Prevalence Statistics for ASD

# Autism and Developmental Disabilities Monitoring (ADDM) Network

- Part of Centers for Disease Control (CDC)
- Monitors the number of 4- and 8-year-old children with ASDs living throughout the United States at 11 sites
- Systematic Record Review of health and educational records (2010)

# Autism and Developmental Disabilities Monitoring (ADDM) Network Sites

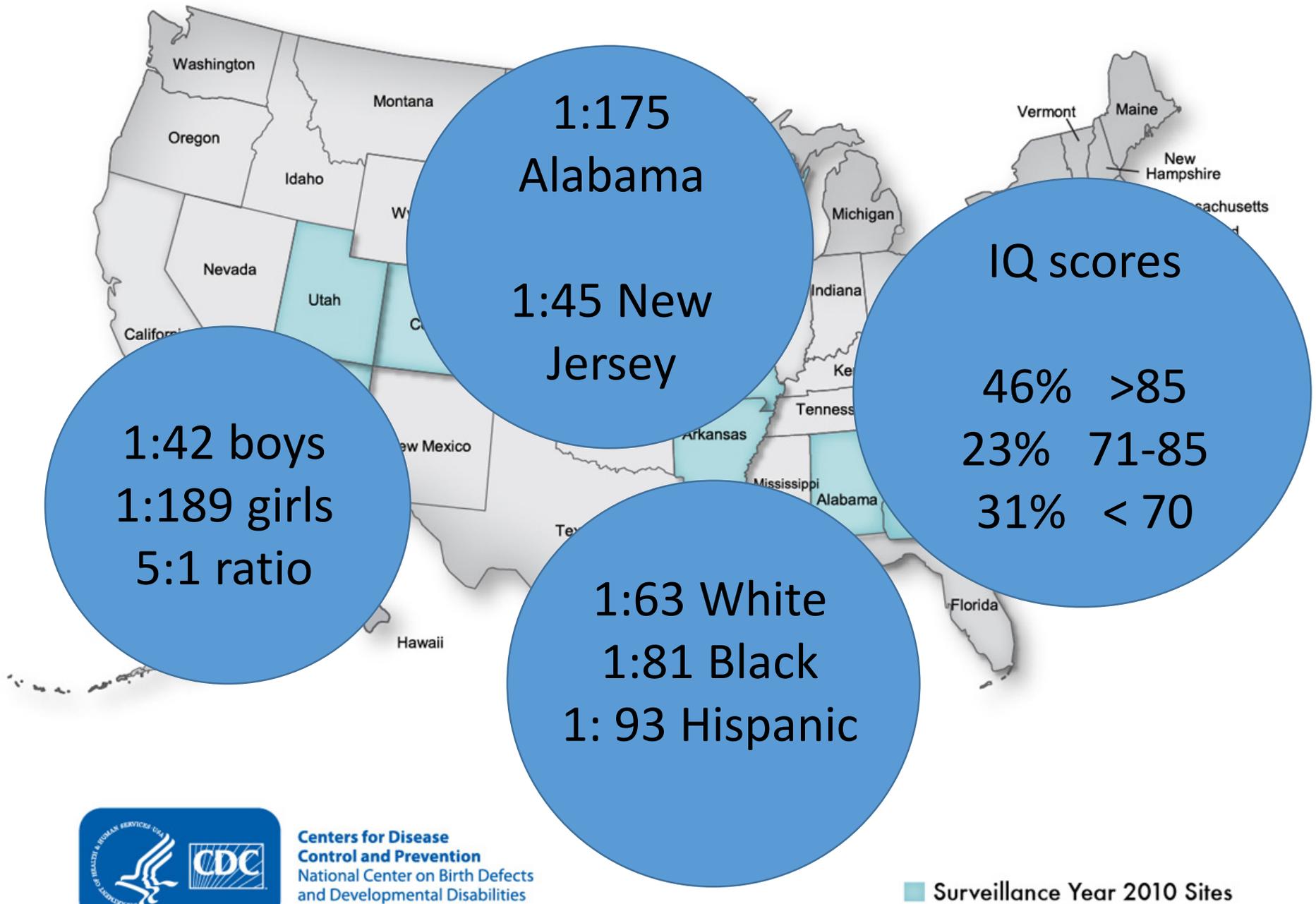


**Centers for Disease Control and Prevention**  
National Center on Birth Defects and Developmental Disabilities

■ Surveillance Year 2010 Sites



# Autism and Developmental Disabilities Monitoring (ADDM) Network Sites



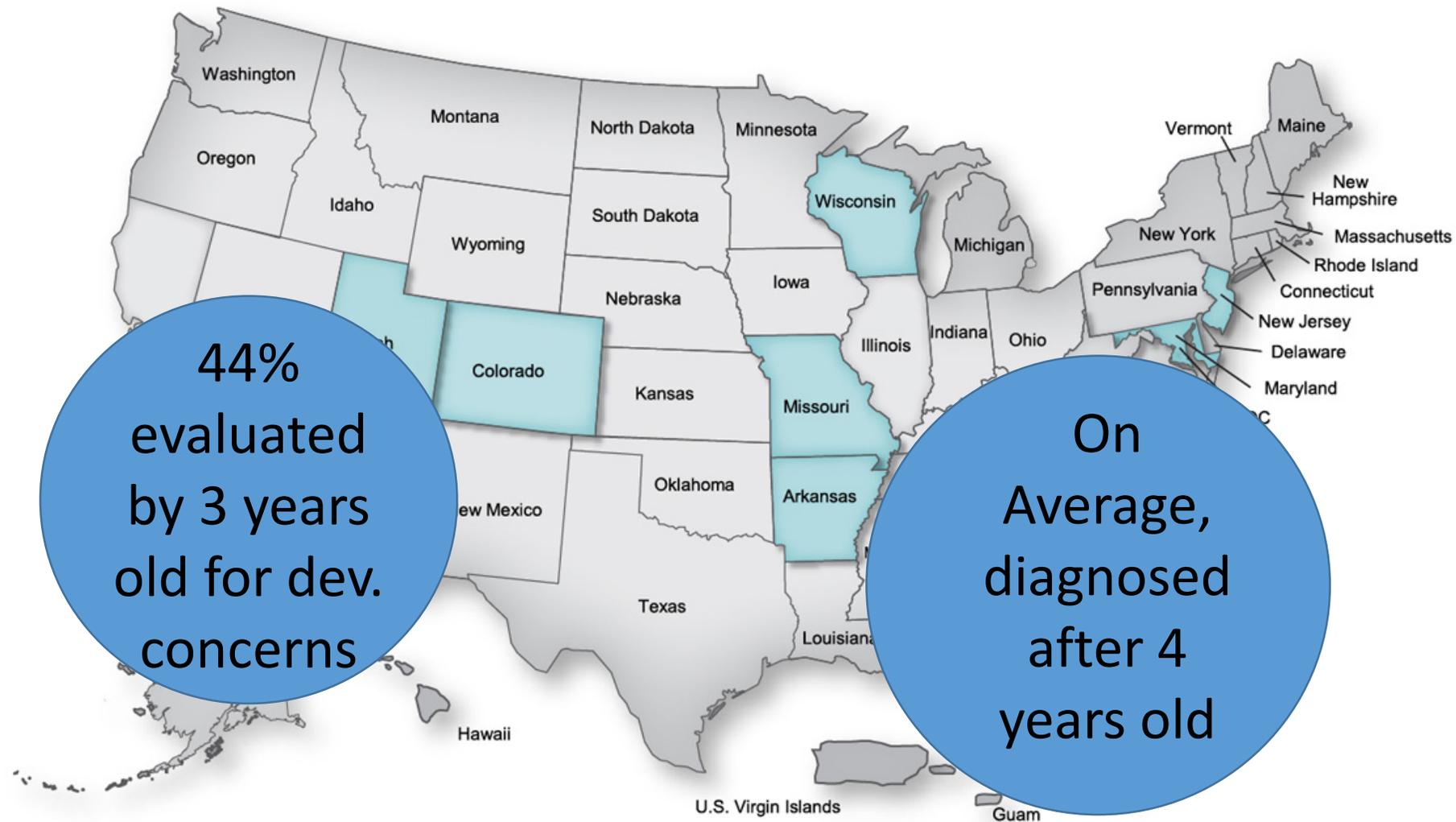
Centers for Disease  
Control and Prevention  
National Center on Birth Defects  
and Developmental Disabilities



# Autism and Developmental Disabilities Monitoring (ADDM) Network

Site	Total	Total no. with ASD	Prevalence
Alabama	21,833	125	5.7
Arizona	33,768	530	15.7
Arkansas	38,956	605	15.5
Colorado	38,806	384	9.9
Georgia	48,529	754	15.5
Maryland	27,605	458	16.6
Missouri	25,367	359	14.2
New Jersey	31,723	696	21.9
North Carolina	37,783	655	17.3
Utah	23,756	442	18.6
Wisconsin	35,623	330	9.3
Total	363,749	5,338	14.7

# Autism and Developmental Disabilities Monitoring (ADDM) Network Sites



Centers for Disease Control and Prevention  
National Center on Birth Defects and Developmental Disabilities

CS246713-C



# Relevance of Prevalence

- Federal
- Service Providers (healthcare, school systems)
- Research
- Policymakers
  
- <http://www.cdc.gov/ncbddd/autism/addm.html>

# Two most common questions

1. Why is the prevalence increasing?
2. What causes autism?



# Why is the Prevalence Increasing?

- Broadening of diagnostic criteria
- Diagnostic substitution
- Public awareness
- Unknown

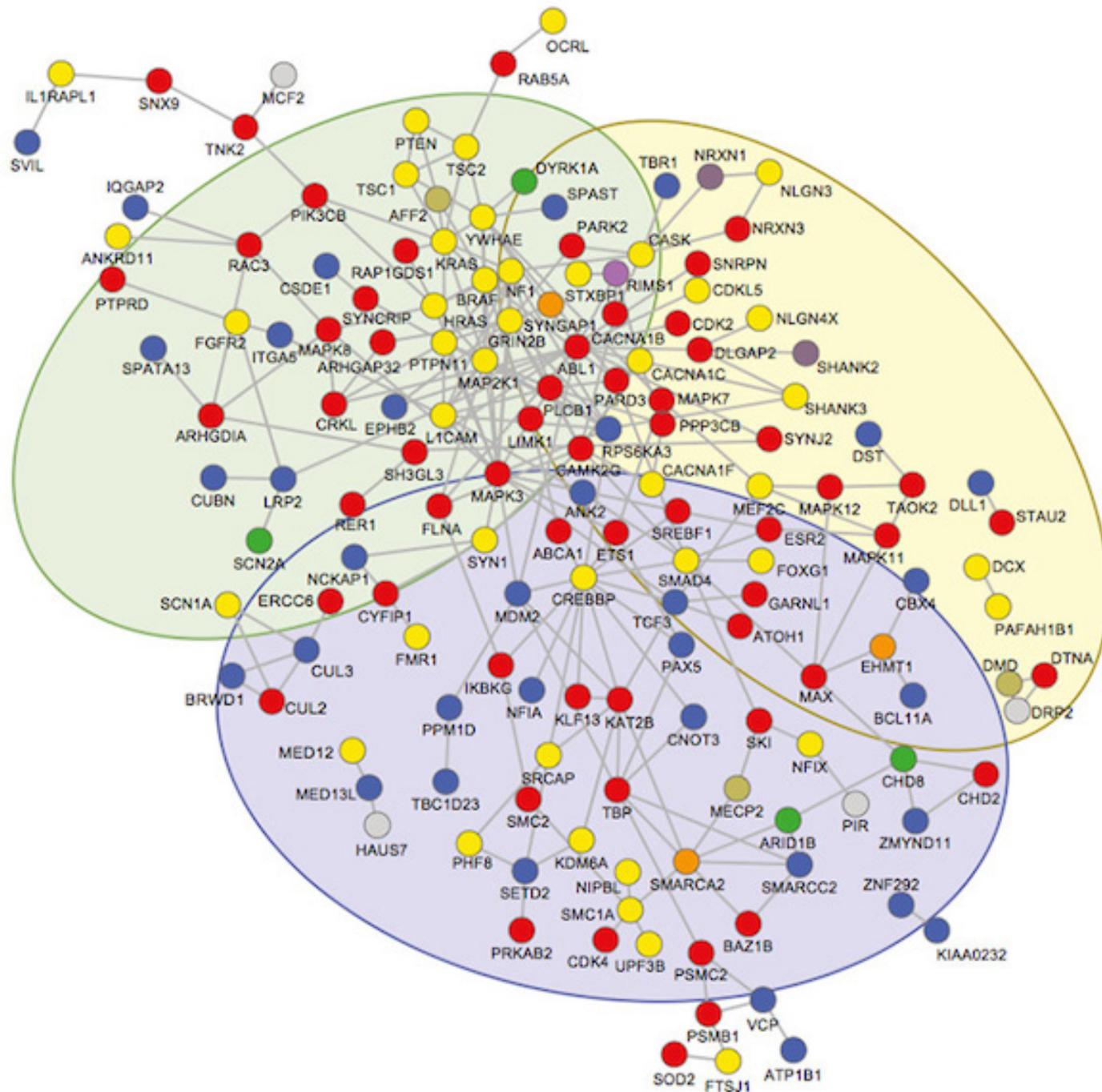
# What causes ASD?

Most cases involve a complex and variable combination of genetic risk and environmental factors that influence early brain development



# Risk Factors

- Genetic disorders
  - Tuberous Sclerosis
  - DiGeorge Syndrome
  - Fragile X
  - Down Syndrome
  - And others...
- Sibling with ASD
- Other environmental factors
- Wendy Chung TED Talk



A

D)

# TED Talk

- Wendy Chung TED talk
- [http://www.ted.com/talks/wendy\\_chung\\_autism\\_what\\_we\\_know\\_and\\_what\\_we\\_dont\\_know\\_yet](http://www.ted.com/talks/wendy_chung_autism_what_we_know_and_what_we_dont_know_yet)

# DSM-5

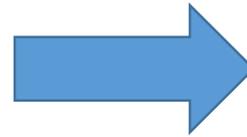
# Why was it changed?

- APA intends the DSM to reflect most current research and practice
- Last revision – 2000
- Confusion and inconsistent application of previous PDD diagnoses

# Why was it changed?

- Improve **sensitivity** and **specificity**
- Provide more accurate and descriptive information (Specifiers)
  - Co-existing conditions and genetic or medical diagnoses
  - Severity level (based on level of supports)
  - Intellectual functioning
  - Language level

# Changes



## **Pervasive Developmental Disorder**

3 Diagnoses:

Autistic Disorder  
Asperger's Disorder  
PDD-NOS

3 "categories" of symptoms

Social Interaction (2/4)  
Communication  
RRB

## **Autism Spectrum Disorder**

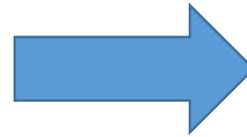
1 Diagnosis

Autism Spectrum Disorder

2 "categories" of symptoms

Social Communication (3/3)  
RRB (2/4)

# Changes



## Pervasive Developmental Disorder

No indication about sensory differences

Language delay criteria

Included Childhood Disintegrative Disorder and Retts Disorder

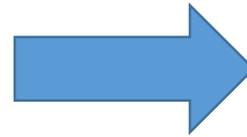
## Autism Spectrum Disorder

Added hyper- or hypo- reactivity to sensory input

Delay in language removed

Removed Childhood Disintegrative Disorder and Retts Disorder

# Changes



## **Pervasive Developmental Disorder**

Must be present before age 3 years

## **Autism Spectrum Disorder**

Present in the early developmental period but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life

# DSM-5 Social Communication

Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history:

- Social-emotional reciprocity
- Nonverbal communication behaviors
- Developing, maintaining and understanding relationships

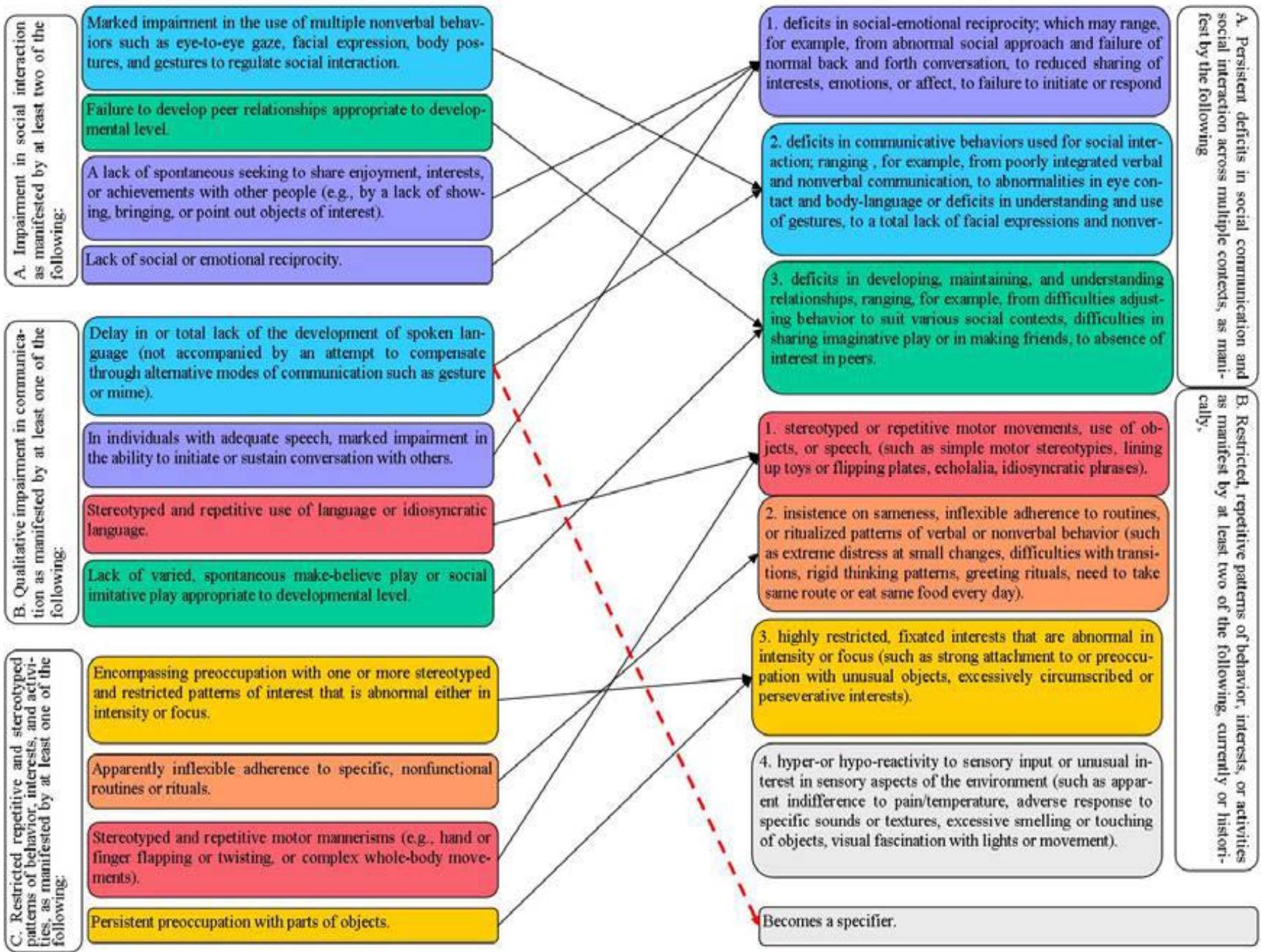
# DSM-5 Restricted and Repetitive Behaviors

Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following:

- Stereotyped or repetitive motor movements, use of objects, or speech
- Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior
- Highly restricted, fixated interests that are abnormal in intensity or focus
- Hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment

# Additional DSM-5 Criteria

- Symptoms must be present in the early developmental period (might not manifest or be noted until later)
- Symptoms cause significant impairment in social, occupational, or other important areas of current functioning
- Disturbances are not better explained by intellectual disability or global developmental delay (note comorbid diagnosis)



# Diagnostic Specifiers

## DSM-5 299.0 Autism Spectrum Disorder

- Level of Support required (i.e., Severity)
- *With or Without* intellectual impairment
- *With or Without* language impairment
- *Associated* with known medical or genetic condition or environmental factor
- *Associated* with another neurodevelopmental, mental or behavioral disorder (e.g., ADHD)
- *With* catatonia

# Severity Level: Social-Communication

## Level 1: requiring support

- Without supports, deficits in social communication cause noticeable impairments; e.g., atypical or unsuccessful responses to social overtures

## Level 2: requiring substantial support

- Marked deficits in verbal and nonverbal social communication, apparent even with supports

## Level 3: requiring very substantial support

- Limited initiation and minimal response to social overtures

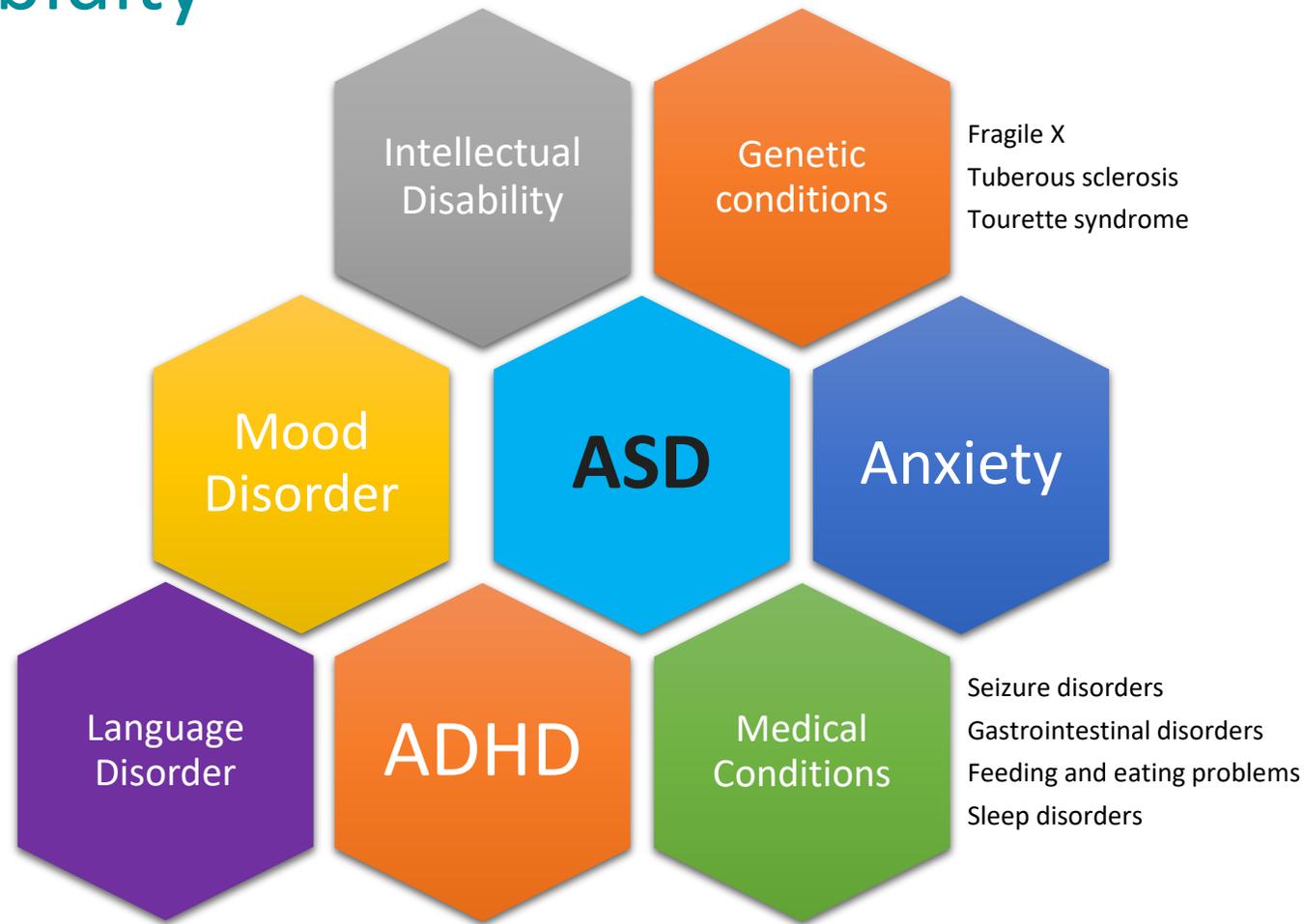
# Severity Level: Restricted, repetitive behaviors

- Level 1: requiring support
  - Causes significant interference with functioning in one or more contexts
- Level 2: requiring substantial support
  - Appear frequently and interfere with functioning across a variety of contexts
- Level 3: requiring very substantial support
  - Extreme difficulty with change, markedly interfere with functioning in all spheres

# Additional Changes

- Can now have comorbid diagnoses:
  - Language Disorders
  - Global Developmental Delay (under 5 years old)
  - Attention-Deficit/Hyperactivity Disorder
  - Anxiety and Mood Disorders
  - Medical Comorbidities

# Comorbidity



# Sample Diagnosis 1

- DSM-IV-TR
- Axis I: Autistic Disorder (299.00)
- Axis II: Intellectual Disability, Mild (317.0)
- Axis III: Seizure Disorder, NOS (780.39)
- Axis IV: school difficulties, sibling conflict
- Axis V: GAF: 55

# Sample Diagnosis 1

DSM-5

Autism Spectrum Disorder associated with Seizure Disorder:

- Currently requiring substantial supports for deficits in social communication and support for restricted, repetitive behaviors.
- With accompanying intellectual impairment (Intellectual Disability, Mild; 317.0)
- With accompanying language impairment (phrase speech, delays in receptive and expressive communication)
- Not associated with any known genetic cause (appointment pending)

# No more Asperger's?

- Asperger's Disorder is no longer a distinct diagnostic category
- “...identity that represents this an individuals specific strengths and challenges”
- New diagnostic structure allows for descriptive information to convey these strengths and challenges
  - More individualized for everyone receiving a diagnosis

# How does this affect people with ASD and their families?



## **Will we need to get a new evaluation for diagnosis?**

- A person with a well-established diagnosis of Autistic Disorder, Asperger's or PDD-NOS does not need a new evaluation – they should be given a diagnosis of Autism Spectrum Disorder

# Break



# Best Practice in ASD Assessment

A University Center for Excellence in Developmental Disability Education, Research and Service (UCEDD)



# Best Practice Guidelines for ASD Assessment

- Professional Practice Organizations
  - American Academy of Child and Adolescent Psychiatry (2014)
  - American Academy of Neurology and the Child Neurology Society (2000)
    - American Psychiatric Association
    - American Psychological Association
    - American Academy of Pediatrics
- State Agency Guidelines
  - California (2002)
  - Connecticut (2013)
  - Missouri (2010)
  - New Mexico (2004)

# AACAP Assessment Recommendations

1. Developmental and psychiatric assessment should include questions about ASD symptomology
2. Thorough evaluation should be conducted if screening is positive
3. Clinicians should coordinate appropriate multidisciplinary assessment of children with ASD

# State Agency Recommendations for Diagnostic Evaluation Components

- All suggest the following:
  - The importance of early diagnosis, screening, and specialists in ASD as well as the ability to differentiate ASD from other diagnoses as well as a comprehensive evaluation
- Components of a comprehensive evaluation
  - Parent/caregiver/individual Interview
  - Review of records
  - Medical history and evaluation
  - Direct assessment and observation of the individual
  - Assessment of the core ASD criteria
  - Feedback

# Models of Assessment

- Single practitioner assessment
- Multidisciplinary assessment
- Interdisciplinary assessment
  
- Team members may include:



# Assessment of ASD Core Deficit Areas (DSM-5 criteria)

- Direct behavior observation in clinic, school, or home
  - Social interaction and communication through interview, play, etc.
  - Repetitive, restricted, and stereotyped patterns of behavior
  - Sensory
- Cognitive and Adaptive Measures
- Speech, Language and Communication
- Social competence and Functioning necessary for a differential diagnosis

## Autism Diagnostic Observation Schedule, Second Edition (ADOS-2)

A semi-structured assessment tool  
designed to evaluate ASD related  
difficulties

- language and communication
- social reciprocity
- play and imagination
- repetitive behaviors

Requires specialized training to  
administer and score

- Scoring system based on skills  
observed during the ADOS



# ADOS-2

- Five modules for individuals of all ages and ability levels
  - Toddler Module-12 to 30 months, inconsistent phrase speech
  - Module 1- no speech to single words, activities such as bubble play and imitation
  - Module 2- phrase speech, activities such as pretend play, story telling from a book
  - Module 3- child with fluent speech, make believe play, questions about emotions and social relationships
  - Module 4- adolescent or adult with fluent speech, questions about responsibility, goals, relationships





# Family Centered/Cultural Competence

- A family-centered approach is suggested for all parts of the evaluation (e.g., person first language)
- Understand relevant cultural factors
- Feedback to family- verbal and written in a timely manner



## In Sum...

- ASD diagnosis is complex and requires assessment of a variety of domains
- Best Practice is:
  - An interdisciplinary assessment with “specialists” in development and ASD
  - The use of ASD-specific measures
  - Comprehensive information gathering and evaluation of the individuals functioning
  - Formulation of conclusion together
  - Family-centered and culturally sensitive

# ASD in Young Children

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# ASD in Young Children

- Distinct signs of ASD may begin to appear in the first year of life.
  - become more pronounced by 18 to 24 months
- Reliable diagnoses with ASD between 2nd and 3rd birthdays
- Parents may notice signs and symptoms before age 2 years and intervention can take place before that formal diagnosis.

# Social –Communication happens at a very young age

- In autism, we see these behaviors less often



# Social –Communication happens at a very young age

In autism, we see these behaviors less often



Imitation



Showing Off



Social Games

# Video of Early Signs

- Kennedy Krieger Institute Center for Autism and Related Disorders
- <https://www.youtube.com/watch?v=YtvP5A50HpU>
- Start at 4:23

# Developmental Screening AND Monitoring

- **Screening alone is insufficient**
  - 1 in 5 children with a disability will not be identified through a single developmental screening
  - American Academy of Pediatrics (AAP) recommends that infants receive 7 well-child visits, during which ongoing **screening and monitoring** can occur and increase detection of disabilities
  - 2007 The American Academy of Pediatrics recommends specific screening for ASD **twice before two** (18 and 24 months)



# Developmental Screening AND Monitoring

- **Specific ASD Screening**
  - Developmental screening and monitoring are the best pathway to identify children with ASD early in life
  - Couple with ASD-specific screening.
- **Recent Research in 6 states**
  - 60% pediatricians screened for ASD at 18 months
  - 50% pediatricians screened at 24 months (Arunyanart, et al., 2012)



# Developmental Screening and Monitoring

- There is no time for the “Wait and See” approach to developmental concerns
- There is no harm done in screening and referral
- Early identification is key to access to intervention
- 2004 Learn the Signs Act Early campaign by the CDC



[www.cdc.gov/actearly](http://www.cdc.gov/actearly)

# Early Identification to Improve Developmental Outcomes

- Early identification → early intervention
- Fully understanding a child's presentation → the right kind of early intervention
- The right kind of early intervention → the best possible outcomes

Website for Part C  
Information:

<http://idea.ed.gov/part-c>



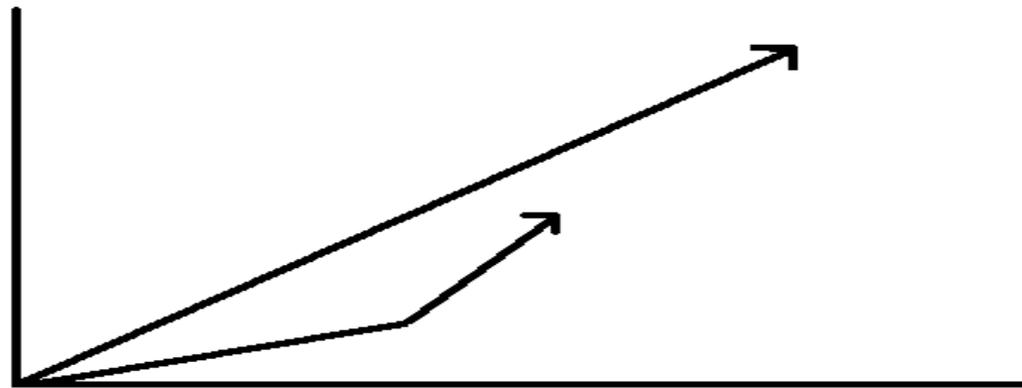
The screenshot shows the homepage of the IDEA 2004 website. At the top left is the ED.gov logo and the U.S. Department of Education tagline. The main heading is "IDEA 2004: Building the Legacy" with a sub-heading "Part C (birth - 2 years old)". A search bar is located on the right side. Below the heading is a navigation menu with buttons for Home, Statute, Regulations, Q&A Corner, and Major Topics. A central banner features a hand icon and text describing the IDEA law. On the right, a "News" section lists two items: "Announcing two new IDEA Part C Training Curriculum modules" and "Non Regulatory Guidance and Support".

# Cumulative Effects of Deficits

- Core deficits of autism lead to a reduced capacity to learn from the environment
  - secondary consequences (e.g., delays in adaptive behavior, academic skills)
- Not all the functional deficits of autism are primary deficits of the disorder.

# Cumulative Effects of Deficits

- Intervention is thought to work by
  - improving core deficits through direct teaching
  - provide an enriched, intensive learning environment that leads to change in trajectory



# Sibling Research



Recurrence Risk for Autism  
Spectrum Disorders  
(Ozonoff et al., 2011)

- Previous estimates suggested recurrence risk of 3-10%
- Larger, prospective, longitudinal, multisite (12) study of 664 siblings (55% male)
- Followed until 36 months of age

# Sibling Research



Recurrence Risk for Autism Spectrum Disorders  
(Ozonoff et al., 2011)

- Results suggested recurrence risk of 18.7%
- Even higher with two siblings with ASD (32.2%)



AU Free Developmental Assessments for Siblings, Kennedy Krieger Institute (EDD)

# Sibling Research



Beyond Autism: A BSRC Study of High-Risk Children at Three Years of Age (Messinger et al., 2013)

- New Study of High Risk siblings (507) who did not receive ASD diagnosis
- 20% of High Risk siblings, the majority of them male demonstrated higher levels of ASD symptoms and/or some developmental delays

# Early Markers of ASD in Siblings

Replicated risk markers include:

- Impairments in social communication
  - reduced social orienting/response to name
  - reduced joint attention behaviors
- Repetitive behaviors involving body movements and/or atypical use of objects
  - intense visual inspection
  - repetitive actions such as tapping and spinning
- Atypical emotional regulation
  - reduced positive affect
  - more variably, increased negative affect



# Early Markers of ASD in Siblings



- Atypical developmental trajectories:
  - progressive reduction in age-appropriate social behaviors, as well as evidence of plateauing (slowed acquisition) of language and non-verbal cognitive skills.
- Differentiating children with ASD from comparison groups starting at 12–14 months.
  - However, there remains considerable heterogeneity at an individual level
- Need for ongoing screening and monitoring over time  
Not just a one-time event

# Diagnostic Stability in Siblings



Ozonoff, et al., 2015

- Evaluations of 418 later-born siblings of children with ASD at 18, 24, and 36 months of age
  - Clinical diagnosis of ASD or Not ASD was made at each age
- Stability of an ASD diagnosis at:
  - 18 months was 93%
  - 24 months was 82%
  - There were relatively few children diagnosed with ASD at 18 or 24 months whose diagnosis was not confirmed at 36 months.

# Diagnostic Stability in Siblings



- **However**, many children with ASD outcomes at 36 months who had not yet been diagnosed at
  - 18 months (63%)
  - 24 months (41%)

## Conclusions:

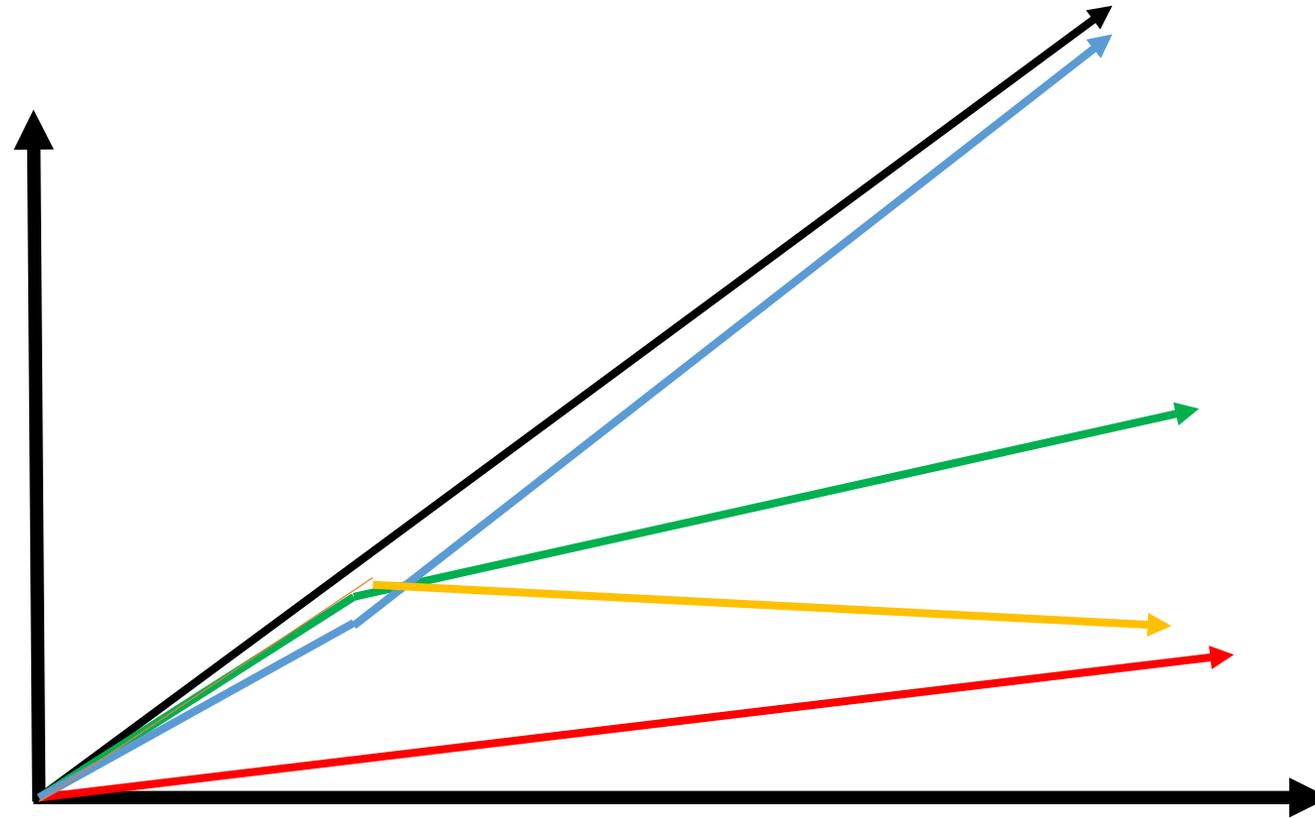
- Stability of ASD diagnosis in this familial-risk sample was high at both 18 and 24 months of age and comparable with previous data from clinic- and community-ascertained samples.
- However, almost half of the children with ASD outcomes were not identified as being on the spectrum at 24 months and did not receive an ASD diagnosis until 36 months.

# Diagnostic Stability in Siblings



- Longitudinal follow-up is critical for children with early signs of social-communication difficulties, even if they do not meet diagnostic criteria at initial assessment
- A public health implication of these data is that screening for ASD may need to be repeated multiple times in the first years of life
- These data also suggest that there is a period of early development in which ASD features unfold and emerge but have not yet reached levels supportive of a diagnosis.

# Developmental Trajectories



# Break



# Adult Assessment and Issues

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# Adult Assessment

- Video of adult - church bell ringing

# Adult Issues

- Lack of capacity of systems to meet needs
- Interagency Autism Coordinating Committee –
  - Future of Adults with ASD is one of seven strategic areas of focus and funding
- Generally low levels of vocational and social engagement
  - Outcomes based on different measures

# Adult Issues

- Engage stakeholders in ASD research (Pellicano, 2014; Gotham 2015)
  - Directly ascertain their views on autism research priorities
  - Both researchers and individuals prioritized research to develop programs for life skills enhancement and “practical areas of life”
  - Additionally, stakeholders place high priority on:
    - Improve public services, health care access and recognition of physical and mental health comorbidities
    - Building an understanding of the place of people with ASD in society and studying comorbidity risk

# Adult Issues (Gotham 2015)

- Self-report ASD adults:

- Slight majority lived independently or with spouse/partner
- Tend to be underemployed (25% had full time employment)
- Experience workplace discrimination
- Find it too challenging to hold a job
- Have two or more physical and/or mental health conditions
  - 75% with anxiety depression, physical health also elevated

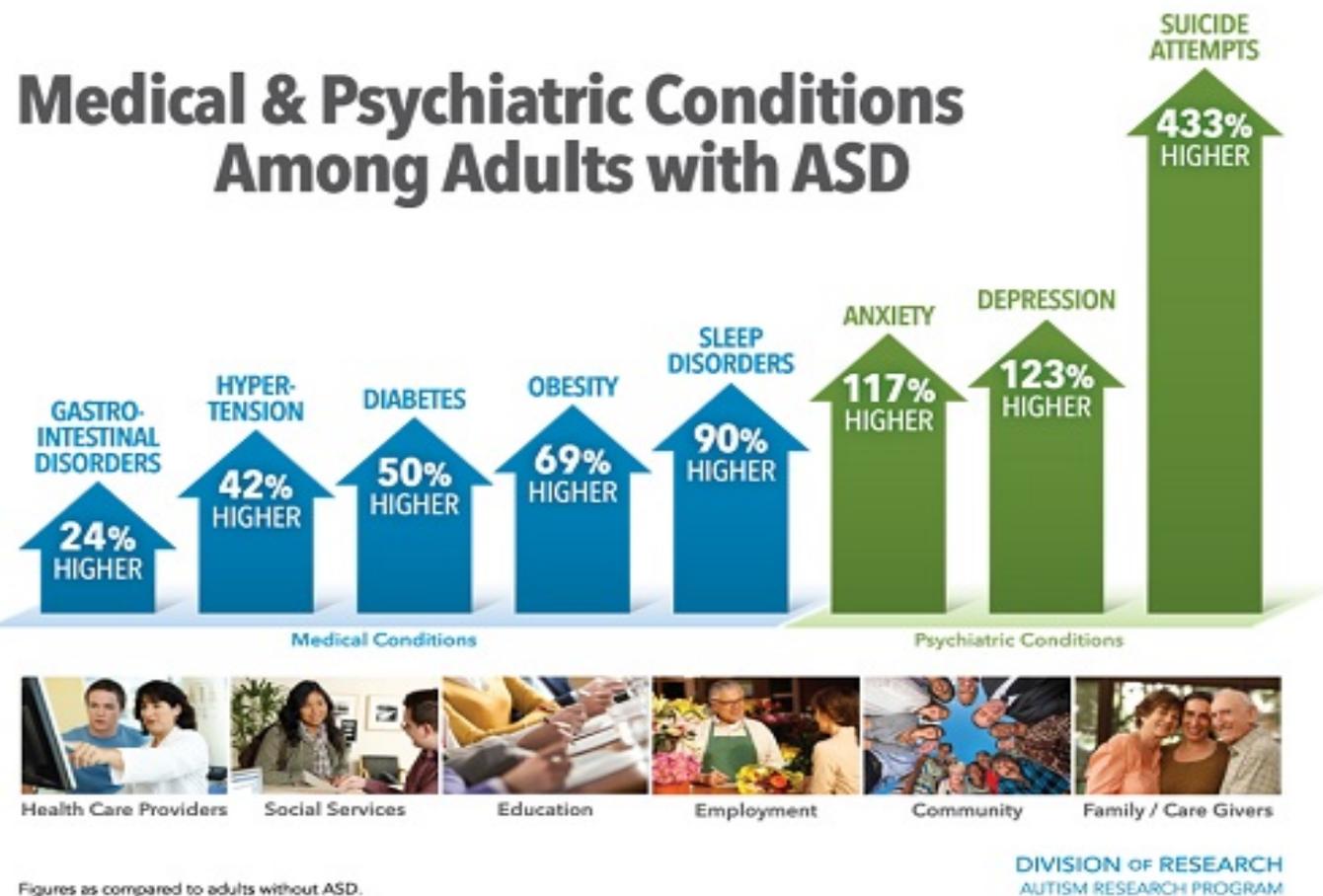
- Legally represented adults with ASD

- more consistent with general ASD outcome studies
- low rates of employment - 10% held paid employment for more than 10 hrs per week
- low rates of independent living - 90% lived with families or paid caregivers with state or federal assistance
- Unknown what they do when not working or in programming – precursor to physical and mental health problems.
- Similar to self-report group, majority with physical and mental health comorbidities

# Adult Issues

Croen, et al., 2015

1507 adults with ASD  
diagnoses  
15,070 controls without  
ASD diagnoses





# Adaptive Behaviors

## Klinger, et al., (IMFAR 2015)

- Sample of adults, adaptive behavior was the single best correlate of adult outcome
- Adaptive behavior in childhood was an equally strong predictor of outcome
- Above and beyond symptom severity and intellectual/language functioning.
- Interventions targeting adaptive behaviors are overlooked, but the findings suggest their importance across a lifespan.



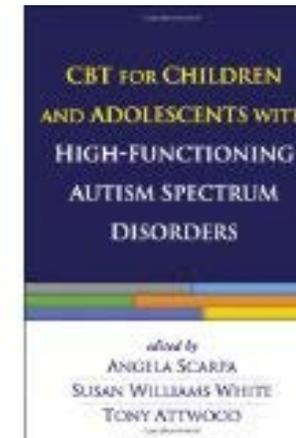
# Vocational Activities

Engagement in Vocational Activities Promotes Behavioral Development for Adults with Autism Spectrum Disorders (Taylor and Mailick, 2014)

- greater vocational independence leads to subsequent improvements in maladaptive behaviors and activities of daily living in adulthood



# Treating Co-Morbid Disorders



- Cognitive Behavioral Therapy (CBT)
  - appropriate for individuals without cognitive disabilities, but social difficulties may impact traditional treatment
  - Incorporate Social Skills training component
  - Facing your Fears
- Strategies for ASD and Anxiety
  - Use visuals, use simple language (limit metaphors), include parents, include special interests (Moree and Davis, 2010)

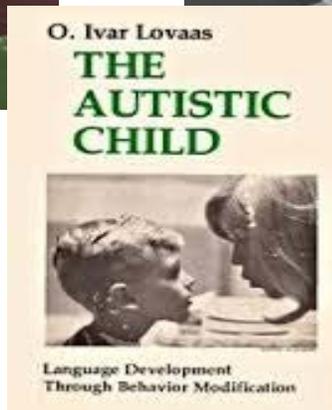
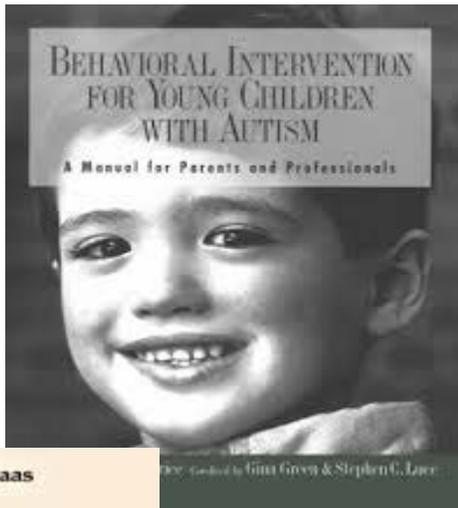
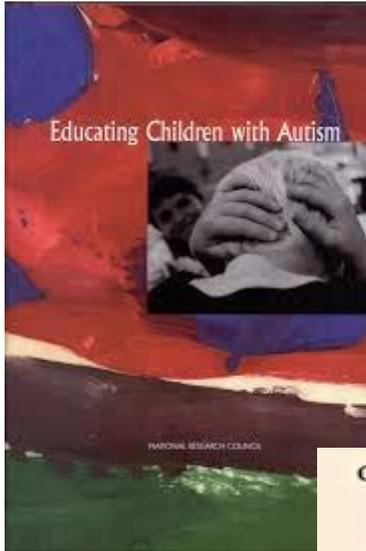


# Intervention for ASD

A University Center for Excellence in Developmental Disability Education, Research and Service (UCEDD)



# Evidence-Based Intervention and Applied Behavioral Analysis (ABA)



- Types of Intervention
  - Behavioral
  - Educational
  - Medical\*
- Advances in health coverage for treatments based on Applied Behavioral Analysis (ABA)

\*See the AACAP Practice Parameters for the Assessment and Treatment of Children and Adolescents with ASD for a review of pharmacotherapy offered to target symptoms or comorbid conditions (Vokmar et. al, 2014)

# What does early intervention look like?

- Starts at the earliest age possible
- Intensive- 20-45 hours per week
- Parents actively involved in treatment
- Highly trained staff
- Collecting data, ongoing assessment, planful teaching
- Focus on core deficit areas of ASD
- Video
  - <http://www.youtube.com/watch?v=V-c50HNnPg0>

# National Standards Project Phase 2 (NSP2)

## Established Treatments

1. Behavioral Interventions
2. Cognitive Behavioral Intervention Package
3. Comprehensive Behavioral Treatment for Young Children
4. Language Training (Production)
5. Modeling
6. Naturalistic Teaching Strategies
7. Parent Training
8. Peer Training Package
9. Pivotal Response Training
10. Schedules
11. Scripting
12. Self-Management
13. Social Skills Package
14. Story-based Intervention



- [http://may.convio.net/site/MessageViewer?dlv\\_id=11521&em\\_id=3041.0](http://may.convio.net/site/MessageViewer?dlv_id=11521&em_id=3041.0)

# National Standards Project 2

## For children to young adults under 22 years

- Established (14)
- Emerging (18)
  - Augmentative and Alternative Communication Devices
  - Developmental Relationship-based Treatment
  - Exercise
  - Exposure Package
  - Functional Communication Training
  - Imitation-based Intervention
  - Initiation Training
  - Language Training (Production & Understanding)
  - Massage Therapy
  - Multi-component Package
  - Music Therapy
- Picture Exchange Communication System
- Reductive Package
- Sign Instruction
- Social Communication Intervention
- Structured Teaching
- Technology-based Intervention
- Theory of Mind Training
- Unestablished (13)
  - Animal-assisted Therapy
  - Auditory Integration Training
  - Concept Mapping
  - DIR/Floor Time
  - Facilitation Communication
  - Gluten-free/Casein-free diet
  - Movement-based Intervention
  - SENSE Theatre Intervention
  - Sensory Intervention Package
  - Shock Therapy
  - Social Behavioral Learning Strategy
  - Social Cognition Intervention
    - Social Thinking Intervention

# National Standards Project 2

- For adults 22 years and older
  - Established (1)
    - Behavioral Interventions
  - Emerging (1)
    - Vocational Training Package
  - Unestablished (4)
    - Cognitive Behavioral Intervention Package
    - Modeling
    - Music Therapy
    - Sensory Integration Package

# National Professional Development Center on Autism Spectrum Disorder (2014)

- Antecedent-Based Interventions
- Cognitive Behavioral Intervention
- Differential Reinforcement
- Discrete Trial Training
- Exercise
- Extinction
- Functional Behavior Assessment
- Functional Communication Training
- Modeling
- Naturalistic Intervention
- Parent-Implemented Intervention
- Peer-Mediated Instruction and Intervention
- Picture Exchange Communication System (PECS)
- Pivotal Response Training
- Prompting
- Reinforcement
- Response Interruption/Redirection
- Scripting
- Self-Management
- Social Narratives
- Social Skills Training
- Structured Play Group
- Task Analysis
- Technology-aided Instruction and Intervention
- Time Delay
- Video Modeling
- Visual Support



THE NATIONAL PROFESSIONAL DEVELOPMENT CENTER ON  
**AUTISM SPECTRUM DISORDERS**

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# Treatment Examples

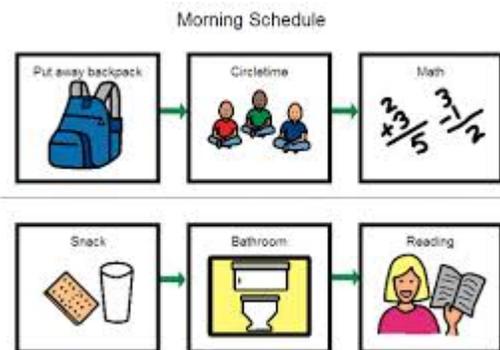
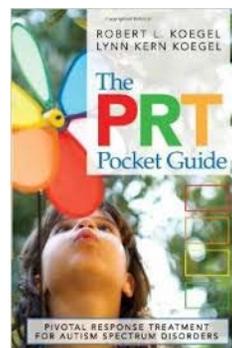
- Autism Speaks Video Glossary

❖ <https://www.autismspeaks.org/what-autism/video-glossary>



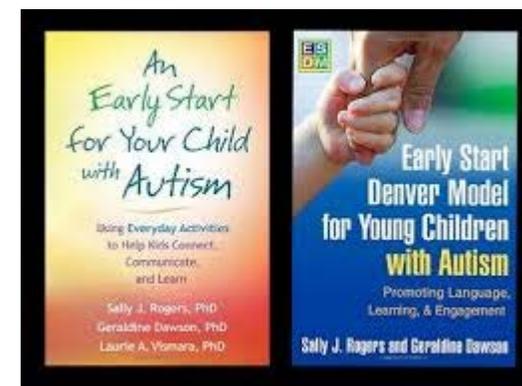
Discrete Trial Training (DTT)

Pivotal Response Training (PRT)



Visual Supports

Early Start Denver Model



# Family and Economic Impact

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# Economic Impact

- It is estimated to cost at least \$17,000 more per year to care for a child with ASD compared to a child without ASD
- Costs include health care, education, ASD-related therapy, family-coordinated services, and caregiver time
- Taken together, it is estimated that total societal costs of caring for children with ASD were over \$11.5 billion in 2011

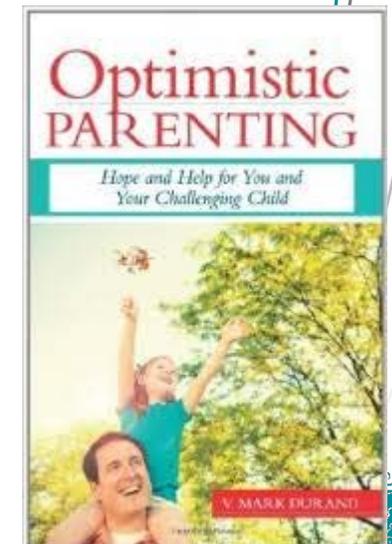
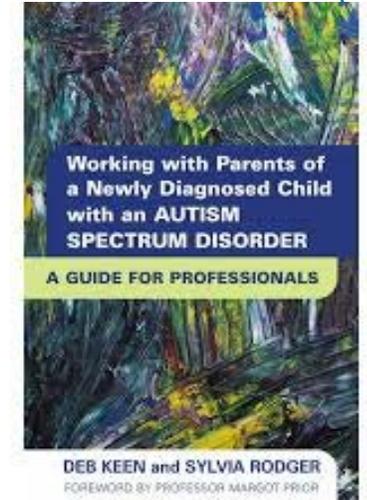


# Family Impact

- Parents of children with ASD have reported high levels of stress
  - Access to needed services and quality of care compared to parents of children with other developmental disabilities or mental health conditions.
- Some parents also report having to stop work to care for their child with ASD
  - Mothers who maintain employment end up working about 7 hours less per week and
  - Earn 56% less than mothers of children with no major health issues

# Working with Parents of Individuals with ASD

- Increased stress level
  - Often related to “problem behaviors” in ASD
- Behavioral parent training- using the principals of ABA
- Support group
- Optimistic Parenting
  - Encourage optimistic views of the child
  - Explore more positive views in parent’s ability to make changes
  - CBT strategies applied to parenting beliefs
  - Mindfulness training



# ASD in New Mexico

- Barriers
  - Prevalence rates unknown
  - Access to assessment and treatment
  - Adult issues including vocational, behavioral, and mental health services
  - High staff turnover
- Improvements
  - Increasing awareness
  - Education and training

# Resources

A University Center for Excellence in Developmental Disability Education, Research and Service (UCEDD)



# Where can families go for an evaluation?

**Need MORE for ADULTS**

**Center for Development and Disability**

Early Childhood Evaluation Program (ECEP) **Ages 0 -3 years**

Autism Spectrum Evaluation Clinic **Ages 3 years and up**

[www.cdd.unm.edu](http://www.cdd.unm.edu)

**Family Infant Toddler Program, NM DOH**

<http://archive.nmhealth.org/ddsd/nmfit/Providers/FITPrgrmPrvdrs.htm>

**Albuquerque Public Schools Child Find**

<http://www.aps.edu/aps/SpecialEd/childfndprvt.html>

# Helpful links

- MORE NEEDED
- ASD Video Glossary:  
<http://autismspeaks.player.abacast.com/asdvideoglossary-0.1/autismspeaks/login>
- Autism Speaks – <http://autismspeaks.org>
- Centers for Disease Control and Prevention, Learn the Signs. Act Early:  
<http://www.cdc.gov/ncbddd/actearly/index.html>
- American Academy of Pediatrics Policy Page:  
<http://pediatrics.aappublications.org/site/aappolicy/index.xhtml>