Autism and Developmental Delay

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Disclosure

I do not have any financial relationships to disclose

I do not plan to discuss unapproved or off label use of products

Objectives

-Identify importance of early screening

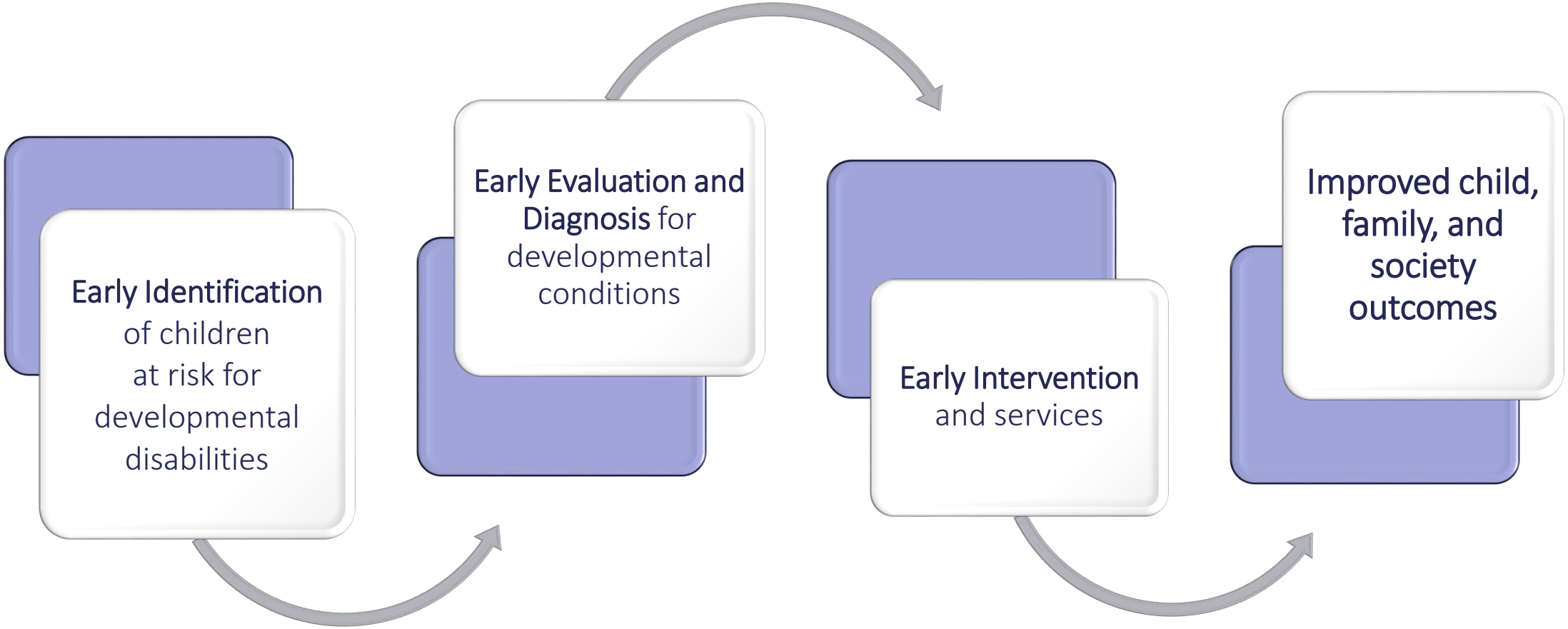
-Recognize diagnostic criteria for autism

-Define potential red flags that signal concerns for autism

-Recognize co-morbidities frequently seen in children with autism

-Describe potential risks and benefits associated with complimentary therapies used for children with autism

Why is Screening Important?



Research has shown that the earlier you intervene the more effective and less costly your intervention will be and the bigger the effect on the child's developmental trajectory.

Center on the Developing Child at Harvard University (2008, 2010)

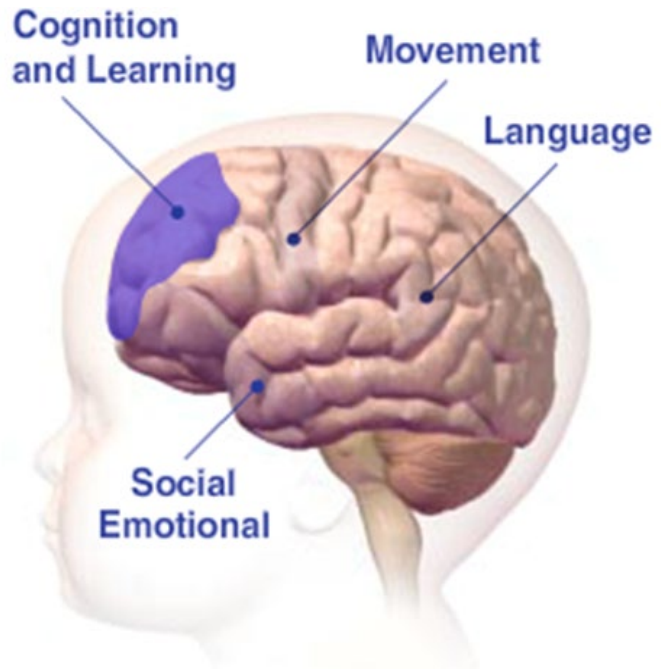
The Earlier the better

-From Age 0 – 3 the brain grows to 80% of its adult size

-Wiring and connections in the brain form much faster during this time

-The brain's ability to change

decreases with age



Why Screen?

70%

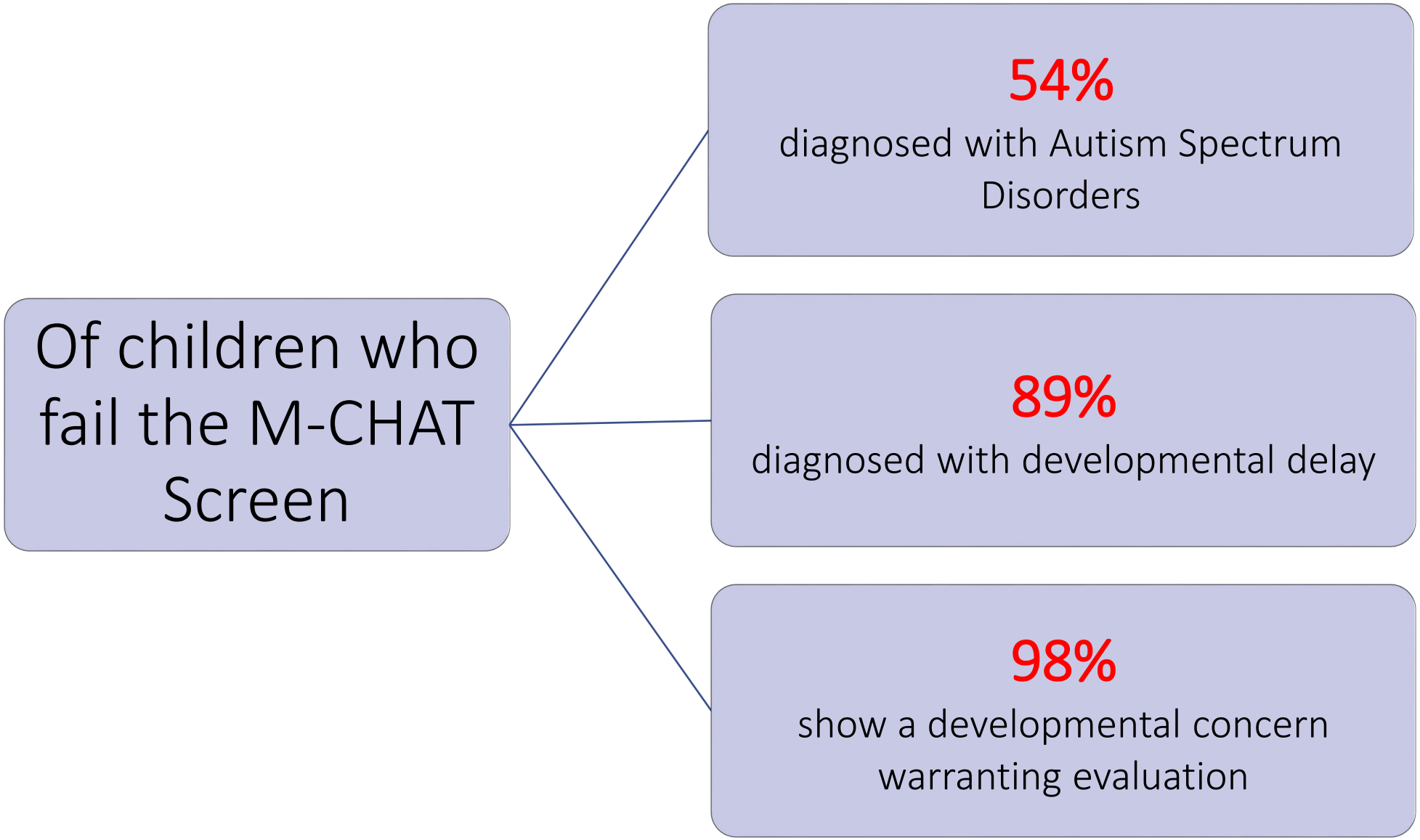
- 7 out of 10 children with developmental disabilities were not identified until they started school

67%

- Clinical assessment without screening missed delays in 2 out of every 3 children under the age of 2

(Palfrey, J.S., et al., Early identification of children's special needs: a study in five metropolitan communities. J Pediatr, 1987. ***111****(5): p. 651-9)*
Hix-Small, H., et al., *Impact of implementing developmental screening at 12 and 24 months in a pediatric practice.* Pediatrics, 2007. **120**(2): p. 381-9)

Benefits of autism screening



Jack, a 24-month-old boy, comes in for a well-child visit.
His mother reports he says a couple words, drags her to the fridge when he wants something and tantrums a lot. Upon review of his records you note he had reached all of his developmental milestones on time. What is the next best step to take?

A. Advise Jack's mother to wait and see if he outgrows it; he may be a late bloomer

B. Encourage Jack's mother to arrange more play dates for him

C. Recommend a behavioral reward system be implemented for Jack's behavior

D. Ask Jack's mother to complete an autism specific screening questionnaire

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Practical outcomes of screening

ABA Therapy will **not be covered** by DDD/ALTCS if the child is not flagged at-risk for autism prior to age 4.

Developmental screening results **provide more evidence** behind your referral

Early detection provides an understanding of the community needs for early intervention and can provide critical data to **justify the benefits** of early identification.

Families may be wary of bringing up concerns if you do not ask. You will **prevent future issues** by addressing concerns as early as possible.

Current AAP recommendations

Surveillance

At every well child visit

Developmental Screening

When your surveillance demonstrates a risk AND

9, 18 and 24 months (or 30 months)

Screening for Autism Spectrum Disorders

Whenever your surveillance demonstrates a risk AND

18 and 24 months (or 30 months)

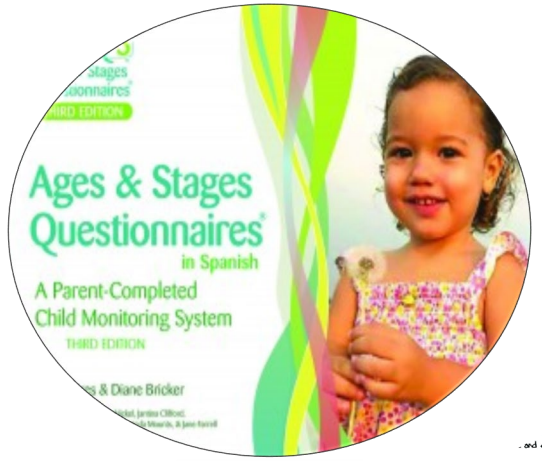
AHCCS Approved Screening Tools

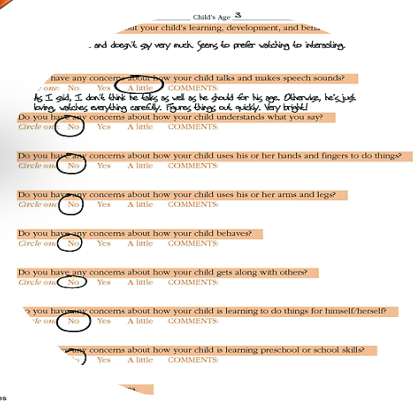
Developmental Screens

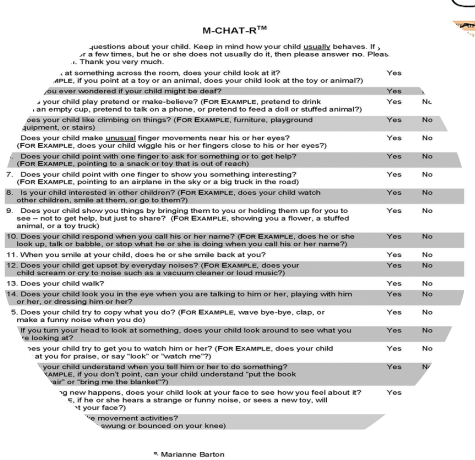
- Ages and Stages (ASQ-3)
- Pediatric Evaluation of Developmental Status (PEDS)

Autism Screens

- Modified Checklist for Autism in Toddlers Revised with Follow-Up (M-CHAT-R/F)







MCHAT-R/F

The M-CHAT-R is a parent-completed questionnaire

Valid for toddlers between 16-30 months

The M-CHAT-R includes a Follow-Up Interview, in which the parent is asked questions to help clarify answers and obtain additional information for at-risk items.

Sensitivity of the M-CHAT-R with Follow-Up is 85% and Specificity is 99%.

Evaluation is warranted for any child who screens positive.

-Parents complete the MCHAT R/F

If the M-CHAT-R Total Score is in the High-Risk category for ASD (total score of 8-20 points), refer for a comprehensive diagnostic evaluation and eligibility evaluation for early intervention

If the M-CHAT-R Total Score is in the Medium-Risk for ASD (total score of 3-7 points), conduct the Follow-Up interview.

If the Follow-Up Interview raises concerns, or if the child fails any two items on the Follow-Up, referral for comprehensive evaluation is warranted.

If the M-CHAT-R Total Score is in the Low-Risk for ASD (total score of 0-2 points) AND the provider and parents have no concerns, then **continue developmental surveillance** at all subsequent health supervision visits.

Critical questions on M-CHAT-R that can help with screening at 18 and 24 months

-Is your child interested in other children?

-Does your child point with one finger to show you something interesting?

-Does your child show you things by bringing them to you or holding them up for you to see—not to get help but just to share?

-Does your child try to copy what you do?

-Does your child respond when you call his or her name?

-If you point at something across the room does your child look at it?

What would contribute to a false negative or false positive screen?

A parent or caregiver who does not **fully comprehend** the items

Completing the M-CHAT-R at an **early age** (younger than the recommended age)

-Approximately 30% of children with ASD show a period of typical development followed by plateau or regression, and screening too early might miss some of these later-onset children.

A child with **other forms of developmental delay**

-toddlers with severe developmental delays or impairments in vision and/or hearing

Mild symptoms and even an absence of symptoms at 18 months does not "rule out" a later diagnosis of ASD

Clinical judgment should be considered

-Even if a screen is negative, if there are professional or parental concerns, the child should be referred for a comprehensive evaluation and to early intervention.

Autism

3 Major areas define the autistic spectrum

-Impairment in language development (often delays)

-Atypical social communication skills

-Restricted, repetitive behaviors

Observe for joint attention, showing objects, pretend play, quality of eye contact

DSM 5 Criteria

Deficits in social communication:

- Eye contact, response to name
- Pointing and gestures
- Engagement and interaction
- Play

Behavior concerns:

- Repetitive (flap, spin, echolalia, line up toys)
- Rigid (stuck on routines)
- Intense interests (trains, dinosaurs, Mindcraft, etc)
- Sensory (loud noises, crowds, textures, lights, etc)

Red Flags for Autism

Early signs of Autism vary for each child. Some common signs usually seen in the first two years, may include:

Doesn't make eye contact

Doesn't show an interest in other children

Does not try to share an experience with you, for example by looking back and forth between you and a toy

Doesn't use gestures on their own, for example will only wave goodbye when told to

Doesn't engage in imaginative play, such as pretending to feed dolls

Doesn't consistently respond to own name being called

Focuses narrowly on objects or toys, such as lining up toys or spinning wheels on cars

Copies direct phrases heard from others, or from the TV

Repeats body movements or has unusual body movements, such as flapping hands or walking on toes

Has intense interests in certain toys or objects, and will often 'become stuck' on these

Easily upset by change and must follow routines - things must be done in the same way every time

Seeks certain sensory experiences, such as rubbing items on face, or placing bright flashing items up to eyes

Can be sensitive to sensory experiences, such as loud noises, bright lights, or certain textures

Sensory

- High pain tolerance
- Visual inspection
- Peering
- Hyper-sensitive to sensory input
- Certain sounds, bright lights
- Tactile defensiveness
- Hypo-sensitive/ sensory- seeking
- Licking/ sniffing objects

The failure of an 18-month-old child who has autism to respond to his or her name when called is believed to be the result of deficits in:

A. Auditory processing

B. Cognition

C. Hearing

D. Receptive language

E. Social relatedness

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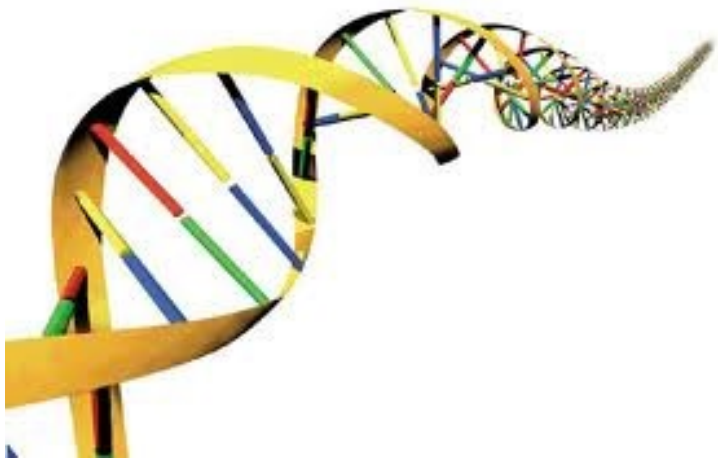
What are the risk factors for ASD?



-Male gender

-Sibling with ASD/ Family history

-Higher maternal/ paternal age

-Prematurity, low birth weight

-Perinatal complications

~10% associated with known genetic/ chromosomal abnormalities (e.g. Down Syndrome, Fragile X, Tuberous Sclerosis, Rett Syndrome)

www.cdc.gov/ncbddd/autism/data.html

Co-morbidities frequently seen:

- ADHD
- Intellectual disability
- Learning disability
- Anxiety/ depression
- Externalizing behaviors (tantrums, aggression), irritability

What can mimic autism?

-Children with ADHD

-Anxiety

-Rigid temperament/Obsessive behaviors

-Vision or hearing impairment

-Sensory impairments

Treatment

-Evidence supports ABA based approach

-Educational interventions (IEP, special education if needed)

-Speech therapy

-Social skills support

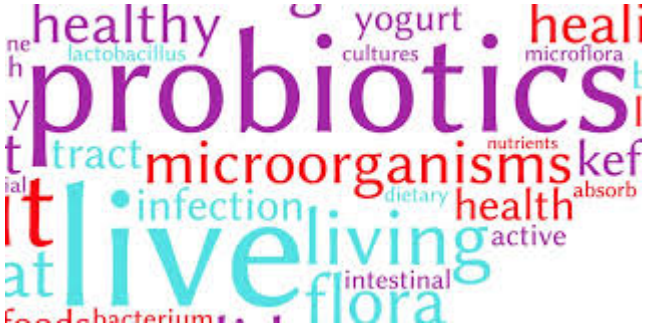
-OT, PT if needed

Melatonin

More than half of all children with autism spectrum disorder (ASD) struggle with sleep disorders – insomnia being the most common.

Melatonin is a naturally occurring hormone that helps regulate the sleep-wake cycle. Supplements have been found to improve sleep and reduce insomnia in children with autism

CAM


healthy
yogurt
lactobacillus
cultures
microflora
probiotics
tract
microorganisms
nutrients
dietary
health
absorb
infection
living
active
intestinal
flora


GLUTEN FREE


CHELATION
THERAPY

Gluten Free/Casein-free diet

Potential benefit with GI symptoms

Risk for nutritional compromise

Consult with registered dietitian

Is not a **cure** for autism

Limits/restricts diet in many who are already very picky eaters

Chelation

Chelation--decreasing heavy metal levels in patients with documented toxic exposures.

Mercury toxicity has not been causally linked to ASD

Some studies used is a hair sample, the accuracy of which is unproven.

One child's death is related to intravenous chelation therapy for autism.

No FDA approved product with this clinical indication

Equine Therapy

Case series have identified improvement in teacher reported behavioral scales

Need attention to safety (helmet, trained assistants)

Risk is low

Potential benefit for symptoms

Positive social interactions/leisure activity

Probiotics

Gastrointestinal symptoms in children with autism are common and are often linked to the children's abnormal behavior and social interactions.

Probiotics are **hypothesized** to positively impact gut microbial communities in children with ASD.

Whether probiotics improve behavior and these markers has yet to be determined.

This needs additional study.

Caution should be taken in using the probiotics applied in animal models in humans

Hyperbaric Oxygen

Hyperbaric oxygen therapy provides a higher concentration of oxygen delivered in a chamber or tube containing higher than sea level atmospheric pressure.

Hyperbaric oxygen therapy has been approved for treating specific conditions such as decompression sickness (some use for wound healing).

Case series and randomized controlled trials show no evidence to support the benefit of HBOT for children with ASD

Food and Drug Administration has published a warning for parents to beware of false or misleading claims about HBOT for treating autism (no FDA approved product on market with this clinical indication)

Parents of a 4 year old girl diagnosed with ASD want to know the best, most accepted complementary and alternative therapies for their child's disorder. Which of the following therapies is best accepted in this category?

A. Chelation for heavy metals
B. Hyperbaric oxygen therapy
C. Massage therapy
D. Melatonin therapy
E. Vitamin B12 shot therapy

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D. **Melatonin therapy**
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What to do while waiting for DBP

Refer to Early Intervention (birth to 3)

Refer to school district for special preschool and therapy (3-5 yrs)

Refer for specific therapy (speech, OT, PT, behavior support)

Provide resources and family support

Assist with sleep challenges (Melatonin and sleep hygiene)

Resources

Ages and Stages
http://agesandstages.com/

M-CHAT-R/F
http://mchatscreen.com/mchat-rf/

PEDS Tool
http://www.pedstest.com/Home.aspx

CDC Learn the Signs. Act Early.
https://www.cdc.gov/ncbddd/actearly/index.html

AAP Bright Futures
https://brightfutures.aap.org/Pages/default.aspx

Zero to Three
https://www.zerotothree.org/

American Academy of Pediatrics Developmental Screening Recommendations
https://www.aap.org/en-us/about-the-aap/Committees-Councils-Sections/Council-on-Children-with-Disabilities/Pages/Description-and-Policy.aspx

Resources/Books

BOOKS:

Baker, Jed

No More Meltdowns

The Social Skills Picture Book: Teaching Play, Emotion, and Communication to Children with Autism

Duncan, Megan Moore, Jeanne Holverstott, Brenda Smith Myles, and Terri Cooper Swanson

Autism Spectrum Disorders: A Handbook for Parents and Professionals

Notbohm, Ellen

Ten Things Every Child with Autism Wishes You Knew

Phelan, Thomas

1,2,3 Magic

Wheeler, Marcia

Toilet Training for Individuals with Autism or Other Developmental Issues

Websites:

Autism Society of America (www.autism-society.org) – See especially their free downloadable information sheets

Autism Speaks (www.autismspeaks.org) – See especially the *First 100 Days Kit*

Exceptional Parent Magazine (www.eparent.com)

Video Glossary (autismnavigator.com)

American Academy of Pediatrics (www.healthychildren.org/English/health-issues/conditions/Autismhtopics/autism.cfm)

Do2Learn (www.do2learn.com) – Many free printable materials, activity suggestions, and online activities