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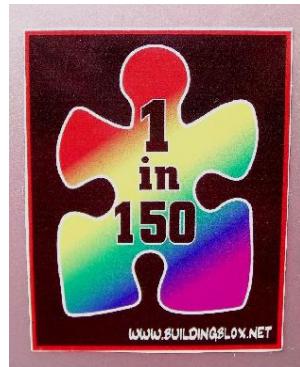


Key Inforbits

- Epidemiology of autism
- Do vaccines cause autism?
- Autism in the medical literature
- Autism in the lay literature
- Do you know someone with autism?
- Interesting Facts about autism



April is...
Autism Awareness
Month



WHAT IS AUTISM?



Autism, also known as Autistic Spectrum Disorder (ASD) or Pervasive Developmental Disorder (PDD), is a condition that affects behavior, and is defined by a static disorder of the immature brain. Autism is not a disease but a syndrome with multiple non-genetic and genetic causes. Autistic spectrum disorders [ASDs] are a wide spectrum of developmental disorders characterized by impairments in 3 behavioral domains: 1) social interaction; 2) language, communication, and imaginative play; and 3) range of interests and activities.¹ According to a study published in *JAMA* about the prevalence of autism in a US metropolitan area, ASD prevalence in the United States during the 1990s was

2.0 to 7.0 per 1,000 children. Prevalence rates vary by age, ranging from 1.9 per 1000 children in three year-olds to 4.7 per 1000 children in eight year-olds. Boys are in a higher risk group; ASD affects more boys than girls, with an average male-to-female ratio of 4.3 to 1.²

Early diagnosis of ASD is critical because interventions can improve the functioning of children with ASD and may be more effective with younger children. The onset of ASD usually occurs before three years of age. Several tools are commonly used to screen for autism, including the Checklist of Autism in Toddlers (CHAT) and the Comprehensive Autism Ratings Scale (CARS). These screenings do not diagnose, but rather provide a suggestion for further evaluation.

According to the CDC, signs and symptoms of ASD include: trouble expressing needs using typical words or motions, repetitions of actions over and over again, trouble adapting when a routine changes, unusual reactions to smell, taste, look, feel, or sound, and a loss of skills mastered.³

1. Muhle R, Trentacoste SR, and Rapin I. The genetics of autism. *Pediatrics*. 2004; 113:e472-e486.

2. Yeargin M, Rice K, Karapurkar T, Doernberg N, Boyle C, and Murphy C. Prevalence of autism in a us metropolitan area. *JAMA*. 2003; 289: 1.

3. Disorders autism and developmental disabilities monitoring network. Prevalence of autism spectrum. *MMWR*. 2000; 56(SS01): 1-11.

IS THERE A LINK BETWEEN AUTISM AND THE MMR VACCINE?

Since the late 1990's, there has been some clinical controversy over a causative link between the Measles, Mumps and Rubella (MMR) vaccine and autism. The MMR vaccine protects children from these potentially deadly infections and is usually given to children 12-15 months old and a second dose between 4-6 years of age.¹ A study published by Wakefield et al in *The Lancet*, discovered a possible relationship between patients receiving the MMR vaccine and the development of autism.^{1,2} However, this study has several potential flaws. One of the major flaws is that it was not randomized and only included 12 patients.² Dr. Wakefield, a gastroenterologist, reported these findings after patients were being treated for intestinal lesions. Since this initial study, several other studies examining this relationship have not been able to determine a causal association between MMR and autism.³ In 2004, 10 of the 13 co-authors of the Wakefield study printed a retraction in *The Lancet* claiming there is not enough data to suggest a causal link.^{1,4}



Other vaccines containing thimerosal, a mercury containing preservative, have been implicated in causing autism as well. However, to date there is no evidence supporting a causal relationship between thimerosal and autism, even after exhaustive investigation.⁴ Since 2001, no routinely administered vaccine given to children contains any thimerosal with the exception of some influenza vaccines.⁴

Although reported in the popular media as a potential cause of autism, scientifically there is no data that suggest that MMR or thimerosal vaccines are linked to autism. Therefore, it is important to go over patients and parents concerns when administering vaccines and dispel misinformation.

1. Centers for Disease Control and Prevention. [homepage on the internet]. Atlanta, GA: Measles, Mumps, and Rubella (MMR) Vaccine and Autism Fact Sheet [updated 2007 October 22; cited 2008 March 17]. Available from: http://www.cdc.gov/od/science/iso/concerns/mmr_autism_factsheet.htm
2. Wakefield AJ, Murch SH, Anthony A, Linnell J, Casson DM, Malik M, et al. Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *Lancet* 1998; 351: 637-41.
3. National Health Service. [homepage on the internet]. Norwich, UK: MMR the Facts [updated 17 March 2008; cited 17 March 2008]. Available from: <http://www.mmrthefacts.nhs.uk/>.
4. Murch, SH, Anthony A, Casson DH, Malik M, Berelowitz M, Dhillon AP, et al. Retraction of an interpretation. *Lancet* 2004; 363:750.
5. Centers for Disease Control and Prevention. [homepage on the internet]. Atlanta, GA: Mercury and Vaccines (Thimerosal) [updated 2007 October 22; cited 2008 March 17]. Available from: <http://www.cdc.gov/od/science/iso/concerns/thimerosal.htm>.

FROM THE MEDICAL LITERATURE



Pharmacotherapy Update on Drugs to Treat Autism

Autism is not a disorder that can be readily treated with medications. The symptoms, however, can. In a review article by Myers, there is evidence that risperidone, methylphenidate and some selective serotonin re-uptake inhibitors for maladaptive behaviors commonly associated with autism spectrum disorders have shown improved effectiveness in treating the symptoms associated with autism. There are also preliminary controlled trials that show some promise with valproate, atomoxetine, α -2 adrenergic agonists and olanzapine. Although these drugs can be effective in treating the psychosomatic symptoms associated with autism, there has not been any validation that they treat the core symptoms. For more information, please refer to:

Myers SM. The status of pharmacotherapy for Autism Spectrum Disorders. *Expert Opin Pharmacother*. 2007; 8: 1579-1603.

Risperidone FDA approved for Autism

Risperidone (Risperdal®) is the only drug that has been FDA approved to treat symptoms of autism, and was approved in October 2006. The full indication is: Irritability associated with autistic disorder.¹ There have been several clinical trials performed to find the efficacy of risperidone in autistic children.^{2,3} McDougal and associates performed a clinical trial, comparing risperidone to placebo, to ascertain the effect on the core symptoms of autism (difficulties with social interactions, verbal/non-verbal communication, and limited interest in activities).² They found that risperidone improved sensory-motor behavior, affectual reactions, and sensory responses. However, no statistical difference was found between groups in social relatedness or language. The Pediatric Psychopharmacology Autism Network performed a clinical trial to determine the long-term effects of risperidone.³ They found that risperidone showed persistent efficacy in treating children with autism characterized by tantrums, aggression or self-injurious behavior. They also found that the tolerability of risperidone was good in this population (one out of 63 children had to discontinue risperidone due to adverse effects).



1. Risperidone [package insert]. Titusville, NJ: Janssen. Revised February 2008. Available at: <http://www.risperdal.com/risperdal/shared/pi/risperdal.pdf#zoom=100>. Accessed March 17, 2008.
2. McDougal CJ, Scahill L, Aman MG, McCracken JT, Tierney E, Davies M, et al. Risperidone for the core symptom domains of autism: Results from the study by the autism network of the research units on pediatric psychopharmacology. *Am J Psychiatry*. 2005; 162:1142–1148.
3. Research Units on Pediatric Psychopharmacology Autism Network. Risperidone treatment of autistic disorder: Longer-term benefits and blinded discontinuation after 6 months. *Am J Psychiatry*. 2005; 162:1361–1369.

FROM THE LAY LITERATURE



Look who's talking about vaccines causing autism: in the *Canadian Press* on March 15, 2008, Jenny McCarthy (Playboy bunny-turned actress) claims that vaccines caused her son's autism¹; Sen. John McCain, the republican nominee, stated in a town hall meeting in Texas on Friday, February 29, 2008 that "there's strong evidence" that thimerosal, a mercury-based preservative that was once in many childhood vaccines, is responsible for the increased diagnoses of autism in the U.S.² The article continues to state that this "is in stark contrast to the medical establishment."²

In other news, the United States government has conceded that vaccines may have "hurt" 9 year-old Hannah Poling. The *New York Times* reports that while the government does not advocate the idea that vaccines can cause autism, in this particular case, the government is willing to settle out of court.³

Finally, while there is no way to completely cure autism, one doctor is using herbal medications to help treat autistic patients. Dr. Hitendra Shah, who works out of the Wellness Clinic in Diamond Bar, is using the Defeat Autism Now! (DAN) approach in treating autistic patients, rather than using antipsychotic medications. The basic idea behind the DAN method is to relieve the body of toxins and remove gluten and casein products from the diet (gluten products are mainly grain products, and casein products are mainly dairy products).⁴

1. Playmate-turned-author and activist Jenny McCarthy battles autism her own way. The Canadian Press. March 15, 2008. Accessed from: <http://canadianpress.google.com/article/A1eqM5jhRlvPhbpETHoiBWvmjpflUq2vhMQ> on March 18, 2008.
2. Tapper J. John McCain Enters the Autism Wars. ABC News Blog. February 29, 2008. Accessed from: <http://www.abcnews.go.com/2008/02/john-mccain-ent.html> on March 18, 2008.
3. Harris G. Deal in an Autism Case Fuels Debate on Vaccine. The New York Times. March 8, 2008. Accessed from: http://www.nytimes.com/2008/03/08/us/08vaccine.html?_r=1&ref=health&oref=login on March 18, 2008.
4. Velazquez M. Defeating Autism: Doctor Incorporates Natural Remedies. San Gabriel Valley Tribune. March 11, 2008. Accessed from: http://www.sgvtribune.com/highlanders/ci_8534020 on March 18, 2008.

DO YOU KNOW SOMEONE WITH AUTISM?

Here is a list of people who have been diagnosed with Autism. Does anyone sound familiar?



Morgan S, Taylor E. Antipsychotic Drugs in Children with Autism. *BMJ* 2007; 334: 1069-70.

- Daryl Hannah, an American actress best known for her roles in *Splash*, *Blade Runner* and *Kill Bill* was diagnosed as a child as being 'borderline autistic'
- Matthew Laborteaux, actor on *Little House on the Prairie*
- Richard Burton's (deceased actor) daughter
- William Christopher's (Father Mulcahy on *M*A*S*H*) son, Ned.
- Tom Henke's (Toronto baseball pitcher) son.
- Doug Flutie's (football player) son, Doug Jr.
- Joe Mantegna's (actor) daughter
- Dan Marino's (football player) son
- Jenny McCarthy's (actress) son, Evan
- Wynton and Brandford Marsalis' (jazz/classical musicians) brother
- Sylvester Stallone's (movie actor) son, Seargeoh

For more information, please see:

<http://www.child-autism-parent-cafe.com/famous-people-with-autism.html> or

<http://www.autism-resources.com/autismfaq-well.html>

QUICK FACTS ABOUT AUTISM

Did you know that....?

- Autism is the fastest-growing serious developmental disability in the U.S. , potentially due to changes in the diagnostic practice
- Each year, autism costs the nation over \$90 billion
- Less than 5% of all research funding is appropriated towards autism
- There is no medical detection or cure for autism
- A new case of ASD is diagnosed almost every 20 minutes
- More children will be diagnosed with autism this year than with AIDS, diabetes & cancer combined
- 1 in 150 children are diagnosed with autism
- 1 in 94 boys has the autism spectrum

For more information, go to www.autismspeaks.org

The Last Dose

"If a man does not keep pace with his companions, perhaps it is because he hears a different drummer. Let him step to the music he hears, however measured or far away." ~Henry David Thoreau [1817-1862]

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