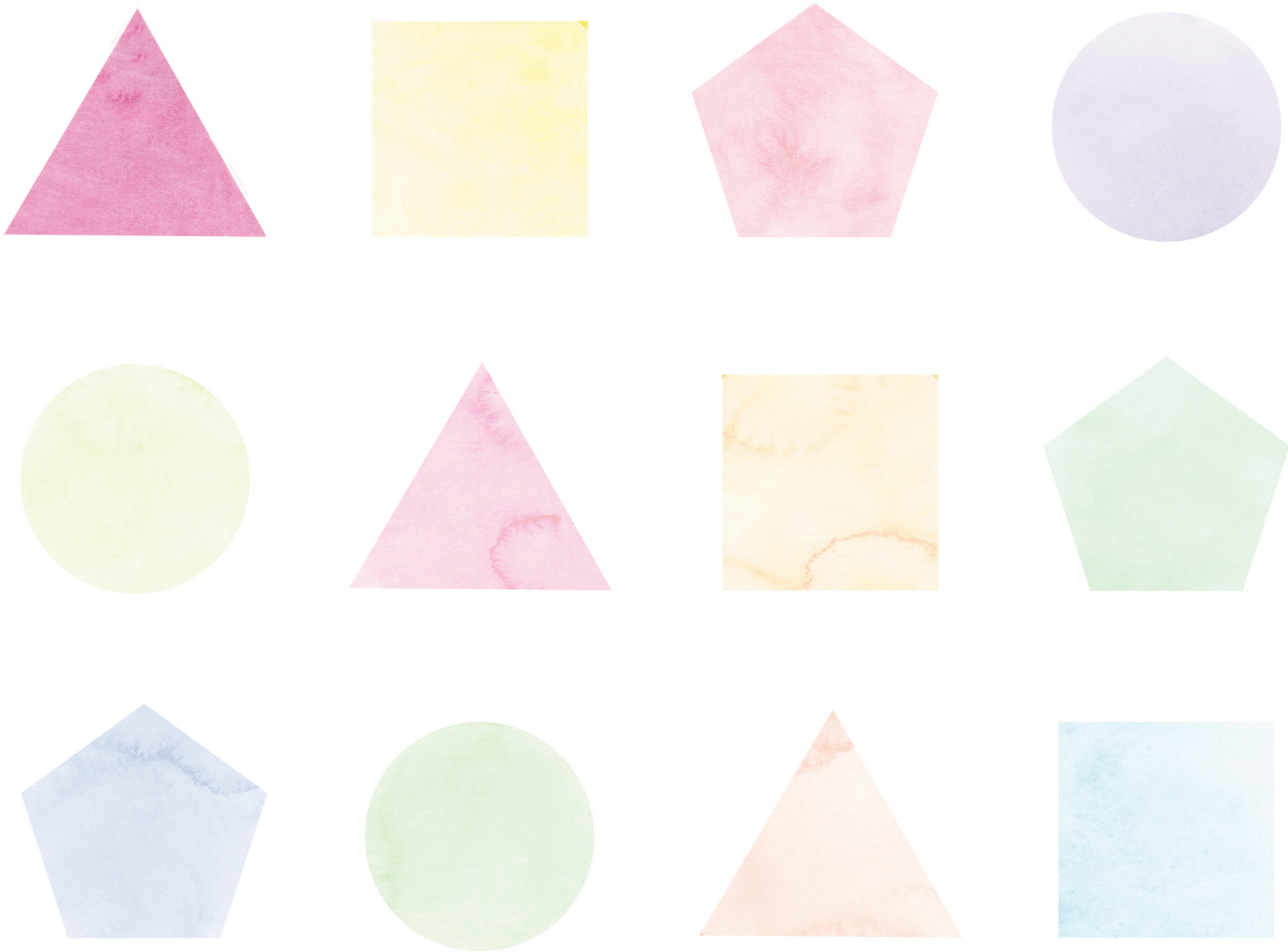
What is Autism Spectrum Disorder?

ASD DIAGNOSIS OCCURANCE RATE

BATON ROUGE ASD DIAGNOSIS OCCURANCE RATE



Autism Spectrum Disorder (ASD), often referred to as autism, is a general term for an array of complex brain development disorders that are characterized by difficulties in social interaction, verbal and nonverbal communication and repetitive behaviors.[8]

ASD is frequently associated with intellectual disability, motor coordination difficulty, and physical health problems such as sleep disorders, seizures, and gastrointestinal issues.[9]

Health care professionals in the United States utilize the ASD diagnostic criteria found in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). This current version of the DSM was published in May of 2013. Prior to the publication of DSM-5, the array of autism disorders was organized into basic subtypes, including:

1. Autistic disorder (sometimes called autism or classical ASD),
2. Childhood disintegrative disorder,
3. Pervasive developmental disorder – not otherwise specified (PDD-NOS), and
4. Asperger syndrome.

The full text of the DSM-5 diagnostic criteria for ASD and the related diagnostic criteria for Social Communication Disorder (SCD) is provided by Autism Speaks on its website.[10]

The character and severity of ASD can vary significantly from individual to individual. Autistic Disorder (classical ASD) is the most severe form of ASD. ASD is found in all ethnic and socioeconomic groups and affects people of all ages. However, males are four times more likely than females to have an ASD.[11]

8 Autism Speaks, "What is Autism?," available online at http://www.cdc.gov/ncbddd/autism/screening.html.
9 ibid
10 Autism Speaks, "DSM-5 Diagnostic Criteria," available online at www.autismspeaks.org/what-autism/diagnosis/dsm-5-diagnostic-criteria.
11 National Institute of Neurological Disorders and Stroke, "Asperger Syndrome Fact Sheet," available online at www.ninds.nih.gov/disorders/asperger/detail_asperger.

WHAT CAUSES AUTISM?

Scientists are not certain about what causes ASD, but it is likely that both genetics and environment play a role. Researchers have identified a number of genes associated with the disorder. Studies of people with ASD have found irregularities in several regions of the brain. Other studies suggest that people with ASD have abnormal levels of serotonin or other neurotransmitters in the brain. These abnormalities suggest that ASD could result from the disruption of normal brain development early in fetal development caused by defects in genes that control brain growth and that regulate how brain cells communicate with each other, possibly due to the influence of environmental factors on gene function. While these findings are intriguing, they are preliminary and require further study. The theory that parental practices are responsible for ASD has long been disproved.

Autism Fact Sheet, National Institute on Neurological Disorders and Stroke

http://www.ninds.nih.gov/disorders/autism/detail_autism.htm

ASD is generally regarded as a lifelong disorder by mainstream medicine despite the assortment of supposed autism cures promoted on the internet. Many different types of treatments are utilized today to address ASD. The federal Centers for Disease Control and Prevention (CDC) state that these different treatments can be organized into the following four general categories.

Behavior and Communication Approaches

According to reports by the American Academy of Pediatrics and the National Research Council, behavior and communication approaches that help children with ASD are those that provide structure, direction, and organization for the child in addition to family participation.

Dietary Approaches

Some dietary treatments have been developed by reliable therapists. But many of these treatments do not have the scientific support needed for widespread recommendation. An unproven treatment might help one child, but may not help another.

Many biomedical interventions call for changes in diet. Such changes include removing certain types of foods from a child's diet and using vitamin or mineral supplements. Dietary treatments are based on the idea that food allergies or lack of vitamins and minerals cause symptoms of ASD. Some parents feel that dietary changes make a difference in how their child acts or feels.

Medication

There are no medications that can cure ASD or even treat the main symptoms. But there are medications that can help some people with related symptoms. For example, medication might help manage high energy levels, inability to focus, depression, or seizures.

Complementary and Alternative Treatments

To relieve the symptoms of ASD, some parents and health care professionals use treatments that are outside of what is typically recommended by the pediatrician. These types of treatments are known as complementary and alternative treatments (CAM). They might include special diets, chelation (a treatment to remove heavy metals like lead from the body), biologicals (e.g., secretin), or body-based systems (like deep pressure).

These types of treatments are very controversial. Current research shows that as many as one third of parents of children with ASD may have tried complementary or alternative medicine treatments, and up to 10% may be using a potentially dangerous treatment.

Autism Spectrum Disorder, Centers for Disease Control and Prevention

http://www.cdc.gov/ncbddd/autism/treatment.html

There are a few very recent and very small reputable studies that indicate some children diagnosed with ASD can achieve an "optimal outcome" that includes reaching normal cognitive function and no longer meeting the diagnostic criteria for any ASD.[12] [13]

12 Orinstein, AJ, et.al, "Intervention for Optimal Outcome in Children and Adolescents with a History of Autism," *Journal of Developmental and Behavioral Pediatrics*, May 2014.

13 Anderson, DK, et.al, "Predicting Young Adult Outcome among More and Less Cognitively Able Individuals with Autism Spectrum Disorders," *Journal of Child Psychology and Psychiatry*, May 2014.

ASD DIAGNOSIS OCCURANCE RATE

The frequency of ASD diagnosis occurrence has increased dramatically in recent decades, from an estimate of 1 in 200 in 1990s to approximately 1 in 68 today – as reported by the CDC surveys.[14] There is considerable question and debate in the scientific/medical community about the current 1 in 68 diagnosis occurrence rate. Specifically, how much of this increase is due to actual ASD occurrence increase and how much is due to other factors such as diagnostic definitional changes, new diagnostic tools and practices, and greater ASD awareness?

There is a data collection effort underway through the Autism and Development Disabilities Monitoring Network (ADDM Network) to better understand the ASD prevalence rate. The ADDM Network, for example, found in Alabama a prevalence rate of 1 in 175, while New Jersey found a prevalence rate of 1 in 45.[15] Louisiana is not currently an ADDM Network participant.

An additional data collection effort reported by the CDC is the National Health Interview Survey (NHIS) which is a nationally representative household survey restricted to children ages three to 17 years old. The most recent NHIS report was published November 13, 2015. The methods, results, and conclusions of the NHIS survey are provided in the report abstract.

14 Center for Disease Control and Prevention, "Prevalence of Autism Spectrum Disorder among Children Aged 8 Years – Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2010," CDC's *Morbidity and Mortality Weekly Report*, March 2014.

15 Center for Disease Control and Prevention, "Autism and Developmental Disabilities Monitoring (ADDM) Network," available online at www.cdc.gov/ncbddd/autism/addm.

Methods

In NHIS, one child is randomly selected from each family to be the subject of detailed questions on health conditions, functional limitations, and health care utilization. Parents are asked if a doctor or health professional had ever told them that their child had each of a series of developmental disabilities. Prevalence estimates of ASD, ID [intellectual disabilities], and other DD [developmental disabilities] for children aged 3–17 years were calculated using data collected in 2011–2014.

Results

The estimated prevalence of ASD based on 2014 data was 2.24%, a significant increase from the estimated annualized prevalence of 1.25% based on 2011–2013 data. In contrast, the prevalence of other DD declined significantly from 4.84% based on 2011–2013 data to 3.57% based on 2014 data. The prevalence of ID did not significantly change from 2011–2013 (1.27%) to 2014 (1.10%). The prevalence of having any of the three conditions was constant across survey years.

Conclusions

The revised question ordering and new approach [change in the order and wording of questions to parents] to asking about developmental disabilities in the 2014 NHIS likely affected the prevalence estimates of these conditions. In previous years, it is likely that some parents of children diagnosed with ASD reported this [developmental disability] as other DD instead of, or in addition to, ASD. Following these changes, the 2014 ASD estimate was more similar to ASD prevalence estimates from other sources.[16]

This new NHIS information would translate into an ASD diagnosis occurrence rate of approximately 1 in 45. Research focused on the many unknowns regarding ASD diagnosis occurrence continues.

16 Zabotsky, Benjamin, PhD, et al., "Estimated Prevalence of Autism and Other Developmental Disabilities Following Questionnaire Changes in the 2014 National Health Interview Survey", Centers for Disease Control and Prevention, National Center for Health Statistics, *National Health Statistics Report*, Number 87, November 13, 2015, available online at www.cdc.gov/nchs/data/nhsr/nhsr087.pdf.

BATON ROUGE ASD DIAGNOSIS OCCURRENCE RATE

Utilizing both the 1 in 68 and 1 in 45 ASD diagnosis occurrence rates and the U.S. census data for the Baton Rouge MSA,[17] we can estimate that in 2010 the Greater Baton Rouge population of 802,484 included approximately 11,800 (1 in 68) or 17,835 (1 in 45) people with an ASD diagnosis. Figure 1 subdivides the estimated Baton Rouge MSA population with an ASD diagnosis into 14 distinct age groups.

01 Baton Rouge MSA Population with an ASD Diagnosis, 2010

Age Group	Baton Rouge MSA % of Population	Baton Rouge MSA Population	ASD Rate 1 in 68	ASD Rate 1 in 45
Age 0 to 4	6.84%	54,890	807	1,220
Age 5 to 9	6.79%	54,489	801	1,211
Age 10 to 14	6.81%	54,649	804	1,214
Age 15 to 17	4.16%	33,383	491	742
Age 18 to 20	5.20%	41,729	614	927
Age 21 to 24	6.68%	53,606	788	1,191
Age 25 to 34	14.41%	115,638	1,701	2,570
Age 35 to 44	12.93%	103,761	1,526	2,306
Age 45 to 54	13.84%	111,064	1,633	2,468
Age 55 to 59	6.15%	49,353	726	1,097
Age 60 to 64	5.28%	42,371	623	942
Age 65 to 74	6.31%	50,637	745	1,125
Age 75 to 84	3.26%	26,161	385	581
Age 85 and over	1.35%	10,834	159	241
Totals	**100%**	**802,564**	**11,802**	**17,835**

Utilizing both the 1 in 68 and 1 in 45 ASD diagnosis occurrence rates and U.S. census projections data through 2030 for the Baton Rouge MSA, we estimate that in 2030 the Greater Baton Rouge population of approximately 1 million will include approximately 3,500 (1 in 68) or 5,300 (1 in 45) citizens ages 0-21 with an ASD diagnosis and within that group, approximately 930 (1 in 68) or 1,400 (1 in 45) children ages 0-4.

17 MSA – Metropolitan Statistical Area; Baton Rouge MSA includes the following parishes: Ascension, East Baton Rouge, East Feliciana, Iberville, Livingston, Pointe Coupee, St. Helena, West Baton Rouge, and West Feliciana.

Figure 2 shows the annual projected totals for age 0-21 and 0-4 through 2030 for the Greater Baton Rouge area with an ASD occurrence rate of 1 in 68. Figure 3 shows the annual projected population totals for age 0-21 and 0-4 through 2030 for the Greater Baton Rouge area with an ASD occurrence rate of 1 in 45.

02 Annual Baton Rouge MSA Population with ASD Occurrence Rate of 1 in 68

Year	Baton Rouge MSA Population	Births	ASD Births 1 in 68	ASD, Age 0-21 Years	ASD, Age 0-4 Years
2010	804,406	10,988	162	2,899	786
2011	809,017	11,146	164	2,931	797
2012	813,628	11,304	166	2,965	808
2013	818,238	11,462	169	2,997	820
2014	822,849	11,620	171	3,031	831
2015	827,460	11,778	173	3,065	843
2016	835,610	11,810	174	3,100	853
2017	843,760	11,841	174	3,134	860
2018	851,910	11,873	175	3,167	867
2019	860,060	11,904	175	3,199	871
2020	868,210	11,936	176	3,229	873
2021	877,446	12,009	177	3,252	876
2022	886,682	12,082	178	3,276	879
2023	895,918	12,156	179	3,305	884
2024	905,154	12,229	180	3,336	888
2025	914,390	12,302	181	3,366	894
2026	924,600	12,435	183	3,396	900
2027	934,810	12,568	185	3,426	907
2028	945,020	12,700	187	3,456	915
2029	955,230	12,833	189	3,485	924
2030	965,440	12,966	191	3,514	934

03 Annual Baton Rouge MSA Population with ASD Occurrence Rate of 1 in 45

Year	Metro Population	Births	ASD Births 1 in 45	ASD, Age 0-21 Years	ASD, Age 0-4 Years
2010	804,406	10,988	244	4,380	1,188
2011	809,017	11,146	248	4,430	1,205
2012	813,628	11,304	251	4,480	1,222
2013	818,238	11,462	255	4,530	1,239
2014	822,849	11,620	258	4,580	1,256
2015	827,460	11,778	262	4,631	1,274
2016	835,610	11,810	262	4,684	1,288
2017	843,760	11,841	263	4,736	1,300
2018	851,910	11,873	264	4,785	1,309
2019	860,060	11,904	265	4,833	1,316
2020	868,210	11,936	265	4,880	1,319
2021	877,446	12,009	267	4,913	1,324
2022	886,682	12,082	268	4,951	1,329
2023	895,918	12,156	270	4,994	1,335
2024	905,154	12,229	272	5,041	1,342
2025	914,390	12,302	273	5,086	1,351
2026	924,600	12,435	276	5,132	1,360
2027	934,810	12,568	279	5,177	1,371
2028	945,020	12,700	282	5,222	1,383
2029	955,230	12,833	285	5,266	1,396
2030	965,440	12,966	288	5,311	1,411

The 2010 estimates and the projections (through 2030) presented here make clear that ASD is a significant and growing reality in the Capital Region. The challenges presented by this wide-ranging disorder, coupled with the prevalence of occurrence, qualifies ASD as a condition that warrants a growing commitment of attention and resources from the scientific, medical, educational, social service, political, and philanthropic communities in the Capital Region.