Related Disorders

At least seven disorders are part of or closely related to Autism. Each disorder has symptoms commonly seen with autism, as well as its own specific symptoms. Choose from the index below to jump to the desired information.

Syndrome

Fragile X Syndrome

Landau-Kleffner Syndrome

Syndrome

Angelman Syndrome

Rett Syndrome

Tardive Dyskinesia

Medical comorbidities are also commonly seen in autism spectrum disorder including PANS/PANDAS, ADD/ADHD, seizures, dental issues, sleep disturbances and gastrointestinal symptoms. The conditions listed below all exhibit similar behavioral symptoms to autism spectrum disorder. Behavioral treatments for these conditions overlap with those of autism. However, treatments should always be informed by diagnosis. It is important to seek out a diagnosis by a qualified healthcare professional before pursuing any course of treatment.

ARI thanks Stephen M. Edelson, PhD, for his contribution to this content.

Complementary CME Webcast Series: Autism Medical

Williams Syndrome

Williams Syndrome (also known as Williams-Beuren syndrome) is a rare genetics disorder in which a portion of DNA material on chromosome 7 is missing. The prevalence in the population is somewhere between 1 out of 10,000.

Many people with Williams Syndrome exhibit autistic behaviors. This includes: developmental and language delays, problems in gross motor skills, hypersensitivity to sounds, picky eating, and perseverating.

However, Williams Syndrome includes other symptoms that may require different or additional treatments. A diagnosis is essential to maximize quality of care.

These individuals differ from the typical autistic individual because they also have cardiovascular abnormalities, high blood pressure, elevated calcium levels, and are very sociable. They also have unique pixie-like facial features–almond shaped eyes, oval ears, full lips, small chins, narrow faces, and broad

mouths.

For more detailed information regarding this disorder please visit the Williams Syndrome Association.

Fragile X

Fragile X syndrome (also known as Martin-Bell syndrome) is a sex-linked genetic disorder. The exact frequency of Fragile X syndrome is unclear, but the CDC estimates that roughly 1.4 in 10,000 males and 0.9 in 10,000 females are affected by this disorder. Males afflicted with this syndrome typically have a moderate to severe form of intellectual handicap. Females may also be affected but generally have a mild form of impairment.

Approximately 15% to 20% of those with Fragile X Syndrome exhibit autistic-type behaviors, such as poor eye contact, hand-flapping or odd gesture movements, hand-biting, and poor sensory skills. Behavior problems and speech/language delay are also common features of Fragile X Syndrome.

People with Fragile X syndrome also have a number of recognizable physical features, including a high arched palate, strabismus (lazy

eye), large ears, long face, large testicles in males, poor muscle tone, flat feet, and sometimes mild, heart valve abnormalities. Although most individuals with Fragile X syndrome have a characteristic 'look' (long face and large ears), there are some who do not have typical features.

Many hospitals and laboratories perform blood tests to diagnose Fragile X syndrome. Several treatments are recommended for individuals with this disorder, including mild medications for behavior problems and therapies for speech and language and sensory improvement. Families are advised to seek genetic counseling to understand the inheritable nature of Fragile X Syndrome and to discuss with family members the likelihood other individuals or future offspring may have this disorder.

For more information visit the National Fragile X Foundation

We would like to thank Dr. Peter Jacky of Kaiser Sunnyside Hospital in Clackamas, Oregon for his comments on this article.

Landau-Kleffner

Syndrome

Landau-Kleffner Syndrome is a rare form of epilepsy that manifests as a form of aphasia, (loss of language), which usually develops between 3 and 7 years. It is twice as common in males than females and is often diagnosed in conjunction with autism. Initially, these individuals have a healthy, problem-free development with normal speech and vocabulary. These individuals first lose their ability to comprehend (i.e., receptive speech) and then their ability to speak (i.e., expressive speech). These changes can occur gradually or suddenly.

People with Landau-Kleffner Syndrome have abnormal EEG patterns (i.e., brain waves) in the temporal lobe (located on the sides of the brain) and in the temporo-parieto-occipital regions during sleep. Diagnosis of this syndrome usually involves examining the person's EEG patterns during sleep. Approximately 70% develop epilepsy; and these seizures are typically infrequent and can be either with or without convulsions.

One common characteristic of Landau-Kleffner Syndrome is the failure to respond to sounds. Thus, parents may suspect their child of

hearing loss. Autistic characteristics seen in Landau-Kleffner Syndrome individuals include pain insensitivity, aggression, poor eye contact, insistence on sameness, and sleep problems.

The cause of Landau-Kleffner Syndrome is not known. Some suggested causes have been a dysfunctional immune system, exposure to a virus, and brain trauma. The prognosis is better when the onset is after age 6 and when speech therapy is started early. Several other treatments have also been shown to be beneficial for many of these individuals, such as anticonvulsant mediations and corticosteroids. There is also a surgical technique in which the pathways of abnormal electrical brain activity are severed.

For additional information, visit the Epilepsy Foundation

Prader-Willi Syndrome

Prader-Willi Syndrome is a disorder which is sometimes associated with, but not a subtype of, autism. The classical features of this disorder include an obsession with food which is often associated with impulsive eating, compact body build, underdeveloped sexual characteristics, and poor muscle tone. Because

of their obsession with food, many people afflicted with Prader-Willi Syndrome are overweight. Most individuals afflicted with Prader-Willi Syndrome have mild mental deficits.

Some of the behaviors which are common to both Prader-Willi Syndrome and autism are:

- delays in language and motor development
- learning disabilities
- feeding problems in infancy
- sleep disturbances, skin picking
- temper tantrums
- high pain threshold

Prader-Willi Syndrome affects approximately 1 in 10,000 people. Most individuals suffering from this disorder are missing a small portion of chromosome 15 which appears to come from the paternal side of the family. When a small portion of chromosome 15 is missing and comes from the maternal side, the person may suffer from **Angelman Syndrome**.

The most effective form of treatment for people suffering from Prader-Willi Syndrome is behavior modification. In general, medications do not appear to be very effective for these individuals.

For more information about Prader-Willi Syndrome vist the Prader-Willi Syndrome Association (USA) or the Ontario Prader-Willi Syndrome Association (Canada)

Angelman Syndrome

Angelman syndrome is a genetic disorder that affects the nervous system. Initial symptoms of this disorder typically manifest in the first year of life and become more apparent through early childhood. It is estimated that Angelman syndrome occurs in roughly every one in 15,000 people. Similarly to Prader Willi Syndrome, this disorder derives from a missing portion of chromosome 15, but unlike Prader Willi, this deficit comes from the maternal side.

Angelman syndrome is commonly characterized by:

- Mental and speech deficits
- Speech impairment
- Problems with motor skills and balance
- Epilepsy
- Small head size
- Hyperactivity
- Smiling, Laughing and Hand flapping
- Difficulty sleeping

To learn more about Angelman Syndrome, please visit the Angelman Syndrome Foundation

Rett Syndrome

Rett Syndrome was first recognized by Andreas Rett in 1966 and is a neurological disorder affecting primarily females. Autopsies on the brains of these individuals indicate a pathology different from autism; however, children afflicted with Rett Syndrome often exhibit autistic-like behaviors, such as repetitive hand movements, prolonged toe walking, body rocking, and sleep problems. In most cases, there is a regression in cognition, behavior, social, and motor skills throughout their lifetime.

The prevalence of Rett Syndrome is estimated to be between 1 in 10,000 and 1 in 15,000 people.

Typical characteristics:

- Normal development until 1/2 to 1 1/2 years
- Behavioral, social, and cognitive regression
- Shakiness of the torso, and possibly the

limbs
- Unsteady, stiff-legged gait
- Breathing difficulties (hyperventilation, apnea, air swallowing)
- Seizures (approximately 80% have epilepsy)
- Teeth grinding and difficulty chewing
- Stunted growth and small head
- Severe mental deficits
- Hypoactivity

In 1999, Dr. Huda Zoghbi and her colleagues located the gene for Rett syndrome. The gene was located on one of the two X chromosomes that determine sex. Rett syndrome results from the mutation of the gene that makes methyl cytosine binding protein, resulting in excessive amounts of this protein.

For more information about this disorder, visit International Rett Syndrome Association

Tardive dyskinesia

Tardive dyskinesia is a syndrome involving dysfunctional, involuntary movements associated with long-term, chronic use of neuroleptic medications, such as Haldol, Prolixin, and Thorazine. These drugs lead to an apparent general calming or sedative effect on

the individual and are considered major tranquilizers.

Tardive dyskinesia may appear anywhere from three months to several years after initial use of these medications, and withdrawal from neuroleptics often exacerbates the symptoms.

Common tardive dyskinesia movements include, but are not limited to:

- facial tics, grimacing
- eye blinking
- lip smacking
- tongue thrusting
- moving one's head back or to the side
- foot tapping
- ankle movements
- shuffled gait
- head nodding

Tardive dyskinesia may lead to very serious problems, such as respiratory interference, inability to eat, oral ulcerations, and difficulty standing/walking.

Tardive dyskinesia movements may be confused with stereotypy because of the repetitive nature of both behaviors. Stereotypy refers to ritualistic, often complex behaviors, such as body and head rocking, hand-flapping, and complex hand movement patterns.

Stereotypy appears to be under voluntary control. In contrast, tardive dyskinesia movements are less complex, less ritualistic, and are not volitional.

Other psychoactive drugs, such as clozaril/clozapine, have similar effects on behavior but do not produce tardive dyskinesia as neuroleptics do.

Is it Autism?

While the behavioral symptoms of the conditions above may overlap with autism, they may require different or additional treatments. Seek a diagnosis and treatment plan from a qualified medical professional before starting any form of treatment. For more on common signs and symptoms of autism visit our Is It Autism? page.

Special thanks to Julie Genz for her comments on an earlier draft.

Autism Health and Nutrition

February 5th, 2025 | Anxiety, Gastrointestinal, Health, Medical Care, Nutrition, Self Care, Sensory, Webinar

NEW TIME: Free webinar at 1 p.m. Eastern time (US), Wednesday, February 5, 2025 About the speaker: Kelly Barnhill, MBA, CN, CCN, is the Director of the Nutrition

Disordered Eating and Autism – Obesity

October 22nd, 2024 | Autism Spectrum Disorders, Biomarkers, Gastrointestinal, Gastrointestinal, Health, Medical Care, Parenting, Research, Research, Self Care, Ways to Help, Webinar

Learn research updates on co-occurring disordered eating and autism, including emerging findings to a higher risk for obesity. Handouts are online HERE The speaker:

Blood-brain barrier dysfunction in Pediatric Acute Neuropsychiatric Syndrome (PANS) and Regulation

June 20th, 2024 | Anxiety, Assessment, Autism Spectrum Disorders, Biomarkers, Early Intervention, Health, Medical Care, Neurological, News, PANS/PANDAS, Parenting, Research, School Issues, Ways to Help, Webinar

Dr. Jennifer Frankovich reviews what we know about the underlying mechanisms, trajectories, and symptoms of Pediatric Acute Neuropsychiatric Syndrome (PANS). She discusses the role of

the Basal Ganglia in PANS symptoms

Screen Time and Social Engagement in Early Childhood Development

September 12th, 2023 | Assessment, Autism Spectrum Disorders, Early Intervention, Educational Therapies, Medical Care, Research, Webinar

Karen Heffler, MD, takes viewers on a comprehensive exploration of the relationship between early-life screen time exposure and autism risk. She delves into the intricate interplay of genetics, environmental factors,

Co-Occurring Conditions and Autism

January 10th, 2022 | News, Uncategorized

Research suggests that individuals with autism experience some conditions—including underlying medical issues, neurodevelopmental differences, and mental health issues—more frequently than the general population. Learning about these potential medical needs can help you

What is Toe Walking?

November 26th, 2021 | News

Toe walking refers to a gait cycle/walking pattern in which the heel does not contact the ground; this is a common developmental variation in young children (aged three and under) and generally isn't

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