



How COVID-19 & Pandemic Life Has Affected Those on the Autism Spectrum

TPN.Health

New Orleans, Louisiana

Kevin T. Blake, Ph.D., P.L.C., ASDCS, CCSP-ADHD

Tucson, Arizona

Announcements, Disclosures and Paperwork



Disclaimer

“Materials that are included in this webinar may include interventions and modalities that are beyond the authorized practice of mental health professionals. As a licensed professional, you are responsible for reviewing the scope of practice, including activities that are defined in law as beyond the boundaries of practice in accordance with and in compliance with your profession’s standards.”

Disclaimer

- **None of the techniques described in this webinar will work for all persons with autism spectrum disorder (ASD). Every person with ASD is different.**
- **There are no absolutes.**
- **All treatments have negative side effects. Some more than others. The presenter will do his best to cover the most common ones.**
- **The theories described in this webinar do not have the same amount of empirical evidence supporting each one of them. The presenter will do his best to describe the pros and cons of each.**
- **If you are concerned about a treatment technique described in this webinar ask the presenter about it.**

Disclaimer

- **Speaker Disclosure:**
- **Financial:** Kevin Blake maintains a private practice. He is a stockholder in Johnson & Johnson, Inc. and Amgen, Inc. Dr. Blake receives a speaking honorarium from TPN.Health and royalties from PESI, Inc.
- **Non-financial:** Kevin Blake is a member of the Children and Adults with Attention Deficit Disorders (CHADD), International Dyslexia Association (Orton Oak), Learning Disabilities Association of America, and American Psychological Association.

Disclaimer

“DSM[®], DSM-IV-TR[®], DSM-5[®] and DSM-5 TR[®] are registered trademarks of the American Psychiatric Association. The American Psychiatric Association is not affiliated with nor endorses this webinar.”

Background

2022 06 09

Autism Spectrum Disorder is NOT New!

- “People have probably lived with what we know today as autism spectrum disorders throughout history. Some of the earliest published descriptions of behavior that sounds like autism date back to the 18th century. But the disorder did not have a name until the middle of the 20th century.”

--Centers for Disease Control and Prevention. Autism Information Center.

<http://www.cdc.gov/ncbddd/autism/overview.htm#is>

- **Henry Cavendish-Scientist (1731-1810)
Asperger's Disorder?**

--Sacks (October 9, 2001).

- **Currently 1 in 59 children have ASD.**

- **Four times more males than females.**

- **Average prevalence between 1 and 2 percent in Asia, Europe & North America.**

--National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention (September 3, 2019).

A Physician was Scientifically Examining People with ASD Prior to the Civil War in the US

Dr. Samuel Gridley Howe's (1801-1876), "...Report Made to the Legislature of Massachusetts upon Idiocy,' which he presented in February of 1848, includes signals of classic autistic behavior so breathtakingly recognizable to anyone familiar with the condition's manifestations that they cannot be ignored... Howe's final report contained 45 pages of tabulated data, drawn from a sample of 574 people who were thoroughly examined by him or his colleagues in nearly 63 towns."

Dr. Howe gave stunning descriptions of savant-like behavior, too.

Donvan, J, and Zucker, C. (January, 2016). The Early History of Autism in America. Smithsonian Magazine. From website: <https://www.smithsonianmag.com/science-nature/early-history-autism-america-180957684/>.

What does NEUROBIOLOGICAL mean?

- “The latest thinking in this area is that ASD is a developmental neurobiological disorder, meaning that a variety of developmental changes occur in the brains of people with this disorder” (p. 5).
- At present few workers in the field of ASD believe that psychological or social influences play a major role in the development of this disorder” (p. 40).

Durand, M.V. (2014).

- “The field has come a long way since parents were considered to be the cause of autism spectrum disorders.” (p. 64)*

*Ozonoff, et al. (2002); Kaiser, M.D., et al. (November 15, 2010).

Autism and Genetics

- **“Autism (Spectrum Disorder, sic) is known to be a genetic disorder, at least in part.” (p. 2 of 3).**

--Author (No Date). Fact Sheet: Study to Explore Early Development (SEED).

- **“It is now abundantly clear that ASD has a genetic component, with the best evidence suggesting moderate genetic heritability” (p. 41).**

--Durand, M.V. (2014)

- **There are 239 likely candidate genes for autism.**

--Issifove, I. et al. (October 13, 2015).

- **Of the 200 + genes related to autism about 70 are directly related to brain development**
- **The remainder are related to,”...psychiatric disorders and peripheral comorbidities that include cancer, cardiovascular disease, renal disorders, respiratory disorders and metabolic disorders, demonstrating a broader impact of brain-associated genes in other developing organ systems. Some of these may be related to random errors of metabolism and/or mutations in mitochondrial DNA as well as unusual gut microbiomes that can negatively effect the brain.**

--Stevenson, J.A. et al. (October 20, 2015).

Autism & Genetics

- **40% to 70% of ASD population has significant GI problems**

--Buie, T., et al. (November 7, 2014).

- **About 7% of those with ASD have mitochondrial disease**

--Korson, M., et al. (November 7, 2014).

- **Recently scientists have discovered through brain imagery the brain has a lymphatic system. This caused the scientists to postulate that this may indicate disorders like autism have some link to inflammation.**

--Louveau, A., et al. (June 1, 2015).

- **Heritability between 60 and 70%**

- **<10% of cases caused by Fragile X, Tuberous Sclerosis, etc.**

--Volkmar et al. (2017).

- **30 to 61% of those with ASD will have comorbid AD/HD**

--Autism Speaks (No Date).

- **14% of those with AD/HD have comorbid ASD**

--National Center on Birth Defects and Developmental Disabilities (October 15, 2019).

Microbiome & Mental Health

- **People who are depressed have a diversity “narrowed microbiome”.**
- **Not the only reason for depression, but may play a role.**
 - **Low diet fiber puts people at risk.**
- **Only 43% of you is you the rest is microbiome, bacteria, viruses, fungi and single-celled archaea.**
 - **This can be connected to disorders like allergy, obesity, inflammatory bowel disease, Parkinson's, whether cancer drugs work and even depression and autism.**

Microbiome

- **The microbiome in people with Parkinson's disease is significantly different from controls.**
- **Stool “transplanted” from Parkinson’s patients to mice cause the mice to develop symptoms.**
- **Psychiatrists are starting to prescribe probiotics to boost mental health.**

Gallahger, J. (April 24, 2018). How Bacteria Are Changing Your Mood. BBC News. From website: <https://www.bbc.com/news/health-43815370>.

ASD & Gut Biome

Research from Australia with those who have ASD has indicated those with the disorder have a significantly different gut biome than neurotypicals due to their (those with ASD) dietary preferences. They tend to have a less diverse biome and looser stools as a result. This may be caused in part by their restricted range of interests.

Yap, C.X. et al (November 11, 2021). Autism-related dietary preferences mediate autism-gut microbiome associations. Cell. DOI: [10.1016/j.cell.2021.10.015](https://doi.org/10.1016/j.cell.2021.10.015).

Neuroanatomy of ASD

- Increased grey matter anterior temporal & dorsolateral prefrontal lobe.
- Decreased grey matter occipital and medial parietal areas.
- Significant reduction in size of cerebellum (fewer Purkinje cells).
- Overall Brain Size Larger.

Ecker, C., (February 8, 2012); Durand, M.V. (2014); Volkmar (2017).

- Large grey matter differences in the following:
 - cingulate, motor area, basal ganglia, amygdala, inferior parietal lobe, prefrontal lobe
- Reductions in white matter volume.
- These differences are linked to autistic symptoms and persist throughout life.
- Estimates are 38% of those with ASD have intellectual disabilities.

--Durand, M.V. (2014).

- **41% have an IQ>85**

--Baio et al. (April 17, 2018).

Autism and Autoimmunity



2022 06 07

Autism Spectrum Disorder & Inflammation

- **Adults with ASD were found to have abnormalities in the neuroimmune processes and mitochondrial dysfunction probably caused by anomalies in the translocator protein (18 kDa).**
- **An overexpression of this is primarily a marker of inflammation.**
- **This may be found in other mental health disorders.**

Repprecht, R. et al. (December 1, 2010). Translocator protein (18 kDa) (TSPO) as a therapeutic target for neurological and psychiatric disorders. Nature: Reviews Drug Discovery. DOI: <https://doi.org/10.1038/nrd3295>.

Autism & Autoimmunity

The research community has long recognized a connection between autism and autoimmune dysfunction. Perhaps immune dysregulation in utero could alter brain chemistry and development causing autism. Anti-bodies in the prenatal environment may be a cause of autism. Additionally, familial risk of autoimmune disease has been linked to autism as has a direct genetic link.

Meltzer, A. et al. (September 21, 2016). The Role of the Immune System in Autism Spectrum Disorder. Neuropsychopharmacology. DOI: [10.1038/npp.2016.158](https://doi.org/10.1038/npp.2016.158).

Autism & Autoimmunity

Children with autism are 35% more likely than their neurotypical peers to develop asthma. “Increased risk of type 1 diabetes, allergic rhinitis, atopic dermatitis, urticaria and a trend toward increasing comorbidity with Crohn's disease are also observed in subjects with ASD.” At least 50% of those with autism suffer from some sort of gastrointestinal disease. “Increased inflammation and dysregulation of the GI tract in ASD is important as this compartment comprises a significant percentage of immune cells in the body, and immune cells educated here participate in immune function throughout the body... The evidence that immune dysfunction likely plays a role in the etiology/pathophysiology of ASD is becoming substantial.”

Hughes, H.K. et al. (November 13, 2018). Immune Dysfunction and Autoimmunity as Pathological Mechanisms in Autism Spectrum Disorders. Frontiers in Cellular Neuroscience. DOI: [10.3389/fncel.2018.00405](https://doi.org/10.3389/fncel.2018.00405).

Autoimmune Markers found in The Brains of Those with ASD

Scientist associated with Harvard Medical School conducted brain autopsies of people who had ASD. They found that those with ASD had significantly more T-immune cells and other autoimmune markers when compared to neurotypicals. The concluded these findings may indicate, at least in part, ASD is connected to autoimmune disorders.

DiStasio, M.M. et al. (November 4, 2019). T-lymphocytes and Cytotoxic Astrocyte Blebs Correlate Across Autism Brains. Annals of Neurology. DOI: [10.1002/ana.25610](https://doi.org/10.1002/ana.25610).

Autism & Autoimmunity

After a recent review of literature American scientists concluded ASD children have significantly higher levels of reactive antibodies including anti-brain antibodies than their neurotypical friends.

Zou, T. et al. (April 7, 2020). Autoantibody and autism spectrum disorder: A systematic review. Research in Autism Spectrum Disorders. DOI: [10.1016/j.rasd.2020.101568](https://doi.org/10.1016/j.rasd.2020.101568).

Autism & Autoimmunity

American, French and Swiss scientists found that patients with prior autoimmune disorders tend to take longer to recover from COVID-19 and are more vulnerable to Long-Haul COVID.

Dreyer, N. et al. (July 26, 2021). Autoimmune Diseases Recover More Slowly from COVID-19. International Journal of General Medicine. DOI: [10.2147/IJGM.S313486](https://doi.org/10.2147/IJGM.S313486).

Autism & Autoimmunity

Spanish scientists found that patients with systemic autoimmune disease are 5 times more likely to contract COVID-19 than the general public, but how COVID-19 affects them is largely determined by what their autoimmune disorder is.

Gracia, B.D.C. et al. (January 22, 2022). COVID GEAS: COVID-19 National Survey in Patients With Systemic Autoimmune Diseases. Frontiers in Medicine. DOI: [10.3389/fmed.2021.808608](https://doi.org/10.3389/fmed.2021.808608).

Autism & Autoimmunity

“If you have an autoimmune disorder, you are not more likely to get COVID-19. However, depending on the autoimmune disorder and the immunosuppressive medication you are taking, you may be more likely to get seriously ill from COVID-19.”

Author (February 17, 2022). Autoimmune Disorders and COVID-19. From website:
https://www.nm.org/conditions-and-care-areas/infectious-disease/covid-19-overview/high-risk-groups/autoimmune-disorders#tabs_accord.

Autism & Autoimmunity

Researchers from Iran found there could be an association between autoimmune diseases, multisystem inflammatory syndrome and COVID-19. Both autoimmune disorders and COVID-19 are due in large part to disruptions of the immune systems.

Hosseini, P. et al. (April 14, 2022). Multisystem Inflammatory Syndrome and Autoimmune Diseases Following COVID-19: Molecular Mechanisms and Therapeutic Opportunities. Frontiers in Molecular Biosciences. DOI: [10.3389/fmolb.2022.804109](https://doi.org/10.3389/fmolb.2022.804109).

How Much at Risk are Those with ASD

Researchers from Drexel University found that adults with ASD, intellectual impairment, and/or mental health disorders are 3 times more at risk for COVID-19 exposure and severe infection than neurotypicals. Adults with ASD often are not able to communicate their concerns and medical difficulties and medical staff do not know how to work with them. Those with ASD have extreme difficulty obtaining services. The people with ASD need to be helped to get services. They have had trouble adjusting to the pandemic and will have difficulty transitioning to a non-pandemic world.

Schott, W. et al. (August 2021). COVID-19 risk: Adult Medicaid beneficiaries with autism, intellectual disability, and mental health conditions. Autism. DOI: [10.1177/13623613211039662](https://doi.org/10.1177/13623613211039662).

Adult ASD, COVID Risk, and Vaccine Side-Effects

A large group of scientists from all over Europe investigated the adults with ASD and intellectual disability in two inpatient facilities in Italy. None of the patients were able to tolerate masking due to sensory sensitivities. The staff all wore masks and pandemic safety precautions were put in place. Contrary to popular theory those with ASD were not more at risk of contracting COVID than the staff. When the patients were vaccinated they tended to show less side-effects than the staff. The most common side-effect for the patients was a low grade fever.

Brondino, N. et al. (June 28, 2021). A Pilot Study on Covid and Autism: Prevalence, Clinical Presentation and Vaccine Side Effects. Brain Sciences. DOI: [10.3390/brainsci11070860](https://doi.org/10.3390/brainsci11070860).

Risk Hypothesis

“We therefore hypothesize that melatonin deficiency may predispose those ASD patients who have low melatonin output to COVID-19 disease.”

Brown, G.M. et al. (February 18, 2021). Autism Spectrum Disorder patients may be susceptible to COVID-19 disease due to deficiency in melatonin. Medical Hypotheses. DOI: [10.1016/j.mehy.2021.110544](https://doi.org/10.1016/j.mehy.2021.110544).

Cellular Similarities Between COVID-19 and ASD

Researchers from across Europe recently wrote, “Although COVID-19 and ASD differ in their aetiology and pathobiology, they share a single common feature: both are associated with the aberrant activation of the immune system and establishment of a pro-inflammatory environment. Growing evidence indicates the role of glial cells in both pathologies.”

Valenza, M. et al. (November 29, 2021). Systemic Inflammation and Astrocyte Reactivity in the Neuropsychiatric Sequelae of COVID-19: Focus on Autism Spectrum Disorders. Frontiers in Cellular Neuroscience. DOI: [10.3389/fncel.2021.748136](https://doi.org/10.3389/fncel.2021.748136).

ASD Risk of COVID-19

Researchers from Drexel University examined the Medicate Analytic eXtract data for adults with autism, intellectual disability, and/or mental disorders in those 20 to 64 years old. All these groups were determined to have significantly higher odds of contracting COVID-19 than the general population. This included having more severe COVID-19 infections. The reasons for this were multifaceted; higher chance of living in a group home, receiving help from caregivers outside the home, and more hospitalizations. They concluded medical professionals should be made aware of this so they could create mitigation systems.

Schott, W. et al. (August 21, 2021). COVID-19 risk: Adult Medicaid beneficiaries with autism, intellectual disability, and mental health conditions. Autism. DOI: [10.1177/13623613211039662](https://doi.org/10.1177/13623613211039662).

Being Hospitalized for COVID if you have ASD

Researchers from France reported on an inpatient facility with 16 people that have ASD (ages 12 to 43), that had been hospitalized due to significant disruptive changes in their behavior between March 2020 and mid-April 2020 during the pandemic. Most of the patients had severe ASD and intellectual disability. All were suspected to have contracted COVID-19 as well as needed psychiatric care. Eleven of them were tested positive for COVID-19. Their most common COVID symptoms were in order being upper respiratory infection, diarrhea, fatigue, and respiratory signs. One patient need oxygen therapy and 3 were asymptomatic. Five of the patients displayed atypical licking behaviors. The scientists created a special COVID ward for those with ASD after consulting with infectious disease experts. They concluded, “We believe that this initiative should be promoted to limit both the spread of the virus and the ostracism of patients with autism.”

Nollace, L. et al. (September 9, 2020). Autism and COVID-19: A Case Series in a Neurodevelopmental Unit. Journal of Clinical Medicine. DOI: [10.3390/jcm9092937](https://doi.org/10.3390/jcm9092937).

ASD, COVID-19 and Hospitalizations

A recent study by Autism Speaks in the US looked at the National Private Claims Insurance Database and found those with ASD and intellectual disability were 9 times more likely to be hospitalized due to COVID-19 infection than neurotypicals. It was also found those with ASD and other comorbidities had a higher likelihood of hospitalization and longer inpatient stays.

Karpur, A. et al. (May 26, 2022). Brief Report: Impact of COVID-19 in Individuals with Autism Spectrum Disorders: Analysis of a National Private Claims Insurance Database. Journal of Autism and Developmental Disorders. DOI: [10.1007/s10803-021-05100-x](https://doi.org/10.1007/s10803-021-05100-x).

ASD & COVID-19 Risk

Brazilian scientists stated, “ASD patients present several comorbidities that usually potentialize their inflammatory system. Even though there are blank spaces in COVID-19 physiopathology, we know that patients who manifest endogenous inflammation tend to present a worst prognostic.” They went on to suggest ASD along with the common comorbidities that go with it are risk factors to contracting COVID-19.

De Sousa Lima, M.E. et al. (November, 2020). Medical Hypothesis. DOI: [10.1016/j.mehy.2020.109899](https://doi.org/10.1016/j.mehy.2020.109899).

ASD, and COVID-19 Risks

“Autistic individuals in congregate and group settings, with co-occurring medical conditions are at higher risk for contracting COVID-19 and poor health outcomes...Emergency preparedness plans often overlook the needs of autistic individuals; for example, the use of the frailty scale to ration care, which unfairly disadvantages autistic individuals.”

Fernandes, P. et al. (April 1, 2022). Autism and COVID-19. Pediatrics, Supplement 4. DOI: [10.1542/peds.2020-0494370](https://doi.org/10.1542/peds.2020-0494370).

Autism, COVID-19, and Mortality

- A recent population study conducted in the US found that people with intellectual disabilities are far more likely to contract COVID-19, have more serious symptoms from it and die from it than neurotypicals. Such patients also tend to have significant comorbidities that also significantly increases morbidity and mortality.
- Approximately 40% of those with autism are non-verbal and one-third have intellectual disabilities.

Gleason, J. et al. (March 5, 2021). The Devastating Impact of Covid-19 on Individuals with Intellectual Disabilities in the United States. New England Journal of Medicine, Catalyst – Innovation in Care Delivery. From website: <https://catalyst.nejm.org/doi/full/10.1056/CAT.21.0051>.

Mastroianni, B. (March 24, 2021). What Is Autism? Symptoms, Causes, Diagnosis, Treatment, and Managing It. Everyday Health. From website: <https://www.everydayhealth.com/autism/>.

Pregnancy, COVID, and ASD

“Severe infections, though, particularly those that require hospitalization, have been linked to a slightly increased likelihood of having a child with autism or other psychiatric conditions. And although it’s new, severe COVID-19 has already been tied to an increased risk of certain pregnancy complications, including preterm birth, that are, in turn, associated with an increased chance of a child having autism.”

- **Pregnancy raises a woman’s risk of contracting COVID about 4%.**
- **As more time passes we will know more.**

Askham, A.V. et al. (March 2, 2022). As the pandemic wanes, will autism diagnoses rise in its wake? Spectrum. DOI: [10.53053/UNYJ4981](https://doi.org/10.53053/UNYJ4981).

Breakthrough COVID-19 Infections in Those With Autoimmune Disorders Whom are Vaccinated

“Findings from these studies suggest that blunted immune responses after SARS-CoV-2 vaccination in some patients with immune dysfunction may be associated with an increased risk for a breakthrough COVID-19 infection that can have severe and even fatal outcomes. These findings have implications for the health of immunocompromised patients because of the risk for a breakthrough infection. There is a range of immune dysfunction, and additional studies are needed to elucidate the complex associations of disease types, medications, and comorbidities with vaccine efficacy and disease severity.”

Kim, A.H.J et al. (December 28, 2021). COVID-19 Breakthrough Infection Among Immunocompromised Persons. Journal of the American Medical Association (JAMA), Internal Medicine. DOI: 10.1001/jamainternmed.2021.7033.

ASD and Vaccinations

2022 06 11

A Short History of Anti-Vaccine Movements

Ashton, J. (January 14, 2021). COVID-19 and the anti-vaxxers. Journal of the Royal Society of Medicine. DOI: [10.1177/0141076820986065](https://doi.org/10.1177/0141076820986065).

Andrew Wakefield, M.D., ASD and COVID-19

“Dr. Andrew Wakefield said he adhered to official guidelines in his research, which led to the publication of the 1998 Lancet paper. He said he wanted to treat and prevent autism after being approached by worried parents. The 51-year-old, who is now working in the US is accused of violating ethical guidelines, and of acting against the clinical interest of the children who took part in his trial. He is accused of acting dishonestly in failing to disclose to the Lancet that he was advising solicitors acting for the parents who had alleged their children had been damaged by MMR...” (p. 1 of 3).

Author (April 2, 2008). MMR Doctor Defends His Research. BBC News. From website: <http://newsvote.bbc.co.uk/mpapers/pagetools/print/news.bbc.uk/2/hi/health/7314144.stm>.

Timely Recent Summary of Anti-Vaccine Movement

Velasquez-Manoff, M. (May 27, 2022). The Anti-Vaccine Movement's New Frontier. The New York Times Magazine . From website:

https://www.nytimes.com/2022/05/25/magazine/anti-vaccine-movement.html?utm_source=pocket-newtab.

Parents' COVID-19 Vaccine Hesitancy for Children

- Parents who believed their children's ASD was caused by toxins in vaccines were 11.9 times more vaccine hesitant than parents whose child did not have ASD, but had developmental delays.
- Although vaccine rates for prior injections did not differ between groups.
- “This study suggests that there may be differences in vaccine hesitancy in parents of children with ASD compared with parents of children with non-ASD developmental delays.”
- It also stressed the importance of educating vaccine hesitant parents with the best information available.

Mensha-Bonsu, N.E., et al. (May 28, 2021). Understanding Vaccine Hesitancy Among Parents of Children with Autism Spectrum Disorder and Parents of Children with Non-Autism-Developmental Delays. Journal of Child Neurology. DOI: [10.1177/08830738211000505](https://doi.org/10.1177/08830738211000505).

Parents' Intentions to Have Their Children Vaccinated for COVID-19

American nursing researchers surveyed 322 parents of children on the autism spectrum and found that 35% planned to get their children vaccinated when the opportunity arrived. They found that negative vaccine side-effects and the parents personal vaccine status were not a determinate in their plans regarding their children, but trust in their pediatrician was very important. However, it was not sufficient to insure the children would be vaccinated. They suggested that medical professionals should present accurate in-depth data regarding how the vaccinations would effect children with neurodevelopmental disorders might raise the vaccination rates.

Choi, K. et al. (March-April, 2022). Parent intentions to vaccinate children with autism spectrum disorder against COVID-19. Journal of Pediatric Nursing. DOI: [10.1016/j.pedn.2021.11.019](https://doi.org/10.1016/j.pedn.2021.11.019).

Vaccine Acceptance and Hesitancy in Adults with Autism

Scientists from Pennsylvania sent self-report surveys to adult with autism in the state (n=431) inquiring about their thoughts and concerns about the pandemic. This was conducted between March 29 and July 26, 2021 with a reported response rate of 39% (N=168). Those respondents who stated they had at least on vaccination, or planned to receive a vaccination equaled 78.3%. Of those 55.4% said they had one injection. These numbers appeared to match the adult neurotypical population of the state. Adults with autism often reported they would take the vaccine to protect others and so they would not have to be isolated due to a shutdown. In those who reported they had no intention of getting vaccinated 73% stated they were concerned about vaccine safety and only 29.7% said they feared getting COVID.

Shea, L.L. et al. (April 22, 2022). Self-reported COVID-19 vaccination acceptance and hesitancy among autistic adults. Vaccine. DOI: [10.1016/j.vaccine.2022.04.060](https://doi.org/10.1016/j.vaccine.2022.04.060).

ASD Adults and COVID-19 Vaccinations

- **Take something to fidget with/headset/visual support.**
- **Have someone go with you to help complete paperwork and communicate.**
- **Drink plenty of water if you get a fever after the injection.**

Author (No Date). COVID-19 Vaccines: What You Should Know. Autism Speaks. From website:
<https://www.autismspeaks.org/sites/default/files/Vaccine%20Hesitancy%20Flyer%20-Community.pdf>.

ASD Adults and COVID-19 Vaccinations

- **Temporary mild side effects are common with the vaccine.**
- **The vaccine can help significantly reduce chances of serious illness, hospitalization and death.**
- **The vaccines are thoroughly tested and have many ingredients found in food.**

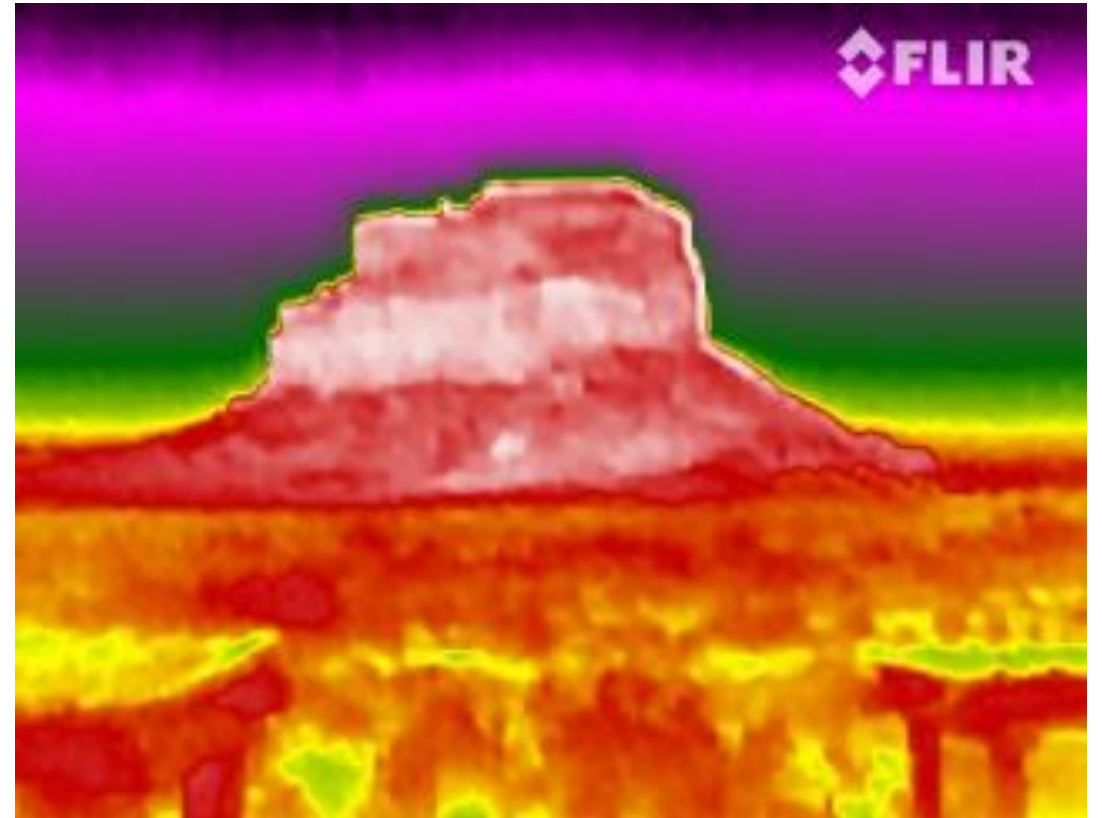
Author (No Date). COVID-19 Vaccines: What You Should Know. Autism Speaks. From website:
<https://www.autismspeaks.org/sites/default/files/Vaccine%20Hesitancy%20Flyer%20-Community.pdf>.

Adults with ASD Vaccination Rates

Israeli researchers conducted a population study of the vaccination rates among ASD adults in Israel. They found those adults with ASD between the ages of 16 and 40 were significantly more apt to be vaccinated than their neurotypical peers, but those above the age of 40 had rates similar to their non-ASD peers. The researchers concluded special efforts to encourage those with ASD and other vulnerabilities may increase vaccination rates in younger adults.

Weinstein, O. et al. (November 2021). COVID-19 vaccination among individuals with autism spectrum disorder: A population-based study. Research in Autism Spectrum Disorders. DOI: [10.1016/j.rasd.2021.101865](https://doi.org/10.1016/j.rasd.2021.101865).

Sensory Issues



Sensory Issues and ASD

Sensory Processing in Those with ASD:

British researchers reported results of a study that indicated that those children with ASD had significantly different audiovisual, auditory, and visual processing of social facial, and speech stimuli than typically developing children. Those with ASD have significantly less activation in the brain areas than neurotypicals processing such stimuli and in the frontal lobe when exposed to social stimuli.

--Regener et al. (May 13, 2016).

Researchers at the University of California Davis found that children without a disability, those with developmental disorders and those with autism spectrum disorder all tend to have sensory issues, particularly in the smell, taste and auditory senses when they are very young, but the typically developing children grow out of them. Those with developmental disorders and ASD often do not.

--McCormick et al. (September 22, 2015).

Tony Attwood Asks Temple Grandin a Question

TONY: “I’d like to ask you a technical question. If you had \$10 million for research and you were either going to create research in new areas, or support existing research, where would you spend that money?”

TEMPLE: “One of the areas I would spend it on is really figuring out what causes all the sensory problems. I realize it’s not the core deficit in autism, but it’s something that makes it extremely difficult for persons with autism to function” (p. 376).

--Grandin (2014).

How to get Someone on the Spectrum to Wear a Mask

- Wearing a mask can cause significant discomfort, fear and anxiety is someone with ASD.
- Tactile defensiveness to elastic, seams, tags, material, etc. may thwart mask wearing.
 - Try a variety of masks, until one that can be tolerated is found.
 - Think outside the box. Try a space helmet, i.e., MicroClimate Air 2 (<https://microclimate.com/>).
 - Start beginning to wear mask at home when it is not needed to get them used to the idea.
 - Start having them wear the mask when doing fun activities for a short time.

How to get Someone on the Spectrum to Wear a Mask

- **Wear some kind of mask is better than wearing nothing at all.**
 - **As they get used to where any kind of mask they may transition to a more secure one.**
 - **Try masks with their favorite interest on it.**

Ratto, A. (August 7, 2020). Helping kids with autism get used to wearing face masks. Rise and Shine; Children's National Hospital. From website: <https://riseandshine.childrensnational.org/helping-kids-with-autism-get-used-to-wearing-face-masks/>.

How to get Someone on the Spectrum to Wear a Mask

Investigators from New Zealand and Belgium demonstrated that graduated exposure and shaping conducted virtually with children on the spectrum can teach them to wear a mask for ten minutes without difficulty. Once they were able to tolerate the mask for ten minutes they were able to generalize the behavior to different environments and longer times. Tests indicated that while wearing the masks the children received sufficient oxygen.

Sivaraman, M. et al. (November 25, 2020). Telehealth mask wearing training for children with autism during the COVID-19 pandemic. Journal of Applied Behavioral Analysis. DOI: <https://doi.org/10.1002/jaba.802>.

ASD & Nose Swabbing

The University of North Carolina suggested the following to help a person on the spectrum get a PCR test:

1. While scheduling the appointment find out the exact procedure.
 - a. Write down the procedure in a step by step and create a social narrative.
 - b. Add pictures to help illustrate the process.
 1. Wear mask; Wait with “iPad”; Doctor; Nose swab; Wash hands; McDonalds
2. Match the narrative to the person’s level of understanding.
 - a. Use as few words as possible.
 - b. Perhaps create a pamphlet with a different step on every page.
3. Give them a distraction to do while getting swabbed (i.e., video, squeeze ball, relaxation exercise etc.).
4. Give them a visual countdown of the time remaining of the swabbing.

Author (2022). TEACCH Tip#17 – Preparing an individual with autism for COVID-19 testing. TEACCH Autism Program. From website: https://teacch.com/resources/teacch-tips/17_covid_testing_prep/.

Hand Washing

- Autism Speaks - What should the autism community know about the coronavirus outbreak?: <https://www.autismspeaks.org/science-news/what-should-autism-community-know-about-coronavirus-outbreak>
- Autism Speaks – Everyone gets sick sometimes:
https://www.autismspeaks.org/sites/default/files/flu_teaching_story_final%20%281%29.pdf
- Carol Gray Social Stories – COVID-19 How Can I Help?:
<https://carolgraysocialstories.com/wp-content/uploads/2020/03/COVID-19-I-Can-Help.pdf>
- With Sensory Processing Disorder (SPD):
<https://sensoryprocessingdisorderparentsupport.com/>
- Hand washing, tooth brushing, bathing and SPD:
<https://sensoryprocessingdisorderparentsupport.com/hygiene-ideas-for-sensory-processing-disorder.php>

Hyperacusis

“Hyperacusis is a rare hearing disorder that causes sounds which would otherwise seem normal to most people to sound unbearably loud. People who suffer from hyperacusis may even find normal environmental sounds to be too loud.”

- One in 50,000 will have hyperacusis**
- One in 1,000 people with hyperacusis will have tinnitus**

Goodson, S. and Hull, R.H. (2015). Hyperacusis. American Speech-Hearing Language Association: Rockville, MD. From website: <https://www.asha.org/siteassets/ais/ais-hyperacusis.pdf>.

Hyperacusis

Causes

- Bell's palsy
- Chronic fatigue syndrome
- Lyme disease
- Meniere's disease
- Posttraumatic stress disorder
- Depression
- Autism

Treatments

The same diagnostic techniques and treatment techniques as with tinnitus, with the exception of sound suppression.

Goodson, S. and Hull, R.H. (2015). Hyperacusis. American Speech-Hearing Language Association: Rockville, MD. From website:
<https://www.asha.org/siteassets/ais/ais-hyperacusis.pdf>.

Types of Hyperacusis

- **Phonophobia: Abnormal and persistent fear of sound**
- **Misohonia: Individually unique strong dislike of certain sounds**
- **Decreased Sound Tolerance (Super Hearing): Avoidance of sound**

Coelho, C. et al. (no date). Tinnitus and Hyperacusis. (Practice Portal). Retrieved month, day, year, from www.asha.org/Practice-Portal/Clinical-Topics/Tinnitus-and-Hyperacusis/.

Percentage of Hyperacusis and/or Tinnitus Among the Population of Those with ASD

- Researchers from Vanderbilt wrote, “In this meta-analysis, we found a high prevalence of current and lifetime hyperacusis in individuals with ASD, with a majority of individuals on the autism spectrum experiencing hyperacusis at some point in their lives.”

Williams, Z.J. et al. (February, 2021). Prevalence of Decreased Sound Tolerance (Hyperacusis) in Individuals With Autism Spectrum Disorder: A Meta-Analysis. Ear and Hearing. DOI: [10.1097/AUD.0000000000001005](https://doi.org/10.1097/AUD.0000000000001005).

- Other researchers from the US found that 69% of those with ASD reported experiencing hyperacusis, 35% reported tinnitus, and 31% reported hyperacusis and tinnitus.

Demesh, A.A. et al. (July 26, 2015). Tinnitus and hyperacusis in autism spectrum disorders with emphasis on high functioning individuals diagnosed with Asperger's Syndrome. International Journal of Pediatric Otorhinolaryngology. DOI: [10.1016/j.ijporl.2015.07.024](https://doi.org/10.1016/j.ijporl.2015.07.024).

Long-Haul COVID and Tinnitus

The following are the percentages of people with Long-Haul COVID that suffer hearing loss and/or tinnitus:

- **Hearing loss (7.6%)**
- **Tinnitus (14.8%)**
- **Pre-existing Tinnitus can become significantly worse**

Almufarrij, I. et al. (March 22, 2021). One year on: an updated systematic review of SARS-CoV-2, COVID-19 and audio-vestibular symptoms. International Journal of Audiology. DOI: [10.1080/14992027.2021.1896793](https://doi.org/10.1080/14992027.2021.1896793) .



Founder of Texas Roadhouse Commits Suicide Due to Post COVID Tinnitus

Kent Taylor, founder and CEO of Texas Roadhouse restaurant chain committed suicide on March 18, 2021 due to unbearable symptoms of tinnitus caused by Post-COVID Syndrome.

Treisman, R. (March 22, 2021). Coronavirus Updates: Texas Roadhouse Founder Kent Taylor Dies After Struggle With 'Post-COVID' Symptoms. National Public Radio. From website: <https://www.npr.org/sections/coronavirus-live-updates/2021/03/22/979929592/texas-roadhouse-founder-kent-taylor-dies-after-struggle-with-post-covid-19-sympt>.

Psychiatric Comorbidity, ASD, COVID, & Lockdown



2022 06 15

ASD and Comorbidity

- **Epilepsy: Up to 46%; 22% develop after age 10; General Population 1.2%**

--Volkmar et al. (2019). CDC (January 25, 2019).

- **Anxiety Disorders: 50 to 80%; 42%; General Population: 6-10%.**

--Durand, M. (2014); Autism Speaks (No Date); CDC (April 19, 2019).

- **Obsessive Compulsive Disorder: 17.4% ; General Population: 1.2%**

--Postorino et al. (October 30, 2018); National Institute of Mental Health (a) (November 2017).

- **Depressive Disorders: 25-34%; 7 to 26%; General Population: 2-6%**

--Durand, M. (2014); Autism Speaks (No Date); CDC (April 19, 2019).

- **Bipolar Disorder: 6 to 21.4%; General Population: 4.4%**

--Autism Speaks (2017); National Center of Mental Health (b) (November, 2017).

- **Schizophrenia: 1.5%; General Population: General Population: 0.25 to 0.64%**

--Baio (March 28, 2014); National Institute of Mental Health (May, 2018).

- **Sleep Disorders: 50 to 80%; General Population: 19 to 30%**

--Durand, M. (2014); Devnani et al. (October/November, 2015); Calhoun et al. (January, 2015).

Comorbidity: ASD & AD/HD

➤ General Population 6.1%

- 26% of Children with PDD-NOS, or ASD have comorbid Combined Type AD/HD
- 33% of Children with PDD-NOS, or ASD have comorbid Inattentive AD/HD
- 59% of Children with PDD-NOS, or ASD have some type of AD/HD

--Centers for Disease Control and Prevention (October 15, 2019); Sam Goldstein and Jack A. Naglieri (2011).

➤ British population study of AD/HD+ASD adults

- The higher the inattention scores the more social and communication difficulties.
- Conclusion: AD/HD and ASD may have “somewhat” common etiology.

--Panagiotidi, M., et al. (August 11, 2017).

Comorbidity

➤ **Specific Learning Disorder/Dyslexia: 6 to 30%; General Population: 17 to 20%**
--Hendern et al. (March 27, 2018); Lyon (1998).

➤ **Hyperlexia: 9 to 20%**
--Ostrolenk et al. (August 2017)

➤ **Developmental Coordination Disorder: 25%; General Population: 1.8%**
--Kopp et al. (March/April, 2010); Lingam et al. (April, 2009).

➤ **Tic Disorders: 22%; General Population: 2.99%**

--Cantitano et al. (January 2007); Knight (August, 2012).

➤ **Tourette's Disorder: 35%; General Population: 0.06%**

--Centers for Disease Control and Prevention (July 18, 2019).

Comorbidity

- **Gastrointestinal Problems: 42%; ASD 3X > General Population**

--Durand, M. (2014); Chaidez et al. (May, 2015).

- **Microbiome: 22.7%**

--Nikolov et al. (2009).

- **Constipation problems: 15%; General Population: 3.5%**
 - **Diarrhea: 13%; General Population: 1.6%**
 - **Gastroesophageal Reflux Disease (GERD): 2.9%; General Population: 0.3%**
- Chaidez, et al. (May 1, 2015).

- **Mitochondrial Disease: 5.0 to 30%; In General Population: < .01%**

--Cheng et al. (February 21, 2017)

- **Eating Problems: 36%**

--Romero et al. (2016).

- **Food Sensitivities: 31%; General Population: 4.5%**
- Chaidez, V. et al. (May 1, 2015).
- **Overeating/Obesity: 32%; General Population 23%**
- Autism Speaks (No Date)
- **PICA: 23.2%; General Population: 3.6%**
- Fields et al. (May, 2019)

Depression and Anxiety with COVID-19

A recent observational study out of Iceland and Great Britton indicated that acute COVID-19 patients who were bedridden for 7 or more days, 22.3% of COVID-19 patients showed significantly higher symptoms of depression and anxiety than those who were not bed ridden. This lasted up to 16 months after the acute COVID-19 phase.

Magnúsdóttir, I. et al. (March 14, 2022). Acute COVID-19 severity and mental health morbidity trajectories in patient populations of six nations: an observational study. The Lancet. DOI: [10.1016/S2468-2667\(22\)00042-1](https://doi.org/10.1016/S2468-2667(22)00042-1).

AD/HD Caused by COVID-19?

- **Joel Nigg (April 14, 2021) reported James Swanson (April 8, 2021) stated at the biennial meetings of the Society for Research in Child Development that records of the 1918 Flu Pandemic indicated a high prevalence of neuro-inflammation in those infected and that may have led to a significant increase in children labeled as “hyperkinetic”. He urged watching for the same “syndrome” (Acquired AD/HD?) during the current pandemic.**

Nigg, J. (April 14, 2021). Mental Health, ADHD, COVID-19. In General News (Newsletter). From website: <https://joelniggphd.com/mental-health-adhd-covid-19/>.

Swanson, J. (April 8, 2021). What is the history of the evolving concept of ADHD? In the symposium, Conceptual and methodological challenges in ADHD research: Understanding risk factors and optimizing outcomes (Chair, J Cotton). Presented at the biennial meetings of the Society for Research in Child Development.

Post-Encephalitic ADHD?

Levy, S. (June, 1959). Post-Encephalitic Behavior Disorder – A Forgotten Entity: A Report of 100 Cases. American Journal of Psychiatry, 115(12), 1062-1067.

From website:

<http://ajp.psychiatryonline.org/doi/abs/10.1176/ajp.115.12.1062>.

Does “COVID Fog” = “Acquired AD/HD”?

Russell Barkley (No Date) stated:

- **He believes it may be possible for a “blip” in the prevalence of ADHD due to COVID-19.**
- **He does not believe the Post COVID-19 “virus fog” has symptomatology like AD/HD.**
 - **COVID Fog: Is difficulty, ...with the power of your attention...given your alertness.”**
 - **AD/HD: “...is a disorder of sustaining attention to especially boring tasks over time.” it is not a problem with attention.**
 - **COVID Fog may start to look like Sluggish Cognitive Temp (SCT) over time.**

Author (No Date). HCP Live. From website: <https://www.hcplive.com/view/adhd-focus-concerns-covid-19-infection>.

“Mild” Acute COVID Infection Brain Changes

British researchers reported of conducting Pre and Post Brain MRI images and neuropsychological tests of 401 patients who tested positive for acute COVID after the first scan. On average there were 141 days between examinations. There were 384 controls.

Hospitalized patients were not included. The COVID cases included were considered “Mild.” Patients Post-COVID were found as group to have lost significant gray matter thickness in the parahippocampal gyrus and the orbitofrontal cortex, damage to the olfactory cortex, and significant reduction in total brain size (.03%) as well as a significant cognitive decline (Trails A & B). This was also true when compared to controls. It is not known if these changes can be reversed with treatment, and/or time.

Douaud, G. et al. (March 7, 2022). SARS CoV-2 is Associated with Changes in Brain Structure in UK Biobank. Nature. DOI: [10.1038/s41586-022-04569-5](https://doi.org/10.1038/s41586-022-04569-5).

Long-Haul Cognitive Problems after Acute COVID-19

A study conducted in New York state found 27% of post-COVID patients whom had sought help for cognitive difficulties 6 to 8 months after infection had extremely low neuropsychological test battery scores (1 percentile) and significantly lower scores than the comparison group. The patient group had extremely low scores on attention, processing speed, memory, and executive function. Those with the most significant acute COVID symptoms had the worst cognitive difficulties medical comorbidities, depression, subjective and functional cognitive complaints. They also had very high inflammatory markers.

Ferrando, S.J. et al. (January 25, 2022). Neuropsychological, Medical, and Psychiatric Findings After Recovery From Acute COVID-19: A Cross-sectional Study. Journal of the Academy of Consultation-Liaison Psychiatry. DOI: [10.1016/j.jaclp.2022.01.003](https://doi.org/10.1016/j.jaclp.2022.01.003).

Could Long-Haul COVID-19 Cause An ADHD-Like Syndrome

Possibly. Especially after looking at the last slides.

Blake, K.T. (2022).

ASD and COVID-19 Phobia

Recently an undiagnosed 8 year old boy with ASD from Japan developed a “COVID-19 phobia” and a fear of contracting the virus from food. He eventually refused to eat and not even swallow his own saliva. At the time he had life threatening dehydration. While in the hospital he was given a psychiatric evaluation and found to be autistic. The doctors provided the child therapy and his parents psychoeducation about ASD. The physicians suggested that people who have extreme COVID-19 phobias often be undiagnosed people with ASD. They suggested in such situations the person should be screened for ASD, and if found to be ASD the ASD should be treated first then the anxiety disorder.

Shoko, S. et al. (June 4, 2021). COVID-19 phobia in a boy with undiagnosed autism spectrum disorder. Medicine. DOI: [10.1097/MD.00000000000026233](https://doi.org/10.1097/MD.00000000000026233).

Psychiatric Comorbidity in ASD Children Due to Pandemic

- Researchers from Johns Hopkins found after examining 275 parents and their children with ASD that almost 60% of the children experienced a significant increase in psychiatric symptoms two months into the pandemic.
- Forty-Five percent experienced an exacerbation of symptoms and 50% percent experienced new symptoms.
- Disruptive behavior and sleep disturbances increased, too as well as anxiety disorders and irritability.
- They stressed the need for mental health access for this population during the pandemic.

Vasa, R.A. et al. (July 7, 2021). Psychiatric problems during the COVID-19 pandemic in children with autism spectrum disorder. Autism Research. DOI: [10.1002/aur.2574](https://doi.org/10.1002/aur.2574).

Children with ASD Mental Health During The Pandemic

Canadian scientists interviewed and assessed 265 parents of children and adolescents with ASD and found that two-thirds of the offspring suffered from mental health deterioration during the pandemic. A small subset of the children experienced improved mental health. Children with internalizing symptoms prior to the pandemic were particularly at risk of deterioration as were children whose parents suffered significant stress during the pandemic.

Charalampopoulou, M. et al. (May 5, 2022). Mental health profiles of autistic children and youth during the COVID-19 pandemic. Paediatrics & Child Health. DOI: [10.1093/pch/pxab111](https://doi.org/10.1093/pch/pxab111).

ASD Children and the Pandemic

A Turkish study of 87 children with ASD (72 male, 15 female; average age 13.96) found that most of them did not comprehend what COVID-19 was, had significant problems with COVID hygiene, difficulty understanding social distancing and comprehending isolating. Additionally, the children experienced significant exacerbation of, “...aberrant behaviors, sleep schedules, and associated problems of aggression, hypersensitivity, tics, appetite, and self-injury.” Parents reported their children displayed significantly more inappropriate speech, communication deterioration, stereotypic behaviors, social withdrawal, hyperactivity, self-injury, and sleep disturbance. The researchers believed this demonstrated the children were experiencing PTSD for the pandemic. Their parents’ level of anxiety was also significantly heightened by the pandemic.

Mutluer, T. et al. (November 16, 2020). Behavioral Implications of the Covid-19 Process for Autism Spectrum Disorder, and Individuals' Comprehension of and Reactions to the Pandemic Conditions. Frontiers in Psychiatry. DOI: [10.3389/fpsy.2020.561882](https://doi.org/10.3389/fpsy.2020.561882).

Pandemic Stress Levels ASD Children Vs. Neurotypical Children

Researchers from Vanderbilt found that the levels of stress experienced by 61 children with ASD was significantly higher than 61 match controls as a result of the pandemic. The levels of stress experienced by the parents of the ASD children was also higher than parents of the neurotypicals. They found children used avoidance to “cope” with new stressors and the neurotypicals tended to use active and cognitive coping strategies to change. The scientists were concerned about the long term effects of the avoidance strategies the children with ASD used.

Corbett, B.A. et al.(April 29, 2021). The impact of COVID-19 on stress, anxiety, and coping in youth with and without autism and their parents. Autism Research. DOI: <https://doi.org/10.1002/aur.2521>.

Affect of Lockdown on Children with ASD

Italian scientists surveyed the families 63 with ASD children and learned that during the first month of the lockdown 30% of the children exhibited significantly more restricted or repetitive behaviors, motor restlessness, sleep problems and irritable mood. Conversely, there was no change in self-care, sensory sensitivities, or aggression. They suggested significantly more community support and counseling of the parents of the children, even if it was online.

Renzo, M.D. et al. (September 16, 2020). Parent-Reported Behavioural Changes in Children With Autism Spectrum Disorder During the COVID-19 Lockdown in Italy. Community in Education. DOI: [10.5334/cie.20](https://doi.org/10.5334/cie.20).

Communication Maintenance During Lockdowns

British scientists found that children with ASD communication did not change during the pandemic lockdowns. They speculated that since parents were forced to work from home they had more interactions with their children and this served to maintain their social communication skills. Parents who reported better communications skills outcomes with their children also reported they had better support for the schools during the lockdown. Those children who maintained virtual contact with friends and classmates did better, too. The majority of parents reported a deterioration of cooperative skills and self-regulation skills in their ASD children during the shutdown, however.

Morris P.O. et al.(May 28, 2021). Parent-reported social-communication changes in children diagnosed with autism spectrum disorder during the COVID-19 pandemic in the UK. International Journal of Developmental Disabilities. DOI: [10.1080/20473869.2021.1936870](https://doi.org/10.1080/20473869.2021.1936870).

ASD Reaction to Pandemic Lockdown

Spanish scientist learned that children and adults with ASD experienced a significant reduction in distress during the social distancing lockdown while parents and caregivers experienced significantly more distress. There was also a significant reduction in ASD population symptoms in those with ASD during lockdown. Feeding quality improved across age groups. ASD adults showed significantly higher rates of obsessive-compulsiveness, anxiety and somatization, however. ASD adults reported a reduction of distress after lockdown and the same was observed in the other age groups.

Lugo-Martin, J. et al. (May 21, 2021). COVID-19 pandemic effects in people with Autism Spectrum Disorder and their caregivers: Evaluation of social distancing and lockdown impact on mental health and general status. Research in Autism Spectrum Disorders. DOI: [10.1016/j.rasd.2021.101757](https://doi.org/10.1016/j.rasd.2021.101757).

COVID, Depression, Anxiety, ASD Teens

Researchers found that autistic teens had significantly more anxiety and depression than other teens in special education from February 2020 to October 2020. In a second 6 month follow-up they found teens with ASD continued to have significant worry, but other teens in special education experienced a significant reduction in emotional concerns. They also found that there was a significant reduction in wellbeing concerns when the requirement to physically attend school was removed from a large subgroup of ASD teens and their parents.

Asbury, K. et al. (May 18, 2022). A Longitudinal Study of the Mental Health of Children and Adolescents with Autism and their Parents during COVID-19 : Part 2, Qualitative Findings. Autism. From website: <https://eprints.whiterose.ac.uk/184132/>.

Suicide Risk, and Mental Health of Adults with ASD during the Pandemic

Australian researchers examined 111 adults with ASD (ages 20-70; 58% female, 32% male, 9% non-binary) regarding the affect the pandemic was having on their mental health and suicide risk. They found, as a whole they experienced and increase in depressive symptoms, and a decrease in wellbeing (changes in, “...routines, family income/employment, food access, medical health care access, mental health treatment access, access to extended family and non-family social supports, stress, and family discord.”) However, they did not experience a significant increase in suicidality.

Hedley, D. et al. (September 21, 2021). The association between COVID-19, personal wellbeing, depression, and suicide risk factors in Australian autistic adults. Autism Research. DOI: [10.1002/aur.2614](https://doi.org/10.1002/aur.2614).

Mental Health Affects from Pandemic on Adults with ASD

Investigators from Belgium collected qualitative and quantitative survey data from 1044 adults with ASD in Belgium, the Netherlands, and England. There was a neurotypical control group. They found, although both groups experienced an increase in anxiety but, the symptoms were significantly higher in those with ASD. Those with ASD worried about their pets, safety and security, work, pharmaceuticals and food. They also said the stress of social interaction and sensory sensitivity had lessened significantly due to their isolation due to the pandemic. Finally, they indicated the amount of ASD specific guidance had gone down significantly during the pandemic. This caused them concern.

Oomen, D. (February 12, 2021). The psychological impact of the COVID-19 pandemic on adults with autism: a survey study across three countries. Molecular Autism. DOI: [10.1186/s13229-021-00424-y](https://doi.org/10.1186/s13229-021-00424-y).

Pre- and During Pandemic Distress in Adults with ASD

American scientists followed 275 (ages 18-35) adults with ASD from prior to the pandemic to ten weeks into the COVID-19 pandemic. Two-thirds reported they were suffering significant distress during the pandemic. Anxiety and depressive symptoms were no different from pre-pandemic and during pandemic measures, on average. However, those with higher COVID related distress during the pandemic had more depressive and anxious symptoms prior to the pandemic. Additionally, women who reported higher anxiety pre-pandemic reported more COVID related distress during the pandemic.

Adams, A. E. et al. (April 12, 2021). Ten weeks in: COVID-19-related distress in adults with autism spectrum disorder. Autism. DOI: [10.1177/13623613211005919](https://doi.org/10.1177/13623613211005919).

How the Pandemic Affected Adults with ASD in Great Britton

British investigators surveyed a large group of adults with ASD just prior to the pandemic and 10 to 15 weeks after the first shutdown. They found there was a sizable subgroup that experienced a worsening of their anxiety, depression, and stress. Most, however, reported less stress due to lessened social interaction. Those who did better with the shut down were those who experienced the least change in routines and had good social support. Those who lost jobs and/or were having trouble getting food, dealing with sensory sensitivities, etc. had the most. Suggestions were given to help those with ASD navigate the shutdown by providing telehealth coaching and priority mental and medical health support.

Bundy, R. et al. (January 27, 2022). The impact of early stages of COVID-19 on the mental health of autistic adults in the United Kingdom: A longitudinal mixed-methods study. Autism. DOI: [10.1177/13623613211065543](https://doi.org/10.1177/13623613211065543).

Job Loss During Pandemic by ASD Adults

American investigators found that adults with ASD suffered significant job loss, reduction, and/or change during the first 10 weeks of the pandemic. On the surface they did not appear to experience the same amount of job loss compared to the neurotypical population (26% to 36%), however, considering prior to the pandemic the unemployment rate among those with ASD was 50%, there is a significantly higher rate of unemployment among the ASD than the neurotypicals. They suggested the depression and mental health concerns as well as social services help should be stressed for the ASD during the pandemic.

Lounds Taylor, J. et al. (October 9, 2021). Job loss predicts worsening depressive symptoms for young adults with autism: A COVID-19 natural experiment. Autism Research. DOI: [10.1002/aur.2621](https://doi.org/10.1002/aur.2621).

Employment After COVID-19



2020 08 18

Helpful Websites for Those With ASD Who Have Employment Concerns During COVID-19

➤ U.S. Department of Labor Blog:

- Employment Resources for People on the Autism Spectrum
- Especially during the COVID-19 Pandemic:
- Robinson, S.M. (April 22, 2020). From website:
 - <https://blog.dol.gov/2020/04/22/employment-resources-for-people-on-the-autism-spectrum>.

➤ Other helpful websites:

- Job Accommodations Network (Jan) website: <https://askjan.org/>
- JAN Autism: <https://askjan.org/disabilities/Autism-Spectrum.cfm>
- JAN COVID-19 job accommodations for those with disabilities: <https://askjan.org/topics/COVID-19.cfm>

Helpful Websites for Those With ASD Who Have Employment Concerns During COVID-19

- **The Employer Assistance and Resource Network on Disability Inclusion (EARN):** <https://askearn.org/>
 - **EARN – Neurodiversity in the Workplace:** <https://askearn.org/page/neurodiversity-in-the-workplace>
 - **EARN-Return to work for those with mental health disabilities and who have had COVID-19 for Employers:** <https://askearn.org/page/mental-health-toolkit>
- **U.S. Department of Labor COVID-19 Resources:** <https://www.dol.gov/coronavirus>

What The Employee Needs to do with Acute COVID

- In acute COVID stage stay home from work and isolate (Follow CDC guidelines for isolation time)
- Contact boss and/or HR and tell them you have COVID and/or have been exposed and ask if you need a medical note.
- Rest until you feel good again. Remember, some Post COVID symptoms can arise after the acute phase.
- Keep in contact with boss/HR to inform them of your health and learn about their requirements to return to work.
- Keep in close contact with your physician regarding your symptoms and release them to speak to boss/HR if needed.

Suggestions for Employers

- **Keep in regular contact with your ill employee.**
 - **Ask if they need help.**
 - **Tell them what is happening at work – helps them keep track of their coworkers and the work routine- helps with morale at work and for sick employee.**
 - **Ask employee if there is something you can do that will help them return to work.**
 - **Can the business help them gain access to treatments, help, etc.**
 - **Employers need to know someone can have full blown COVID with a negative test and they can infect others.**

What The Employee Should Do When Contemplating Returning to Work

- **Get clearance from your physician.**
- **Ask for a referral to an Occupational Health Center (Most large hospitals have these). Your boss may make the referral for you.**
 - **This will help determine if you are fit enough for work even though you have no COVID symptoms at the time.**
 - **It will help the employer know it is safe for your to return to work and it will help insure your coworkers you are no longer infectious.**
- **Contact your boss to discuss the process to return to work.**
 - **Make sure you have a work review shortly after returning to work.**
 - **Make sure you can ease back into work and will not be put under immediate pressure.**
 - **HR and unions can help with this.**

What The Employee Should Do When Contemplating Returning to Work

- **Make sure if you have any health restrictions that accommodations can be made.**
 - **Make suggestions based on your knowledge of the job and your current health condition.**
 - **Ask for, if need, a phased return to work.**
 - **An Occupational Health Physician can help with this.**
 - **Will you need new training to return to work? COVID safety training?**
 - **Discuss “reasonable accommodations” under the ADDAA.**
 - **Both sides should acknowledge that temporary accommodations could become permanent.**

Rayner, C. (2021). COVID-19 Return To Work Guide. The Society of Occupational Medicine, Scotland. From website: <https://www.mountsinai.org/files/MSHealth/Assets/HS/Locations/Abilities-Research-Center/COVID-19-return-to-work-guide-for-recovering-workers.pdf> .

Work Accommodations Resources

- **Job Accommodations Network (JAN) (Part of the Department of Labor):**
 - <https://askjan.org/>.
- **Occupational Health and Safety Administration (OSHA) (Part of the Department of Labor):**
 - <https://www.osha.gov/coronavirus/faqs#return-to-work>
- **OSHA Employers' Emergency Temporary Standards for COVID-19:**
 - <https://www.osha.gov/coronavirus/faqs#return-to-work>

Elder Law Attorneys

- **Attorneys who are members of the National Academy of Elder Law Attorneys (NAELA).**
 - Experts in estate, trust, guardianship and disability law
 - Help with “alternative decision making” documents and plans
 - Finding recourses to finance care
 - Finding and monitoring quality care for disabled/elder person
 - National Academy of Elder Care Attorneys (NAELA):
<https://www.naela.org/>

Author (2021). Consumer Resources. National Academy of Elder Care Attorneys. From website:
https://www.naela.org/ImportTemp/Consumer_Resources_Landing_New.aspx?hkey=1e07503a-588d-4e61-98c0-a975d05fb4a6.

Social Security and COVID-19

- “Yes, long COVID can be a disability under the ADA, Section 504, and Section 1557 if it substantially limits one or more major life activities.”

Author (July 26, 2021). Guidance on “Long COVID” as a Disability Under the ADA, Section 504, and Section 1557. U.S. Department of Health and Human Services, Office of Civil Rights. From website: <https://www.hhs.gov/civil-rights/for-providers/civil-rights-covid19/guidance-long-covid-disability/index.html>.

- National Disability Rights Network: www.ndrn.org
- Disabilities Rights Law Association: <http://disabilityrights-law.org/>
- National Association of Disability Representatives: www.nadr.org
- The National Organization of Social Security Claimants' Representatives: <https://nossocr.org/>



A Few Words About Long-Haul COVID-19

2020 08 03

When is Long-Haul COVID Diagnosed?

- **“Therefore reported symptoms consistent with previous Acute Covid infection and associated ongoing symptoms is enough to consider a diagnosis of long covid once other conditions have been excluded, even in the absence of a positive PCR test” (p. 7).**
- **Symptoms of COVID that persist 12 weeks or more after Acute COVID.**

Chaudhry, A. et al. (September 2021). Long COVID: Learning Over The Last Year From Those with Lingering Symptoms. British International Doctors Association, 27(3). From website: <https://www.mountsinai.org/files/MSHealth/Assets/HS/Locations/Abilities-Research-Center/BJ-Sept2021-LongCovid.pdf>.

When is Long-Haul COVID Diagnosed?

- Symptoms can involve any system of the body and can change over time.
- Must rule out alternative causes. Can consider diagnosis prior to 12 weeks.

Chaudhry, A. et al. (September 2021). Long COVID: Learning Over The Last Year From Those with Lingering Symptoms. British International Doctors Association, 27(3). From website: <https://www.mountsinai.org/files/MSHealth/Assets/HS/Locations/Abilities-Research-Center/BJ-Sept2021-LongCovid.pdf>.

Long-Haul COVID Warning Signs

- In children evidence of Multisystem Inflammatory Syndrome (MIS)
- Suicidal ideation and Severe Psychiatric Symptoms
- Unexplained Chest Pain
- Recent low blood oxygen levels(< 94%), at rest and/or while exercising
- Confusion, weakness, dysphasia/new neurological problems
- Severe syncope/dizziness
- Heart palpitations or tachycardia at rest

Chaudhry, A. et al. (September 2021). Long COVID: Learning Over The Last Year From Those with Lingering Symptoms. British International Doctors Association, 27(3). From website:
<https://www.mountsinai.org/files/MSHealth/Assets/HS/Locations/Abilities-Research-Center/BJ-Sept2021-LongCovid.pdf>.

- **Difficulty breathing or shortness of breath**
- **Tiredness or fatigue**
- **Symptoms that get worse after physical or mental activities**
- **Difficulty thinking or concentrating (sometimes referred to as “brain fog”)**
- **Cough**
- **Chest or stomach pain**
- **Headache**
- **Fast-beating or pounding heart (also known as heart palpitations)**
- **Joint or muscle pain**
- **Pins-and-needles feeling**
- **Diarrhea**
- **Sleep problems**
- **Fever**

Common Post-COVID-19 Conditions

- **Diarrhea**
- **Sleep problems**
- **Fever**
- **Dizziness on standing (lightheadedness)**
- **Rash**
- **Mood changes**
- **Change in smell or taste**
- **Changes in period cycles**
- **After 12 months serious Cardiovascular concerns**

Author (July 12, 2021). COVID-19: Long-Term Effects. Centers for Disease Control and Prevention. From website: <https://www.cdc.gov/coronavirus/2019-ncov/long-term-effects.html>.

Yan, X. et al. (February 7, 2022). Long-term cardiovascular outcomes of COVID-19. Nature Medicine. DOI: 10.1038/s41591-022-01689-3.

Long-Haul COVID Medical Clinics

- **Several large hospitals in the United States offer Long-Haul COVID Clinics.**
- **These offer multidisciplinary treatment and medical experts in every body system as well as mental health, social work and pharmacological experts.**
- **They also keep up with the latest in identifying and treating Long-Haul COVID.**
- **They use a holistic approach with physical and occupational therapy as well as individual and group therapy.**

Author (2021). Center for Post-COVID Care. Mount Sinai Hospital, New York, NY. From website: <https://www.mountsinai.org/about/covid19/center-post-covid-care>.

Where to Find Such Clinics Where You Are

➤ **SURVIVOR CORPS:**
<https://www.survivorcorps.com>

Family/Caregiver Health and Insights

2021 03 20

Review of Family and Children with ASD Findings During Lockdown

Spanish researchers reviewed the literature related to children and teens on the spectrum as well as their caregivers regarding how the pandemic lockdowns have effected them. They found the studies tended to break down into three types: (1) confinement and reduction of activity and the emotional overlay affect on the child with ASD; (2) studies on families with children on the spectrum and the emotional impact on all concerned during lockdowns; and, (3) studies that analyzed the effects of lockdown and confinement of those with ASD. The first group found that those with ASD were involved in significantly less physical activity, and more screen time. All the second group of studies indicated parents of ASD children stress increased during the pandemic in general and particularly during lockdown. They expressed fear of contagion and the pandemic...

Review of Family and Children with ASD

Findings During Lockdown

...work-life imbalances, economic concerns (i.e., job loss), and the addition of potential “new” responsibilities related to their ASD child’s routines. Often they found telehealth and educational services helpful. Regarding how the child with ASD was emotionally affected by shutdowns, in some it increased their distress, and in others it decreased it. The older the child the more the distress. The more impaired the child and more help they need the more distress. The higher the family support of the child and the higher the level of self-help skills learned prior to the pandemic the lower the distress of the child. Some children liked the social isolation because it reduced the stress from socialization. This could cause a problem once lockdowns are over when they have to socialize again.

Alonso-Esteban, Y. et al. (October 22, 2021). A Systematic Review on the Impact of the Social Confinement on People with Autism Spectrum Disorder and Their Caregivers during the COVID-19 Pandemic. Brain Sciences. DOI: [0.3390/brainsci11111389](https://doi.org/10.3390/brainsci11111389).

Affects of Pandemic on Parents of Children with ASD

French researchers found as the pandemic lockdown persisted parents of children on the spectrum experienced significantly more depression and anxiety in 96% of those assessed. Mothers were particularly affected by this increase of symptoms. This appeared to be associated with the severity of their children's difficult symptoms, amount of telecommuting and their self-perceived lack of knowledge COVID-risk. The scientist determined parents, and particularly mothers, needed significant mental health care, COVID training and long-term help.

Miniakova, E. et al. (May, 2022). Anxiety and depression in parents of children with autism spectrum disorder during the first COVID-19 lockdown: Report from the ELENA cohort. Journal of Psychiatric Research. DOI: [10.1016/j.jpsychires.2021.11.022](https://doi.org/10.1016/j.jpsychires.2021.11.022).

Parental Stress During The Pandemic

A study conducted in Saudi Arabia indicated that parents of children with ASD suffered significantly more stress and lower overall emotional wellbeing during the pandemic. They suggested the Ministry of Health provide parents training in how to respond to ASD behavior, control aggressive and repetitive behavior as well as how to establish daily routines in the home.

Alhuzimi, T. (November 20, 2020). Stress and emotional wellbeing of parents due to change in routine for children with Autism Spectrum Disorder (ASD) at home during COVID-19 pandemic in Saudi Arabia. Research in Developmental Disabilities. DOI: [10.1016/j.ridd.2020.103822](https://doi.org/10.1016/j.ridd.2020.103822).

Caregiver Satisfaction of ASD Services During the Pandemic

American researchers surveyed caregivers of children and adults with ASD regarding their satisfaction of the services their charges received during the pandemic. Their results indicated, “caregiver-reported satisfaction was lower for ABA/behavioral, speech/language, and occupational therapy services delivered via telehealth than for those delivered in person. Caregivers who endorsed higher emotional dysregulation for their autistic children reported lower satisfaction with ABA/behavioral therapy services.” They reported that 33% of the respondents indicated that their charges were receiving no services. As many as 63% reported a disruption of services. “In our study, among those who reported access to services, speech/language therapy was the most highly endorsed service, followed by ABA/behavioral therapy, psychotherapy, and occupational therapy services.”

Ferguson, E.F. et al. (August 27, 2021). Predictors of Satisfaction with Autism Treatment Services During COVID-19. Journal of Autism and Developmental Disorders. DOI: [10.1007/s10803-021-05232-0](https://doi.org/10.1007/s10803-021-05232-0).

ASD Assessment During COVID-19



2022 06 11

Telehealth Assessment, Diagnosis and Treatment of Children and Adolescents with ASD During the Pandemic

Researcher from Louisiana State University reviewed 55 articles that pertained to the efficacy of using telehealth for diagnostic assessments, preference assessments, early intervention, applied behavior analysis (ABA), functional assessment and functional communication training, and parent training. The results indicated telehealth worked as well or better than line in-person services. It should be noted that the majority of the studies (37) the parent(s) were the service recipient. They were concerned comorbidities like anxiety were not included in the studies.

Ellison, K.S. et al. (June 10, 2021). Telehealth and Autism Prior to and in the Age of COVID-19: A Systematic and Critical Review of the Last Decade. Clinical Child and Family Psychology Review. DOI: [10.1007/s10567-021-00358-0](https://doi.org/10.1007/s10567-021-00358-0).

Virtual ASD Assessments for Children During The Pandemic

Scientists from Virginia Polytechnic Institute reviewed 16 articles that assessed the efficacy of live-video evaluations, video observations, and online or phone methods of assessing ASD in children. Their findings strongly supported the reliability and validity of these modalities. Of interest they found instruments like the Autism Diagnostic Observation Schedule (ADOS), the Autism Diagnostic Interview-Revised (ADI-R) and the Screening Tool for Autism in Toddlers and Young Children could be easily modified for video assessments.

Dahiya, A.V. et al. (February 2021). A systematic review of technological approaches for autism spectrum disorder assessment in children: Implications for the COVID-19 pandemic. Research in Developmental Disabilities. DOI: [10.1016/j.ridd.2021.103852](https://doi.org/10.1016/j.ridd.2021.103852).

Diagnostic Evaluations, the Pandemic, and ASD

European and African scientists surveyed professionals to determine how the pandemic has effected diagnostic procedures for ASD. They found that demand far outstripped capacity for such services, some professionals found telehealth evaluations useful, others found them possibly unethical, invalid and unreliable. There was concern about how to adapt evaluations to telehealth and how to get the person services after the evaluation. The wait for an initial appointment had on average increased by 58%, and 52% of those surveyed stated they experienced a significant disruption in their ability to provide services.

Spain, D. et al. (April 28, 2022). Autism Diagnostic Assessments With Children, Adolescents, and Adults Prior to and During the COVID-19 Pandemic: A Cross-Sectional Survey of Professionals. Frontiers in Psychiatry. DOI: [10.3389/fpsy.2022.789449](https://doi.org/10.3389/fpsy.2022.789449).

Virtual Doctor Visits Vs. Real Doctor Visits

Professors from Ohio State University surveyed adults with ASD who were seen in both live and virtual doctor visits. Regarding virtual visits the clients said they felt more comfortable seeing their doctor from home, they liked not being exposed to others who may have COVID, and they reported as good or better communication with their doctor as well as they said they did not have to deal with so many sensory sensitivities. What they did not like was the possibility of computer/internet problems, they did not like that their doctor could not physically examine them, and the clients admitted they sometimes would not participate as much as they would with a live visit.

Harris, L. et al. (November 30, 2021). "It was surprisingly equivalent to the appointment I had in person": Advantages and disadvantages of synchronous telehealth for delivering primary care for autistic adults. Autism. DOI: [10.1177/13623613211060589](https://doi.org/10.1177/13623613211060589).

SLEEP, ASD, & COVID

Sleep & ASD

➤ **50% to 80% of Children with ASD have sleep problems**

➤ **Main problems:**

- **Prolonged Sleep Latency, Disruption at Bedtime, Decreased Sleep Efficiency and Duration**
- **Those with ASD may have a problem with the inhibitory neurotransmitter GABA and melatonin which may cause problems with circadian sleep-wake cycles.**
- **Cognitive Behavioral Treatment may help.**

--Durand (2014); Nadeau, J. M., et al. (September 20, 2014).

➤ **“...sleep allows us to process and retain new memories and skills.” (p. 58)**

➤ **Deprive sleep/block training improvement in skill**

➤ **“Evidence for sleep’s effect on declarative memory is much weaker than its effect on procedural memory.” (p. 59)**

➤ **Good sleep creates better procedural memory.**

➤ **Sleep Hygiene, Sleep Clinic, Sleep Study**

--Stickgold (2005); Winerman, (January, 2006); Schonauer (January 2014).

ASD, Sleep and COVID-19

Turkish scientists reiterated that there is a long history of finding sleep disorders in children with ASD. They found that the confinement required by the pandemic has exacerbated these significantly. This is especially so in those children whose sleep cycles are to go to sleep later and the rise later as well as have an unstable sleep rhythm. They suggested pharmacotherapy and counseling for the child as well as psychoeducation for the parents.

Turkoglu, S. et al. (July 1, 2020). The relationship between chronotype, sleep, and autism symptom severity in children with ASD in COVID-19 home confinement period. Chronobiology International. DOI: [10.1080/07420528.2020.1792485](https://doi.org/10.1080/07420528.2020.1792485).

Sleep and ASD

Italian scientist after analyzing the results of an anonymous on-line survey sent to 111 children and teens with ASD regarding changes in their behavior during the pandemic. They found bedtime awakening time and duration of sleep changed significantly in the subjects during the pandemic. The same has been found in neurotypical, children and teens and adults. The scientists also found sleep-time anxiety, daytime sleepiness and nightmares increased in those with ASD during the pandemic. They believed this was caused by the extreme changes to routines cause by the pandemic. They went on to speculate this distress would exacerbate ASD symptoms.

Bruni, O. et al. (January 1, 2022). Impact of COVID-19 lockdown on sleep in children with autism spectrum disorders. Journal of Clinical Sleep Medicine. DOI: [10.5664/jcsm.9518](https://doi.org/10.5664/jcsm.9518).

ASD, COVID-Risk and Melatonin Deficiency

Canadian, Indian and Argentine scientists found people with ASD may be more at risk than the general population to contracting COVID due to a melatonin deficiency which causes sleep disorders and genetic alterations. They suggest teaching sleep hygiene and administering melatonin to those with ASD.

Brown, G.M. et al. (February 18, 2021). Autism Spectrum Disorder patients may be susceptible to COVID-19 disease due to deficiency in melatonin. Medical Hypothesis. DOI: [10.1016/j.mehy.2021.110544](https://doi.org/10.1016/j.mehy.2021.110544).

Treatment of ASD During COVID-19



Applied Behavioral Analysis

- **40 year of research has shown these techniques are effective with those with intellectual disabilities and autism spectrum disorders.**
- **Many professional organizations and state governments have endorsed the use of these techniques with such individuals.**

--Hagopian, L.P. (August 27, 2010)

Applied Behavioral Analysis During the Pandemic

A British scientist and four applied behavioral analysis (ABA) experts from Italy adapted ABA to meet the need of families with ASD children. The investigators discovered early on there were many articles about how to adapt parts of ABA programs to online presentation, but not entire programs. They found ABA programs were insufficient for total lockdowns during the pandemic. They found the almost complete elimination of noncontingent reinforcement and using token economies 24/7 to be necessary. “However, the primary problem reported to us by parents before making this change was a lack of structure and loss of child motivation due to continuous free access to reinforcers. By programming reinforcement contingent on active engagement with the household schedule, we empowered the parents to increase their child’s motivation and provide clear direction for everyone involved.”

Applied Behavioral Analysis During the Pandemic

They continued by saying if the parents had not provided significant support in appropriate prompting and making tasks at a achievable level this system would not have worked. The ABA consultants helped them achieve this and home life was reported to be calm and happy.

Espinosa, F.D. et al. (June 2, 2020). A Model of Support for Families of Children With Autism Living in the COVID-19 Lockdown: Lessons From Italy. Behavior Analysis in Practice. DOI: [10.1007/s40617-020-00438-7](https://doi.org/10.1007/s40617-020-00438-7).

Anxiety, CBT, Telehealth, & The Pandemic

Scientists from Yale and UCLA concluded, “Ultimately, we believe that when approached with flexibility and fidelity, the delivery of CBT for anxiety in ASD via telehealth is not only possible but also presents unexpected opportunities and benefits for tailoring treatment to better serve the needs of children with ASD as we move forward beyond the COVID-19 Pandemic.”

Kalvin, C.B. et al. (January 1, 2021). Conducting CBT for Anxiety in Children with Autism Spectrum Disorder During COVID-19 Pandemic. Journal of Autism and Developmental Disorders. DOI: [10.1007/s10803-020-04845-1](https://doi.org/10.1007/s10803-020-04845-1).

ABA, Parent Training and Lockdown

Italian scientists investigated how pandemic lockdowns affected ABA training in children with autism (N=88; ages 30 months to 18 years). They followed the children for 6 months of ABA training. After 3 months there was a lockdown. Then they observed them 3 months after the lockdown. They found the children were able to maintain their trained behaviors during the lockdown and three months after the lockdown. They were even able to generalize their skills. They found communication, personal autonomy and socialization skills improved, but hyperactivity, stereotyped behaviors and distractibility increased significantly after training sessions resumed. They stressed how important parental training was in maintaining the above when they worked with their children during the lockdown.

Sergi, L. et al. (October 20, 2020). Autism, Therapy and COVID-19. Pediatric Reports. DOI: [10.3390/pediatric13010005](https://doi.org/10.3390/pediatric13010005).

Suggestions for Parents Regarding How to Structure ASD Child's Time During The Pandemic

Italian professor Antonio Narzisi offered the following 10 suggestions to help ASD children through the pandemic:

- 1. Explain what COVID-19 is (use augmented communication as needed)**
- 2. Structure home life-visible calendar**
- 3. Manage semi-structured play activities every day. Take care of sensory issues**
- 4. Regular online social interaction for the high-functioning**
- 5. “Serious games” every day – learning social skills, etc.**
- 6. Specific times for shared video games with parents. Protect against isolation and addiction.**
- 7. Regular online therapy for the high-functioning**
- 8. Regular weekly online consultation for parents.**
- 9. Regular online social interaction for the high-functioning**
- 10. Regular online social interaction for the high-functioning**

Suggestions for Parents Regarding How to Structure ASD Child's Time During The Pandemic

- 9. Maintain regular contact with child's school.**
- 10. Leave spare time every day for child to decompress and just be a child.**

Narzisi, A. (March 28, 2020). Handle the Autism Spectrum Condition during Coronavirus (COVID-19) Stay at Home Period: Ten Tips for Helping Parents and Caregivers of Young Children. Brain Science. DOI: doi.org/10.3390/brainsci10040207.

Suggestions for Parents Regarding How to Structure ASD Child's Time During The Pandemic

Dr. Bethany Viber of the Child Mind Institute of New York offered the following regarding how to structure the day for a child with ASD during the pandemic:

- **Develop a pandemic emergency plan**
 - Substitute caregivers and supervision
 - Prominently displayed household emergency plan
 - Frequent check-ins if away from home
 - Emergency resources
 - Autism Response Team: 888-288-4762
- **Autism Speaks:**
help@autismspeaks.org
- **Create Daily Schedule/Routine**
 - Start time and beginning of day cues
 - Use old schedules
 - Build in exercise
 - Schedule breaks for the caregivers
 - Create visual schedules
 - ABCs of behavior management
- **Design environment**
 - Specific places for activities
 - Promote communication and responsibility

Suggestions for Parents Regarding How to Structure ASD Child's Time During The Pandemic

- Practice new behaviors and ideas in a safe environment
- Clear limits on screen time
- Continue working toward lifetime goals
 - Keep in touch with and work with service providers
 - Stay active with support group and networks

Viber, B. (2022). Supporting Children With Autism During the Coronavirus Outbreak. Child Mind Institute. From website:

<https://childmind.org/article/supporting-children-with-autism-during-the-coronavirus-outbreak/>.

ASD, Physical Activity, & COVID



2022 06 09

Teens with ASD, Physical Activity, and Screen Time

Researchers from the University of Central Florida found during the pandemic adolescents with ASD engaged in significantly less physical activity and significantly more screen time activities. They suggested families encourage more physical activity and restrict screen time to help insure better health outcomes.

Garcia, J.M. et al. (April 2021). Brief report: The impact of the COVID-19 pandemic on health behaviors in adolescents with Autism Spectrum Disorder. Disability and Health Journal. DOI: [10.1016/j.dhjo.2020.101021](https://doi.org/10.1016/j.dhjo.2020.101021).

Autism, Obesity, Sedentary Lifestyle and the Pandemic

Turkish researchers found that adolescents on the spectrum strongly tended to have a significantly higher BMI (body mass index), be obese and less active than their neurotypical peers prior to the pandemic. This they found significantly increased during the pandemic. They concluded these results strongly indicated those with ASD should receive training to reduce unhealthy weight and increase physical activity.

Demirci, N. et al. (2021). Investigation of Obesity, Physical Activity and Sedentary Behaviors of Individuals with and Without Autism Spectrum Disorder during the Covid-19 Pandemic Process. Jumora: Jurnal Moderasi Olahraga (from abstract). DOI: [10.53863/mor.v1i02.220](https://doi.org/10.53863/mor.v1i02.220).

ASD, The Pandemic and Physical Activity

Investigators from Indonesia found similar findings in children with ASD from 8 to 14 years old. They found that children with ASD fell from being in the mid range of physical activity to the lowest range among their neurotypical peers during the pandemic. They said that not only are sports and being physically active good for the children they help the parents, too, by among other things reducing anxiety. They suggested at least 30 minutes of light physical activity a day, and good nutrition.

Tyas Pinru Phytanza, D. et al. (2021). Phytanza, et al.: Level of physical activity of students with autism spectrum disorder during the COVID-19 Pandemic. Sport Science. From website: https://www.sposci.com/PDFS/BR1501/20.%20Original%20Article_Phytanza,%20et%20al_Sport%20Science.pdf.

Sleep, Autism, Neurotypicals and Lockdown

A French population study comparing the sleep, screen time and sun light exposure of adults with ASD and neurotypicals found that prior to the lockdown those on the spectrum had significantly more sleep disturbances than controls. During the lockdown they found,”...Adults with autism displayed significantly higher levels of sleep and circadian rhythm disturbances and less favorable daily routines known to regulate sleep. While the effect of confinement on sleep and sleep related behaviors was similar in both groups, the results highlight that the pre-existing shift in circadian rhythms and lifestyles in adults with ASD further deteriorated during lockdown.”

Reynaud, E. et al. (March 2, 2022). Differential effects of COVID-related lockdown on sleep–wake rhythms in adults with autism spectrum disorder compared to the general population. Autism Research. DOI: [10.1002/aur.2692](https://doi.org/10.1002/aur.2692).

Helpful Websites



CDC Helpful Websites

➤ **Vaccinating older adults and people with disabilities (for vaccination sites):**
<https://www.cdc.gov/vaccines/covid-19/clinical-considerations/older-adults-and-disability.html>

➤ **Guidance for Vaccinating Older Adults and People with Disabilities: Ensuring Equitable COVID-19 Vaccine Access:**
<https://www.cdc.gov/vaccines/covid-19/clinical-considerations/older-adults-and-disability/access.html>

CDC Helpful Websites

- **Disability Toolkit with COVID-19 vaccine equity and prevention guidance:**

https://www.cdc.gov/ncbddd/humandevelopment/covid-19/toolkit-for-people-with-disabilities.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fcommunication%2Ftoolkits%2Fpeople-with-disabilities.html

- **Promising Practices: Reaching Populations with Limited Access to Vaccines:**

<https://www.cdc.gov/vaccines/covid-19/vaccinate-with-confidence/limited-access.html>

CDC Helpful Websites

- **Prioritizing and Scheduling People with Disabilities and Caregivers for Vaccination:**

<https://www.cdc.gov/vaccines/covid-19/hcp/disabilities.html>

US Department of Health and Human Services: Autism & COVID-19

- **Interagency Autism Coordinating Committee (IACC) Coronavirus:**
<https://iacc.hhs.gov/resources/coronavirus/>

Autism Speaks Helpful Websites

- Autism Speaks: <https://www.autismspeaks.org>
- COVID-19 information and resources for adults on the spectrum: <https://www.autismspeaks.org/covid-19-information-and-resources-adults-spectrum>
- COVID-19 information & resources for families: <https://www.autismspeaks.org/covid-19-information-and-resources-families>
- COVID-19 information and resources for educators and health professionals: <https://www.autismspeaks.org/covid-19-information-and-resources-educators-and-health-professionals>
- Virtual Activities: <https://www.autismspeaks.org/virtual-activities-kids-autism>
- COVID-19 Non-English resources: <https://www.autismspeaks.org/covid-19-non-english-resources>

Autism Society COVID-19 Materials

- **Autism Society:** <https://www.autism-society.org>
- **Autism Society COVID-19:** <https://www.autism-society.org/covid-19/>
 - There are many different helpful videos on this website.

The Mind Institute Autism & COVID-19

- The Mind Institute: <https://childmind.org>
- Supporting Children With Autism During the Coronavirus Outbreak: <https://childmind.org/article/supporting-children-with-autism-during-the-coronavirus-outbreak/>
- Tips for Talking With Your Child With Autism About the Coronavirus: <https://childmind.org/article/tips-for-talking-with-your-child-with-autism-about-the-coronavirus/>

Carrol Gray Social Stories

- Carol Gray – Social Stories: <https://carolgraysocialstories.com/>
- Carol Gray – Social Stories Pandemic: <https://carolgraysocialstories.com/wp-content/uploads/2020/03/Pandemics-and-the-Coronavirus.pdf>

Thank You!



- **Kevin T. Blake, Ph.D., P.L.C.**
- **Office: 520-327-7002**
- **E-mail:**
kblake@drkevintblake.com
- **Website: www.drkevintblake.com**
- **Mail: 5210 East Pima, Suite 200,
Tucson, AZ 85712**