

# Why Do 1 in 9 Children Now Have ADHD Diagnosis?

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## STORY AT-A-GLANCE

- › ADHD diagnoses in U.S. children have increased, with 1 in 9 now affected. Factors like chemical intolerance in parents, environmental pollutants, and prenatal exposures are potential contributors
- › Toxic substances linked to ADHD include lead, phthalates, BPA, pesticides, and air pollution. These can disrupt brain development and neurotransmitter systems, affecting behavior and cognitive function
- › EMF exposure from electronic devices may cause mitochondrial dysfunction and neuropsychiatric effects, potentially contributing to ADHD. Limiting EMF exposure is recommended but challenging in modern environments
- › Multiple childhood vaccinations may be associated with increased ADHD risk. Genetic vulnerabilities may increase susceptibility to environmental toxins like glyphosate and vaccine ingredients
- › Early-life gut flora composition plays a crucial role in neurodevelopment. Frequent antibiotic use, environmental stress, and secondhand smoke exposure in early childhood increase ADHD risk

In the U.S., 1 in 9 children between the ages of 3 and 17, or 7.1 million, have been diagnosed with attention deficit hyperactivity disorder (ADHD).<sup>1</sup> Among them, 58.1% had moderate or severe cases, but 30.1% had not received any treatment for the condition.

Describing ADHD as an "ongoing and expanding public health concern," the data, from the U.S. Centers for Disease Control and Prevention, also revealed that about 1 million more children had ever received an ADHD diagnosis in 2022 than in 2016.<sup>2</sup>

While the authors suggested increasing awareness and diagnosis, and stressors related to the COVID-19 pandemic, could be driving the rise in ADHD cases,<sup>3</sup> other factors, including toxic exposures, are likely to blame.

## **CDC Data Highlight Steep Rise in ADHD**

In 2016, 9.9% of U.S. children had been diagnosed with ADHD at some point in their lives. By 2022, this increased to 11.4%. As for the number of children living with the condition, there were 6.5 million in 2022. Among them, 77.9% had at least one co-occurring disorder, such as anxiety, depression, learning disability or autism spectrum disorder (ASD). More than half (53.6%) were taking ADHD medications, while 44.4% had received behavioral treatment.<sup>4</sup>

ADHD is considered a "chronic and debilitating" condition that can affect academic success and professional achievements later in life, along with posing challenges to relationships and daily functioning.<sup>5</sup> Children with ADHD may have poor self-esteem and social function, while adults with ADHD often experience poor self-worth and increased self-criticism.<sup>6</sup>

There are physical health risks as well. People with ADHD are more likely to develop dependence on nicotine, alcohol, cocaine and other drugs, and have higher rates of obesity, self-harm and binge eating.<sup>7</sup> An umbrella review published in *Frontiers in Psychiatry* emphasizes the significant toll this condition takes on a person's life — highlighting the urgent need to identify its underlying causes:

*"The findings reveal a spectrum of health and lifestyle risks associated with ADHD, encompassing mental health vulnerabilities such as addiction, suicide, eating disorders, mood, and personality disorders. Moreover, the review*

*underscores the significance of recognizing key physical health risks, notably obesity, sleep issues, oral hygiene, injuries, and somatic diseases.*

*Crucially, the review unveils the broader implications on lifestyle, encompassing areas such as offending behavior, criminality, violence, employment, education, quality of life, relationships, and risk-taking."*

## **Parents With Chemical Intolerance More Likely to Have Children With ADHD**

Parents who suffer from high chemical intolerance, which describes a range of symptoms that occur after exposure to mold, chemical inhalants, foods and food additives, pesticides, drugs and other chemicals, are 2.1 times more likely to have a child with ADHD, and 5.7 times more likely to have a child with autism.<sup>8</sup>

The researchers previously found an association between chemical intolerance and mast cells, and suggest "the global rise in autism and ADHD may be due to fossil-fuel-derived and biogenic toxicants epigenetically 'turning on' or 'turning off' critical mast cell genes that can be transmitted transgenerationally."<sup>9</sup>

Exposure to insecticides known as pyrethroids in utero or during early childhood has also been linked to neurodevelopmental delays and behavioral issues. Among children aged 8 to 15 years, those with higher levels of pyrethroid metabolites 3-phenoxy benzoic acid (3-PBA) in their urine were twice as likely to have ADHD compared to those with lower levels.<sup>10</sup>

## **Environmental Pollutants Involved in ADHD**

Many environmental pollutants are associated with ADHD. A scoping review specifically found lead, phthalates and bisphenol A are "moderately to highly" associated with ADHD.<sup>11</sup> Bisphenol A (BPA) and pesticides, for instance, can affect the brain's serotonin and dopamine systems, leading to changes in behavior and neurological function.

Pesticides may also affect the cholinergic system, which involves the neurotransmitter acetylcholine. This system is important for learning, memory and muscle activation. Metals may contribute to ADHD by disrupting the way calcium channels, which are important for the release of neurotransmitters, work in the brain, as well as by affecting the N-methyl-D-aspartate receptor, which can lead to cognitive and behavioral issues.<sup>12</sup>

Air pollution is another likely factor. A systematic review of 801 studies revealed prenatal exposure to particulate matter 2.5 (PM2.5) air pollution is linked to a heightened risk of ADHD.<sup>13</sup> PM2.5 air pollution refers to particulate matter with a diameter of 2.5 micrometers or smaller. These fine particles are small enough to be inhaled deeply into your lungs.

The study also revealed a connection between ADHD and postnatal air pollution exposure, "underlining the potential neurodevelopmental harms from early exposure to these pollutants."<sup>14</sup> According to the study:<sup>15</sup>

*"Research demonstrates that prenatal and early life exposure to pollutants can adversely affect brain volume and cognitive functions, leading to increased behavioral problems.*

*Specifically, exposure to PM2.5 during pregnancy is associated with reduced white matter in the brain's left hemisphere, which may increase the risk of ADHD symptoms. Despite the profound implications of air pollutant exposure on neurodevelopment, potentially resulting in severe lifelong disabilities, its recognition remains limited, often referred to as a 'silent killer.'"*

## **Phthalates Linked to Attention and Behavioral Disorders**

Ubiquitous exposure to phthalates, found in everything from food packaging to personal care products, is also putting children's brain development at risk, according to Project TENDR (Targeting Environmental Neuro-Development Risks), a collaboration of scientists, health professionals and advocates for children and the environment.

The group formed in 2015 due to concerns that toxic environmental chemicals were playing a role in neurodevelopmental disorders including autism, attention deficits, hyperactivity, intellectual disability and learning disorders.<sup>16</sup>

In their April 2024 briefing paper for delegates, they call for policy reforms to protect the developing brains of children from the harmful effects of toxic chemicals in plastics, including phthalates. Regarding the chemicals, the paper notes:<sup>17</sup>

*"Phthalates are not chemically bound to the products that contain them, and readily migrate into dust, food, and the environment. The class of ortho-phthalates has been clearly established as neurotoxic, including di-2ethylhexyl phthalate (DEHP), di-butyl phthalate (DBP), and butylbenzyl phthalate (BBzP).*

*A substantial and growing body of evidence documents the impacts of prenatal exposure to phthalates on brain development, including cognitive and motor function being affected in the preschool period, or later childhood/early adolescence, impacts on behavior, including poor executive function, attention and working memory, delayed language development, reduced IQ, and preschool and childhood ADHD."*

As rates of ADHD have risen, so too have everyday products containing phthalates, bisphenols and other chemicals linked to ADHD, making avoiding them difficult. For instance, Consumer Reports found the compounds in 84 out of 85 food and beverages tested.<sup>18</sup> BPA was found in 79% of the samples, which included fruits, vegetables, milk, meat, seafood, baby food and more, while phthalates were found in all the products tested except one.

## **Other Toxic Exposures Linked to ADHD**

Electromagnetic fields (EMFs) are the cigarettes of the 21st century – and most people are being exposed 24 hours a day. Most of the radiation emits from cellphones, cell towers, computers, smart meters and Wi-Fi, to name just a few of the culprits.

Exposure causes serious mitochondrial dysfunction due to free radical damage. Among the most common consequences of chronic EMF exposure to your brain may be chronic conditions like ADHD. Martin Pall, Ph.D., also discovered a previously unknown mechanism of biological harm from microwaves emitted by cellphones and other wireless technologies via voltage gated calcium channels (VGCCs) embedded in your cell membranes.<sup>19</sup>

VGCCs are found in high concentrations in the brain, and research involving animals has shown that even low levels of microwave EMFs can have significant and varied effects on the brain. Studies suggest that when these VGCCs are activated by EMFs, it can lead to a range of neuropsychiatric effects.

At least 26 studies have linked EMFs to neuropsychiatric effects, and five specific criteria have been used to demonstrate that this relationship is causal, meaning EMFs can cause these effects.<sup>20</sup> An association between exposure to magnetic field (MF) nonionizing radiation during pregnancy and increased risk of ADHD has also been reported.<sup>21</sup> While it's nearly impossible to avoid EMF exposure completely, there are [practical ways to limit it](#).

Exposure to multiple vaccines in childhood may also be involved. Dr. Paul Thomas, whose medical license was suspended due to his advocacy for informed consent regarding vaccinations, along with James Lyons-Weiler from the Institute for Pure and Applied Knowledge (IPAK), conducted a study comparing the health of vaccinated and unvaccinated children.<sup>22</sup>

Their findings revealed that vaccinated children experienced significantly higher instances of various health issues, including behavioral issues.<sup>23</sup> Notably, among the 561 unvaccinated children, none were diagnosed with ADHD, whereas 5.3% of children who had received some or all recommended vaccinations were diagnosed with ADHD.

"The implications of these results for the net public health effects of whole-population vaccination and with respect for informed consent on human health are compelling," they wrote.<sup>24,25</sup> The study also points out that the rate of ADHD in the practice was about half the national rate. According to The Defender:<sup>26</sup>

*"While scientists and public health officials often cite genetic predisposition as a causal factor in ADHD, Thomas said genetic vulnerability relates more to an increased susceptibility to toxins like the weedkiller glyphosate and aluminum in vaccines.*

*'What some might call genetic is just a toxic effect of exposures in the womb,' he said, citing the MTHFR single nucleotide polymorphism that 'can make it more difficult to get toxins out of the body.' Paul [Thomas] said MTHFR also affects one's ability to produce enough dopamine and norepinephrine, the neurotransmitters thought to be involved in mental focus – an issue at the heart of ADHD."*

## **ADHD May Result From Disturbed Gut Flora in Early Life**

The makeup of gut flora at birth and during the first year of life may also play a key role in the development of neurodevelopmental disorders like ADHD.<sup>27</sup> In a study published in the journal *Cell*, researchers with the University of Florida study tracked a group of Swedish children from birth over a 20-year period to identify factors that might influence whether they develop a neurodevelopmental disorder.<sup>28</sup>

They collected extensive data from early in the children's lives using detailed questionnaires about infections, antibiotic use, stress, prenatal conditions and family health history. They also analyzed biological markers such as metabolites in umbilical cord blood and stool, types of body cell proteins and gut bacteria.

Notably, the research connected changes in gut bacteria to neurodevelopmental disorders and identified early signs of mood and digestive problems. Infants who went on to develop these conditions were deficient in many bacteria known to promote gut health, including *Akkermansia*, *Bifidobacterium*, *Ruminococcus* and *Faecalibacterium*.

The study also revealed that children who had three or more ear infections treated with penicillin from the time they were born until age 5 were at increased risk of

neurodevelopmental disorders compared to those in the control group, including being 3.27 times more likely to develop ADHD.<sup>29</sup>

Meanwhile, both environmental and emotional stress increased the risk of neurodevelopmental disorders, and toddlers exposed to secondhand smoke were 4.88 times more likely to develop ADHD. Overall, to protect brain health in utero and during early childhood and beyond, taking steps to not only **improve gut health** but also **avoid toxic exposures** is essential.

## Sources and References

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- <sup>1, 2, 3, 4</sup> [Journal of Clinical Child & Adolescent Psychology](#) May 22, 2024
- <sup>5, 6</sup> [American Psychiatric Association, What Is ADHD?](#)
- <sup>7</sup> [Front Psychiatry](#). 2024; 15: 1343314
- <sup>8, 9</sup> [J. Xenobiot](#). 2024, 14(1), 350-367; doi: 10.3390/jox14010022
- <sup>10</sup> [Front. Public Health](#), 13 December 2023
- <sup>11, 12</sup> [Int. J. Environ. Res. Public Health](#) 2022, 19(5), 2849
- <sup>13, 14, 15</sup> [Front. Public Health](#), 23 May 2024
- <sup>16</sup> [Project TENDR](#)
- <sup>17</sup> [Project TENDR, Briefing Paper](#) April 13, 2024
- <sup>18</sup> [Consumer Reports](#) January 4, 2024
- <sup>19</sup> [Rev Environ Health](#). 2015;30(2):99-116
- <sup>20</sup> [Journal of Chemical Neuroanatomy](#) September 2016, Volume 75, Part B, Pages 43-51
- <sup>21</sup> [Environmental Health](#) March 24, 2020
- <sup>22, 24</sup> [Int J Environ Res Public Health](#). 2020 Nov; 17(22): 8674
- <sup>23</sup> [Substack, COVID Intel, Dr. William Makis](#) April 2, 2024
- <sup>25</sup> [Int. J. Environ. Res. Public Health](#) 2021, 18(3), 936; doi: 10.3390/ijerph18030936
- <sup>26</sup> [Children's Health Defense, The Defender](#) May 30, 2024
- <sup>27, 28</sup> [Cell](#) April 3, 2024
- <sup>29</sup> [University of Florida](#) April 3, 2024