Frontiers | Frontiers for Young Minds



# ADHD AND PREGNANCY: WHAT TEENS SHOULD KNOW FOR THE FUTURE

#### Bridget Foy, Molly O. Murphy and Elijah W. Hale\*

School of Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO, United States



This study explores how attention-deficit/hyperactivity disorder (ADHD) affects pregnant women, focusing on what this means for their health. Aimed at young people and teenagers, the research helps explain complex scientific ideas in a way that is easy to understand. It starts by explaining what ADHD is: a common condition that begins in childhood and can continue into adulthood. The research then looks at the specific problems women with ADHD might face when they are pregnant, such as a higher risk of depression, anxiety, and complications during pregnancy. By examining detailed health records from many different sources and comparing the experiences of pregnant women with and without ADHD, the study finds that women with ADHD are more likely to have serious health issues when pregnant. However, it also shows that those who take ADHD medication while pregnant might see a decrease in these health problems, which highlights the importance of safe medication use. The study ends by offering advice for teenagers: talk openly with doctors and make informed health choices during pregnancy.

### ATTENTION-DEFICIT/ HYPERACTIVITY DISORDER (ADHD)

A common brain condition that affects both kids and adults, characterized by difficulties in focusing, sitting still, or controlling impulses.

#### DEPRESSION

A mental health condition in which a person feels extremely sad, hopeless, or uninterested in life.

#### ANXIETY

A feeling of worry, nervousness, or unease about something.

#### HIGH BLOOD PRESSURE

A condition in which the force of the blood against the blood vessel walls is too high, which can lead to health problems.

#### DIABETES

A disease that occurs when blood sugar (glucose) levels are too high.

# **UNDERSTANDING ADHD**

**Attention-deficit/hyperactivity disorder (ADHD)** is a common brain condition that affects both kids and adults. People with ADHD have energetic brains, which can make it hard to focus, sit still, or control impulses. Around the world, about 5 out of every 100 people have ADHD, which means in a class of 20 students, 1 or 2 might have ADHD [1].

For a long time, people mainly talked about ADHD in kids. By doing lots of research, scientists have discovered that ADHD does not just disappear when kids grow up. Instead, it often continues throughout adulthood. Scientists are learning more about how ADHD affects people throughout their lifespans.

ADHD affects the brain, which means it can interact with other health issues people face. These can include **depression**, which is feeling really sad all the time; **anxiety**, which is being super worried or nervous; and accidents, like getting hurt more often (because people with ADHD can be a bit more impulsive and not always as careful). It is important to recognize the signs of ADHD and get the right help. This is true for kids, teenagers, and adults.

# **PREGNANCY AND ADHD**

When ADHD was first discovered, it seemed to occur mostly in boys. Doctors are getting better at finding ADHD in everyone, so now ADHD is being recognized in girls, too. When those girls grow up and become women, some might become pregnant and have babies. Doctors are realizing that having ADHD during pregnancy can come with some special challenges and problems.

During pregnancy, a woman's body goes through natural changes to support the baby's development. Sometimes things can go wrong during pregnancy, putting both the woman and her baby in danger. These problems can include **high blood pressure**, which happens when the blood vessels start squeezing the blood too hard. Some women also get **diabetes**, which is when the body struggles to use the energy it needs from food. Pregnant women can also develop depression or anxiety (for more information on common pregnancy complications, see this website).

Now, here is where it gets tricky: we do not know a lot about how ADHD and pregnancy interact. We do not know if having ADHD makes any of the problems seen in pregnancy more likely. We *do* know that around eight out of every 100 pregnant women have one of the health problems we listed, or similar ones [2]. But what happens if pregnant women also have ADHD? Would ADHD make something like diabetes

kids.frontiersin.org

during pregnancy harder to manage? That is what we are trying to figure out through our research.

Just like other health conditions, some people with ADHD take medications to help them focus and feel better; however, many mothers do not know whether their medications are safe to take during pregnancy. Some medications have to be stopped during pregnancy to protect the baby. We do know that more and more women with ADHD are taking their medicines even when they are pregnant, so we must do more research because we do not know all the effects ADHD medications can have on unborn babies.

# WHAT DID WE DO?

To find out more about how ADHD affects pregnancy, we looked at lots of information from hospitals all around the country. We checked health records of many pregnant women, some with ADHD and some without. We compared the health of the women during pregnancy to see if women with ADHD had more pregnancy-related problems compared to women without ADHD. We also investigated whether taking ADHD medicines seemed to help women with ADHD have healthier pregnancies.

### **UNDERSTANDING THE DATA**

As we already mentioned, there are many medical conditions that can be diagnosed during pregnancy, and some of them can be very dangerous for both the mother and the baby. While each specific condition is complicated, the general dangers include high blood pressure, depression, low oxygen in the blood, high blood sugar, infections, early birth, and bleeding [3]. In Figure 1, you can see that most of the dangerous medical conditions that we tracked happen more often in the group of pregnant women diagnosed with ADHD than in the group without ADHD. While this does not necessarily mean that ADHD causes these conditions, it is possible that there are some symptoms or features of ADHD that make these women more vulnerable to developing these other conditions. For example, the forgetfulness and impulsiveness associated with ADHD might make a woman less likely to remember to avoid things that could make her sick during pregnancy, like changing the cat litter box. This information shows that we should do more research on ADHD and how it affects a person's overall health.

But here is an interesting twist: women with ADHD who were taking ADHD medicines during pregnancy had fewer pregnancy-related problems compared to women with ADHD who were *not* taking medicine [3]. This means taking ADHD medications might be very helpful during pregnancy for women who struggle with ADHD.

#### INFECTIONS

The invasion and multiplication of microorganisms such as bacteria, viruses, and parasites that are not normally present within the body

#### Figure 1

Two large groups of equal size were analyzed: a group of 42,916 pregnant women with ADHD (blue) and a group of 42,916 pregnant women without ADHD (orange). The percentages of women in each group that were diagnosed with a potentially dangerous medical condition during pregnancy were graphed side by side.



# **THE BIG PICTURE**

It is important for anyone who has ADHD and is pregnant to talk to their doctor. Doctors can help women decide what is best for them and their baby. Sometimes, stopping an ADHD medication might not be the best idea because it can make things harder for both the pregnant mother and the baby. Remember though: every pregnancy—and every person—is different. What is best for one person might not be the same for someone else. Every woman needs to have a conversation with her doctor to make the right choice for her and her baby.

In summary, ADHD is something that can stick with you throughout your life, even when you grow up, become an adult, and have a family of your own. Being a mother with ADHD can bring its own unique challenges during pregnancy. Do not worry though—doctors are working hard to understand how to help moms with ADHD have healthier pregnancies. If you have ADHD or know someone who does, just remember that you can always talk to your doctor about it, to help you live the healthiest life possible. Together, we can make sure everyone gets the support they need, whether they are kids, teenagers, or pregnant grown-ups.

# **ORIGINAL SOURCE ARTICLE**

Walsh, C. J., Rosenberg, S. L., and Hale, E. W. 2022. Obstetric complications in mothers with ADHD. *Front. Reprod. Health* 4:1040824. doi: 10.3389/frph.2022.1040824

# REFERENCES

- 1. Sayal, K., Prasad, V., Daley, D., Ford,T., Coghill, D. 2018. ADHD in children and young people: prevalence, care pathways, and service provision. *Lancet Psychiatry* 5:175–86. doi: 10.1016/S2215-0366(17)30167-0
- 2. Williams, M. A. 2011. Pregnancy Complications. Reproductive and Perinatal Epidemiology (New York, NY: Oxford University Press), 99–126.
- Walsh, C. J., Rosenberg, S. L., and Hale, E. W. 2022. Obstetric complications in mothers with ADHD. *Front. Reprod. Health* 4:1040824. doi: 10.3389/frph.2022.1040824

SUBMITTED: 12 January 2024; ACCEPTED: 14 May 2024; PUBLISHED ONLINE: 27 May 2024.

EDITOR: Michelle Juarez, Stony Brook University, United States

SCIENCE MENTORS: Silindile Ngcobo and Kristin Musselman

**CITATION:** Foy B, Murphy MO and Hale EW (2024) ADHD and Pregnancy: What teens should know for the future. Front. Young Minds 12:1369304. doi: 10.3389/ frym.2024.1369304

**CONFLICT OF INTEREST:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

**COPYRIGHT** © 2024 Foy, Murphy and Hale. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

# **YOUNG REVIEWERS**

#### LIAM, AGE: 15

Liam is a grade 10 student who enjoys watching movies and downhill skiing. He has been participating in research studies since he was 3 months old.



#### SIMMY, AGE: 13

My nickname is Simmy and I love to read science. I am 13 years old and want to become a scientist one day like my mentor. I enjoy being in the debating team and science club at school as I get to learn how to think and express my scientific views.







#### **BRIDGET FOY**

Bridget is from California and moved to Colorado to attend medical school. She is training to become a doctor who helps deliver babies and takes care of women from their adolescent years through the remainder of their lives. This type of doctor is called an Obstetrician and Gynecologist, or OB/GYN. When she is not in the hospital delivering babies, she enjoys playing grass volleyball in the sunshine, going on bike rides, and spending time with her friends and family.

#### MOLLY O. MURPHY

Molly Murphy is currently located in Denver, Colorado. She previously attended the University of Notre Dame and studied biology, business, and philosophy. She is now in her third year of medical school at the University of Colorado and hopes to become a pediatric surgeon someday. She loves working with kids and actually previously spent a year teaching sixth grade math in Chicago. When she is not studying, she enjoys running, rollerblading, hiking, skiing, reading, and camping with her friends.

#### ELIJAH W. HALE

Elijah W. Hale is a medical researcher located in Denver, Colorado at the University of Colorado School of Medicine. His research primarily focuses on combinations of ADHD diagnoses and other medical conditions. The combination of ADHD and medical conditions allows him to find ways that ADHD impacts patients that have not been discovered before. He is currently in training and hopes one day to be a child psychiatrist in an academic and private practice setting. \*elijah.hale@cuanschutz.edu

