

Alcohol and Adults

UNDERSTANDING THE EFFECTS OF PRENATAL ALCOHOL EXPOSURE



FASD Lasts a Lifetime

Claire D. Coles, PhD

Fetal alcohol syndrome (FAS) was first described in the United States in 1973. Since that time, many people have been diagnosed with fetal alcohol spectrum disorders (FASDs) and they and their families often are frustrated when they seek help from professionals and services systems. This is particularly true of adolescents and adults. Physicians and metal health specialists may not understand that prenatal alcohol exposure can have long-term effects. Many who were diagnosed as children, and are now adults, find that they cannot find care that is informed about diagnosis and treatment for conditions associated with prenatal exposure. This lack of information can lead to misunderstanding and inappropriate treatment.

The Emory Adult Health Study is leading a project supported by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) as well as by the SKK Foundation. We are working with investigators at the University of Washington in Seattle and in Canada at the University of Calgary and Brock University in Ontario. The goal is to better understand how prenatal exposure affects health and quality of life as individuals grow older. People who were exposed prenatally and those diagnosed with FASD as children are visiting our research sites to provide biological samples and information about their lives. When the study is completed, we will share the results to help provide for better clinical care for people affected by prenatal exposure.



Adult Research Studies at the Center for Maternal Substance Abuse and Child Development (MSACD)

Since FASD lasts a lifetime, the Center for MSACD is carrying out research with adults at midlife. Here are some early results.

1. Vascular System

The vascular system, that carries blood to every part of the body, appears to be vulnerable to prenatal alcohol exposure (PAE). In volunteers in Atlanta, the study looked at blood pressure as well as a measure of vascular flexibility and found that there were alterations that could affect the efficiency of tissue perfusion in both the brain and other areas of the body. That is, the vessels themselves appeared to be less flexible in those with PAE and this lack of flexibility affected how efficiently the body was able to get blood to the brain and to other parts of the body.

2. Insulin

To understand whether metabolic problems, particularly diabetes, were more common in adults with PAE, we examined indicators of diabetes including fasting plasma glucose, hemoglobin A1c and insulin levels. We found that insulin levels and insulin resistance (often a precursor to diabetes), are different in PAE and contrast groups. Prenatal alcohol exposure and Body Mass (BMI) interacted and those with PAE were more negatively affected by weight gain than controls.

3. Mental Health

When we looked at mental health problems in adults with PAE compared to contrast groups who were not exposed, we found that alcohol-affected people reported higher levels of depression, anxiety, and bipolar disorders currently as well as diagnoses of attention deficit/hyperactivity disorders as children. There were no differences of psychotic disorders. In addition, individuals with PAE reported more environmental distress including adverse childhood experiences (ACEs) and lower current access to financial resources. The results suggest that exposure during gestation combined with later environmental stress makes the individual more vulnerable to anxiety and depression.

4. Fluid Cognition

One way of thinking about cognition or intelligence is understanding it as being made up of fluid and crystallized intelligence. Fluid cognition is the "learning" part of intelligence. It involves thinking abstractly, quick reaction time and the ability to solve problems without previous knowledge. In contrast, crystallized intelligence involves using the body of knowledge, including language and skills, that we have acquired over our lifetimes. We have found that fluid intelligence is sometimes affected in children exposed to alcohol and we tested adults to see if this problem is similar in midlife. Using a test called the NIH Tool Box, we found that adults with FASD did have more difficulty with tests that called on fluid cognition. This suggests that this is a persistent problem for this population.

If you want to know more about any of these results, the articles are listed here.

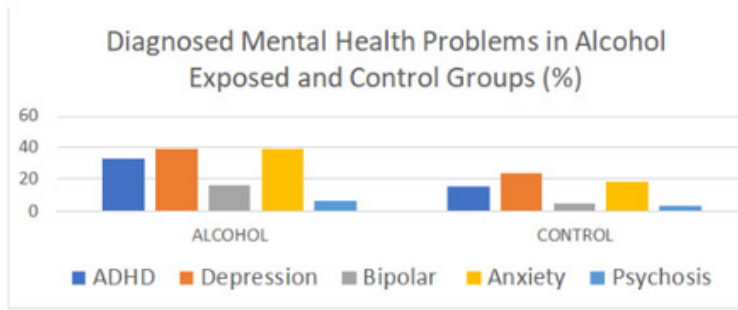
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Coles, CD, Grant, TM, PhD, Kable, JA, Stoner, SA, Perez, A (2022) Prenatal alcohol exposure and mental health at midlife: A preliminary report on two longitudinal cohorts. *Alcohol: Clinical and Experimental Research*, 47

Shapiro, ZR, Kable, JA, Grant, TM, Stoner, SA, & Coles, CD (2023) Prenatal alcohol exposure and cognition at midlife: Evidence of fluid cognition deficits in two cohorts. *Alcohol: Clinical and Experimental Research*, 48



With the exception of Psychoses, those with prenatal alcohol exposure had significantly higher rates of Diagnosed Mental Health Disorders.

Transition to Adulthood in Individuals with Fetal Alcohol Spectrum Disorders

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The transition through the teen and young adult years can present some unique challenges for those with an FASD and their caregivers. All teenagers want independence and freedom to make decisions. Caregivers of teenagers with FASD may need to find ways to safely respect these desires in tune with the teen’s strengths and challenges (National Health Service (NHS)). For example, caregivers often have expectations for teens based on their age. However, this thinking assumes that the individual is meeting their developmental milestones. Research has shown that teenagers and young adults with FASD are usually developmentally younger than their peers (NHS), particularly in certain domains.

The teenage years are also a time when secondary effects of FASD may become more obvious, such as mental health concerns, substance use problems, impulsivity, self-harm, higher risk behaviors, or even criminal justice involvement (Streissguth & Kanter, 1997). Mental health problems specifically are one of the most prevalent adverse outcomes associated with FASD, with some estimates indicating that as much as 90% of this population will experience a mental health challenge over their lifetime (Flannigan et al., 2020). In our group at the Emory Center for Maternal Substance Abuse and Child Development (MSACD), we have seen that those exposed to alcohol prenatally show significantly higher rates of mental health conditions such as attention deficit hyperactivity disorder (ADHD), depression, anxiety, and bipolar disorder (Coles et al., 2022). See the graph above. Consistent with some research, our group has also found higher rates of use of some substances (e.g., tobacco, stimulants) in those with prenatal exposure, though this may be due to other factors such as life stress or a higher number of life stressors or ACES, rather than due to exposure itself (Coles et al., data in preparation). Interestingly, our group found lower rates of alcohol use in those with prenatal exposure compared to controls, which is in contrast to what has been reported in some research, suggesting that more investigation is needed into this under-researched area.

Regardless, secondary effects such as mental health, substance use, or other problems can become even more of a concern as parents support their teens in the transition to adulthood. During this time, it is recommended that teens/young adults learn phone and environmental safety, receive information about the dangers of high risk behavior (e.g., unsafe sex, the dangers of alcohol and drug use, what to do if one gets irritable and upset in public), and learn areas of safety related to independent living such as household reminders, useful phone numbers, strategies for using transportation safely, work and school schedules, and personal and household safety reminders. This is all best supported by a safety plan with supportive others (family, friends, community caregivers) involved (SAMHSA). Vocational training is also important as employment has been shown to be a protective factor for teens and emerging adults with FASD (Lindstrom et al., 2013). Suggestions for vocational support include: helping young adults develop individual attributes and skills, explore a broad range of careers, create initial work experience opportunities, obtain postsecondary education/training, support young adults to facilitate advancement on the job, and advocate for changes in the workplace (Lindstrom et al., 2013; SAMHSA).

Interventions for how to best support teens and young adults in the transition to adulthood are unfortunately another under-researched area, which warrants greater attention as we support those with FASD to live more full and meaningful lives.



Resources for Fetal Alcohol Spectrum Disorders

Taylor Neither, MPH

Resources for FASD can be hard to find but here are a few to help guide your search:

- **FASD United**
 - www.fasdunited.org
- **Centers for Disease Control and Prevention**
 - www.cdc.gov/ncbddd/fasd
- **Emory Center for Maternal Substance Abuse and Child Development**
 - www.emory.edu/msacd
- **Center for Parent Information and Resources**
 - www.parentcenterhub.org
- **Tommy Nobis Center**
 - www.tommynobiscenter.org

If you or a loved one are pregnant and using substances, contact your health care provider to develop a personalized plan for a healthier pregnancy.

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