

# How Much Alcohol is Safe During Pregnancy

There is a lot of untrue information out there about drinking during pregnancy. You might hear different things from your friends, the news, and your doctor. Proof Alliance is here to set the record straight: there is no known safe amount of alcohol during pregnancy.

## What are the facts?

The harmful effects of drinking during pregnancy have been shared by scientists for more than 40 years.<sup>1</sup> Binge drinking has been found to be particularly harmful.<sup>2,3</sup> However, even drinking small amounts can affect the fetus.<sup>4,5,6,7</sup> Drinking during pregnancy can cause fetal alcohol spectrum disorders (FASD). FASD includes many different effects:<sup>8,9,10</sup>

- Hyperactive behavior<sup>11</sup>
- Impulsive behavior<sup>12</sup>
- Poor judgment skills<sup>13</sup>
- Poor social skills<sup>14</sup>
- Memory issues<sup>15</sup>
- Difficulty paying attention<sup>16</sup>
- Being sensitive to light, touch, or sound<sup>17</sup>
- Hearing or vision problems<sup>18,19</sup>
- Poor coordination<sup>20</sup>
- Difficulty in school<sup>21</sup>

**All major health groups say that no amount of alcohol can be considered safe during pregnancy. These health groups include:**

- World Health Organization<sup>22</sup>
- Centers for Disease Control (CDC)<sup>23</sup>
- American Academy of Pediatrics<sup>24</sup>
- American College of Obstetricians and Gynecologists (ACOG)<sup>25</sup>
- U.S. Surgeon General<sup>26</sup>

## What about articles that say a little bit is okay?

Scientists have not been able to find a safe level of alcohol during pregnancy. If an article claims otherwise, they are not sharing all the facts. Even when there is no binge drinking, alcohol use during pregnancy can affect brain development.<sup>27</sup> Drinking smaller amounts of alcohol during pregnancy can also cause low birth weight and preterm birth.<sup>28,29</sup>

## Is any amount of alcohol safe during pregnancy?

Not every person who drinks alcohol during pregnancy will have a child with FASD. However, scientists are not able to find a safe level of alcohol during pregnancy. There are many things that affect how alcohol impacts the fetus. The risk is different for each woman and each pregnancy. Even a small amount of alcohol can be dangerous depending on a wide range of factors.<sup>30</sup>

These factors include:

- Genetics<sup>31</sup>
- Mother's diet<sup>32</sup>
- Mother's age<sup>33</sup>
- Mother's tobacco use<sup>34</sup>
- Mother's substance use<sup>35</sup>

Research has found that even identical twins with the same amount of alcohol exposure can have very different outcomes and effects.<sup>36</sup> There is no way to tell which fetuses are more at risk.

Because of this, and because even small amounts of alcohol have been found to affect the fetus, Proof Alliance continues to share the message that there is no known safe amount of alcohol during pregnancy.

### Everyone plays a role in preventing FASD:

- **If you can become pregnant, talk with your care provider about preventing an alcohol exposed pregnancy.**
- **If you are a health care provider, take every opportunity to have conversations with patients about alcohol use before and during pregnancy.**
- **Become an advocate for change as it relates to alcohol policies in your community and state.**
- **Learn more about FASD and how you can support those impacted by this disorder at [proofalliance.org](http://proofalliance.org).**

### Sources:

1. Benz J, Rasmussen C, Andrew G. Diagnosing fetal alcohol spectrum disorder: History, challenges and future directions. *Paediatr Child Health*. 2009;14(3):231-237.
2. Roozen S, Peters G-JY, Kok G, et al. Systematic literature review on which maternal alcohol behaviours are related to fetal alcohol spectrum disorders (FASD). *BMJ Open*. 2018;8:e022578.
3. Montag AC. Fetal alcohol spectrum disorders: Identifying at-risk mothers. *International Journal of Women's Health*. 2016;8:311-323.
4. Terasaki LS, Schwarz JM. Impact of Prenatal and Subsequent Adult Alcohol Exposure on Pro-Inflammatory Cytokine Expression in Brain Regions Necessary for Simple Recognition Memory. *Brain Sciences* (2076-3425). 2017;7(10):1-16.
5. Day NL, Hessel A, Sonon K, Goldschmidt L. The association between prenatal alcohol exposure and behavior at 22 years of age. *Alcoholism: Clinical and Experimental Research*. 2013;37(7):1171-1178.
6. Flak et al. The association of mild, moderate, and binge prenatal alcohol exposure and child neuropsychological outcomes: A meta-analysis. *Alcoholism: Clinical and Experimental Research*. 2014;38(1):214-26.
7. Irner TB. Substance exposure in utero and developmental consequences in adolescence: A systematic review. *Child Neuropsychology*. 2012;18(6):521-549.

## Sources Continued:

8. Treit et al. Longitudinal MRI reveals altered trajectory of brain development during childhood and adolescence in fetal alcohol spectrum disorders. *Journal of Neuroscience*. 2013;33(24):10098-109.
9. Muralidharan P, Sarmah S, Feng C, Zhou, Marrs JA. Fetal Alcohol Spectrum Disorder (FASD) Associated Neural Defects: Complex Mechanisms and Potential Therapeutic Targets. *Brain Sciences* (2076-3425). 2013;3(2):964-991.
10. Behnke M, Smith VC. Prenatal substance abuse: Short- and long-term effects on the exposed fetus. *Pediatrics*. 2013;131:e1009-e1024.
11. Young S, Absoud M, Blackburn C, Branney P, Colley B, Farrag E, & ... Mukherjee R. Guidelines for identification and treatment of individuals with attention deficit/ hyperactivity disorder and associated fetal alcohol spectrum disorders based upon expert consensus. *BMC Psychiatry*. 2016; 16(1):324.
12. Comasco E, Rangmar J, Eriksson UJ, Orelund L. Neurological and neuropsychological effects of low and moderate prenatal alcohol exposure. *Acta Physiologica*. 2018;222:e12892.
13. Tsang TW, Lucas BR, Olson HC, Pinto RZ, Elliott EJ. Prenatal alcohol exposure, FASD, and child behavior: A Meta-analysis. *Pediatrics*. 2016;137(3):e20152542.
14. Moore EM, Riley EP. What happens when children with fetal alcohol spectrum disorders become adults? *Curr Dev Disord Rep*. 2015;2(3):219-227.
15. Rangmar J, Dahlgren Sandberg A, Aronson M, Fahlke C. Cognitive and executive functions, social cognition and sense of coherence in adults with fetal alcohol syndrome. *Nord J Psychiatry*. 2015;69:472-478.
16. Panczakiewicz AL, et al. Neurobehavioral deficits consistent across age and sex in youth with prenatal alcohol exposure. *Alcohol Clin Exp Res*. 2016;40(9):1971-1981.
17. Stevens SA, Nash K, Koren G, Rovet J. Autism characteristics in children with fetal alcohol spectrum disorders. *Child Neuropsychology*. 2013;19(6):579-587.
18. Stephen JM, Kodituwakku PW, Kodituwakku EL, Romero L, Peters AM, Sharadamma NM, Caprihan A, Coffman BA. Delays in auditory processing identified in preschool children with FASD. *Alcoholism, Clinical and Experimental Research*. 2012;36(10):1720-1727.
19. Vernescu RM, Adams RJ, Courage ML. Children with fetal alcohol spectrum disorder show an amblyopia-like pattern of vision deficit. *Developmental Medicine and Child Neurology*. 2012;54(6):557-562.
20. Taggart TC, Simmons RW, Thomas JD, Riley EP. Children with Heavy Prenatal Alcohol Exposure Exhibit Atypical Gait Characteristics. *Alcoholism: Clinical & Experimental Research*. 2017;41(9):1648-1655.
21. Glass L, Moore EM, Akshoomoff N, Lyons Jones K, Riley EP, Mattson SN. Academic difficulties in children with prenatal alcohol exposure: Presence, profile, and neural correlates. *Alcohol Clin Exp Res*. 2017;41(5):1024-1034.
22. World Health Organization. Counting the costs of drinking alcohol during pregnancy. *Bulletin of the World Health Organization*. 2017;95:320-321.
23. Centers for Disease Control and Prevention. Fetal Alcohol Spectrum Disorders (FASDs). <https://www.cdc.gov/ncbddd/fasd/alcohol-use.html>
24. American Academy of Pediatrics. AAP Says No Amount of Alcohol Should Be Considered Safe During Pregnancy. <https://www.aap.org/en-us/about-the-aap/aap-press-room/Pages/AAP-Says-No-Amount-of-Alcohol-Should-be-Considered-Safe-During-Pregnancy.aspx>
25. American College of Obstetricians and Gynecologists (ACOG). Fetal alcohol spectrum disorders (FASD) prevention program. <https://www.acog.org/About-ACOG/ACOG-Departments/Tobacco--Alcohol--and-Substance-Abuse/Fetal-Alcohol-Spectrum-Disorders-Prevention-Program>
26. Centers for Disease Control and Prevention. Notice to Readers: Surgeon General's Advisory on Alcohol Use in Pregnancy. <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5409a6.htm>
27. Jacobson SW, Carter RC, Jacobson JL. Commentary on Day and Colleagues (2013): The association between prenatal alcohol exposure and behavior at 22 years of age – adverse effects of risky patterns of drinking among low to moderate alcohol-using pregnant women. *Alcoholism: Clinical & Experimental Research*. 2013;37(7):1069-1073.
28. Janisse JJ, Bailey BA, Ager J, Sokol RJ. Alcohol, tobacco, cocaine, and marijuana use: Relative contributions to preterm delivery and fetal growth restriction. *Substance Abuse*. 2014;35:60-67.
29. Mamluk L, Edwards HB, Savović J, et al. Low alcohol consumption and pregnancy and childhood outcomes: Time to change guidelines indicating apparently 'safe' levels of alcohol during pregnancy? A systematic review and meta-analyses. *BMJ Open*. 2017;7:e015410.
30. Crawford-Williams F, Steen M, Esterman A, Fielder A, Mikocka-Walus A. "My midwife said that having a glass of red wine was actually better for the baby": A focus group study of women and their partner's knowledge and experiences relating to alcohol consumption in pregnancy. *BMC Pregnancy and Childbirth*. 2015;15:79.
31. Tunc-Ozcan E, Sittig LJ, Harper KM, Graf EN, Redei EE. Hypothesis: Genetic and epigenetic risk factors interact to modulate vulnerability and resilience to FASD. *Frontiers in Genetics*. 2014;5.
32. Alati R, Smith GD, Lewis SJ, Sayal K, Draper ES, Golding J, Fraser R, Gray R. Effect of prenatal alcohol exposure on childhood academic outcomes: Contrasting maternal and paternal associations in the ALSPAC study. *PLoS ONE*. 2013;8(10):e74844.
33. Chiodo LM, Da Costa DE, Hannigan JH, et al. The Impact of Maternal Age on the Effects of Prenatal Alcohol Exposure on Attention. *Alcoholism: Clinical and Experimental Research*. 2010;34:1813-1821.
34. de Zeeuw P, Zwart F, Schrama R, van Engeland H, Durston S. Prenatal exposure to cigarette smoke or alcohol and cerebellum volume in attention-deficit/hyperactivity disorder and typical development. *Transl Psychiatry*. 2012;2(3):e84.
35. Forray A. Substance use during pregnancy. *F1000Res*. 2016;5:F1000 Faculty Rev-8874
36. Hemingway SJA, Bledsoe JM, Davies JK, Brooks A, Jirikowic T, Olson EM, Thorne JC. Twin study confirms virtually identical prenatal alcohol exposures can lead to markedly different fetal alcohol spectrum disorder outcomes – fetal genetics influences fetal vulnerability. *Adv Pediatr Res*. 2019;5:23.