

Raja and Neil's FASD Book Club

How Does Alcohol Affect the Developing Fetus?



Dr Neil Aiton is a neonatologist. He helps new-born babies who were exposed to alcohol in the womb before they were born.



In this session, he talked about how alcohol affects a fetus in the womb, and how the brain grows during pregnancy.



And he talked about how the effect of alcohol on a fetus during pregnancy can be different from person to person.



He also talked about something called epigenetics, and how alcohol is involved in this.

How alcohol affects the fetus



Alcohol can affect the developing fetus in lots of ways. It can damage the organs and also the way the body creates energy (metabolism).



Alcohol can also affect the mother's hormone levels and how much water she has in her body. These things also affect the developing fetus.



Even low levels of alcohol consumption have been linked to a higher risk of miscarriage.



Alcohol also increases the risk of children being born too early and too small.

The brain and nervous system development



Neil outlined 3 main stages in the way that the brain and nervous system develop during pregnancy:



1) From around 3 weeks, the basic structure of the brain and the nervous system is formed.



2) From around 7 weeks, what are called 'white matter' connections are made in the brain.



3) Around 22-24 weeks, the brain starts to get more complicated, and starts to develop the folds that give it its bumpy look.

How alcohol affects differently at different stages of pregnancy



Because the brain starts to develop very early on in pregnancy, alcohol exposure during the early part of pregnancy can have a large impact on the fetus.



The central parts of the brain (the limbic system) are formed around this time. They are the parts that control how well you can focus on things and your attention, and are linked to conditions like ADHD which lots of people FASD have.



Later on in pregnancy, when the brain is becoming more complex, alcohol can still have a lot of impact, so it's important that doctors remind pregnant women that it's never too late to stop drinking alcohol.

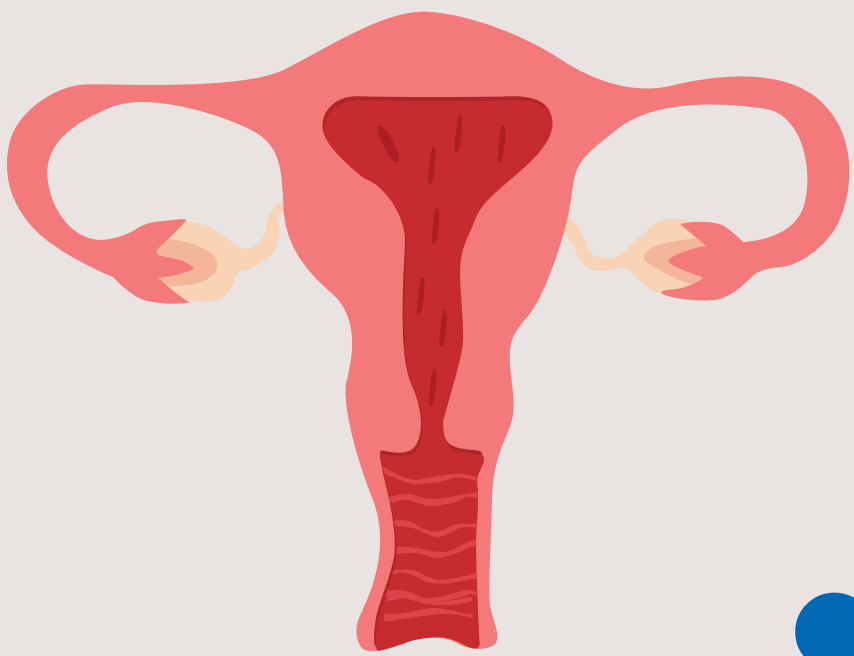
Epigenetics and FASD

There are other ways that alcohol can affect babies, beyond just FASD.

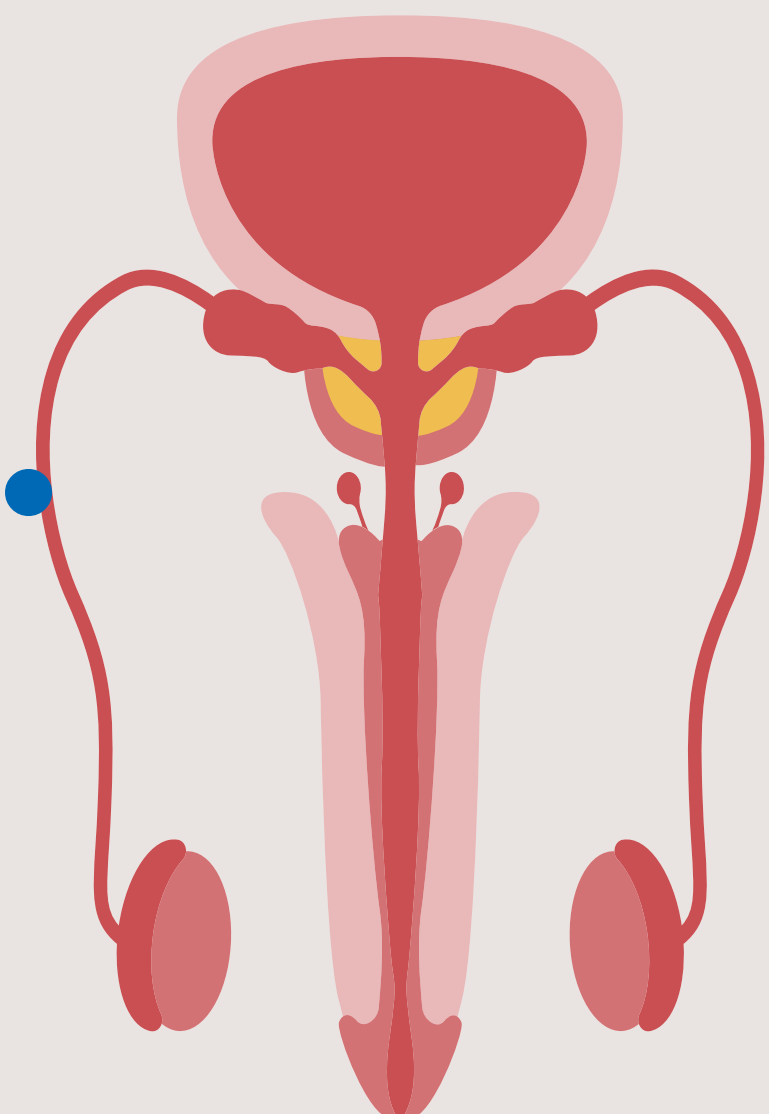
If someone's mother or grandmother was exposed to alcohol when they were in the womb, they might be affected by genetic changes from these older generations.



This is because female fetuses already have all of their eggs before birth, so if these are exposed to alcohol, it can affect the next generation too by altering their DNA.



Men's sperm can also be affected by alcohol, and potentially pass on altered DNA to their children, although sperm refresh every 3 months or so. This is why dads-to-be are advised to avoid alcohol if they and their partner are trying for a baby.



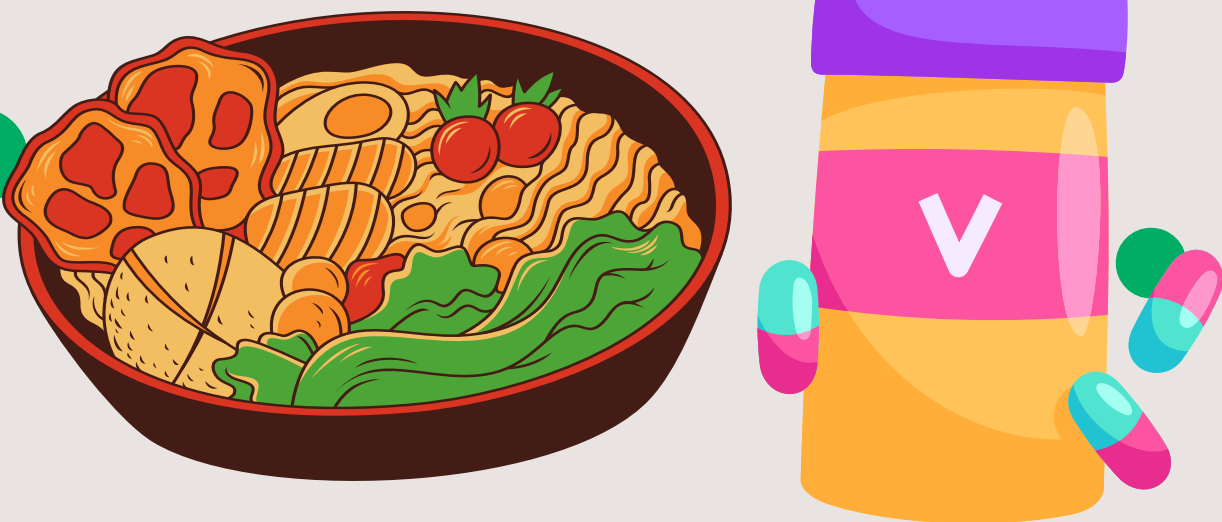
Why it's hard to know how alcohol during pregnancy will affect different people



It's hard to predict how being exposed to alcohol in the womb will affect different people.



Some people are more naturally resistant to alcohol than others.



Different women choose different diets and vitamins during their pregnancies, which can affect how alcohol is passed to the fetus.



Alcohol also has different effects depending on when in the pregnancy it's consumed and how much is consumed.

It's safest to avoid alcohol during pregnancy



The Chief Medical Officers in the UK say it's safest to avoid alcohol if you are pregnant or could become pregnant.

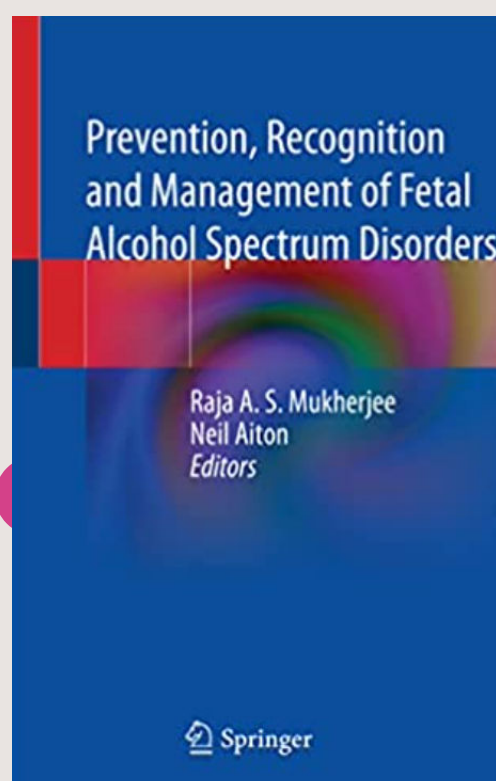
2016

This has been their official advice since 2016.



It's important to talk with a doctor or midwife about alcohol in pregnancy and how it might have affected you or your loved ones.

What is Raja & Neil's FASD Bookclub?



Prof Raja Mukherjee and Dr Neil Aiton wrote a book for other doctors about FASD. But they hope more people can access the information.



In this online book club people who wrote chapters give 15- minute talks about what they wrote and then they answer questions.



After each book club, the talks are shared on National FASD's YouTube channel.



You don't have to read the book. It's expensive because it's for libraries and universities. But if you want to order it, it's here:

<https://tinyurl.com/RajaAndNeilFASDBook>