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## CAFFEINE IN PREGNANCY

### Key messages:

- Current UK guidance from the NHS and the RCOG is that women can safely consume up to 200mg of caffeine daily, while internationally the WHO sets the safe limit at below 300mg. • Current research evidence shows that there is a link between high caffeine consumption (>300mg a day) and lower birthweight and preterm birth.
- Intakes of more than 350mg a day are associated with pregnancy loss (miscarriage and stillbirth). • A recent UK based study found a significant increase in stillbirth risk for each 100mg caffeine consumed each day.
- There is growing evidence that caffeine intake in pregnancy is one of the modifiable risk factors for stillbirth. The key modifiable factors most strongly associated with stillbirth are maternal obesity, smoking and undetected fetal growth restriction.
- Midwives should advise pregnant women about the risks of high caffeine intake during pregnancy, so that they can make informed choices to reduce their intake.
- Midwives should provide women with guidance on how to monitor their caffeine intake – bringing awareness to the elevated levels of caffeine present in energy drinks (which can be 100mg per serving), in other caffeinated soft drinks and coffee; as well as the presence of caffeine in chocolate and some over the counter analgesia

### Evidence:

#### Stillbirth

The Midlands and North of England Stillbirth Study (MiNESS) interviewed 290 women who experienced a stillbirth after 28 weeks and 720 women in a control





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group who did not have a stillbirth. The research team interviewed women within a month of the birth, exploring a wide range of lifestyle factors. This identified that women who experienced a stillbirth were more likely than the control group to exceed the WHO limit of 300mg of caffeine per day (15% of women compared to 8% in the control group) (Heazell et al, 2020). The study identified a linear relationship between higher levels of caffeine intake during pregnancy, from coffee and caffeinated soft drinks, in the women who experienced a stillbirth, when compared with the control group

. • In the study, energy drinks had the most impact per serving, leading to 1.85x higher stillbirth risk, followed by instant coffee (1.34x) and cola (1.23x).

• The study found that although most (54.5%) people cut down on caffeine while pregnant, 1 in 20 increased their intake, showing a lack of awareness about caffeine consumption and the risks

. • Women interviewed in the study identified midwives as a key source of information for them in making health behaviour decisions in pregnancy.

Greenwood et al (2010) cohort study of 2,643 pregnant women found that women with higher caffeine intakes in the first trimester had a higher risk of late miscarriage and stillbirth. This was particularly marked for those with an intake of over 300mg a day.

It is also important to remember the other key modifiable risks associated with higher rates of stillbirth. Gardosi et al (2013) UK based population study of 92,218 singleton pregnancies found the following key modifiable factors associated with stillbirth:

- maternal obesity
- smoking and
- undetected fetal growth restriction.

### **Low Birthweight**





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The link between high caffeine intake and low birth weight is well established. A range of observational studies and systematic reviews identified a link between high caffeine consumption (>200mg or >300mg a day) and lower birth weights (Bakker et al, 2010; Bech et al, 2015; CARE study group, 2008; Chen et al 2014; Chen et al, 2019; Kobayashi et al, 2019; Modzelewska et al, 2019).

### **Miscarriage**

A systematic review found a link between high caffeine intake (>300mg) and spontaneous miscarriage (Lyngso et al, 2017) but no association with fertility or length of time to becoming pregnant.

### **Preterm Birth**

There are different findings in relation to a possible association between maternal caffeine intake and preterm birth. While some studies indicate that maternal caffeine intake is not associated with higher rates of preterm birth (Jarosz et al, 2012; Sengpiel et al 2013), there is a suggestion in one systematic review that there may be an association between intakes of over 300mg a day and preterm birth (Greenwood et al, 2014). This supports the current advice given by midwives to women to seek to keep their caffeine intake below 200mg a day.

### **Additional resources and guidance**

The Tommy's website has a useful caffeine calculator tool: Tommy's (2020) Check your caffeine intake in pregnancy Available at <https://www.tommys.org/pregnancy-information/impregnant/nutrition-pregnancy/check-your-caffeine-intake-pregnancy>

NHS Choices (2018) Should I limit caffeine during pregnancy? Available at <https://www.nhs.uk/common-health-questions/pregnancy/should-i-limit-caffeine-duringpregnancy/>





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