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# The Impact of Caffeine in Pregnancy

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## INTRODUCTION

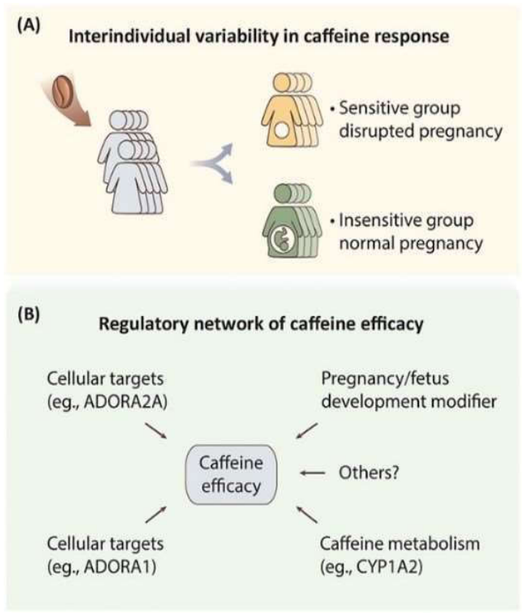
During pregnancy, caffeine (an alkaloid of the purine class, a natural substance found in the seeds, leaves, and fruits of more than 60 plant species, also called 1,3,7-trimethylxanthine) is consumed by about 75% of pregnant women. Because the consumption of this active substance is relatively increased during pregnancy (300 mg/day), the following question was asked: Is there a risk of developing a negative impact on the fetus in pregnancy?

## OBJECTIVE OF THE STUDY

The work was carried out with the aim of elucidating some associations in caffeine consumption (taking into account also the amount of caffeine consumed per day) and the consequences that may occur in the fetus during pregnancy and after.

## METHODS

The research was carried out by studying scientific articles from different periods in order to observe some differences between the hypotheses put forward, as well as the progress made in order to determine the consequences for the health of the mother and fetus.




https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7035149/

**Figure no.1.** *Individual variability of the body's response to caffeine.*

## KEYWORDS

Caffeine, pregnancy, metabolism, negative impact.

## RESULTS

**It is believed that caffeine can affect the fetus in pregnancy due to the fact that:**

Being a fat-soluble substance, it is able to break through the placental barrier. CYP1A2, the main enzyme involved in the metabolism of caffeine, is absent in the placenta and the organism of the fetus. The effect of caffeine is potential in the last trimester when its elimination from the maternal organism decreases by 3 times, and the concentration in the blood increases by 75%.

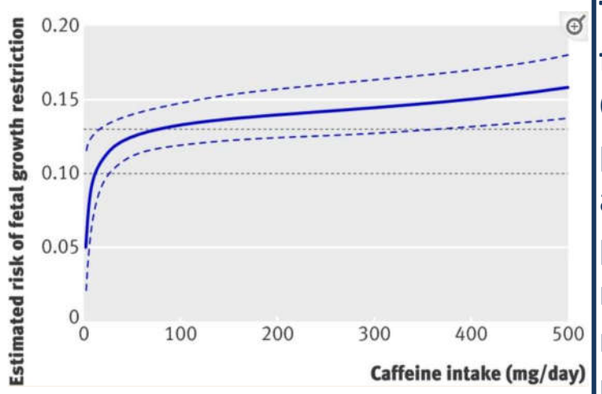



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**Figure no.2:** *The interdependence between increased caffeine consumption and fetal weight loss at birth.*

**The negative effect is manifested by the following physiological mechanisms:**

Caffeine can lead to inhibition of phosphodiesterase and antagonization of adenosine actions, decreased intervillous placental flow, increased levels of maternal epinephrine and cyclic 3,5-monophosphate, catecholamines; risk of miscarriage, low birth weight (a reduction of 60-90 g, which increases the risk of perinatal morbidity), risk of Sudden Infant Death Syndrome (in case of consumption >400mg/day), increased homocysteine levels (which leads to endothelial and cardiovascular diseases).

## CONCLUSION

It is believed that caffeine will have a detrimental effect only in case of excessive consumption. According to the recommendation of medical specialists, the amount that can be consumed by pregnant women is less than 200 mg/day (equivalent to 2 cups of espresso).