# Article information:

The influence of maternal cortisol and emotional state during pregnancy on fetal intrauterine growth | Pediatric Research
<https://www.nature.com/articles/pr201270>

# Article summary:

1. The DOHaD research paradigm explores the impact of the prenatal and early postnatal environment on long-term health outcomes.

2. Animal studies suggest that the hypothalamic-pituitary-adrenal (HPA) axis plays a role in transmitting stress from mother to fetus, but the mechanisms in humans are still unclear.

3. While there is evidence of a correlation between maternal stress during pregnancy and slower fetal growth, the variance explained by maternal stress is low.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article titled "The influence of maternal cortisol and emotional state during pregnancy on fetal intrauterine growth" discusses the relationship between maternal cortisol levels, emotional state, and fetal growth during pregnancy. While the article provides some interesting findings, there are several potential biases and limitations that need to be considered.

One potential bias in the article is the reliance on self-reported measures of maternal emotional state. The use of self-report questionnaires such as the Edinburgh Depression Scale and Hospital Anxiety and Depression Scale may introduce bias due to social desirability or inaccurate reporting. Additionally, these measures may not capture all aspects of maternal emotional state, such as chronic stress or trauma history, which could also impact fetal growth.

Another limitation is the small sample size of the study (91 pregnant women). This small sample size may limit the generalizability of the findings and increase the risk of Type I errors (false positives) or Type II errors (false negatives). A larger sample size would provide more robust results and allow for subgroup analyses based on factors such as gestational age or maternal characteristics.

The article also lacks a discussion of potential confounding variables that could influence fetal growth. Factors such as maternal nutrition, smoking status, alcohol consumption, or medical conditions like gestational diabetes could all impact fetal growth but are not mentioned in this study. Without controlling for these confounders, it is difficult to determine if cortisol levels and emotional state are truly independent predictors of fetal growth.

Additionally, there is limited discussion of alternative explanations for the observed associations between cortisol levels/emotional state and fetal growth. The authors suggest that alterations in the function of the hypothalamic-pituitary-adrenal axis may be responsible for low birth weight found after prenatal stress. However, other mechanisms such as placental dysfunction or altered nutrient transport could also contribute to impaired fetal growth.

Furthermore, there is a lack of consideration for potential reverse causality in this study. It is possible that fetal growth influences maternal cortisol levels and emotional state, rather than the other way around. Longitudinal studies that measure cortisol levels and emotional state at multiple time points throughout pregnancy would provide more insight into the directionality of these relationships.

The article also does not adequately address potential risks associated with high cortisol levels or maternal distress during pregnancy. While the authors mention that there is evidence linking maternal stress to slower fetal growth, they downplay the variance explained by maternal stress (approximately 1% in a meta-analysis). This lack of emphasis on potential risks may lead readers to underestimate the importance of managing stress during pregnancy.

In terms of reporting, the article primarily focuses on positive associations between cortisol levels/emotional state and fetal growth. There is limited discussion of null findings or negative associations, which could provide a more balanced perspective on the topic. Additionally, there is a lack of exploration of counterarguments or alternative hypotheses that could explain the observed results.

Overall, while this article provides some interesting insights into the relationship between maternal cortisol levels, emotional state, and fetal growth, it has several limitations and biases that need to be considered. Future research with larger sample sizes, control for confounding variables, and consideration of alternative explanations is needed to further understand these complex relationships.

# Topics for further research:

* Potential confounding variables impacting fetal growth during pregnancy
* Mechanisms of placental dysfunction and altered nutrient transport in fetal growth restriction
* Longitudinal studies on cortisol levels and emotional state throughout pregnancy
* Risks associated with high cortisol levels and maternal distress during pregnancy
* Importance of managing stress during pregnancy for optimal fetal growth
* Alternative explanations for the observed associations between cortisol levels/emotional state and fetal growth

# Report location:

<https://www.fullpicture.app/item/6b66a6bc682eb695bc7e201c3ef69bae>