



## Pregnancy Outcomes and Morning Sickness: A Perspective

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### INTRODUCTION

Despite being common, pregnancy nausea has an unclear explanation. The strongest possibility is human chorionic gonadotropin, which is very undoubtedly endocrine in origin and most likely a by-product of placental hormones. Greater levels of nausea and vomiting during pregnancy have long been linked to a lower rate of spontaneous abortion; however the underlying causes are still unknown. One widely accepted theory at the moment is that nausea and vomiting during pregnancy act as fetoprotective mechanisms, causing aversions to foods, particularly those high in meat, dairy, and shellfish, which may contain toxins, infections, or mutagens. However, genetic or epigenetic flaws that exist at or close to conception are the main causes of spontaneous abortions [1].

As a result, most embryos have their developmental destiny decided before the signs of morning sickness appear. High quality embryos are more likely to both create the biochemical precursors of pregnancy illness and prevent spontaneous abortion, which provides an alternative explanation for the relationship between pregnancy sickness and spontaneous abortion. Recent studies have demonstrated that there is a considerable correlation between pregnancy sickness and spontaneous abortion that increases with maternal age and becomes especially pronounced in moms who are 35 or older. This is a reflection of the concurrent increase in autosomal aneuploidy incidence with mother age [2]. The association between morning sickness during pregnancy and spontaneous abortion exists not because morning sickness is fetoprotective, but rather because morning sickness is a sign of a high-quality embryo.

### DISCUSSION

Pregnancy sickness, which is caused by an antagonistic pleiotropy over thyroid function in which embryos employ hCG to modify maternal thyroid hormone synthesis during

gestation, is not a trait that is adaptive in and of itself. Thyroid hormone synthesis, which is important for neurodevelopment and benefits embryos, but causes nausea and vomiting in the mother as a side effect [3]. However, pregnancy illness might still maintain embryo quality according to a distinct mechanism proposed under the MEPH. By regulating the dietary intake of iodine, a vitamin important for neuromotor development, embryo quality is safeguarded. Iodine has been scarce for most humans for the majority of our evolutionary history, and iodine deficiency is still the most typical cause of cognitive impairment worldwide.

Iodine also has another intriguing characteristic that can be harmful to the development of the embryonic brain during early pregnancy [4]. Given the strong relationship between iodine consumption and thyroid function (hypothyroidism is connected to higher levels of nausea and vomiting, whereas hyperthyroidism is linked to lower levels), an easy conclusion can be drawn. Pregnancy illness is less common when plants, especially corn and maize, are the only sources of food staples. This is not because plants are safe, as was previously believed, but rather because these meals are iodine deficient and may also be goitrogenic [5].

It is obvious that pregnancy illness, which lowers dietary iodine intake, is maladaptive in iodine deficit and hypothyroidism situations. By limiting the consumption of iodine-rich foods, increased levels of pregnant sickness brought on by hyperthyroidism, on the other hand, may shield embryos from the harmful effects of excessive dietary iodine during early gestation. Sickness during pregnancy is a puzzling aspect of human reproduction.

Many women experience nausea and vomiting in the early stages of pregnancy, yet despite its frequent occurrence, its pathogenesis is still unknown. Despite the fact that placental hormones are undoubtedly involved, it is classified as an obstetric condition with several causative pathways. Pregnancy

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sickness has the odd property of predicting a successful pregnancy: spontaneous abortion is less common when a woman has nausea and vomiting during pregnancy.

The maternal and embryo protection hypothesis is an extension of the basic claim that pregnancy sickness is fetoprotective to encompass moms who are immune compromised throughout gestation (MEPH) [6]. It asserts that pregnant illness safeguards moms and embryos by making people averse to items that may pose dietary risks. Whether the connection between pregnancy sickness and spontaneous abortion is causal or results from post hoc ergo propter hoc reasoning is a crucial and unanswered question. That is, while pregnancy sickness and spontaneous abortion is connected to a third reason, there is a linkage between the two that makes the latter more likely to occur after the former. The third factor has a clear contender in the form of embryo quality.

According to the embryo quality hypothesis, low quality embryos are less likely to produce the biochemical triggers of morning sickness than high quality embryos and are more likely to spontaneously abort than good quality embryos. The maternal-embryo conflict and, in particular, the synthesis of Human Chorionic Gonadotropin (hCG), a glycoprotein hormone generated in many isoforms and involved in a number of crucial tasks throughout gestation, have been explored in relation to the embryo quality theory. Human chorionic gonadotropin (hCG), a dimeric glycoprotein hormone that confers functionality, is a placental (embryonic) hormone that plays the role of corpus luteum rescue in humans. hCG is a copycat of maternal luteinizing hormone and is produced by duplication of the genes for the beta chain. The embryo may prevent spontaneous abortions that its mother would have otherwise preferred, which could be a possible source of genetic conflict, by creating its own hormone [7].

Similar to what I explain below, the immediate mechanism includes hCG stimulating the maternal thyroid. Space does not allow for a complete discussion of this intriguing notion, but I do note that it would be beneficial to review it from the standpoint of maternal-fetal conflict. A crucial hormone and its receptor in Huxley's concept (insulin-like growth factor 2) are vulnerable to genomic imprinting, and the placenta is constructed by embryonic genes.

## CONCLUSION

Here, I investigate the claim that the association between morning sickness and spontaneous abortion is not causative but rather an effect of the embryo's quality. I'll break up my review into three sections. I start by looking at the causes of variance in human embryo quality and how it varies with both gestational and maternal ages. I then look at the biological causes of morning sickness. The role of placental hormones and how they change with embryo quality are the main topics of this article. Third, I look at the connection between spontaneous abortion and pregnant sickness as well as its probable third cause, embryo quality. I next go over the findings in light of the maternal and embryo protection and embryo quality hypothesis.

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