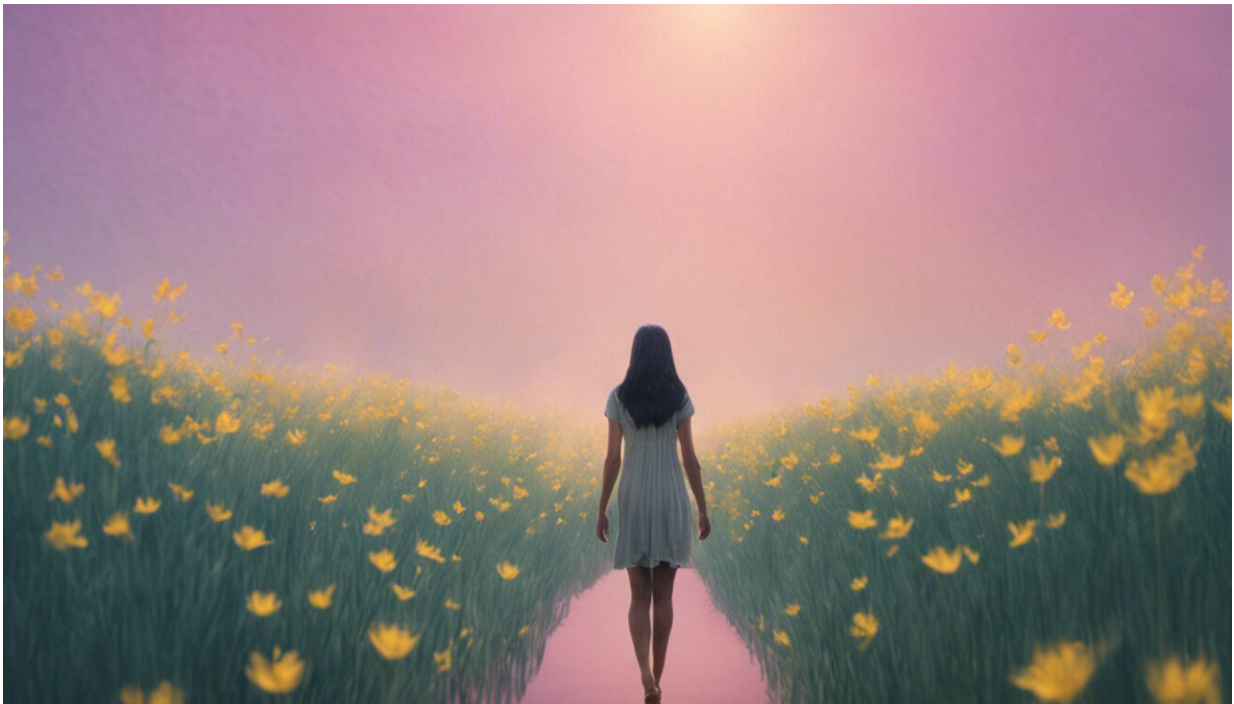


# Significance of vitamin D levels in pregnant women may depend on their ethnic origin

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Credit: AI-generated image ([disclaimer](#))

Ethnicity affects the links between vitamin D levels and high blood-sugar levels in pregnant women and the likelihood of them undergoing emergency Cesarean deliveries, shows research in Singapore.

The findings come from a large scale ongoing study of mothers and

infants before and after birth, called 'Growing Up in Singapore Towards healthy Outcomes (GUSTO)'—a collaboration of Singapore's National University Health System (NUHS), KK Women's and Children's Hospital (KKH) and the A\*STAR Singapore Institute for Clinical Sciences.

The GUSTO study is unique in its ability to compare participants from the three major ethnic groups of Singapore—Chinese, Malay and Indian. This enables researchers to explore the influences of ethnicity on several aspects of maternal and infant nutrition and health.

Blood levels of [vitamin D](#) and of glucose were measured in 940 [women](#) between weeks 26 and 28 gestation. Of these, 388 women had some level of vitamin D inadequacy, which was particularly prevalent among the women of Malay and Indian origin. Vitamin D status was associated most significantly with higher fasting [blood glucose levels](#), and therefore a greater risk of metabolic conditions, in Malay women. For emergency Cesarean section, an intervention often required due to poor muscle performance and uterine contractions, the risk was most significantly increased in Chinese and Indian women.

Although more intensive follow-up study is needed, these findings suggest that the guidance and clinical intervention offered to [pregnant women](#) may need to be refined to take greater account of ethnic differences.

"Our evidence also suggests health professionals should monitor vitamin D status in pregnancy, or at least screen those at risk of inadequate vitamin D," says Mary Chong of A\*STAR.

Chong is also concerned about the relatively widespread vitamin D inadequacy in general. While vitamin D is long known to influence the risk of rickets in children and osteoporosis in adults, Chong explains,

there is growing evidence linking vitamin D deficiency in adults with an increased risk of other diseases such as cardiovascular diseases, hypertension, cancers, autoimmune diseases and infectious diseases.

"There are misconceptions that living in a tropical country like Singapore means the risk of vitamin D deficiency or inadequacy is low," says Chong. "Our data reveals that this is not true." Chong points out that many people in Singapore tend to stay indoors to avoid the humid and hot weather, limiting sunlight exposure. There is also only a limited range of local foods that are fortified with vitamin D.

**More information:** See Ling Loy et al. Association of Maternal Vitamin D Status with Glucose Tolerance and Caesarean Section in a Multi-Ethnic Asian Cohort: The Growing Up in Singapore Towards Healthy Outcomes Study, *PLOS ONE* (2015). [DOI: 10.1371/journal.pone.0142239](https://doi.org/10.1371/journal.pone.0142239)

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