

Depression in pregnant women is associated with low folate levels, but not with vitamin B12

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A study of women in Singapore has revealed a possible link between depression in mid-to-late pregnancy and levels of folate, also known as folic acid or vitamin B9.

"Depression affects as many as 12 per cent of women during [pregnancy](#) and 7 per cent just after birth," explains study leader Mary Chong of the A*STAR Singapore Institute for Clinical Sciences. "We were keen to find out if nutrition during pregnancy could play a role in optimizing a mother's mental health, and in this study we focused on folate and [vitamin B12](#)."

Previous studies in groups such as the elderly and adolescents have suggested possible links between [depression](#) and low levels of these B vitamins, explains Chong. Limited studies in women both during and shortly after pregnancy, however, had not demonstrated any link.

Chong worked with a large team of researchers in Singapore and collaborators from the United Kingdom, New Zealand and Canada as part of the Growing Up in Singapore Towards healthy Outcomes (GUSTO) study group. Women participating in the study completed a questionnaire known as the Edinburgh Postnatal Depression Scale, between the twenty-sixth and twenty-eighth week of pregnancy, and then again three months after giving birth. Their responses were matched against measurements of plasma folate and vitamin B12 taken during pregnancy.

Low folate levels were found to be associated with depression during pregnancy, but not with [postnatal depression](#). There was no association between depression and vitamin B12.

Chong emphasizes that finding an association between low folate levels and antenatal depression does not indicate any direction of causation. She notes, however, that folate is required for the synthesis of neurochemicals that are known to regulate moods and behavior, and so low [folate levels](#) may in part cause depression.

It is also possible that depression results in poor nutritional habits or

causes some of the depressed women to neglect taking their recommended vitamin supplementation, leading to folate insufficiency. Such lack of adherence to prenatal supplement recommendations has been demonstrated in previous studies by other researchers.

Chong's group plans to begin a new study in January 2015 that will start by measuring folate and vitamin B12 levels in women before conception. It will then follow, both during and after pregnancy, the prevalence of depression in those [women](#) who conceive. "This will enable us to further understand the direction of causality in this relationship and when to intervene, so as to help support mothers' mental well-being," says Chong.

More information: Chong, M. F. F., Wong, J. X. Y, Colega, M., Chen, L.-W., van Dam, R. M. et al. "Relationships of maternal folate and vitamin B12 status during pregnancy with perinatal depression: The GUSTO study." *Journal of Psychiatric Research* 55, 110–116 (2014). [dx.doi.org/10.1016/j.jpsychires.2014.04.006](https://doi.org/10.1016/j.jpsychires.2014.04.006)

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