

OP35 **VITAMIN D TO REDUCE DEPRESSIVE SYMPTOMS:
A SYSTEMATIC REVIEW**

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Background Both vitamin D deficiency/insufficiency and depression are major global public health concerns. An estimated 1 billion people worldwide have low vitamin D levels and the WHO reports that depression is the third largest burden of disease worldwide. In the last 10 years animal, genetic and cross-sectional studies have shown an association between low vitamin D levels and increased depressive symptoms.

Objectives (1) To examine the association between vitamin D status (using serum levels) and depressive symptoms. (2) To determine the effectiveness of vitamin D supplementation for the primary and secondary prevention of depressive symptoms.

Methods MEDLINE, EMBASE, Web of Science and Knowledge, PsychInfo, the Cochrane Library and trial registers were searched with no language restrictions from inception to October 2010. Studies were included if they fulfilled the following criteria: (1) prospective observational studies (cohort/nested case control studies), with participants free of depressive disorder at baseline, 25 hydroxy-vitamin D3 serum levels measured, and outcomes relevant to depressive symptoms (clinically diagnosed depressive disorder or a change in depressive symptoms measured by validated mood/depression scales. (2) Randomised controlled trials (RCTs), with participants free of depressive disorder at baseline for primary prevention trials, or a diagnosis of depressive disorder for secondary prevention trials, where the intervention was vitamin D supplementation (as a single micronutrient or multivitamin preparations), the comparison groups were no intervention or placebo, and outcomes were: clinical diagnosis of depression or change in validated mood/depression scale score for primary prevention, and for secondary prevention a change in disease progression measured by validated mood/depression scales or clinically using the Mental State Examination.

Results Following initial screening of the titles and abstracts 47 potentially relevant studies were assessed for inclusion by 2 reviewers independently. 12 separate studies met the inclusion criteria, 2 addressing objective 1 and 10 addressing objective 2. Studies reported a wide range of different populations, interventions and outcomes which preclude an overall synthetic meta-analysis. Preliminary data from prospective studies show an association between low vitamin D levels and subsequent depressive symptoms. Data from trials are mixed, with the largest RCT showing no beneficial effect of supplementation on depressive symptoms, while most smaller studies (6/9) show a positive effect of vitamin D supplementation on depressive symptoms, indicating likely publication bias.

Conclusions There is limited research on the role of vitamin D to reduce depressive symptoms and it currently provides a mixed picture – it is likely that more research will be needed.