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##### **What is the relationship between vitamin D and obesity?**

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**Background & Aim:** Obesity is a serious public health issue and it is imperative to identify their modifiable risk factors, particularly those that can be easily treated. According to the literature, there seems to be an association between vitamin D deficiency and obesity.

**Aims:** Assess the relationship between vitamin D deficiency and obesity; measure the possible effects of vitamin D supplementation on body weight reduction.

**Method:** We performed a literature search using the Mesh terms: 'Vitamin D deficiency' and 'obesity' in the main bases of scientific data, between 2000 and 2015. We excluded articles that did not meet the objectives of the study or whose theme was repeated.

**Results:** In the studies found it was agreed that obese individuals tend to have low levels of vitamin D, however, the reason is controversial. Some studies suggest the captation of vitamin D by a person's own adipose tissue, since it expresses several receptors for vitamin D. Other studies, on the other hand, suggest that vitamin D deficiency promotes obesity by inhibiting weight loss, showing a benefit in vitamin supplements for weight reduction. But, since vitamin D is essential in the metabolism of calcium, it becomes difficult to separate the effects due to the own vitamin and calcium-mediated effects. In the studies reviewed the supplementation with vitamin D was included among participants without vitamin deficit, demonstrating that supplementation has no effect on them.

**Conclusions:** The association between vitamin D deficiency and obesity is well established, although the mechanisms involved are not clear and there is no certainty regarding the health consequences. There is a need for prospective studies development that include prior measurements involving vitamin D and appropriate doses of supplementation. So, for now, the role of vitamin D supplementation on obesity remains unclear.

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