

Society for Endocrinology - Media Release

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Pregnant women ‘should supplement vitamin D’

Pregnant women should take steps to ensure they have adequate vitamin D in their diet, or they and especially their unborn children may run the risk of developing autoimmune diseases such as diabetes and thyroid diseases.

Speaking at the British Endocrine Societies meeting in Birmingham, Dr Chantal Mathieu (University of Leuven, Belgium) said that research had shown that low levels of vitamin D are associated with autoimmune diseases. This is particularly important during pregnancy, when the nutritional requirement of the developing baby means that mothers can easily develop shortages of vitamin D.

In recent work Dr Mathieu has shown that giving vitamin D to mice who would normally develop type 1 diabetes has helped protect them against the onset of the disease.

Vitamin D deficiency is associated with poor bone health and rickets, but much recent work has shown that people with vitamin D deficiency tend to have a poor immune system, and take longer to recover from infections.

Dr Mathieu said

There is now a lot of work showing that vitamin D deficiency is associated with a poor immune system. This makes it difficult to recover from infection, but it also seems to make you more likely to develop autoimmune diseases. Recently we have been able to prevent the development of type 1 diabetes in mice with a predisposition to develop the disease.

Pregnant mothers are particularly liable to develop vitamin D deficiency, and so they are at increased risk of developing autoimmune diseases through being pregnant.

There are two ways of ensuring you have enough vitamin D. You can make sure that you get an adequate amount of sunshine – bearing in mind that this has to be done sensibly, because too much sunshine can cause problems such as skin cancer. Or it might be easier simply to take vitamin supplements during pregnancy.

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Notes for editors:

This paper will be presented at the Society for Endocrinology spring meeting at 09:45 on Wednesday 7 March. The abstract for Dr Mathieu’s talk, *Vitamin D and autoimmune disease*, is reproduced below: see <http://www.endocrine-abstracts.org/ea/0013/ea0013s32.htm>. This talk forms part of the *Vitamin D – New Perspectives session*.

This call is supported by a recent US study which has shown that the vast majority of both expectant mothers and newborn children are Vitamin D deficient (see: http://www.eurekalert.org/pub_releases/2007-02/uops-vdd022707.php, dated 27 Feb).

The Society for Endocrinology Spring Meeting is Britain's biggest hormone meeting, and is taking place at the ICC, Birmingham, from 5-8 March.

Please mention this meeting in any story.

For more information please contact Tom Parkhill or Jo Thurston on 01454 642230 or 07971 691774.

ABSTRACT

Vitamin D and autoimmune disease

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1,25-dihydroxyvitamin D₃ [1,25(OH)₂D₃] exerts its effects *via* the vitamin D receptor (VDR) that belongs to the steroid/thyroid hormone receptor superfamily leading to gene regulation mediating various biological responses. Within the last two decades, the receptor has been shown to be present not only in classical target tissues such as bone, kidney and intestine but also in many other non-classical tissues, e.g., in the immune system, in the reproductive system, in the endocrine system, in muscles, brain, skin and liver. Besides the almost universal presence of VDRs, some cell types (e.g. keratinocytes, monocytes, bone, placenta) are capable of metabolizing 25-hydroxyvitamin D₃ to 1,25(OH)₂D₃ by the enzyme 1 α -hydroxylase. The combined presence of 25(OH)D₃-1 α -hydroxylase as well as the specific receptor in several tissues introduced the idea of a paracrine role for 1,25(OH)₂D₃. Moreover, it has been demonstrated that 1,25(OH)₂D₃ can induce differentiation and inhibit proliferation of normal and malignant cells. Besides the treatment of bone disorders with 1,25(OH)₂D₃, these newly discovered functions of 1,25(OH)₂D₃ open new therapeutic applications as an immune modulator (e.g. for the treatment of autoimmune diseases or prevention of graft rejection), inhibitor of cell proliferation (e.g. psoriasis) and inducer of cell differentiation (cancer).