

# Vitamin D3 in anterior adipose tissue of pregnant women: depostion of vitamin D3 and the influence of exposure to sunlight and fatty fish consumption on the deposition of vitamin D3 in anterior adipose tissue.

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The aim of this study is to determine the quantity of vitamin D3 in anterior adipose tissue in pregnant women, and to determine the influence of exposure to sunlight and the consumption of fatty fish on vitamin D storage in anterior adipose tissue....

<b>Ethical review</b>	Approved WMO
<b>Status</b>	Pending
<b>Health condition type</b>	Bone, calcium, magnesium and phosphorus metabolism disorders
<b>Study type</b>	Observational invasive

## Summary

### ID

NL-OMON31020

### Source

ToetsingOnline

### Brief title

Storage of vitamin D3 in anterior adipose tissue of pregnant women.

### Condition

- Bone, calcium, magnesium and phosphorus metabolism disorders
- Postpartum and puerperal disorders

### Synonym

rickets/osteomalacia, vitamin D deficiency

## Research involving

Human

## Sponsors and support

**Primary sponsor:** Universitair Medisch Centrum Groningen

**Source(s) of monetary or material Support:** Ministerie van OC&W

## Intervention

**Keyword:** adipose tissue, osteomalacia, pregnancy, Vitamin D3

## Outcome measures

### Primary outcome

Vitamin D $\rightarrow$ 3 will be determined in adipose tissue. Fatty acid profile will be determined in anterior adipose tissue.

25-hydroxyvitamin D3 will be determined in serum to assess the vitamin D status.

### Secondary outcome

In this pilot study we intend to measure the quantity of vitamin D3 in anterior adipose tissue of pregnant women, to determine whether or not deposition takes place.

Fatty acid profile will be established in anterior adipose tissue to gain information about fatty fish consumption. That way we will be able to assess whether it is exposure to sunlight or consuming fatty fish which leads to deposition of vitamin D3 in anterior adipose tissue.

There will be determined whether or not there is correlation between vitamin D3 in anterior adipose tissue and 25-hydroxyvitamin D3 in serum.

## Study description

## **Background summary**

### Titel of the study

Vitamin D3 in anterior adipose tissue of pregnant women: deposition of vitamin D3 and the influence of exposure to sunlight and fatty fish consumption on the deposition of vitamin D3 in anterior adipose tissue.

### Background of the study

Maternal vitamin D deficiency can have major effects on both mother and child. Vitamin D deficiency during pregnancy leads to increased bone-turnover, loss of bone structure, osteomalacia en myopathie in the mother. A foetus accumulates up to 30 grammes of calcium. Calcium is necessary for the formation of a strong skeleton. Absorption of calcium takes place under the influence of vitamin D. Therefore, vitamin D is essential for the formation of a strong skeleton. A leak of vitamin D increases the risk on diseases like diabetes mellitus, multiple sclerose, breast-, prostate- and colorectal cancer and schizophrenia, for both mother and child.

Cutaneous vitamin D synthesis, under influence of sunlight, is one source of vitamin D for the body. Vitamin D can also reach the body by food-intake: fatty fish contains vitamin D.

Vitamin D is a fat-soluble vitamin. It is possible that vitamin D, in times of high synthesis or intake, can be stored in adipose tissue.

## **Study objective**

The aim of this study is to determine the quantity of vitamin D3 in anterior adipose tissue in pregnant women, and to determine the influence of exposure to sunlight and the consumption of fatty fish on vitamin D storage in anterior adipose tissue.

Another objective of the study is to determine whether there is correlation between in anterior adipose tissue stored vitamin D3 and circulating 25-hydroxyvitamin D3 in serum.

### Primairy objective

Is there deposition of vitamin D3 in anterior adipose tissue of pregnant women?

### Secundairy objectives

Does exposure to sunlight influences the quantity vitamin D3 in anterior adipose tissue of pregnant women?

Does fatty fish consumption influence the quantity vitamin D3 in anterior adipose tissue of pregnant women?

Is there correlation between in anterior adipose tissue stored vitamin D3 and

circulating 25-hydroxyvitamin D in serum?

## **Study design**

During Ceasarian section we will be taking approximately one gram subcutaneous anterior adipose tissue from the section to determine the quantity of vitamin D3 in anterior adipose tissue. Fatty acid profile will be established from anterior adipose tissue to gain information about fatty fish consumption. When blood is drawn for clinical purpose, we will be taking one extra coagulation tube to determine circulating 25-hydroxyvitamin D3. The researcher will be filling out a questionnaire, with questions concerning lifestyle and nutrition habits and obstetric history. The gaining of information and the filling out of the questionnaire will take approximately one hour. Participating in the study creates no risks for woman and child.

## **Study burden and risks**

During the Ceasarian section which the subject will undergo for reasons apart from this study, we will be taking approximately one gram subcutaneous anterior adipose tissue. There will not be extra inconvenience.

When blood is drawn, for clinical purpose, we will be taking one extra tube of blood. There will not be extra inconvenience.

The researcher will be filling out a questionnaire, with questions concerning lifestyle and nutrition habits and obstetrics history.

Participating in the study creates no risks for the woman or baby.

## **Contacts**

### **Public**

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### **Scientific**

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## Trial sites

### Listed location countries

Netherlands

## Eligibility criteria

### Age

Adults (18-64 years)

Elderly (65 years and older)

### Inclusion criteria

Gestation period at least 37 weeks.

### Exclusion criteria

Residing less than 1 year at altitude of the Netherlands, multiple births, pre-eclampsia, delay of growth

## Study design

### Design

**Study type:** Observational invasive

Masking: Open (masking not used)

Control: Uncontrolled

Primary purpose: Treatment

### Recruitment

NL

Recruitment status: Pending

Start date (anticipated): 01-08-2007

Enrollment: 40

Type:

Anticipated

## Ethics review

Approved WMO

Application type:

First submission

Review commission:

METC Universitair Medisch Centrum Groningen (Groningen)

## Study registrations

### Followed up by the following (possibly more current) registration

No registrations found.

### Other (possibly less up-to-date) registrations in this register

No registrations found.

### In other registers

**Register**

**ID**

CCMO

NL18848.042.07