

This is another extraordinary study, one we should consider integrating into our chapter on gluten & autoimmune diseases (my comments in italics):

4 times the risk of miscarriages & low IQ children in pregnant hypothyroid women from Maine

Hypothyroidism During Pregnancy Linked To Miscarriage Risk & Low IQ children.

SCARBOROUGH, ME -- November 22, 2000 --

Pregnant women with hypothyroidism (underactive thyroid) have a four-times greater risk for miscarriage during the second trimester, according to a study published in the *Journal of Medical Screening*, a specialty publication of the *British Medical Journal*.

This is the first large, population-based study to examine pregnancy complications among women with elevated serum TSH (thyroid stimulating hormone) values [when elevated usually means underactive thyroid]. The findings indicate that women with hypothyroidism during pregnancy have a 3.8 percent risk for late miscarriage as opposed to women with normal thyroid function who only have a 0.9 percent rate.

In this study, 6 out of every 100 late miscarriages could be attributed to thyroid deficiency during pregnancy, according to the researchers at the Foundation for Blood Research (FBR).

In a study published in the August 18, 1999 *New England Journal of Medicine*, the same researchers documented an association between undetected subclinical hypothyroidism during pregnancy and lower I.Q. in offspring.

Women with untreated thyroid deficiency during pregnancy are four times more likely to have children with lower I.Q. scores. Nineteen percent of the children whose mothers had undiagnosed hypothyroidism during pregnancy averaged 85 or less on their I.Q. tests. Children who have an I.Q. less than 85 are more likely to have difficulties in school, and

may be less successful in their careers and interpersonal relationships.

"Our current study indicates that a change in pregnancy screening practices may be warranted," said Dr. Walter Allan, M.D., lead study author and director of clinical services at the Foundation for Blood Research. "Perhaps expectant mothers should get a TSH test before pregnancy or as part of the initial standard prenatal blood work."

[along with an AGA & perhaps tTG screen to rule out gluten sensitivity & celiac disease, common cause of autoimmune hypothyroidism]

Other studies among pregnant women with hypothyroidism have suggested a connection between **miscarriage, premature birth, low birthweight, placental abruption** *[Ron, recall that these "poor pregnancy outcomes" occur frequently in pregnant women with undetected CD and can be avoided by eliminating gluten from the diet]* and pregnancy-induced hypertension, however these studies were limited to women attending high-risk or specialty clinics and might not have reflected the findings in the general population.

Hypothyroidism is a deficiency in the thyroid, a butterfly-shaped gland just below the Adam's apple that plays a critical role in regulating the most important functions in the body including heart rate, metabolism, growth, cognitive function and development, energy and mood. ***[And it is my understanding that in the US and Canada, by far the most common cause of hypothyroidism is Hashimoto's thyroiditis, an autoimmune thyroid disease overrepresented in celiac disease]***. Approximately one out of every 50 women in the U.S. is thyroid deficient during pregnancy ***[Isn't this a coincidence! This is about the same prevalence found in Italian pregnant women with undetected celiac disease experiencing miscarriages, still births, premature births, etc.]***. However, this condition does not only strike during pregnancy. In fact, nearly 27 million Americans have a thyroid disorder, yet more than half remain undiagnosed. The condition becomes even more prevalent as women age; by age 60, one in five women will suffer from a thyroid deficiency.

Thyroid disease can be diagnosed through a simple blood test called TSH (thyroid-stimulating hormone) ***[Autoimmune thyroid disease also requires a blood test for the presence of anti-thyroid antibodies]***. This highly sensitive test enables doctors to detect thyroid disorders early, and in many cases before the woman experiences symptoms. If left untreated, thyroid disease can lead to serious long-term complications such as heart disease, osteoporosis, infertility, impaired I.Q. in offspring, and now potentially, late miscarriage.

Among the 9,403 women with singleton pregnancies TSH levels were 6mU/L or greater in 209 (2.2 percent) cases.

The rate of late fetal death (miscarriage) was significantly higher in those pregnancies (8 out of 209 or 3.8 percent) than in women with TSH less than 6 mU/L (83 out of 9,194 or 0.9 percent). Furthermore, the rate of fetal death increased incrementally as TSH levels increased. Among the 37 women with TSH levels greater than 10mU/L, fetal deaths occurred in 8.1 percent. In the study, six out of every 100 miscarriages could be attributed to thyroid deficiency during pregnancy.

"Little is known about the cause of late miscarriages *[according the the Italian study published earlier in 2000 (& a number of prior studies), a common cause of miscarriages is undetected celiac disease. Recall that the researchers ended their paper by advocating routine screening for CD in all pregnant woman entering their OB-GYN clinic. Why? Because the 1 in 50 (75?) prevalence was more common than most of the other medical conditions routinely screened for in pregnant women]*, but our findings offer a new opportunity to possibly prevent some of these," said James Hadow, medical director, Foundation for Blood Research. "Further research may show that early detection and treatment for maternal hypothyroidism is the key to preventing these miscarriages."

The purpose of the study was to examine the relationship between certain pregnancy complications and TSH levels in pregnant women. Between July 1990 and June 1992, approximately 10,500 women from the state of Maine agreed to participate in a study of hypothyroidism,

during routine testing between 15 and 18 weeks' gestation to detect neural tube defects and Down syndrome **[1 in 14 Down's patients have celiac disease vs. 1 in 111 of apparently healthy, asymptomatic American adults]**. From this pool, it was determined that 9,403 women were eligible for the study and underwent TSH testing.

The women provided selected information about their pregnancy (e.g. gravidity(1), parity(2), vaginal bleeding, and smoking status) at the time of enrollment. Information about pregnancy outcome (e.g. viability(3), length of gestation, birth weight and Apgar(4) score) was obtained via a collaborative agreement with the state's Bureau of Vital Records. The serum TSH measurements were performed at the New England Newborn Screening Program in Boston and additional thyroid function testing was performed on all serum samples with TSH levels at or above 6mU/L (the definition of thyroid deficiency for the current study) at Beth Israel Deaconess Medical Center. Thyroid function testing was also performed in a selected subgroup of controls.

References:

- (1) Pregnancy; the condition of being pregnant.
- (2) The condition of a woman with respect to her having borne viable offspring.
- (3) Ability to live after birth; capable of living.
- (4) Indicates newborn's health 1-5 minutes post-birth (color, weight, respiratory rate, and muscle tone).

Ron, below are some common presenting symptoms & signs of untreated hypothyroidism (one could argue that many of these symptoms & signs are indirectly related to undetected celiac disease):

Fatigue
Lethargy
Sleepiness
Mental impairment
Depression
Decreased appetite
Cold intolerance
Hoarseness
Decreased perspiration
Dry, scaly skin
Dry, brittle hair

Thick, brittle nails
Hair loss
Generalized edema
Pitting edema of lower extremities
Slow wound healing
Weight gain
Constipation
Menstrual irregularities
Infertility
Arthralgia
Paresthesia

Yellowish hue to skin, especially palms of hands and soles of feet

"Dirty" elbows and knees

Short 5th finger

Celiac disease

Enlargement in front of neck (goitrous enlargement)

ATYPICAL (mostly in the elderly)

Weight loss

Carpal tunnel syndrome

Hearing impairment

Tinnitus

Also, Ron, here's some relevant quotes taken from recent scientific literature regarding autoimmune thyroid disease and celiac disease:

"Thyroid disease affects as many as 27 million million Americans, though more than half of these patients are not diagnosed"

"All patients with Type 1 diabetes should be screened for thyroid autoimmunity at diagnosis."

"We suggest a serological screening for celiac disease in all patients with autoimmune thyroid disease."

"Thyroid disease is the leading secondary cause [second to diet] of elevated cholesterol."

All for now.