V Corso Aggiornamento Ame in Endocrinologia Clinica

Aggiornamenti su TIREOPATIE e GRAVIDANZA

Francesco Vermiglio

AGRIGENTO
20/22 MARZO 2014
It remains uncertain as to what extent clinicians follow these guidelines in their routine clinical practice.
Thyroid and Pregnancy: 
Results of a survey among ETA members

Kris Poppe
on behalf of the Survey members
200 milioni
F/M=7/1
3a-5a decade

Alta % di tireopatie
misconosciute
750 milioni esposti a iodocarenza

Complicanze ostetriche e fetali
malattie funzionali tiroidee

Abortività
Parto pretermine
Preeclampsia
Distacco intempestivo
di placenta
Emorragia post-partum
Mortalità perinatale
Basso peso alla nascita

IUGR
Sindrome da distress
respiratorio
Alterato sviluppo
neuro-intellettivo
Sommario

Screening tireopatie in gravidanza

Eutiroïdismo
Ipertiroïdismo
Ipotiroïdismo
8.4. RECOMMENDATIONS

Although the benefits of universal screening for hypothyroidism may not be justified by current evidence, as presented in Sections 1–7, we recommend case finding among the following groups of women at high risk for thyroid dysfunction:

1. Women with a history of hyperthyroid or hypothyroid disease, PPT, or thyroid lobectomy
2. Women with a family history of thyroid disease
3. Women with a goiter
4. Women with thyroid antibodies
5. Women with symptoms or clinical signs of thyroid underfunction or overfunction, elevated cholesterol, and hypertension
6. Women with type 1 diabetes
7. Women with other autoimmune disorders
8. Women with infertility should have screening with TSH as part of their infertility work-up.
9. Women with prior therapeutic head or neck irradiation.
10. Women with a prior history of miscarriage or preterm delivery.

The USPSTF recommendation level is B; evidence is fair (GRADE 1B). It should also be noted that women living in iodine-deficient areas have a high risk for thyroid disease. In those areas, rather than general screening for hypothyroidism, efforts should be made to supplement women’s diet with iodine before and during pregnancy (see Section 6).
Detection of Thyroid Dysfunction in Early Pregnancy: Universal Screening or Targeted High-Risk Case Finding?

Bijay Vaidya, Sony Anthony, Mary Bilous, Beverley Shields, John Drury, Stewart Hutchison, and Rudy Bilous

Department of Endocrinology (B.V., B.S.), Peninsula Medical School, Royal Devon & Exeter Hospital, Exeter EX2 5DW, United Kingdom; and Departments of Endocrinology (S.A., M.B., R.B.), Clinical Biochemistry (J.D.), and Obstetrics (S.H.), James Cook University Hospital, Middlesbrough TS4 3BW, United Kingdom

1560 consecutive pregnant women
FT4+TSH (1st trimester)

28 (70%) High Risk

40/1560 (2.6%) OVERTLY or SUBCLINICALLY HYPO

12 (30%) No Risk

Conclusion: Targeted thyroid function testing of only the high-risk group would miss about one third of pregnant women with overt/subclinical hypothyroidism. (J Clin Endocrinol Metab 92: 203–207, 2007)
Guidelines of the American Thyroid Association
for the Diagnosis and Management of Thyroid Disease
During Pregnancy and Postpartum

The American Thyroid Association Task Force on Thyroid Disease During Pregnancy and Postpartum

Alex Stagnaro-Green (Chair),1 Frances Abulovic2,2 Erik Alexander,2 Feridoune Azizi,3 Jorge Meshan,3
Roberto Negro,3 Angelina Nixon,4 Elizabeth N. Pearce,5 Orif P. Sadik,3
Scott Sullivan,6 and Werner Wust,7

Thyroid Function Screening in Pregnancy

Question 83: Should all pregnant women be screened for serum TSH level in the first trimester?

RECOMMENDATION 72
There is insufficient evidence to recommend against universal TSH screening at the first prenatal appointment.
Level I-USPSTF

RECOMMENDATION 76
Serum TSH values should be obtained early in pregnancy in the following women at high risk for overt hypothyroidism:
- History of thyroid dysfunction or prior thyroid surgery
- Age >30 years
- Symptoms of thyroid dysfunction or the presence of goiter
- Type 1 diabetes or other autoimmune disorders
- History of miscarriage or preterm delivery
- History of head or neck radiation
- Family history of thyroid dysfunction
- Morbid obesity (BMI ≥40 kg/m²)
- Use of amiodarone or lithium, or recent administration of iodinated radiologic contrast
- Infertility
- Residing in an area of known moderate to severe iodine insufficiency
Level B-USPSTF

Question 84: Should serum TSH testing be performed in a targeted population of pregnant women?
8.0. Screening for thyroid dysfunction during pregnancy

<table>
<thead>
<tr>
<th>TABLE 1. Recommended patient profiles for targeted thyroid disease case finding in women seeking pregnancy or newly pregnant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women over age 30 yr</td>
</tr>
<tr>
<td>Women with a family history or autoimmune thyroid disease or hypothyroidism</td>
</tr>
<tr>
<td>Women with a goiter</td>
</tr>
<tr>
<td>Women with thyroid antibodies, primarily thyroid peroxidase antibodies</td>
</tr>
<tr>
<td>Women with symptoms or clinical signs suggestive of thyroid hypofunction</td>
</tr>
<tr>
<td>Women with type 1 DM or other autoimmune disorders</td>
</tr>
<tr>
<td>Women with infertility</td>
</tr>
<tr>
<td>Women with a prior history of miscarriage or preterm delivery</td>
</tr>
<tr>
<td>Women with prior therapeutic head or neck irradiation or prior thyroid surgery</td>
</tr>
<tr>
<td>Women currently receiving levothyroxine replacement</td>
</tr>
<tr>
<td>Women living in a region with presumed iodine deficiency</td>
</tr>
</tbody>
</table>
Do you (or your institution) screen pregnant women for thyroid dysfunction?
First trimester screen
hypothyroid algorithm

TSH with reflex
FT$_4$ if TSH <0.1
or TSH >2.5
If you screen pregnant women for thyroid dysfunction, which tests do you use? (all answers possible)

- TSH: 98.0% (146)
- Free T4: 67.1% (100)
- Total T4: 4.7% (7)
- Free T3: 18.8% (28)
- Total T3: 7.4% (11)
- TPO antibodies: 66.4% (99)
- Urinary iodine excretion: 6.0% (9)
- Other (please specify): 6.0% (9)

Tg antibodies: 4 --- TSHR antibodies: 2 --- T4 uptake: 2 --- Ultrasound: 1
<table>
<thead>
<tr>
<th>Combined answers</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSH, FT₄, TPO</td>
<td>41</td>
<td>27.5%</td>
</tr>
<tr>
<td>TSH</td>
<td>23</td>
<td>15.4%</td>
</tr>
<tr>
<td>TSH, FT₄, FT₃, TPO</td>
<td>18</td>
<td>12.1%</td>
</tr>
<tr>
<td>TSH, TPO</td>
<td>18</td>
<td>12.1%</td>
</tr>
<tr>
<td>TSH, FT₄</td>
<td>16</td>
<td>10.7%</td>
</tr>
<tr>
<td>TSH, FT₄, TT₃, TPO</td>
<td>6</td>
<td>4%</td>
</tr>
<tr>
<td>TSH, FT₄, FT₃</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>TSH, FT₄, UI</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>TSH, FT₄, TPO, UI</td>
<td>2</td>
<td>1.3%</td>
</tr>
<tr>
<td>TSH, FT₄, FT₃, TPO, UI</td>
<td>2</td>
<td>1.3%</td>
</tr>
<tr>
<td>TSH, TPO, TG</td>
<td>2</td>
<td>1.3%</td>
</tr>
</tbody>
</table>
Sommario

Screening tireopatie in gravidanza

- Eutiroidismo
- Ipertiroidismo
- Ipotiroidismo
First trimester screen 
hypothyroid algorithm

If TSH with reflex
FT$_4$ if TSH <0.1
or TSH >2.5

- TSH < 0.1
  - See hyperthyroid section

- TSH > 0.1 and TSH <2.5
  - normal TFTs
  - no further work-up

- TSH 2.5-10
  - Obtain FT$_4$ level

- TSH >10.0
  - Begin LT$_4$ therapy irrespective of FT$_4$ level

-FT$_4$ normal
  - Obtain thyroid antibodies

-FT$_4$ below the 5$^{th}$ percentile
  - Begin LT$_4$ therapy

-TSH and FT$_4$ q 4 weeks until 20 weeks
  - Adjust LT$_4$ dose to maintain TSH<2.5 in first, and 3.0 in second trimester

-If thyroid antibody negative there are inadequate data to recommend for or against treatment

-If thyroid antibody is positive begin LT$_4$ therapy

-TSH and FT$_4$ between 26-32 weeks
  - Adjust LT$_4$ dose to maintain TSH <3.0 in the third trimester

-TSH and FT$_4$ at 6 weeks postpartum

-If decide not to treat repeat TFTs in 4-8 weeks

-If decide to treat follow the protocol for treatment as indicated
If you screen pregnant women in the first trimester for thyroid dysfunction and if the initial screening test shows a **TSH of 1.5 mIU/L**, would you routinely test thyroid function again during the pregnancy?

Depending upon TPO-Ab and ultrasonographic features: 3
Depending upon HCG titres: 1
CLINICAL STUDY

Gestational thyroid function abnormalities in conditions of mild iodine deficiency: early screening versus continuous monitoring of maternal thyroid status

Maria Carla Moletic, Vincenzo Pio Lo Presti, Filiberto Mattina, Alfredo Mancuso, Antonio De Vivo, Grazia Giorgianni, Beatrice Di Bella, Francesco Trimarchi and Francesco Vermiglio

1 Dipartimento Clinico-Sperimentale di Medicina e Farmacologia- Sezione di Endocrinologia. 2 Dipartimento di Scienze della Riproduzione, Sezione di Patologia Ostetrica e 3 Dipartimento di Scienze Biochimiche, Fisiologiche e della Nutrizione- Servizio di Biochimica Clinica, Università di Messina.

>40% hypothyroid women would not have been diagnosed, if we had limited our observation to early thyroid function tests alone

IH became progressively more common from the end of the first trimester onwards, peaking between weeks 20 and 26
Sommario

Screening tireopatie in gravidanza

- Eutiroidismo
- Ipertiroidismo
- Ipotiroidismo
IPERTIROIDISMO IN GRAVIDANZA

1-3 casi/1000 gravidanze

Sospetto clinico

Soggettività: astenia, palpitazioni, ansia, intolleranza al caldo, diaforesi, perdita di peso/non incremento ponderale con ↑ apporto calorico; iperemesi; prurito;

Anamnesi: pregressa storia di ipertiroidismo e/o familiarità per tireopatie autoimmuni; pregressa storia di iperemesi gravidica

Obiettività: iperplasia tiroidea, f.c.>100 b/min, segni di orbitopatia e/o mixedema pretibiale
Ipertiroidismo gestazionale transitorio

solo in gravidanza; non autoimmune; spesso associato a iperemesis gravidica

• Malattia di Graves

esordio in gravidanza RARO; autoimmune
Prevalenza variabile nelle diverse parti del mondo (% di tutte le gravidanze)

- Europa: 2-3% ➔ 10 volte più frequente del Graves
- Giappone: 0,3%
- Hong Kong: 11%
Elevati livelli sierici di hCG (>75,000-100,000 UI/L) o di sue varianti ad emivita prolungata

Glinoer, 1995

Livelli/andamento normali hCG

AZIONE TSH-like DELL’hCG

Livelli/andra normali l

IPERTIROIDISMO GESTAZIONALE TRANSITORIO

PATOGENESI
**PATOGENESI**

Mutazione del recettore del TSH
Descritta una singola mutazione nel dominio extracellulare del recettore del TSH che rende il recettore mutato altamente sensibile all’hCG

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**Natural Gain of Function.**

A Mutant TSH Receptor, hypersensitive to hCG responsible for familial gestational thyrotoxicosis

---

Rodien et al, 1998
IPERTIROIDISMO GESTAZIONALE TRANSITORIO

Quando sospettarlo?

• Segni clinici di ipertiroidismo (rari)
• Iperemesi (frequente)

Glinoer D et al 1993, Goodwin TM et al 1992
IPERTIROIDISMO GESTAZIONALE TRANSITORIO

Attendere il fisiologico decremento dell’hCG

Monitoraggio della funzione tiroidea (FT₄+TSH)

RECOMMENDATION 25
The appropriate management of women with gestational hyperthyroidism and hyperemesis gravidarum includes supportive therapy, management of dehydration, and hospitalization if needed. Level A-USPSTF

Stagnaro-Green et al. Thyroid 2011

3.2. Most women with hyperemesis gravidarum, clinical hyperthyroidism, suppressed TSH, and elevated free T₄ do not require ATD treatment. USPSTF recommendation level: A; evidence, good (1 simplistic). Clinical judgment should be followed in women who appear significantly thyrotoxic or who have in addition serum total T₃ values above the reference range for pregnancy. Beta blockers such as metoprolol may be helpful and may be used with obstetrical agreement. USPSTF recommendation level: B; evidence, poor (2 simplistic).

De Groot et al. J Clin Endocrinol Metab, August 2012
A 24 year old woman is 8 weeks pregnant. She has severe nausea and vomiting, weight loss and palpitation. Thyroid function tests showed hyperthyroidism, without thyroid antibodies.

Beta blocker: 6 -- Miscellaneous: 8
Riscontro occasionale

**Ipertiroidismo Gestazionale transitorio**
solo in gravidanza; non autoimmune; spesso associato a iperemese gravida

• **Malattia di Graves**
esordio in gravidanza RARO; autoimmune
TOLLERANZA IMMUNOLOGICA IN GRAVIDANZA

PROGESTERONE- Cortisolo
Riduzione generalizzata risposta immune materna

FATTORI UMORALI DI ORIGINE TROFOBLASTICA
Soppressione della risposta immune a livello dell’interfaccia tra madre e placenta

PRODUZIONE LINFOCITI Treg MATERNI
Induzione e mantenimento tolleranza verso alloantigeni fetali

MIGLIORAMENTO MALATTIE AUTOIMMUNI IN GRAVIDANZA

Weetman AP, 2010
DECORSO TIREOPATIE AUTOIMMUNI IN GRAVIDANZA E NEL POST-PARTUM

Weetman AP, 2010

↓ 50-60% titolo anticorpale

Glinoer D, 1994
**IPERTIROIDISMO IN GRAVIDANZA**

**Malattia di Graves**

Rischio di complicanze materno-fetali direttamente correlato con la severità e la durata dell’ipertiroidismo

<table>
<thead>
<tr>
<th>Pregnancy complications</th>
<th>Late or poor control of thyrotoxicosis (%)</th>
<th>Adequate control of thyrotoxicosis (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous abortion</td>
<td>26</td>
<td>13</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>25</td>
<td>3</td>
</tr>
<tr>
<td>Thyroid storm</td>
<td>21</td>
<td>&lt;2</td>
</tr>
<tr>
<td>Preeclampsia</td>
<td>21</td>
<td>6</td>
</tr>
<tr>
<td>Premature delivery</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Low birth weight</td>
<td>23</td>
<td>10 (P = 0.04)</td>
</tr>
<tr>
<td>Stillbirth</td>
<td>25</td>
<td>0</td>
</tr>
</tbody>
</table>

*Endocrine Reviews, October 2010, 31(5):0000–0000*  
*Krassas et al.  Thyroid and Reproduction*
A 24 year old woman is 8 weeks pregnant. She is newly diagnosed with Graves’ disease. How would you treat her thyrotoxicosis?

- Methimazole/carbimazole: 12.3% (21)
- Propylthiouracil: 52.6% (90)
- Propylthiouracil in the first trimester, then change to methimazole/carbimazole: 33.9% (58)
- Other (please specify): 1.2% (2)

Beta blocker: 1 -- No treatment: 1
Putting Propylthiouracil in Perspective

David S. Cooper and Scott A. Rivkees

PTU-related hepatotoxicity vs MMI-related birth defects

- 33 published reports of severe PTU-related liver failure in adults and 14 in children
- 2 reports of serious maternal liver injury due to PTU during pregnancy and 2 reports of liver injury in fetuses whose mothers took PTU
- Odds ratio of 18 (95% CI 3–121) for choanal atresia among infants with in utero MMI exposure
- The risk of aplasia cutis associated with prenatal MMI use is estimated in about 0.03%, not above background

... it is reasonable to recommend that pregnant hyperthyroid women be treated with PTU during the first trimester rather than with MMI. The risk of PTU for expectant mothers can be reduced by limiting PTU use to the first trimester and then changing to MMI
**Monitoraggio** ogni 2-4 settimane

**Utilizzare basse dosi MMI o PTU**

**Mantenere FT4 ai limiti alti della norma, TSH basso/indosabile**

**PTU 1° trim.**

**MMI 2° trim-terminale**

**Evitare l’associazione ATD-LT4**

**permeabilità placentare ATD>>L-T4**

**TABLE 9. Guidelines for the medical treatment of GD in pregnancy**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Monitor clinical signs (heart rate, weight gain, thyroid size, etc.) and serum FT₄ and FT₃, TSH every 2–4 wk.</td>
</tr>
<tr>
<td>2</td>
<td>Use the lowest dose of ATD to maintain the patient in a euthyroid or mildly hyperthyroid state. ATD dosage can usually be lowered after the first trimester and often discontinued during the last trimester. To avoid fetal hypothyroidism, it is advised to maintain maternal serum FT₄ concentrations at or slightly above (&lt;10%) the upper limit of the normal nonpregnant reference range (~1.9 ng/dl or ~24.5 pmol/liter).</td>
</tr>
<tr>
<td>3</td>
<td>Do not attempt to normalize serum TSH. Serum TSH concentrations between 0.1 and 0.4 mIU/liter are appropriate. Lower or undetectable TSH levels are acceptable if the patient’s clinical condition remains satisfactory.</td>
</tr>
<tr>
<td>4</td>
<td>Concerning the choice of ATD, the use of PTU is preferable during the first trimester (remember permeability placental ATD&gt;&gt;L-T4).</td>
</tr>
</tbody>
</table>
What are the target thyroid test results you aim to achieve with antithyroid drugs in pregnancy?

- Low TSH and FT4 (or TT4) in the normal range: 12.9% (22)
- Low TSH and FT4 (or TT4) in the normal range: 19.3% (33)
- Low TSH and FT4 (or TT4) in the upper end of the normal range: 64.3% (110)
- Low TSH, independent of FT4 (or TT4) levels: 1.8% (3)
- Other (please specify): 1.8% (3)

Low TSH and high normal FT4: 1 -- Depending upon TSHR antibody titre: 1
In a pregnant woman with Graves’ disease treated with antithyroid drug, do you routinely check TSH receptor antibodies?

Second trimester: 1 -- Yes, trimester unspecified: 1
In a euthyroid pregnant woman previously treated with radioiodine or total thyroidectomy for Graves’ disease, do you routinely check TSH receptor antibodies?

Second trimester: 1  
First trimester, if positive in each trimester: 1  
Depending upon the time lapse between radioiodine/surgery and pregnancy: 1

Second trimester: 1  
First trimester, if positive in each trimester: 1  
Depending upon the time lapse between radioiodine/surgery and pregnancy: 1
Question 34: What is the value of TRAb measurement in the evaluation of a pregnant woman with Graves’ hyperthyroidism?

**RECOMMENDATION 32**

If the patient has a past or present history of Graves’ disease, a maternal serum determination of TRAb should be obtained at 20–24 weeks gestation. Level B-USPSTF

2.2.1. Because thyroid receptor antibodies (thyroid receptor stimulating, binding, or inhibiting antibodies) freely cross the placenta and can stimulate the fetal thyroid, these antibodies should be measured by 22 wk gestational age in mothers with: 1) current Graves’ disease; or 2) a history of Graves’ disease and treatment with $^{131}$I or thyroidectomy before pregnancy; or 3) a previous neonate with Graves’ disease; or 4) previously elevated TRAb. Women who have a negative TRAb and do not require ATD have a very low risk of fetal or neonatal thyroid dysfunction. USPSTF recommendation level: B; evidence, fair ($\text{I}$).
Sommario

Screening tireopatie in gravidanza

- Eutiroïdismo
- Ipertiroidismo
- Ipotiroidismo
IPOTIROIDISMO IN GRAVIDANZA

Cause più frequenti
(Europa)

INADEGUATO APPORTO IODICO

TIROIDIDITE DI HASHIMOTO

PREGRESSA ABLAZIONE
CHIRURGICA/RADIOMETABOLICA
1.0. Management of hypothyroidism during pregnancy: maternal and fetal aspects

1.2.2. SCH (serum TSH concentration above the upper limit of the trimester-specific reference range with a normal free $T_4$) may be associated with an adverse outcome for both the mother and offspring.

.......................... the panel recommends $T_4$ replacement in women with SCH. For
1.2.3. If hypothyroidism has been diagnosed before pregnancy, we recommend adjustment of the preconception $T_4$ dose to reach before pregnancy a TSH level not higher than 2.5 mIU/liter.

1.2.4. The $T_4$ dose usually needs to be incremented by 4 to 6 wk gestation and may require a 30% or more increase in dosage. USPSTF recommendation level: A; evidence, good (1|★★★★★) (12–15).

1.2.5. If overt hypothyroidism is diagnosed during pregnancy, thyroid function tests should be normalized as rapidly as possible. $T_4$ dosage should be titrated to rapidly reach and thereafter maintain serum TSH concentrations of less than 2.5 mIU/liter (in an assay using the International Standard) in the first trimester (or 3 mIU/liter in second and third trimesters) or to trimester-specific TSH ranges. Thyroid function tests should be remeasured within 30–40 d and then every 4–6 wk.
A 24 year old woman is 12 weeks pregnant and just been diagnosed with overt primary hypothyroidism (TSH 86 mIU/l)

What dose of L-thyroxine would you initially start?

- Start on a small dose (e.g. 25 mcg daily), increasing dose based on treatment response: 4.9% (8)
- Start on a full dose (e.g. 100-125 mcg daily): 45.7% (74)
- Start on a dose based on pregnancy-adapted body weight: 17.9% (29)
- Start for a few days on a double dose (e.g. 200 mcg daily), then a decreased dose: 24.7% (40)
- Start on a dose based on pre-treatment TSH level: 3.1% (5)
- Other (please specify): 3.7% (6)

Start on a dose 50 mcg daily: 4
Intravenous 500 mcg, then 100-125 mcg daily: 1
Abortion: 1
What do you perceive as the risk(s) from overt hypothyroidism in the above patient who was diagnosed and treated adequately in the late first trimester?

Outcome depends upon T4 level: 2
What are the target thyroid test results you aim to achieve with L-thyroxine replacement in pregnancy?

Various target TSH levels +/- FT4 or FT3 targets: 9
If you treat isolated hypothyroxinemia, how do you define isolated hypothyroxinemia?

- Normal TSH with FT4 (or TT4) below the population reference range: 29.8% (34)
- Normal TSH with FT4 (or TT4) below the 2.5th centile: 12.3% (14)
- Normal TSH with FT4 (or TT4) below the 5th centile: 7.0% (8)
- Normal TSH with FT4 (or TT4) below the 10th centile: 5.3% (6)
- TSH within and FT4 below the trimester-specific reference range for pregnancy: 43.0% (49)
- Other (please specify): 2.6% (3)
### PARTICULAR CONDITIONS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Treat</th>
<th>Follow up</th>
<th>Don’t treat or Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isolated Hypothyroxinemia (TSH&lt;2.5 mIU/l and low FT4)</td>
<td>38.5%</td>
<td>48.0%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Isolated thyroid Ab+ (TSH&lt;2.5 mIU/l)</td>
<td>9.6%</td>
<td>74.0%</td>
<td>16.4%</td>
</tr>
</tbody>
</table>
Most studies have shown an association between maternal hypothyroxinaemia and impaired neuropsychological development of offspring.

A large interventional study failed to show any benefit from treating IH.

Both ATA and Endocrine Society guidelines recommend against the treatment of maternal hypothyroxinaemia in pregnancy.

In the survey nearly 40% of the responders would treat IH.

Pop VJ et al. Clin Endocrinol (Oxf) 1999
Henrichs J et al. JCEM 2010
Moleti M et al. J Thyroid Res 2011
Oken E et al. JCEM 2009
Casey BM et al. Obstet Gynecol 2007
Levothyroxine Treatment in Euthyroid Pregnant Women with Autoimmune Thyroid Disease: Effects on Obstetrical Complications

TPO Ab + no L-T4
TPO Ab + L-T4
TPO Ab -

TPO Ab + no L-T4
TPO Ab + L-T4
TPO Ab -

Miscarriage %

Preterm delivery %

TPOAb (+) LT4  TPOAb (+)  TPOAb (-)
HOW SHOULD TAb+ EUTHYROID WOMEN BE MONITORED AND TREATED DURING PREGNANCY?

**RECOMMENDATION 20**
Euthyroid women (not receiving LT₄) who are TAb+ require monitoring for hypothyroidism during pregnancy. Serum TSH should be evaluated every 4 weeks during the first half of pregnancy and at least once between 26 and 32 weeks gestation. Level B-USPSTF

Stagnaro-Green et al. Thyroid 2011

1.2.6. Women with thyroid autoimmunity who are euthyroid in the early stages of pregnancy are at risk of developing hypothyroidism and should be monitored every 4–6 wk for elevation of TSH above the normal range for pregnancy. USPSTF recommendation level: A; evidence, fair (1|★★★★★).  

De Groot et al. J Clin Endocrinol Metab, August 2012
Acknowledgements

Mariacarla Moleti
Beatrice Di Bella
Silvia Presti
Giacomo Sturniolo

Kriss Poppe

All respondents for completing the questionnaire

The executive committee of the ETA for giving us a permission to carry out the survey