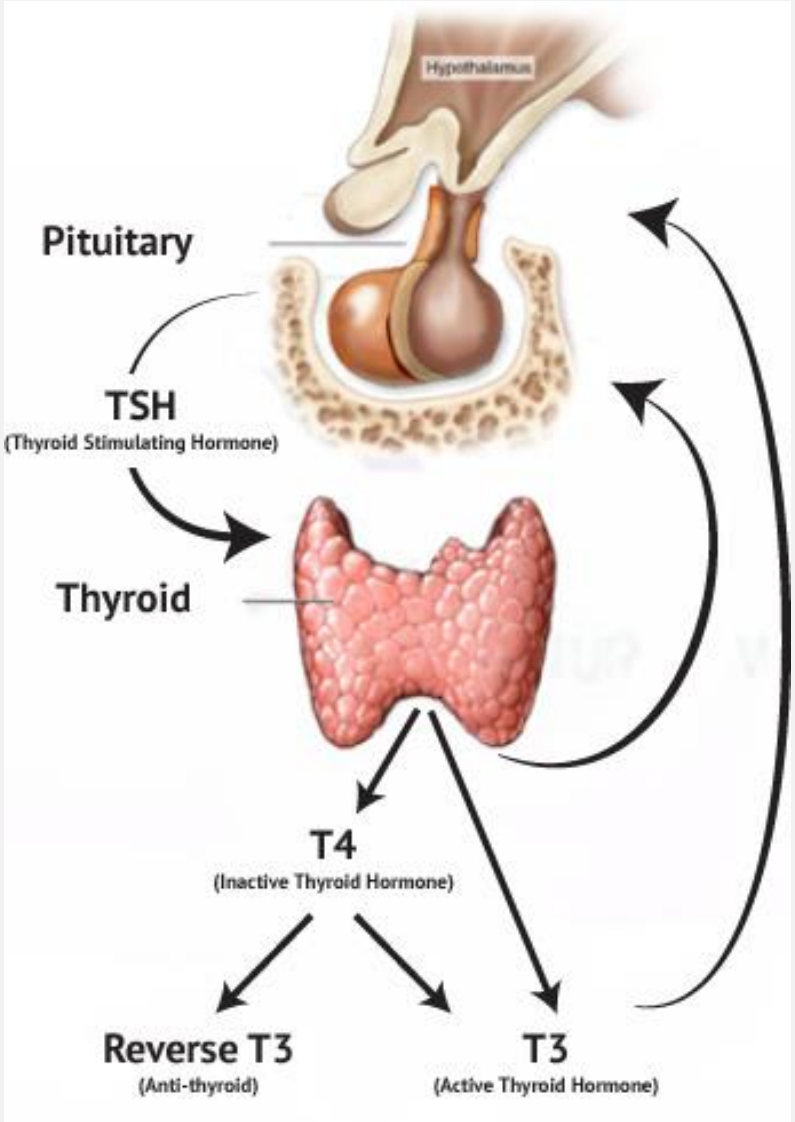
Schilddrüse und Schwangerschaft

Herbstfortbildung der österreichischen Schilddrüsengesellschaft 29.11.2014

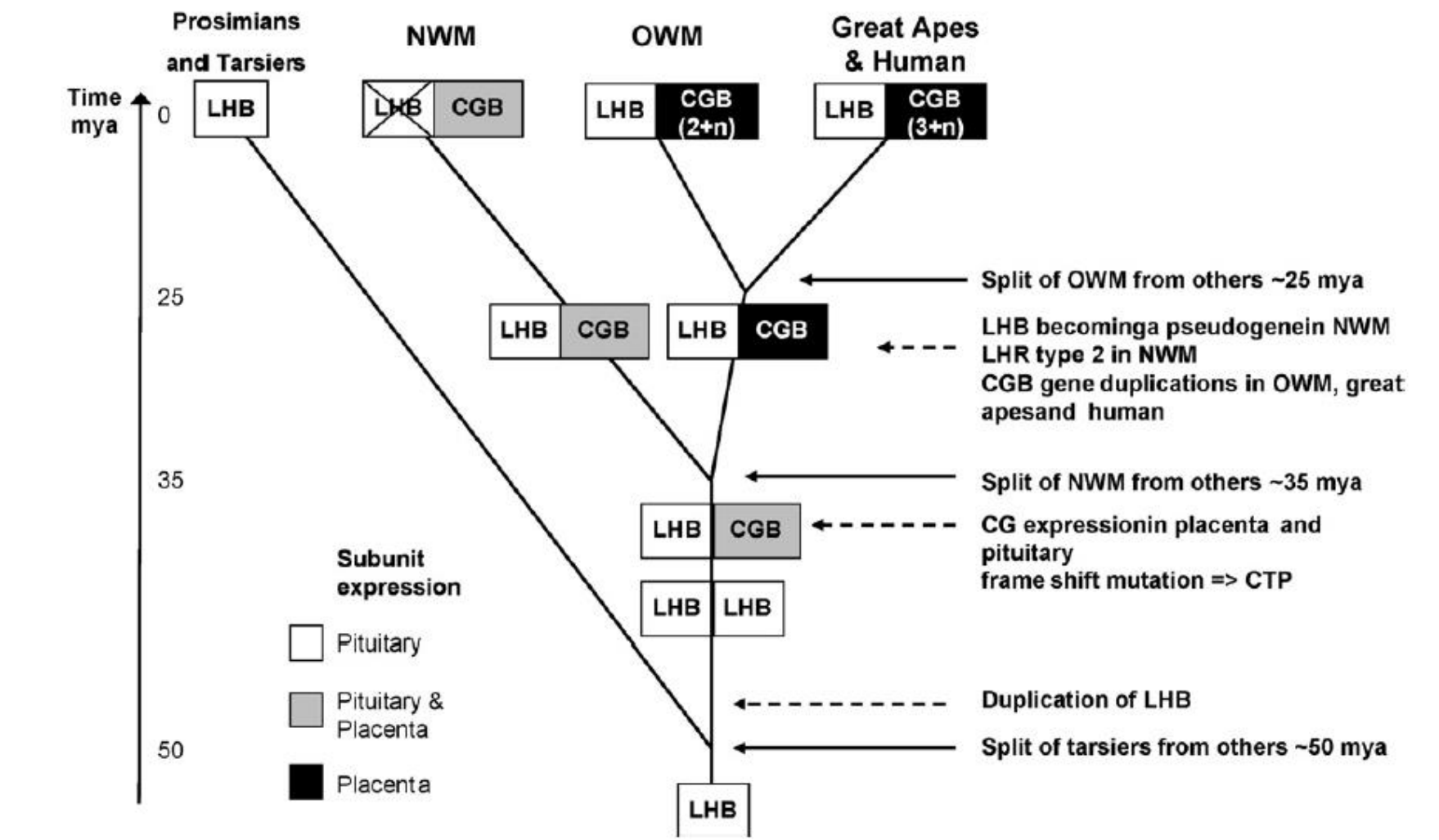
Priv. Doz. Dr. Christina Tugendsam

Schilddrüsenpraxis Josefstadt

Hypothalamus-Hypophyse-Schilddrüse Regelkreis

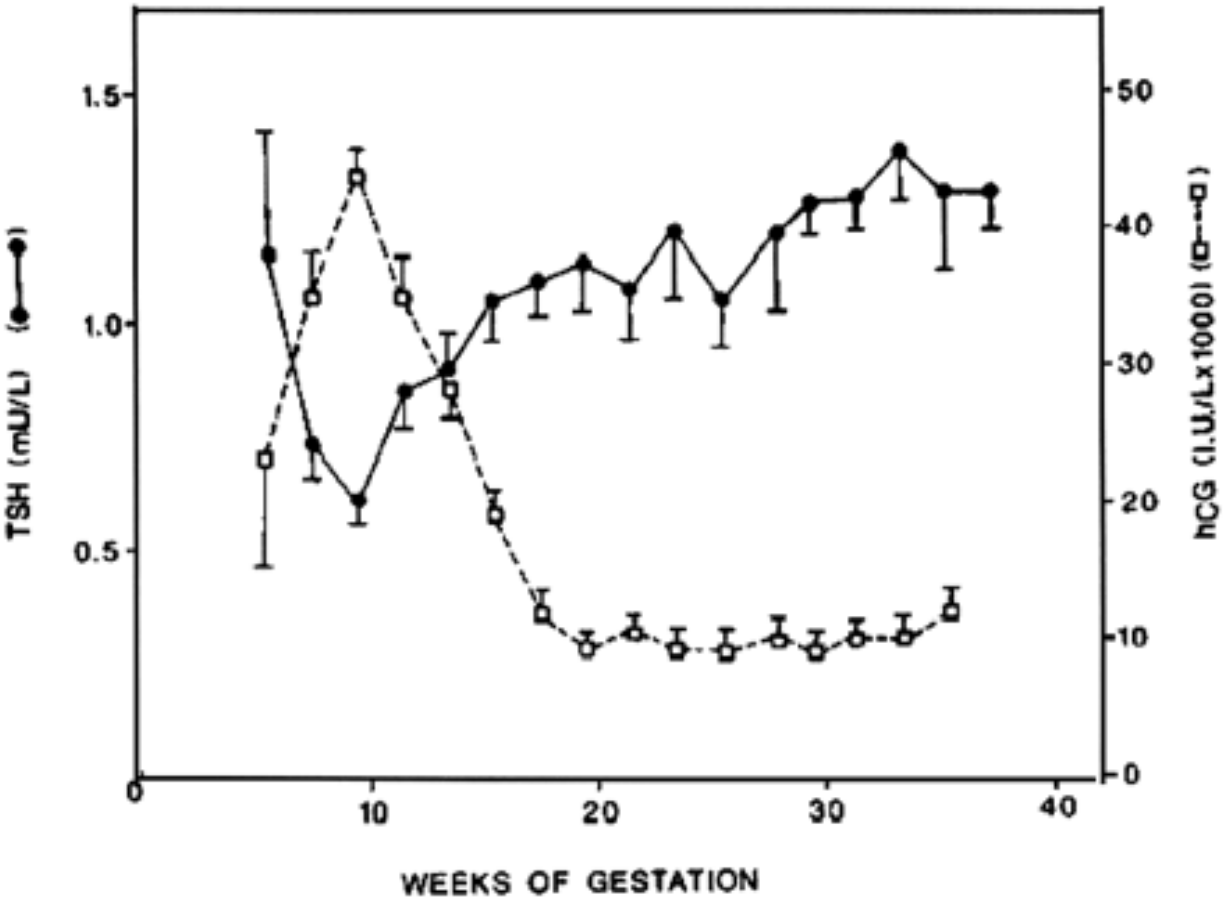


Choriogonadotropin Primatenevolution



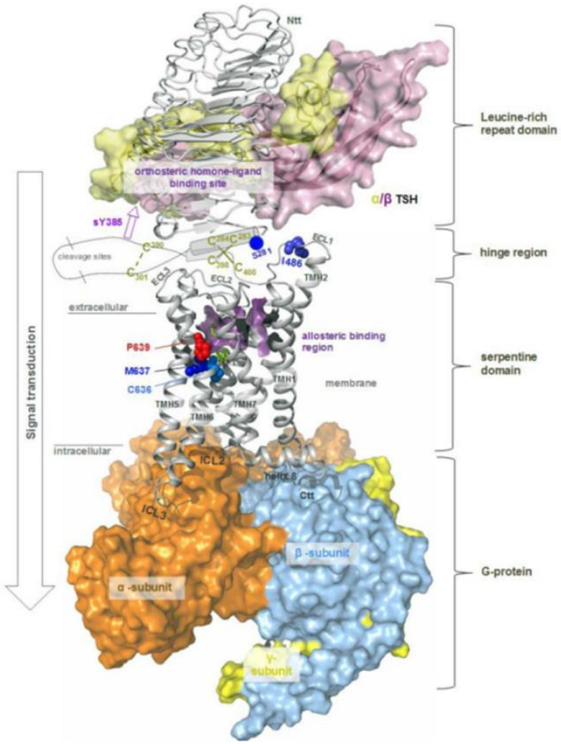
Henke et al (2008) Cell Mol Endocrinol 291:11

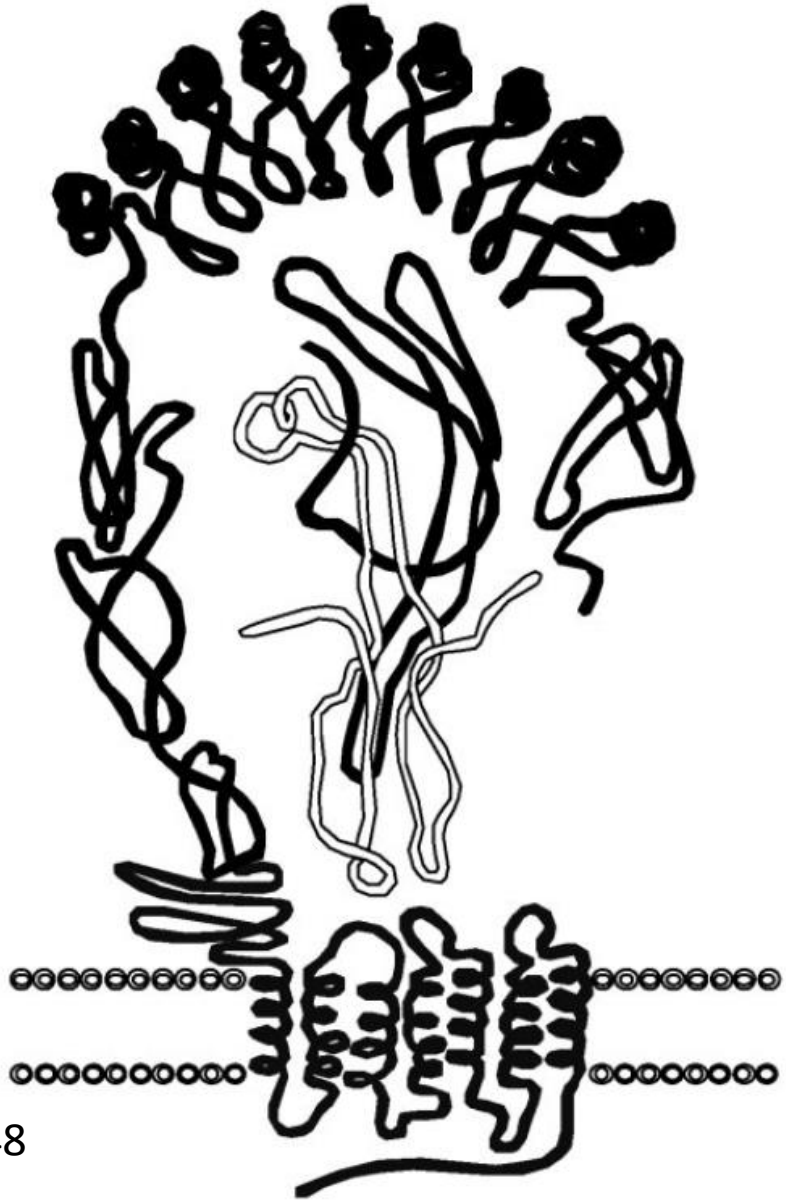
hCG vs. TSH Frühschwangerschaft



Glinoer et al (1990) JCEM

TSH Rezeptor





Farid NR et al (2004) Endocrinology 145: 4048

Veränderungen in Schwangerschaft

- Erhöhte renale Jodclearance
  Vermehrter Jodbedarf
- Durch E2 Anstieg TBG Anstieg
  Fraglich unzuverlässige fT4 Bestimmungen
- 50% vermehrte Produktion von T3 und T4
  Erhöhter SD Hormonbedarf – Dosisteigerung bei vorbehandelten Patientinnen

Manifeste Hypothyreose

- Kretinismus
- Spontanabort
- intrauteriner Fruchttod
- (Prä)eklampsie
- Schwangerschaftshypertonie
- Frühgeburtlichkeit

Latente Hypothyreose

- Gestationsdiabetes
- Niedriges Geburtsgewicht
- Spontanabort
- Präeklampsie
- Schwangerschaftshypertonie

Manifeste Hyperthyreose

- Totgeburt, Frühgeburt
- Eklampsie
- Herzinsuffizienz
- Niedriges Geburtsgewicht
- Mißbildungen

Guidelines

European
Thyroid Journal

Eur Thyroid J 2014;3:76–94
DOI: 10.1159/000362597

Received: February 13, 2014
Accepted after revision: April 1, 2014
Published online: June 7, 2014

2014 European Thyroid Association Guidelines for the Management of Subclinical Hypothyroidism in Pregnancy and in Children

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TSH Referenzbereiche SS

1. Trimenon 0.1 -2.5 mU/L

2. Trimenon 0.2 – 3.0 mU/L

3. Trimenon 0.3 3.0 (-3.5) mU/L

Lazarus J et al (2014) European Thyroid J 3: 76

Wie SD Fehlfunktion entdecken?

The universal screening of asymptomatic pregnant women for hypothyroidism in the first trimester is controversial. Because of insufficient evidence, and because the criteria for universal screening are not all satisfactory, most professional societies essentially from iodine sufficient countries recommend targeted case finding rather than universal screening. The American Thyroid Asso-

Lazarus J et al (2014) European Thyroid J 3: 76

Despite the beneficial effects of levothyroxine treatment on obstetric outcome and the fact that the previously recommended targeted approach to screening thyroid function will miss a large percentage of women with thyroid dysfunction, we do not recommend universal screening for SCH because of the lack of grade 1 evidence. (2S)

Note: although there are still no well-controlled studies to justify universal screening, the majority of the authors (C.D., A.H.-D., J.L., R.N.) recommend universal screening because of the beneficial effects of levothyroxine treatment on unknown overt hypothyroidism, on obstetric outcome and the fact that the targeted approach will miss a large percentage of women with SCH, especially in mildly iodine-deficient women. (2W)

Lazarus J et al (2014) European Thyroid J 3: 76

Screening

- Wenn Screening, dann so früh wie möglich in SS
- fT4 und Antikörper messen bei allen mit TSH > Referenzbereich
- TPO-Ak spezifisch, aber Tg-Ak ebenfalls empfohlen (Falls TSH ↑ und TPO-Ak neg.)
- Ultraschall „may be performed“

Lazarus J et al (2014) European Thyroid J 3: 76

The debate about substitution therapy in SCH is still open both for non-pregnant and pregnant patients. The

Lazarus J et al (2014) European Thyroid J 3: 76

The New England
Journal of Medicine

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VOLUME 341 AUGUST 19, 1999 NUMBER 8

MATERNAL THYROID DEFICIENCY DURING PREGNANCY AND SUBSEQUENT NEUROPSYCHOLOGICAL DEVELOPMENT OF THE CHILD

JAMES E. HADDOW, M.D., GLENN E. PALOMAKI, B.S., WALTER C. ALLAN, M.D., JOSEPHINE R. WILLIAMS, GEORGE J. KNIGHT, PH.D., JUNE GAGNON, M.A., CHERYL E. O'HEIR, M.ED., ED.S., MARVIN L. MITCHELL, M.D., ROSALIE J. HERMOS, M.P.H., SUSAN E. WAISBREN, PH.D., JAMES D. FAIX, M.D., AND ROBERT Z. KLEIN, M.D.

TEST	CHILDREN OF TREATED WOMEN WITH HYPOTHYROIDISM (N=14)	P VALUE†	CHILDREN OF UNTREATED WOMEN WITH HYPOTHYROIDISM‡ (N=48)	P VALUE§	CONTROL CHILDREN (N=124)
Intelligence					
WISC-III full-scale IQ score	111	0.20	100	0.005	107
WISC-III full-scale IQ score ≤85 (%)	0	0.90	19	0.007	5
Attention					
WISC-III freedom-from-distractibility score	103	0.80	97	0.03	102
Continuous Performance Test score >8 (%)¶	50	0.01	33	0.04	19

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 FEBRUARY 9, 2012 VOL. 366 NO. 6

Antenatal Thyroid Screening and Childhood Cognitive Function

John H. Lazarus, M.D., Jonathan P. Bestwick, M.Sc., Sue Channon, D.Clin.Psych., Ruth Paradice, Ph.D., Aldo Maina, M.D., Rhian Rees, M.Sc., Elisabetta Chiusano, M.Psy., Rhys John, Ph.D., Varvara Guaraldo, M.S.Chem., Lynne M. George, H.N.C., Marco Perona, M.S.Chem., Daniela Dall'Amico, M.D., Arthur B. Parkes, Ph.D., Mohammed Joomun, M.Sc., and Nicholas J. Wald, F.R.S.

Table 2. Standardized Full-Scale Child IQ and Scores on the Child Behavior Checklist (CBCL) and the Behavior Rating Inventory of Executive Function, Preschool Version (Brief-P), According to Study Group.*

Test	Screening Group (N=390)	Control Group (N=404)	Difference (95% CI) (Control Group – Screening Group)†	P Value
IQ				
Mean	99.2±13.3	100.0±13.3	0.8 (–1.1 to 2.6)	0.40
<85 (% of children)	12.1	14.1	2.1 (–2.6 to 6.7)	0.39

Levothyroxin in SS

- Frauen mit latenter Hypothyreose vor und in SS sollten behandelt werden – Ziel Trimesterspez. Referenzwerte
- Frauen mit isolierter Hypothyroxinämie im 1. Trimester sollten behandelt werden
- Frauen mit isolierter Hypothyroxinämie im 2. und 3. Trimester sollten nicht behandelt werden

Lazarus J et al (2014) European Thyroid J 3: 76

Hyperthyreose

- Beta-HCG induzierte Hyperthyreose vs. M. Basedow
- Wenn TRAK pos.: Behandlungsziel fT4 am oberen Rand der Norm (oder knapp darüber)
- Mittel der Wahl Propylthiouracil (wg. erhöhter Mißbildungsrate unter Thiamazol), nach 1. Trim. ev. Switch auf Thiamazol („Practitioners should use their clinical judgement“)
- Latente Hyperthyreose nicht behandeln

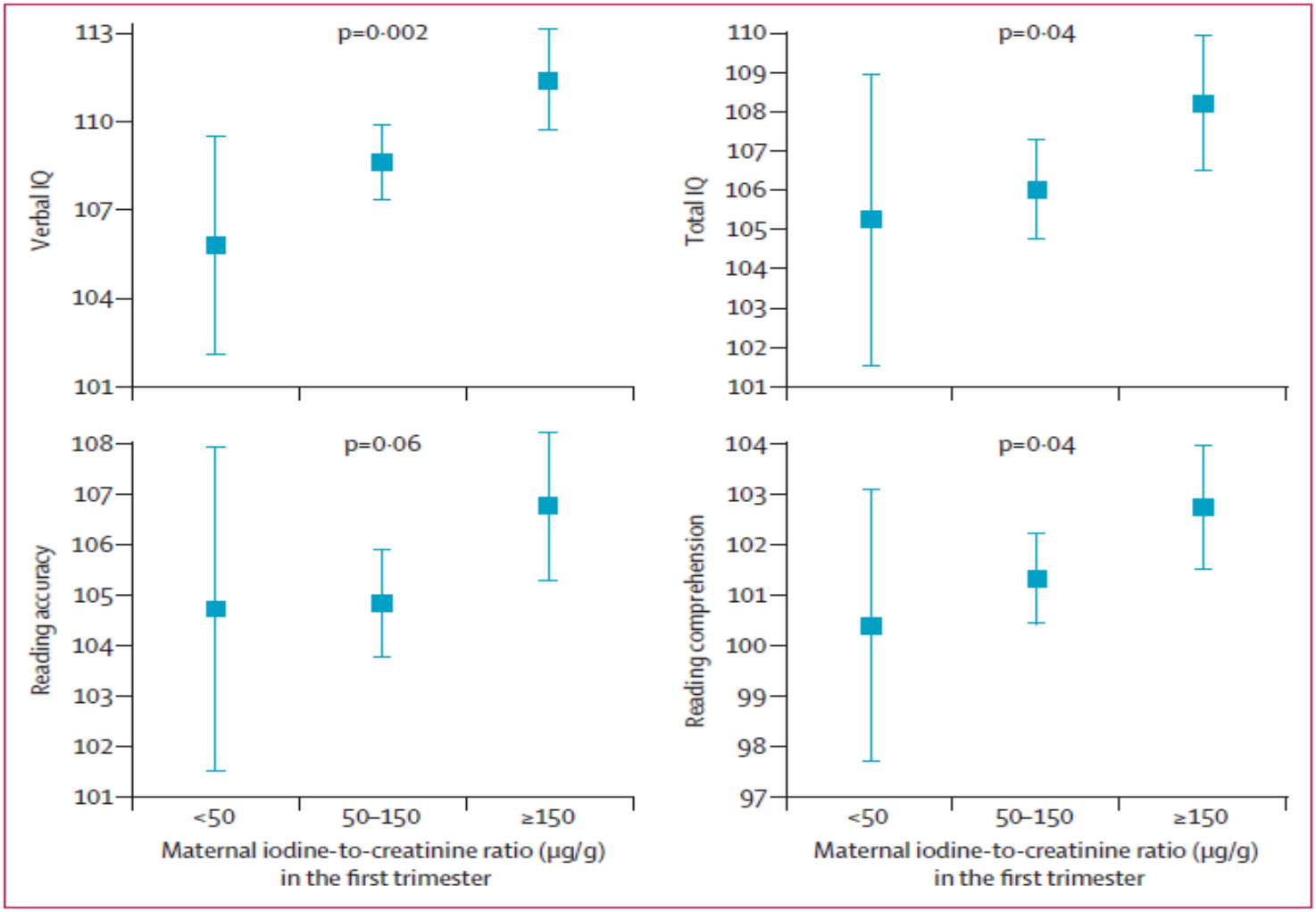
De Groot L et al (2012) JCEM 97:2543

M. Basedow

- TRAK in 22. SSW wenn
  - St. p. M. Basedow
  - St. P. RJT
  - Jemals TRAK pos.
- Wenn TRAK > 2 - 3fach über Normgrenze, fetales Monitoring (Tachycardie, Kropf, Wachstumsverzögerung, akzeleriertes Knochenalter, Hydrops)

De Groot L et al (2012) JCEM 97:2543

Jodmangel Schwangerschaft - Kinder (ALSPAC study)



Bath SC et al (2013) Lancet 382 (9889): 331

Wiener Schwangere

- Mediane Harnjod-Konzentration (**U**rinary **I**odine **C**oncentration **UIC**): 87.0 µg/L (2.3-649.2 µg/L)

mediane UIC (µg/L)	Jod-aufnahme	%		
0-49	Insuffizient	21.5	81.2	
50-99	Insuffizient	40.2		
100-149	Insuffizient	19.5		
150-249	Adäquat	13.8		
250-499	mehr als adäquat	2.8	16.6	4.9
≥ 500	exzessiv	2.0		

Lindorfer H et al – acccepted for publication Eur.J.Clinical Nutrition

Jod in SS

- ALLE Schwangeren (ausser manifest hyperthyreot) sollen Jodsubstitution mit 150 µg/d erhalten
- Idealerweise Beginn präkonzeptionell