

# Thyroid hormones according to gestational age in pregnant Spanish women

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## Abstract

**Background:** Thyroid function changes during pregnancy and maternal thyroid dysfunction have been associated with adverse outcomes. Our aim was to evaluate thyroid hormones levels in pregnant women resident in Aragon, Spain. **Findings:** Samples for 1198 pregnant women with no apparent thyroid disorders were analyzed, using paramagnetic microparticle and chemiluminescent detection technologies, in order to determine levels of thyroid stimulating hormone (TSH), free triiodothyronine (FT3), free thyroxine (FT4), thyroid peroxidase antibodies (TPO-Ab), and thyroglobulin antibodies (Tg-Ab). Of the women in our sample, 85.22% had normal values for TPO-Ab and Tg-Ab and 14.77% had results revealing the presence of autoimmune diseases of the thyroid. The thyroid hormone reference values obtained according to gestational age (in brackets) were as follows: for free T3, values were  $3.38 \pm 0.52$  pg/mL (<11 weeks),  $3.45 \pm 0.54$  pg/mL (11-20 weeks),  $3.32 \pm 0.43$  pg/mL (21-30 weeks),  $3.21 \pm 0.53$  pg/mL (31-36 weeks), and  $3.23 \pm 0.41$  pg/mL (>36 weeks); for free T4, values were  $1.10 \pm 0.14$  ng/dL (<10 weeks),  $1.04 \pm 0.14$  ng/dL (11-20 weeks),  $0.93 \pm 0.12$  ng/dL (21-30 weeks),  $0.90 \pm 0.13$  ng/dL (31-36 weeks), and  $0.80 \pm 0.21$  ng/dL (>36 weeks); and for TSH, values were ( $\mu$ IU/mL):  $1.12 \pm 0.69$  (<10 weeks),  $1.05 \pm 0.67$  (11-20 weeks),  $1.19 \pm 0.60$  (21-30 weeks),  $1.38 \pm 0.76$  (31-36 weeks), and  $1.46 \pm 0.72$  (>36 weeks).

**Conclusion:** Pregnant women with normal antibody values according to gestational age had values for FT4 and TSH, but not for FT3, that differed to a statistically significant degree. The values we describe can be used as reference values for the Aragon region of Spain.