

## A. Weghofer

### **What is the real relevance of thyroid-function and thyroid autoimmunity to IVF success?**

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Thyroid dysfunction is the most common endocrine disorder in women of reproductive years, including infertile women. Overt and subclinical hypothyroidism may cause menstrual irregularities and is believed to increase miscarriage rates. These observations have led to the commonly adopted practice to supplement thyroxin in women with TSH levels  $\geq 2.5$   $\mu\text{IU/mL}$  trying to conceive.

During controlled ovarian hyperstimulation, the impact of thyroid function appears especially pronounced: Once estrogen rises above physiological thresholds, thyroid-binding globulin levels increase. The latter bind more thyroxin, leaving less amounts of free thyroid hormone for utilization. As a result, thyroid-stimulating hormone (TSH) rises.

These observations led to the suspicion that thyroid function may influence in vitro fertilization cycle outcomes. Whether clinical or subclinical hypothyroidism and/or thyroid autoimmunity, indeed, impact on female fertility and pregnancy potential in spontaneous and IVF cycles has, however, remained subject of substantial disagreement.

The present lecture gives an overview of current literature on the subject and presents new insights on the impact of thyroid function and autoimmunity on female reproduction.