

## Does Hormone Replacement Therapy After Hypothyroidism Improve Cognitive Performance and Depressive Mood?

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**Introduction:** It is well examined that hypothyroidism leads to cognitive losses and depressive moods. A well regulated thyroid metabolic status lowers those dysfunctions. After thyroid cancer and successful hormone replacement therapy cognitive and affective capacities can be re-established.

**Objectives:** Do female patients' results in cognitive and affective testing in hypothyroidism after thyroid cancer differ from the same patients' results in euthyroid?

**Aims:** We assume the hypothesis that there is an improvement in cognitive performance and the depressive mood in euthyroidism compared with earlier hypothyroidism.

**Methods:** In this study during 20 months N = 24 healthy female patients' hypothyroid metabolic statuses after thyroid cancer and thyroidectomy were examined as an inpatient and within at least six months later as an outpatient in euthyroidism. At both examination dates the patients filled in the Beck Depression Inventory (BDI) and a psychometric test battery (Rey-Osterrieth Complex Figure Test, D2-Test).

**Results:** A Wilcoxon Signed-Rank Test indicate significant differences between hypothyroidism and euthyroid in favour of euthyroid in the BDI ( $M = z = -3.56, p < .000$ ), Rey-Osterrieth Complex Figures Test (cognitive reproduction,  $z = -4.20, p < .001$ ) and the D2-Test ( $z = -2.56, p = .011$ ).

**Conclusions:** Our findings suggest that there is a relation between the hypothyroidism, depressive mood and fields of cognition (concentration and visual memory). It implies that a hormone replacement therapy should be initiated as quickly as possible for patients with hypothyroidism to re-establish their quality of life, performance and treatment compliance.