



### SUBCLINICAL THYROID DISORDERS AND COGNITIVE DECLINE IN OLD AGE: RESULTS FROM THE PROSPER STUDY

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#### Introduction

Subclinical thyroid disorders have been implicated as a risk factor for cognitive decline in old age, although results are inconsistent. Cardiovascular disease, which contributes to cognitive decline in old age, has been associated with subclinical thyroid disorders. We investigated the association between subclinical thyroid disorders and cognitive decline in the PROspective Study of Pravastatin in the Elderly at Risk (PROSPER).

#### Methods

PROSPER consisted of 5,804 participants aged 70-82 years with pre-existing vascular disease or at risk thereof. Thyroid function was determined at baseline. Cognitive performance was tested at baseline and at four different time points during a mean follow-up of 42 months, using four neuropsychological performance tests.

#### Results

We studied 5,384 participants. Subclinical hyperthyroidism was found in 166 (3.1%) participants, 387 (7.2%) participants had subclinical hypothyroidism. We found no consistent association of subclinical hypo- or hyperthyroidism with altered cognitive performance (compared to euthyroid participants) at baseline or during follow up. However, subclinical hyperthyroidism was associated with a lower body mass index ( $p < 0.01$ ), LDL cholesterol ( $p = 0.02$ ), total cholesterol ( $p = 0.01$ ) and lower prevalence of vascular disease at baseline ( $p = 0.02$ ) when compared to participants with euthyroidism. Subclinical hypothyroidism did not associate with cardiovascular disease or risk factors thereof.

#### Conclusion

We found no consistent evidence for an association of subclinical thyroid disorders and cognitive performance in a large cohort of elderly subjects with pre-existing vascular disease or at risk thereof.