

# Maintaining cognitive function with internet use: a two-country, six-year longitudinal study

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## ABSTRACT

**Objectives:** Maintaining good cognitive function with aging may be aided by technology such as computers, tablets, and their applications.

**Design:** Two population-based studies with a longitudinal design from 2001/2003 (T1) to 2007/2010 (T2).

**Setting:** Sweden and the Netherlands.

**Participants:** Older adults aged 66 years and above from the Swedish National Study on Ageing and Care (N = 2,564) and from the Longitudinal Aging Study Amsterdam (N = 683).

**Measurements:** Internet use was self-reported. Using the scores from the Mini-Mental State Examination (MMSE) from T1 and T2, both a difference score and a significant change index was calculated. Linear and logistic regression analysis were performed with difference score and significant change index, respectively, as the dependent variable and internet use as the independent variable, and adjusted for sex, education, age, living situation, and functional limitations. Using a meta-analytic approach, summary coefficients were calculated across both studies.

**Results:** Internet use at baseline was 26.4% in Sweden and 13.3% in the Netherlands. Significant cognitive decline over six years amounted to 9.2% in Sweden and 17.0% in the Netherlands. Considering the difference score, the summary linear regression coefficient for internet use was  $-0.32$  (95% CI:  $-0.62, -0.02$ ). Considering the significant change index, the summary odds ratio for internet use was  $0.54$  (95% CI:  $0.37, 0.78$ ).

**Conclusions:** The results suggest that internet use might play a role in maintaining cognitive functioning. Further research into the specific activities that older adults are doing on the internet may shine light on this issue.

**Key words:** older adults, internet use, significant cognitive decline, longitudinal study, Sweden, the Netherlands

A negative regression coefficient suggests that Internet use DECREASED cognitive decline (aka: the more older adults used the Internet, the less they declined cognitively).

This is a decent sized effect.