

# **The Effect of Simultaneous Interpreting on Age-Related Changes of Executive Functions Across Lifespan**

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## **Objective**

Various studies show that cognitively stimulating work could slow the normal cognitive decline with advancing age. Underlying mechanisms behind this association suggest that stimulating environments increase « cognitive reserve », which protects against the effects of aging on the cognitive function. Our study aims to evaluate the effects of simultaneous interpretation on the decline of executive functions.

## **Participants and Methods**

225 participants were divided into three groups (75 Interpreters, 75 translators and 75 monolinguals) and five age groups (25 – 34 ; 35 – 44 ; 45 – 54 ; 55 – 65 and 66 +). They performed five tasks, testing their reaction time, dual tasking and executive functions (updating, inhibition, flexibility). The three groups were statistically comparable for gender, level of education, age and seniority at work.

## **Results**

Multiple analyses of variance (MANOVA), followed by Post Hoc (Bonferroni) show that among younger subjects (25-34 years old), there was no significant difference in performance on tests. For participants 35 years and older, differences appear between interpreters and the two other groups. These differences appear in tasks assessing cognitive functions most involved in simultaneous interpretation (information speed processing and updating). However, after retirement (66 +), the differences between interpreters and translators disappear but remain present when compared to monolinguals.

## **Conclusion**

During working life, it seems that simultaneous interpretation may slow the decline of executive functions. However, once retired, interpreters seem to lose the benefits of cognitive stimulation of their work activity even if the benefits of bilingualism are preserved.