*Supplementary Material*

# Cognitive Change During the Life Course and Leukocyte Telomere Length in Late Middle-aged Men.

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Supplementary Table 1 Studies of leukocyte telomere length (LTL) and cognitive decline

| Author, year of publication and [ref-number] | **Method for cognitive assessment** | **Cognitive status** | **Study population** | **Study design** | **Methods for LTL** | **Number** | **Age** | **Main findings** | Adjustments |
|---|---|---|---|---|---|---|---|---|---|
| Harris 2006 [1] | MMSE, MHT | Non-demented | Lothian Birth Cohort | Cross-sectional | TRF | 190 | 79y | No association with LTL and cognitive decline. Small association to verbal fluency only | Education |
| Valdes 2010 [2] | CANTAB | Non-demented | TwinsUK cohort | Cross-sectional | TRF | 382 | 19-78y ♀ | LTL correlates with better cognitive performance | Age,SEP, BP,glucose, BMI, smoking, exercise, VitD, |
| Bendix 2011 [3] | MMSE, cognitive composite | 78/548 MMSE<24 | Danish twins | Cross-sectional | TRF | 548 | 73-92y | No association between LTL and cognitive function | Age, gender and exercise |
| Der 2012 [4] | Alice Heim 4, reaction time (RT) | | West of Scotland Community | Cross-sectional | qPCR | 2185 | 36; 56, 76y | Associated to RT and AH4 score. However diminished after adjustment for age. Little to offer for prediction. | Age |
| Ma 2013 [5] | MMSE, community screening interview | Incl. MMSE<24 | Chinese community-dwelling male | Cross-sectional | qPCR | 976 | >65y ♂ | No linear association with LTL and MMSE. Shorter LTL in individuals with MMSE<24 | Age, education |
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|---|---|---|---|---|---|---|---|---|---|
| Martin-Ruiz 2006 [6] | MMSE | Non-demented | Stroke survivors | Cohort (2 y follow-up) LTL → Dementia | TRF | 195 | 80±4y | Longer LTL associated with reduced risk of dementia and less reduction in MMSE | Age,BP,ApoE4, CVD |
| Yaffe 2009 [7] | MMSE, DSST | Non-demented | Health ABC | Cohort (7 y follow up) Cognitive decline → LTL | qPCR | 2741 | 70-79y | Cognitive decline was less for longest tertile of LTL than medium and short for MMSE, not DSST | Age, gender, SEP |
| Mather 2010 [8] | Cognitive performance | | Australian population | Cohort (4 y follow up) Cognitive decline → LTL | qPCR | 646 | 40´s & 60´s | No cross-sectional association with LTL and cognitive function, nor to cognitive decline | Age, gender, smoking alcohol, exercise, BP |
| Devore 2011 [9] | TICS East Boston | | Nurses Health study | Cohort (10y follow up) LTL → Cognitive decline | qPCR | 2092 | ~65y ♀ | Longer LTL associated with slower cognitive decline. Not a powerful marker. | Age, education, smoking, DM, BP |
| Harris 2012 [10] | MH-T, speed, WAIS-III | Relatively healthy | Lothian Birth Cohort | Cohort (60y follow up) Cognitive decline → LTL | qPCR | 1048 | 70y | No association to cognitive performance at age 70 nor to change from 11-70y | Gender, education, smoking, alcohol |

MMSE=Mini Mental State Examination; MHT=Moray house test; CANTAB=Cambridge Neuropsychological Test Automated Battery; DSST=Digit symbol substitution test; TICS=Telephone interview for cognitive status; WAIS=Wechsler Adult Intelligence Scale; TRF=Telomere restriction fragment length assay; BP= Blood pressure; BMI= Body Mass Index; SEP socioeconomic Position; CVD= Cardiovascular disease; DM= Diabetes; Baseline exposure → Outcome at follow-up

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