Results

Nine follow-up waves with one year intervals after baseline were present for the present analysis. There were a total of 2254 individuals at baseline, 1355 at year 2 of follow up, 729 at year 4, 441 at year 6, and 242 at year 8.

Study characteristics

\*table 1\*

Relations between physical and cognitive functioning

Change in physical functioning.

Peak Flow. Peak flow declined significantly in females but not in males after adjustments for age and education, but this association became attenuated after further adjustments for height, diabetes, smoking, CDV and depression.

Grip Strength. Grip strength declined significantly in females but not in males after adjustments for age and education, but this association became attenuated after further adjustments for height, diabetes, smoking, CVD and depression.

Cross-sectional between-person correlations in baseline physical and cognitive function (intercepts).

Peak Flow. Significant associations between pulmonary functioning and cognition were present in domains of executive function, fluency, knowledge, memory and reasoning in females only. Specifically, in models adjusting for age, there were there were significant correlations between baseline peak flow and TMTB, Categories, Information, Vocabulary, Digit Span, Logical Memory, and Block Design. In models adjusting for age and education associations remained significant between peak flow and TMTB, Categories, Information, Logical Memory and Block Design. Associations between peak flow and Vocabulary and peak flow and Digit Span were attenuated. For models adjusting further for height, and for height, diabetes, smoking and CVD, associations remained significant for TMTB, Information and Logical Memory but became attenuated for Categories and Block Design. There were no significant associations once we introduced depression in the models. There were no significant associations for males in none of the models.

Grip Strength. Associations between grip strength and cognition were present in domains of executive function, knowledge and reasoning in females only. Specifically, in models adjusting for age, there were significant correlations between baseline grip strength and TMTB, Vocabulary, and Block Design. In models adjusting further for education, significant associations were still present between grip strength and TMTB, Vocabulary, and Block Design. The relationship between grip strength and Vocabulary was attenuated once height was entered in the models; however associations remained significant between grip strength and TMTB and Block Design. Grip strength and Information was also significant when height was introduced in the models. When we introduced diabetes, smoking, and CVD, the associations between grip strength and TMTB, Information, and Block Design was attenuated. These associations were further attenuated in the full models, where we further adjusted for depression. There were no significant associations for males in none of the models.

Longitudinal within person correlations in changes in physical functioning with changes in cognition (slopes).

Peak Flow. In females, associations between average peak flow and cognitive decline were specific only to the Boston Naming Task with adjustments for age and education. This association became attenuated once height was included in the model. A positive association between peak flow and Information was also present in females with adjustments for age and education, but this was also attenuated once height was introduced in the model. No associations between changes in peak flow and cognitive function were significant in males.

Grip Strength. Associations were present between decline in grip strength and domains of fluency and knowledge in females, and between grip strength and the domain of language in males. Specifically, when adjusting only for age a significant association was present between decline in grip strength and Verbal Fluency and Information in females, and between decline in grip strength and BNT in males. These associations held when adjusting further for education in females, but became attenuated in males. All associations lost significant once height was introduced in the models. There were no significant associations in further adjustments for diabetes, smoking, CVD and depression in females and males.