

# Serum iron parameters, HFE C282Y genotype, and cognitive performance in older adults: results from the FACIT study

Citation for published version (APA):

Schiepers, O., Van Boxtel, M., De Groot, R., Jolles, J., De Kort, W., Swinkels, D., Kok, F., Verhoef, P., & Durga, J. (2010). Serum iron parameters, HFE C282Y genotype, and cognitive performance in older adults: results from the FACIT study. *The Journals of gerontology. Series A, Biological sciences and medical sciences*, 65A(12), 1312-1321. <https://doi.org/10.1093/gerona/gdq149>

## DOI:

[10.1093/gerona/gdq149](https://doi.org/10.1093/gerona/gdq149)

## Document status and date:

Published: 01/12/2010

## Document Version:

Peer reviewed version

## Document license:

CC BY-NC-ND

## Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

## General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

<https://www.ou.nl/taverne-agreement>

## Take down policy

If you believe that this document breaches copyright please contact us at:

[pure-support@ou.nl](mailto:pure-support@ou.nl)

providing details and we will investigate your claim.

Downloaded from <https://research.ou.nl/> on date: 21 Sep. 2024

Open Universiteit  
[www.ou.nl](http://www.ou.nl)



**TABLE 3**

Associations between iron parameters and cognitive performance at baseline in healthy older adults\*

Cognitive performance indices	<i>n</i>	Standardized regression coefficient ( $\beta$ )					
		Serum iron	<i>p</i>	Ferritin	<i>p</i>	Non-transferrin bound iron	<i>p</i>
Memory	794	-0.019	0.807	0.002	0.951	0.070	0.362
Sensorimotor speed	789	-0.185	0.012	-0.073	0.033	0.141	0.054
Complex speed	788	-0.081	0.296	-0.077	0.019	0.081	0.266
Information processing speed	791	-0.109	0.141	-0.069	0.046	0.078	0.291
Word fluency	794	-0.050	0.519	-0.062	0.092	0.057	0.462

\* Adjusted for the covariates age, sex, level of education, alcohol consumption, smoking, body mass index, physical activity, *APOE* E4 carrier status, serum C-reactive protein, and hemoglobin concentration in hierarchical linear regression analyses.

**TABLE 4**

Longitudinal associations between iron parameters and cognitive performance over 3 years of follow-up in healthy older adults\*

Cognitive performance indices	<i>n</i>	Parameter estimate for longitudinal effect					
		Serum iron	<i>p</i>	Ferritin	<i>p</i>	Non-transferrin bound iron <sup>†</sup>	<i>p</i>
Memory	800	0.002	0.307	-0.001	0.292	0.000	0.965
Sensorimotor speed	799	0.001	0.396	0.000	0.806	0.001	0.925
Complex speed	798	-0.002	0.086	-0.001	0.221	-0.016	0.052
Information processing speed	799	0.001	0.501	0.000	0.578	-0.005	0.446
Word fluency	800	0.002	0.215	0.000	0.991	0.018	0.121

\* Adjusted for the covariates age, sex, level of education, alcohol consumption, smoking, body mass index, physical activity, *APOE* E4 carrier status, serum C-reactive protein, and hemoglobin concentration in linear mixed models.

<sup>†</sup> Non-transferrin bound iron was measured at baseline only. Memory, *n*=794; sensorimotor speed, *n*=793; complex speed, *n*=792; information processing speed, *n*=793; word fluency, *n*=794.

**TABLE 5 [optional]**

Cross-sectional and longitudinal (3-year) associations between the *HFE* C282Y mutation and cognitive performance in healthy older adults\*

Cognitive performance indices	Cross-sectional analyses			Longitudinal analyses	
	<i>n</i>	Standardized regression coefficient ( $\beta$ )	<i>p</i>	Parameter estimate for longitudinal effect	<i>p</i>
Memory	753	-0.033	0.332	-0.005	0.845
Sensorimotor speed	748	-0.003	0.930	-0.024	0.183
Complex speed	748	0.029	0.389	-0.022	0.343
Information processing speed	750	-0.010	0.772	-0.009	0.659
Word fluency	753	-0.003	0.943	-0.031	0.376

\* Displayed are the standardized regression coefficients ( $\beta$ ) for the *HFE* C282Y mutation (0=wildtype, 1=C282Y homozygous/heterozygous) in hierarchical linear regression analyses and the parameter estimates for the longitudinal effect of the *HFE* C282Y mutation in linear mixed models. Cross-sectional and longitudinal associations were adjusted for the covariates age, sex, level of education, alcohol consumption, smoking, body mass index, physical activity, *APOE* E4 carrier status, serum C-reactive protein, and hemoglobin concentration.