

SUPPLEMENTARY DATA

**Supplementary Table 1.** Macrovascular disease and Logical Memory (LM).

	Age and sex adjusted beta)	Four-year cognitive change		Estimated lifetime cognitive change	
		Beta adjusted for age, sex, baseline score	Fully adjusted beta	Beta adjusted for age, sex, MHVS	Fully adjusted beta
<b>Vascular ‘events’</b>					
<b>Any vascular event (n=393)</b>	-0.12 (0.001)	-0.08 (0.005)	-0.08 (0.005)	-0.03 (0.343)	-0.04 (0.202)
<b>Stroke (n= 62)</b>	-0.07 (0.039)	-0.03 (0.354)	-0.03 (0.340)	-0.04 (0.173)	-0.05 (0.145)
<b>Transient Ischemic Attack (n=31)</b>	0.02 (0.646)	0.01 (0.760)	0.01 (0.740)	0.04 (0.239)	0.04 (0.259)
<b>Myocardial infarction (n=150)</b>	-0.03 (0.475)	-0.03 (0.269)	-0.03 (0.286)	<0.01 (0.920)	-0.01 (0.848)
<b>Angina (n=298)</b>	-0.09 (0.012)	-0.05 (0.055)	-0.05 (0.059)	-0.01 (0.693)	-0.02 (0.474)
<b>Peripheral arterial disease (n=65)</b>	-0.04 (0.204)	-0.04 (0.140)	-0.04 (0.165)	-0.03 (0.332)	-0.04 (0.260)
<b>Vascular ‘markers’</b>					
<b>NT-proBNP</b>	-0.09 (0.010)	-0.07 (0.015)	-0.06 (0.030)	-0.07 (0.027)	-0.08 (0.012)
<b>Ankle brachial index</b>	0.08 (0.015)	0.05 (0.047)	0.05 (0.111)	0.05 (0.090)	0.06 (0.062)
<b>Carotid IMT</b>	-0.06 (0.138)	-0.05 (0.067)	-0.04 (0.156)	-0.06 (0.075)	-0.06 (0.074)

Outcome variable is follow-up Logical Memory score. Beta values are standardised regression coefficients. Values in brackets are p-values. Cognitive data includes imputed values. MHVS, Mill-Hill Vocabulary Scale. NT-proBNP, N-terminal pro-brain natriuretic peptide. Carotid IMT, carotid intima-media thickness. N = 757 to 825. Final models additionally adjusted for baseline vascular risk factors (total cholesterol, brachial blood pressure, cigarette smoking).

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**Supplementary Table 2.** Macrovascular disease and Faces.

	Age and sex adjusted beta	Four-year cognitive change		Estimated lifetime cognitive change	
		Beta adjusted for age, sex, baseline score	Fully adjusted beta	Beta adjusted for age, sex, MHVS	Fully adjusted beta
<b>Vascular ‘events’</b>					
<b>Any vascular event (n=393)</b>	-0.11 (0.002)	-0.05 (0.054)	-0.05 (0.060)	-0.05 (0.124)	-0.05 (0.122)
<b>Stroke (n= 62)</b>	-0.06 (0.102)	-0.02 (0.555)	-0.01 (0.719)	-0.04 (0.275)	-0.03 (0.402)
<b>Transient Ischemic Attack (n=31)</b>	-0.04 (0.241)	-0.04 (0.196)	-0.04 (0.196)	-0.04 (0.279)	-0.04 (0.282)
<b>Myocardial infarction (n=150)</b>	-0.04 (0.257)	<0.01 (0.942)	<0.01 (0.916)	-0.02 (0.562)	-0.02 (0.575)
<b>Angina (n=298)</b>	-0.05 (0.179)	-0.02 (0.403)	-0.02 (0.409)	<0.01 (0.986)	<0.01 (0.953)
<b>Peripheral arterial disease (n=65)</b>	-0.06 (0.086)	-0.04 (0.142)	-0.04 (0.172)	-0.05 (0.113)	-0.05 (0.132)
<b>Vascular ‘markers’</b>					
<b>NT-proBNP</b>	-0.07 (0.070)	-0.04 (0.190)	-0.03 (0.276)	-0.05 (0.148)	-0.05 (0.185)
<b>Ankle brachial index</b>	0.06 (0.089)	0.05 (0.069)	0.05 (0.117)	0.04 (0.268)	0.03 (0.362)
<b>Carotid IMT</b>	-0.09 (0.017)	-0.08 (0.008)	-0.08 (0.012)	-0.09 (0.009)	-0.09 (0.012)

Outcome variable is follow-up Faces score. Beta values are standardised regression coefficients. Values in brackets are p-values. Cognitive data includes imputed values. MHVS, Mill-Hill Vocabulary Scale. NT-proBNP, N-terminal pro-brain natriuretic peptide. Carotid IMT, carotid intima-media thickness. N = 757 to 825 Final models additionally adjusted for baseline vascular risk factors (total cholesterol, brachial blood pressure, cigarette smoking).

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**Supplementary Table 3.** Macrovascular disease and Digit Symbol Coding (DSC).

	Age and sex adjusted beta	Four-year cognitive change		Estimated lifetime cognitive change	
		Beta adjusted for age, sex, baseline score	Fully adjusted beta	Beta adjusted for age, sex, MHVS	Fully adjusted beta
<b>Vascular ‘events’</b>					
<b>Any vascular event (n=393)</b>	-0.16 (<0.001)	-0.05 (0.025)	-0.05 (0.030)	-0.08 (0.010)	-0.08 (0.012)
<b>Stroke (n= 62)</b>	-0.17 (<0.001)	-0.08 (0.001)	-0.08 (0.001)	-0.15 (<0.001)	-0.14 (<0.001)
<b>Transient Ischemic Attack (n=31)</b>	-0.01 (0.707)	<0.01 (0.905)	<0.01 (0.976)	0.01 (0.870)	0.01 (0.751)
<b>Myocardial infarction (n=150)</b>	-0.08 (0.023)	-0.01 (0.741)	-0.01 (0.734)	-0.05 (0.147)	-0.04 (0.178)
<b>Angina (n=298)</b>	-0.13 (<0.001)	-0.05 (0.060)	-0.05 (0.054)	-0.06 (0.072)	-0.06 (0.055)
<b>Peripheral arterial disease (n=65)</b>	-0.02 (0.506)	0.01 (0.640)	0.02 (0.480)	-0.01 (0.839)	<0.01 (0.892)
<b>Vascular ‘markers’</b>					
<b>NT-proBNP</b>	-0.08 (0.017)	-0.05 (0.025)	-0.05 (0.043)	-0.06 (0.058)	-0.06 (0.075)
<b>Ankle brachial index</b>	0.10 (0.003)	0.05 (0.031)	0.04 (0.138)	0.08 (0.014)	0.06 (0.092)
<b>Carotid IMT</b>	-0.07 (0.052)	-0.08 (0.001)	-0.07 (0.004)	-0.07 (0.030)	-0.07 (0.048)

Outcome variable is follow-up DSC score. Beta values are standardised regression coefficients. Values in brackets are p-values. Cognitive data includes imputed values. MHVS, Mill-Hill Vocabulary Scale. NT-proBNP, N-terminal pro-brain natriuretic peptide. Carotid IMT, carotid intima-media thickness. N = 755 to 823. Final models additionally adjusted for baseline vascular risk factors (total cholesterol, brachial blood pressure, cigarette smoking).

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**Supplementary Table 5.** Macrovascular disease and Letter-Number Sequencing (LNS).

	Age and sex adjusted beta	Four-year cognitive change		Estimated lifetime cognitive change	
		Beta adjusted for age, sex, baseline score	Fully adjusted beta	Beta adjusted for age, sex, MHVS	Fully adjusted beta (
<b>Vascular ‘events’</b>					
<b>Any vascular event (n=393)</b>	-0.11 (0.003)	-0.04 (0.037)	-0.05 (0.030)	-0.03 (0.367)	-0.04 (0.211)
<b>Stroke (n= 62)</b>	-0.11 (0.002)	-0.04 (0.073)	-0.04 (0.075)	-0.08 (0.012)	-0.08 (0.018)
<b>Transient Ischemic Attack (n=31)</b>	0.01 (0.747)	<0.01 (0.999)	<0.01 (0.941)	0.02 (0.639)	0.01 (0.747)
<b>Myocardial infarction (n=150)</b>	-0.02 (0.521)	<0.01 (0.964)	<0.01 (0.908)	0.01 (0.735)	<0.01 (0.976)
<b>Angina (n=298)</b>	-0.04 (0.291)	-0.03 (0.237)	-0.03 (0.218)	0.03 (0.314)	0.03 (0.456)
<b>Peripheral arterial disease (n=65)</b>	-0.05 (0.213)	-0.01 (0.703)	-0.01 (0.634)	-0.03 (0.361)	-0.04 (0.234)
<b>Vascular ‘markers’</b>					
<b>NT-proBNP</b>	-0.06 (0.075)	-0.07 (0.001)	-0.07 (0.001)	-0.05 (0.164)	-0.05 (0.130)
<b>Ankle brachial index</b>	0.01 (0.740)	0.02 (0.286)	0.02 (0.375)	-0.02 (0.572)	-0.10 (0.771)
<b>Carotid IMT</b>	-0.04 (0.292)	-0.01 (0.640)	<0.01 (0.907)	-0.04 (0.203)	-0.04 (0.287)

Outcome variable is follow-up BVFT score. Beta values are standardised regression coefficients. Values in brackets are p-values. Cognitive data includes imputed values. MHVS, Mill-Hill Vocabulary Scale. NT-proBNP, N-terminal pro-brain natriuretic peptide. Carotid IMT, carotid intima-media thickness. N = .764 to 826. Final models additionally adjusted for baseline vascular risk factors (total cholesterol, brachial blood pressure, cigarette smoking).

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**Supplementary Table 6.** Macrovascular disease and Matrix Reasoning (MR).

	Age and sex adjusted beta	Four-year cognitive change		Estimated lifetime cognitive change	
		Beta adjusted for age, sex, baseline score	Fully adjusted beta	Beta adjusted for age, sex, MHVS	Fully adjusted beta
<b>Vascular ‘events’</b>					
<b>Any vascular event (n=393)</b>	-0.11 (0.002)	-0.03 (0.319)	-0.03 (0.347)	-0.02 (0.510)	-0.02 (0.566)
<b>Stroke (n= 62)</b>	-0.06 (0.065)	-0.03 (0.317)	-0.03 (0.309)	-0.03 (0.300)	-0.03 (0.361)
<b>Transient Ischemic Attack (n=31)</b>	-0.11 (0.002)	-0.08 (0.002)	-0.08 (0.002)	-0.08 (0.009)	-0.08 (0.009)
<b>Myocardial infarction (n=150)</b>	-0.10 (0.004)	-0.05 (0.117)	-0.04 (0.101)	-0.08 (0.015)	-0.08 (0.016)
<b>Angina (n=298)</b>	-0.07 (0.037)	<0.01 (0.960)	<0.01 (0.987)	0.01 (0.807)	0.01 (0.773)
<b>Peripheral arterial disease (n=65)</b>	<0.01 (0.962)	0.02 (0.525)	0.02 (0.448)	0.01 (0.653)	0.02 (0.573)
<b>Vascular ‘markers’</b>					
<b>NT-proBNP</b>	-0.05 (0.197)	-0.01 (0.747)	<0.01 (0.910)	-0.03 (0.371)	-0.02 (0.517)
<b>Ankle brachial index</b>	0.05 (0.192)	<0.01 (0.949)	-0.01 (0.772)	0.01 (0.695)	<0.01 (0.958)
<b>Carotid IMT</b>	-0.10 (0.009)	-0.08 (0.004)	-0.08 (0.007)	-0.10 (0.002)	-0.10 (0.004)

Outcome variable is follow-up MR score. Beta values are standardised regression coefficients. Values in brackets are p-values. Cognitive data includes imputed values. MHVS, Mill-Hill Vocabulary Scale. NT-proBNP, N- to terminal pro-brain natriuretic peptide. Carotid IMT, carotid intima-media thickness. N = 757 to 825. Final models additionally adjusted for baseline vascular risk factors (total cholesterol, brachial blood pressure, cigarette smoking).

SUPPLEMENTARY DATA

**Supplementary Table 7.** Macrovascular disease and Trail-Making-Test-B (TMT-B).

	Age and sex adjusted beta	Four-year cognitive change		Estimated lifetime cognitive change	
		Beta adjusted for age, sex, baseline score	Fully adjusted beta	Beta adjusted for age, sex, MHVS	Fully adjusted beta
<b>Vascular ‘events’</b>					
<b>Any vascular event (n=393)</b>	0.12 (0.001)	0.07 (0.010)	0.06 (0.018)	0.04 (0.185)	0.05 (0.203)
<b>Stroke (n= 62)</b>	0.16 (<0.001)	0.08 (0.001)	0.08 (0.002)	0.13 (<0.001)	0.13 (<0.001)
<b>Transient Ischemic Attack (n=31)</b>	0.01 (0.744)	0.01 (0.668)	0.01 (0.717)	<0.01 (0.940)	<0.01 (0.904)
<b>Myocardial infarction (n=150)</b>	0.05 (0.146)	0.02 (0.406)	0.02 (0.483)	0.02 (0.482)	0.02 (0.510)
<b>Angina (n=298)</b>	0.05 (0.115)	0.03 (0.325)	0.02 (0.414)	-0.01 (0.766)	-0.01 (0.764)
<b>Peripheral arterial disease (n=65)</b>	0.06 (0.097)	0.03 (0.315)	0.02 (0.432)	0.03 (0.319)	0.03 (0.387)
<b>Vascular ‘markers’</b>					
<b>NT-proBNP</b>	0.06 (0.094)	0.04 (0.138)	0.03 (0.262)	0.04 (0.200)	0.05 (0.219)
<b>Ankle brachial index</b>	-0.10 (0.005)	-0.09 (0.001)	-0.08 (0.003)	-0.07 (0.039)	-0.06 (0.075)
<b>Carotid IMT</b>	0.08 (0.033)	0.06 (0.040)	0.05 (0.072)	0.08 (0.018)	0.08 (0.022)

Outcome variable is follow-up TMT-B. Beta values are standardised regression coefficients. Values in brackets are p-values. MHVS, Mill-Hill Vocabulary Scale. NT-proBNP, N-terminal pro-brain natriuretic peptide. Carotid IMT, carotid intima-media thickness. N = 755 to 823 Final models additionally adjusted for baseline vascular risk factors (total cholesterol, brachial blood pressure, cigarette smoking).