

Supplementary

Exclusion criteria of participants

- 1) Those with neurological abnormalities that may cause memory impairment on medical examination.
- 2) Those with a history of psychiatric disorders such as intellectual disabilities, schizophrenia, alcoholism, and bipolar disorder.
- 3) Those with a history of malignant disease (cancer) within the last three years. However, cervical intraepithelial cancer or non-melanoma skin cancer is exempted.
- 4) Those with a history of cerebrovascular surgery such as brain surgery or carotid artery surgery.
- 5) Those with neurological symptoms that are evidence of cerebrovascular diseases such as extrapyramidal signs consistent with subcortical lesions.
- 6) Those with a distinct white matter found on an MRI scan. A distinct white matter should have the following properties: The lesion around the ventricle should be at least 10 mm (extended cap) or at least 10 mm (irregular halo) with an irregular edge and extension to the deep protein by measuring the ventricle in parallel, and the deep protein lesion should be at least 25 mm (confluent white matter change) or at least an extensive deep white matter change rather than a local lesion.
- 7) Those with trouble breathing when sitting still.
- 8) Those with a history of disorder in memory, speech, and problem-solving skills for at least two hours after a heart attack.
- 9) Those with a history of hospitalization for mental or emotional illness within the last five years.
- 10) Those with a history of drug abuse within the last five years.
- 11) Those with a history of alcoholism within the last five years.
- 12) Those with a history of lost consciousness for more than an hour due to a cause other than general anesthesia.
- 13) Those with a history of hospitalization due to head injuries.
- 14) Those who cannot read ordinary letters even with glasses due to reduced vision quality.
- 15) Those who have difficulty in conversation due to hearing impairment even when wearing a hearing aid.
- 16) Pregnant women and nursing mothers.
- 17) Any other person whom a tester deems unfit to participate in a clinical trial.

Supplementary Table 1. ApoE genotype results

Group	ApoE genotype		N
CN	ε4 -	ε2/ ε3	3
		ε3/ ε3	40
	ε4 +	ε2/ ε4	2
		ε3/ ε4	3
AD	ε4 -	ε2/ ε3	3
		ε3/ ε3	40
	ε4 +	ε2/ ε4	1
		ε3/ ε4	24
		ε4/ ε4	12

Abbreviations: ApoE, Apolipoprotein E; CN, cognitively normal; AD, Alzheimer's disease.

Supplementary Table 2. Results of ANCOVA with various covariates on QM-Alz

Covariate	CN		AD		P-value
	N	Mean of algorithm	N	Mean of algorithm	
Age (mean)	62.58	0.5180	68.95	0.6892	< 0.0001
Sex (M/F)	18/30	0.5164	32/48	0.6902	< 0.0001
ApoE (ε4 +/-)	5/43	0.5285	37/43	0.6829	0.0001
Education (years)	12.29	0.5228	10.97	0.6863	< 0.0001
Hypertension (+/-)	15/33	0.5164	32/48	0.6902	< 0.0001
Diabetes (+/-)	6/42	0.5158	14/66	0.6905	< 0.0001
Hyperlipidemia (+/-)	23/25	0.5188	27/53	0.6887	< 0.0001
Stroke (+/-)	0/48	0.5156	5/75	0.6906	< 0.0001
Angina (+/-)	4/44	0.5169	6/74	0.6899	< 0.0001
Thyroid (+/-)	6/42	0.5172	8/72	0.6897	< 0.0001
Surgical history (+/-)	31/17	0.5204	46/34	0.6878	< 0.0001
Cancer (+/-)	2/46	0.5160	9/71	0.6904	< 0.0001
Family history (+/-)	14/34	0.5142	33/47	0.6915	< 0.0001
Drinking (+/-)	31/17	0.5214	36/44	0.6871	< 0.0001
Smoking (+/-)	35/13	0.5163	60/20	0.6902	< 0.0001
BMI (mean)	23.40	0.5472	22.71	0.6931	0.0006

Abbreviations: ANCOVA, analysis of covariance; P, significance level of ANCOVA; CN, cognitively normal; AD, Alzheimer's disease; QM-Alz, QPLEX™ Alz plus assay kit; M, male; F, female; BMI, body mass index.