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Supplement Material

Supplement Table S1: Depression dimensions based on Adams et al, 2004

GDS-item	Question	Dimension	
GDS1	Are you basically satisfied with your life?	D	
GDS2	Have you dropped many of your activities and interests	WAV	
GDS-3	Do you feel that your life is empty	D	
GDS-4	Do you often get bored?	D	
GDS-5	Are you in good spirits most of the time?	D	
GDS-6	Are you afraid that something bad is going to happen to you?	A	
GDS-7	Are you in good spirits most of the time?	D	
GD-8	Do you often feel helpless?	Н	
GDS-9	Do you prefer to stay at home, rather than going out and doing new things?	WAV	
GDS-10	Do you feel you have more problems with memory than most?	M	
GDS-11	Do you think it is wonderful to be alive now?	D	
GDS-12	Do you feel pretty worthless the way you are now?	Н	
GDS-13	Do you feel full of energy?	WAV	
GDS-14	Do you feel that your situation is hopeless	Н	
GDS-15	Do you think that most people are better off than you are?	D	

GDS: Geriatric Depression Scale, D: Dysphoric Mood, WAV: Withdrawal Apathy-Vigor, A: Anxiety, H: Hopelessness, M: Memory complaint.

Supplement Table S2. Associations of GDS score with baseline cognitive function

Depression Dimensions		Model 1			Model 2		
_		EST	SE	P Value	EST	SE	P Value
Dysphoric Mood	Overall	-0.71	0.18	<.001	-0.39	0.10	<.001
	Executive Function	-1.2	0.33	<.001	-0.39	0.11	<.001
	Attention/ working Memory	-0.37	0.29	.19	-0.22	0.14	.12
	Language	-0.63	0.24	.009	-0.25	0.11	.019
	Memory	-0.65	0.32	.04	-0.26	0.15	.080
Withdrawal- Apathy-Vigor	Overall	-0.08	0.10	.46	-0.036	0.06	.54
(WAV)	Executive Function	-0.10	0.19	.61	-0.016	0.066	.81
	Attention/ working Memory	-0.04	0.17	.80	-0.038	0.083	.65
	Language	-0.40	0.14	.003	-0.15	0.062	.015
	Memory	0.20	0.19	.30	0.072	0.091	.43
Anxiety	Overall	0.04	0.07	.53	0.031	0.041	.45
	Executive Function	-0.06	0.13	.64	-0.014	0.046	.76
	Attention/ working Memory	0.03	0.12	.80	0.014	0.058	.81
	Language	0.16	0.97	.10	0.082	0.043	.059
	Memory	0.07	0.13	.57	0.030	0.063	.63
Hopelessness	Overall	-0.50	0.17	.003	-0.29	0.099	.004
	Executive Function	-0.36	0.32	.25	-0.15	0.11	.18
	Attention/working Memory	-0.23	0.28	.40	-0.13	0.14	.33
	Language	-0.33	0.23	.15	-0.15	0.10	.15
	Memory	-0.87	0.31	.005	-0. 33	0.15	.028
Memory Complaint	Overall	-0.31	0.10	.001	-0.16	0.05	.004
	Executive Function	-0.15	0.17	.40	-0.045	0.060	.45
	Attention/working Memory	-0.14	0.16	.40	-0.012	0.075	.88
	Language	-0.28	0.13	.028	-0.15	0.06	.008
	Memory	-0.81	0.17	<.0001	-0.34	0.082	<.001

EST: Estimation; the coefficient of the main effect of each standardized depression dimension. It also corresponds to the difference in z score for every unit difference in each depression dimension between two subjects at baseline, SE: Standard Error, P: P value. Model 1: adjusting for age, sex, education, Model 2: adjusting for age, sex, education, duration of Type 2 Diabetes , cholesterol, creatinine, HbA1c, triglycerides, systolic and diastolic blood pressure, BMI, metformin and physical activity . Two-sided p-value ≤ 0.01 was defined as the significance level.

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Supplement Table S3: Scores of the specific neuropsychological tests per follow up

Cognitive Test	Baseline (N=1002)	Follow up 1(N=837)	Follow up 2 (N=596)	
Trail making time A (seconds)	55.00 (43.00- 71.00)	53.00 (42.00-70.00)	54.00 (42.00- 72.00)	
Trail making time B (seconds)	119.50 (91.00-161.00)	117.00 (89.50-166.00)	119.00 (92.00-174.00)	
Digit Symbol score	34.36 (10.51)	34.40 (10.43)	33.71 (10.29)	
Diamond cancellation (# of correct answers)	16.50 (2.70)	16.82 (2.47)	16.90 (2.33)	
Digit-Span Backward	5.55 (1.93)	5.34 (1.91)	5.72 (1.99)	
Digit-Span Forward	8.33 (1.80)	8.12 (1.85)	8.29 (1.89)	
ADAS- Recognition	20.99 (2.18)	21.32 (2.13)	21.19 (2.58)	
ADAS-Immediate Recall	17.99 (3.74)	17.63 (4.08)	17.86 (4.06)	
ADAS- Delayed recall	4.90 (2.16)	4.77 (2.27)	4.80 (2.31)	
Category (animal) fluency	35.40 (8.90)	35.14 (9.33)	35.39 (8.86)	
Similarities- WAIS-R	21.32 (5.99)	20.67 (6.06)	21.41(5.25)	
Trail making time A and B are described as Me	dian (Interquartile Range, IQ	R) and the rest of variables of	described as Mean(SD)	