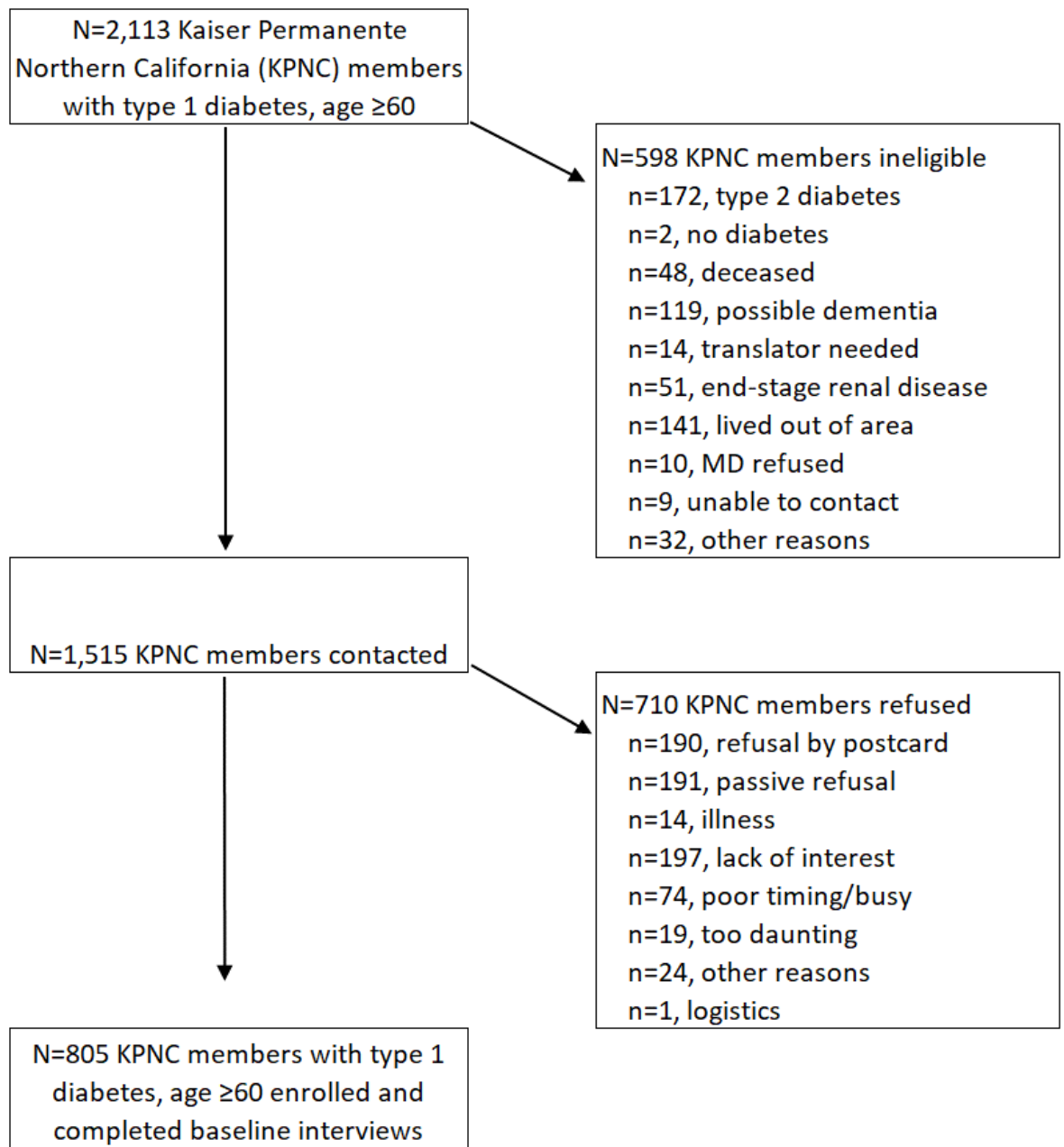SUPPLEMENTARY DATA

Supplementary Figure 1. Study enrollment flowchart for participants with type 1 diabetes, The Study of Longevity in Diabetes (SOLID)

N=2,113 Kaiser Permanente
Northern California (KPNC) members
with type 1 diabetes, age ≥60

N=598 KPNC members ineligible
    n=172, type 2 diabetes
    n=2, no diabetes
    n=48, deceased
    n=119, possible dementia
    n=14, translator needed
    n=51, end-stage renal disease
    n=141, lived out of area
    n=10, MD refused
    n=9, unable to contact
    n=32, other reasons

N=1,515 KPNC members contacted

N=710 KPNC members refused
    n=190, refusal by postcard
    n=191, passive refusal
    n=14, illness
    n=197, lack of interest
    n=74, poor timing/busy
    n=19, too daunting
    n=24, other reasons
    n=1, logistics

N=805 KPNC members with type 1
diabetes, age ≥60 enrolled and
completed baseline interviews

SUPPLEMENTARY DATA

Supplementary Table 1. Association between severe hypoglycemia and cognitive function among participants with no cognitive impairment at baseline

	Exposure to recent SH		Exposure to lifetime SH	
	Model 1	Model 2	Model 1	Model 2
	Adjusted for age, sex, race, diagnosis age, education	Additional adjustment for depression, stress, sleep and alcohol use at baseline	Adjusted for age, sex, race, diagnosis age, education	Additional adjustment for depression, stress, sleep and alcohol use at baseline
Model outcome	β (95%CI)	β (95%CI)	β (95%CI)	β (95%CI)
Global cognition				
0 episodes	REF	REF	REF	REF
1-3 episodes	-0.10 (-0.17, -0.03)	-0.11 (-0.19, -0.04)	-0.08 (-0.15, -0.02)	-0.09 (-0.15, -0.02)
≥4 episodes	-0.08 (-0.20, 0.03)	-0.10 (-0.21, 0.02)	-0.10 (-0.20, 0.003)	-0.09 (-0.20, 0.01)
Language				
0 episodes	REF	REF	REF	REF
1-3 episodes	-0.12 (-0.23, -0.02)	-0.14 (-0.25, -0.03)	-0.09 (-0.19, 0.01)	-0.09 (-0.19, 0.01)
≥4 episodes	-0.09 (-0.26, 0.09)	-0.13 (-0.31, 0.04)	-0.08 (-0.23, 0.08)	-0.03 (-0.19, 0.13)
Executive function				
0 episodes	REF	REF	REF	REF
1-3 episodes	-0.13 (-0.22, -0.04)	-0.15 (-0.24, -0.05)	-0.16 (-0.24, -0.08)	-0.14 (-0.22, -0.05)
≥4 episodes	-0.14 (-0.29, 0.01)	-0.16 (-0.31, -0.02)	-0.20 (-0.33, -0.06)	-0.17 (-0.30, -0.04)
Episodic memory				
0 episodes	REF	REF	REF	REF
1-3 episodes	-0.08 (-0.17, 0.02)	-0.11 (-0.21, -0.01)	-0.02 (-0.11, 0.07)	-0.02 (-0.11, 0.07)
≥4 episodes	-0.29 (-0.45, -0.13)	-0.29 (-0.45, -0.13)	-0.08 (-0.22, 0.06)	-0.07 (-0.21, 0.08)
Attention				
0 episodes	REF	REF	REF	REF
1-3 episodes	-0.08 (-0.17, 0.02)	-0.08 (-0.18, 0.02)	-0.12 (-0.20, -0.03)	-0.12 (-0.20, -0.03)
≥4 episodes	-0.08 (-0.23, 0.08)	-0.09 (-0.24, 0.06)	-0.16 (-0.30, -0.03)	-0.13 (-0.27, 0.02)

Supplemental Table 1 Footnote: Multivariable linear regression models examining the association between recent severe hypoglycemia (past-12 month) and lifetime severe hypoglycemia (resulting in emergency department or inpatient utilization) among the subset of participants without cognitive impairment at baseline (defined as cognitive scores 1.5 SD below the population mean for the global and domain-specific scores).

SUPPLEMENTARY DATA

Supplementary Table 2. Association between recent severe hypoglycemia and cognition independent of lifetime hypoglycemia exposure

Model outcome	Cognitive performance β (95%CI)	Cognitive impairment (1.5 SD below mean) OR (95%CI)
Global cognition		
No exposure	REF	REF
1-3 episodes	-0.09 (-0.17, -0.01)	1.36 (0.66, 2.82)
≥4 episodes	-0.18 (-0.31, -0.06)	2.88 (1.15, 7.25)
Language		
No exposure	REF	REF
1-3 episodes	-0.12 (-0.24, -0.004)	1.62 (0.74, 3.54)
≥4 episodes	-0.22 (-0.40, -0.03)	3.00 (1.12, 8.07)
Executive function		
No exposure	REF	REF
1-3 episodes	-0.10 (-0.22, 0.02)	0.88 (-.43, 1.81)
≥4 episodes	-0.20 (-0.39, -0.-01)	1.77 (0.70, 4.45)
Episodic memory		
No exposure	REF	REF
1-3 episodes	-0.08 (-0.19, 0.04)	1.15 (0.59, 2.25)
≥4 episodes	-0.30 (-0.49, -0.02)	1.83 (0.68, 4.89)
Attention		
No exposure	REF	REF
1-3 episodes	-0.08 (-0.22, 0.06)	0.99 (0.49, 2.02)
≥4 episodes	-0.07 (-0.30, 0.15)	1.29 (0.42, 3.98)

Supplemental Table 1 Footnote: All models adjusted for age at baseline interview, sex, race/ethnicity, education, diabetes duration, and lifetime exposure to SH resulting in hospitalization or ED utilization