# Supplemental Online Content

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This supplemental material has been provided by the authors to give readers additional information about their work.

**eMethods 1. Inclusion of Participants**

At the time of the present analyses, 1,365 completed evaluation for scam susceptibility. Of these 1,365 participants, 69 were excluded for having clinical dementia at baseline. Out of 1,296 participants, 538 died, 431 underwent autopsy, and 408 had complete neuropathologic data as required for these analyses. Participants included 97% non-Latino Whites, 2% non-Latino Blacks, and 1% Latino.

**eMethods 2. Scam Susceptibility**

The items within the scam susceptibility measure have a Cronbach alpha value of 0.63, suggesting moderate internal consistency. Considerable prior work suggests that individuals who are more susceptible (based on our measure) are more vulnerable to a variety of adverse health and financial outcomes. In prior work from this cohort, we have shown scam susceptibility is associated with older age, lower cognition, lower financial literacy, lower financial fragility, poorer cardiovascular health, lower psychological well-being, self-report of financial fraud, and poorer financial and health decision making [8, 9, 10, 13, 14.] Additionally, scam susceptibility is associated with the risk of developing Alzheimer's dementia and mild cognitive impairment [10]. These findings demonstrate the strong associations between scam susceptibility and the behaviors one would expect to be related to it (e.g., cognition), as well as the predictive utility of this measure for a variety of adverse health and financial outcomes. Together, this work provides strong support of the measure's ecological validity.

**eMethods 3. Assessment of Psychosocial Factors** [14, 22, 23, 24]

Psychosocial factors include measures of psychological wellbeing, depressive symptoms, neuroticism, purpose in life, anxiety, and extraversion. *Psychological wellbeing* was measured using an 18-item instrument adapted from Ryff's Scales of Psychological Well Being, which includes components of self-acceptance, autonomy, environmental mastery, purpose in life, positive relationships, and personal growth. Higher scores indicate greater psychological wellbeing. The Cronbach α for the wellbeing items is 0.81.

*Depressive symptoms* are assessed with a modified, 10-item version of the Center for Epidemiologic Studies Depression scale (CES-D) Participants report whether they experienced each symptom much of the time during the past week. A summary score counts the total number of symptoms reported. Higher scores indicate more depressive symptoms. The Cronbach α for the depressive symptom items is 0.72.

*Neuroticism* indicates proneness to experiencing psychological distress. The measure was derived using a short form of the neuroticism scale from the NEO Five-Factor Inventory. Participants rate, on a 5-point scale, agreement with 6 statements on being a worrier, feeling inferior to others, feeling tense and jittery, angry at the way they are being treated, tendency of giving up when things go wrong, and feeling helpless. Item-specific ratings were added to obtain a summary score, and higher scores indicate greater neuroticism. The Cronbach α for the neuroticism items is 0.77.

*Purpose in life* was assessed using a 10-item rating scale derived from Ryff's scales of Psychological Well-Being.

*Level of anxiety* is assessed at baseline with a modified version of the Anxiety Trait Scale from the State-Trait Anxiety Inventory. Participants are read statements about anxious feelings and asked to respond either 'yes' or 'no'.

*Extraversion* is the tendency to be sociable, active, and optimistic and is measured using 6 items from the NEO Five-Factor Inventory. Participants rate agreement with each item on a 5-point

Likert rating scale. Items that are negatively worded are flipped so that higher scores on all individual items indicate greater extraversion.

**eMethods 4. Assessment of Postmortem Indices of Neurodegenerative Pathologies**

Average post-mortem interval was 10.4 hours (SD=8.6), and brain removal and processing followed a standard protocol. Briefly, one hemisphere was cut into 1-cm coronal slabs and fixed in 4% paraformaldehyde. Tissue from a minimum standard set of 13 brain regions including cortical, subcortical, brainstem, and midbrain were taken for diagnostic and data collection purposes. In addition, blocks were taken from the contralateral hemispheres for any macroscopic infarcts observed during gross examination. All blocks were dehydrated, embedded in paraffin wax, and sections (6μm) were stained. Neuropathologic data was collected masked to demographic or clinical information.

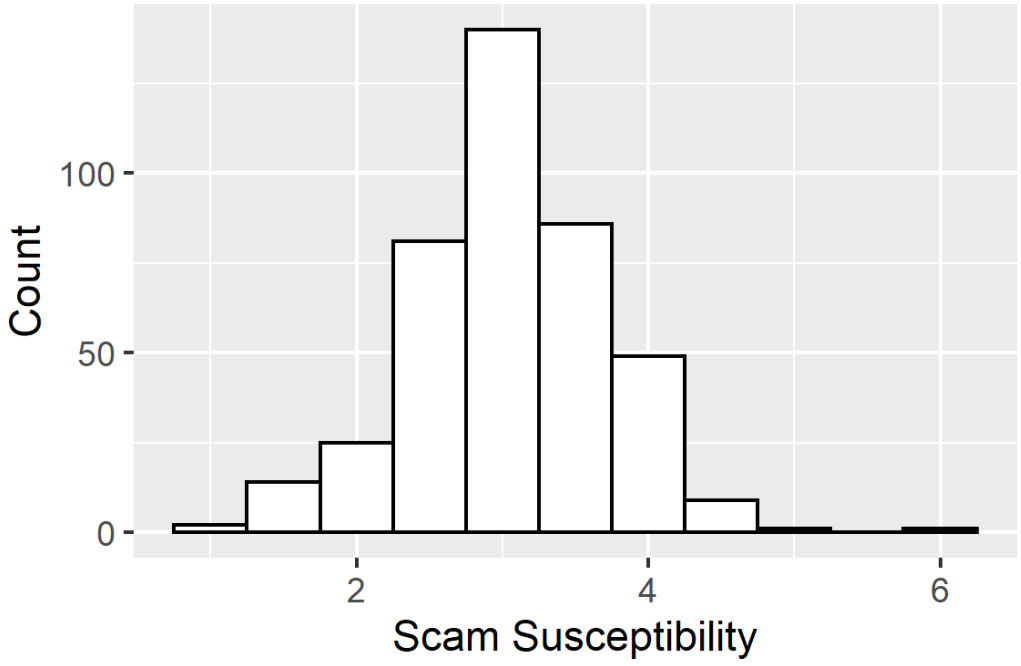
*Neurodegenerative Pathologies* [28, 33-36]

*AD Pathology*: Manual counts of neuritic and diffuse plaques, and neurofibrillary tangles were obtained from across 5 brain regions (midfrontal, mid-temporal, entorhinal, and inferior parietal cortices, and the hippocampus) from a modified Bielschowski stain. Counts from all 5 regions were averaged across regions and divided by the SD to create a summary measure of the AD pathology score, as previously described. A pathologic diagnosis of AD was assessed by using the new NIA-AA criteria that included CERAD, Braak score, and Thal phase. A cortical measure for β-amyloid burden was obtained by averaging the mean percentage area per region, across all 8 regions.

*Lewy body pathology* - Lewy bodies were evaluated using a phosphorylated α-synuclein antibody (Wako; 1:20,000) in seven regions including substantia nigra, limbic and neocortical regions, as described previously. A pathologic diagnosis of dementia with Lewy body disease was assessed by a modified McKeith's criteria; such that nigral predominant Lewy body pathology included cases only with Lewy bodies in the substantia nigra, Limbic-type Lewy body disease included cases with either anterior cingulate or entorhinal positivity (typically also with nigral pathology), and neocortical-type Lewy body pathology required Lewy bodies in either midfrontal, temporal, or inferior parietal cortex with either nigral or limbic positivity (often both). A pathologic diagnosis for Parkinson's disease included having nigral Lewy body pathology with moderate-to-severe nigral degeneration.

*LATE neuropathologic changes (LATE-NC)* - Phosphorylated transactive response DNA-binding protein 43 (TDP-43) pathology was assessed by immunohistochemistry using a monoclonal antibody phosphorylated to TDP-43 (pS409/410; 1:100). TDP-43 was evaluated in 8 brain regions: amygdala, hippocampus, dentate gyrus, entorhinal cortex, anterior temporal pole, middle temporal gyrus, mid-frontal gyrus and orbitofrontal cortex. LATE-NC stage 1 was defined by cases with TDP-43 pathology in the amygdala alone, cases with LATE-NC stage 2 involved amygdala with hippocampus, and cases with LATE-NC stage 3 involved the amygdala, hippocampus, and neocortex.

**eFigure: Histogram of Scam Susceptibility**




The scam susceptibility score averaged across all visits had a mean of 3.04 (range of the average scores was 1.2 to 6). The mean score of scam susceptibility at baseline was 3.06 (SD = 0.7) and at last valid 3.10 (SD = 0.8).

**eTable 1: Association of Regional Macroscopic Infarcts with Cognitive Domains**

| Brain Region(s) [a] | Episodic Memory | Semantic Memory | Working Memory | Perceptual Speed | Visuospatial |
|---|---|---|---|---|---|
| **Frontal Lobe** | -0.09 (0.15,0.51) | -0.14 (0.13,0.28) | -0.09 (0.13,0.54) | -0.09 (0.12,0.43) | -0.09 (0.12,0.44) |
| **Parietal Lobe** | -0.24 (0.21,0.24) | 0.06 (0.18,0.74) | -0.43 (0.17,0.02) | -0.22 (0.17,0.19) | -0.08 (0.17,0.65) |
| **Temporal Lobe** | -0.28 (0.22,0.21) | -0.15 (0.20,0.45) | -0.14 (0.19,0.47) | -0.55 (0.17,0.002) | -0.24 (0.18,0.18) |
| **Occipital Lobe** | -0.35 (0.25,0.16) | 0.004 (0.23,0.98) | -0.30 (0.22,0.18) | -0.23 (0.20,0.26) | -0.06 (0.21,0.76) |
| **Basal Ganglia** | -0.14 (0.14,0.34) | -0.09 (0.14,0.49) | -0.08 (0.13,0.56) | -0.33 (0.12,0.006) | -0.06 (0.12,0.62) |
| **Thalamus** | -0.56 (0.20,0.006) | -0.07 (0.19,0.70) | -0.11 (0.17,0.51) | 0.56 (0.16,0.001) | -0.17 (0.17,0.33) |
| **Lacunar** | -0.32 (0.13,0.01) | -0.24 (0.11,0.03) | -0.20 (0.11,0.07) | -0.33 (0.10,0.001) | -0.18 (0.10,0.09) |
| **Non-Lacunar** | -0.11 (0.15,0.50) | -0.06 (0.15,0.70) | 0.05 (0.14,0.71) | -0.17 (0.13,0.20) | 0.07 (0.13,0.62) |

[a] Brain region(s) are not mutually exclusive.

The estimates are derived from linear regression models with each cognitive domain as the outcome and each individual brain region as the predictor. All models adjusted for age-at-death, sex, education, and AD pathology. Values in cells are β-co-efficient estimates (SE, p-value).

**eTable 2. Association of Macroscopic Infarcts with Scam Susceptibility is Independent of Cognitive Domains and Psychosocial Factors**

| | Scam Susceptibility | | | | | | |
|---|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
| **Macroscopic Infarcts** | 0.17 (0.07,0.02) | 0.17 (0.07,0.01) | 0.17 (0.07,0.02) | 0.18 (0.07,0.008) | 0.21 (0.07,0.003) | 0.19 (0.07,0.008) | 0.17 (0.07,0.02) |
| **Episodic Memory** | -0.13 (0.03,<0.001) | - | - | - | - | - | - |
| **Semantic Memory** | - | -0.17 (0.03,<0.001) | - | - | - | - | - |
| **Working Memory** | - | - | -0.10 (0.03,0.003) | - | - | - | - |
| **Perceptual Speed** | - | - | - | -0.19 (0.04,<0.001) | - | - | - |
| **Visuospatial** | - | - | - | - | -0.16 (0.04,0.001) | - | - |
| **Neuroticism** | - | - | - | - | - | 0.01 (0.01,0.02) | - |
| **Well-being** | - | - | - | - | - | - | -0.19 (0.05,<0.001) |

The estimates are derived from separate linear regression models with scam susceptibility as the outcome. All models adjusted for age-at-death, sex, education. Values in cells are β-co-efficient estimates (SE, p-value)

**eTable 3 - Association of β-amyloid Pathology with Scam Susceptibility**

In a sensitivity analysis to support our prior findings, linear regression models adjusted for demographics and global cognition; we find that beta-amyloid pathology was related to greater scam susceptibility independent of global cognition. The association of macroscopic infarcts with scam susceptibility remained above and beyond β-amyloid burden and global cognition

| | **Scam Susceptibility** | |
|---|---|---|
| **Macroscopic Infarcts** | - | 0.17 (0.07,0.01) |
| **Cortical βAmyloid** | 0.08 (0.03,0.007) | 0.08 (0.03,0.007) |
| **Global Cognition** | -0.15 (0.04, <0.001) | -0.15 (0.03, <0.001) |

The estimates are derived from linear regression models with scam susceptibility as the outcome. All models adjusted for age-at-death, sex, education. Values in cells are β-co-efficient estimates (SE, p-value).

**eTable 4: Association of Pathologic Diagnoses with Scam Susceptibility**

| Predictors | Scam Susceptibility | |
|---|---|---|
| | Model 1 | Model 2 [a] |
| **Macroscopic Infarcts** | 0.17 (0.0720,0.02) | 0.1774 (0.0720,0.01) |
| **AD Diagnosis** | 0.19 (0.07,0.01) | - |
| **Parkinson's Disease** | 0.03 (0.16,0.85) | - |
| **LATE-NC** | 0.04 (0.03,0.17) | - |
| **Dementia with Lewy Body Disease (Neocortical-Type)** | 0.09 (0.10,0.31) | - |
| **Braak Score** | - | 0.05 (0.03,0.10) |
| **Thal Score** | - | 0.04 (0.02,0.08) |

The estimates are derived from linear regression models with scam susceptibility as the outcome. All models adjusted for age-at-death, sex, education. Values in cells are β-co-efficient estimates (SE, p-value).

**eTable 5. Association of Watershed Microvascular Pathologies with Scam Susceptibility**

| Predictors | Scam Susceptibility |
|---|---|
| **Arteriolosclerosis (Anterior watershed)** | 0.05 (0.03,0.08) |
| **Arteriolosclerosis (Posterior Watershed)** | -0.01 (0.03,0.54) |
| **Watershed Microinfarcts** | -0.06 (0.09,0.51) |
| **Non-Watershed Microinfarcts** | 0.03 (0.07, 0.66) |

Beta co-efficient estimates in each cell were obtained from linear regression models adjusted for age-at-death, sex, education, AD pathology, and macroscopic infarcts. Values in cells are β-co-efficient estimates (SE, p-value).