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Research Article

Interoceptive Accuracy Enhances Deception Detection in Older Adults

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Abstract

Objectives: Difficulties with deception detection may leave older adults especially vulnerable to fraud. Interoception, that is, the awareness of one's bodily signals, has been shown to influence deception detection, but this relationship has not been examined in aging yet. The present study investigated effects of interoceptive accuracy on 2 forms of deception detection: detecting interpersonal lies in videos and identifying text-based deception in phishing emails.

Methods: Younger (18–34 years) and older (53–82 years) adults completed a heartbeat detection task to determine interoceptive accuracy. Deception detection was assessed across 2 distinct, ecologically valid tasks: (i) a lie detection task in which participants made veracity judgments of genuine and deceptive individuals, and (ii) a phishing email detection task to capture online deception detection. Using multilevel logistic regression models, we determined the effect of interoceptive accuracy on lie and phishing detection in younger versus older adults.

Results: In older, but not younger, adults greater interoceptive accuracy was associated with better accuracy in both detecting deceptive people and phishing emails.

Discussion: Interoceptive accuracy was associated with both lie detection and phishing detection accuracy among older adults. Our findings identify interoceptive accuracy as a potential protective factor for fraud susceptibility, as measured through difficulty detecting deception. These results support interoceptive accuracy as a relevant factor for consideration in interventions targeted at fraud prevention among older adults.

Keywords: Bodily awareness, Fraud, Phishing

Deception targeted toward older adults is a growing problem, as millions of older adults are scammed annually (Burnes et al., 2017). Older adults are notably vulnerable to financial exploitation, which is estimated to cost seniors about $36.5 billion each year and affect about 40% of seniors in any 5-year period (Stinchcombe, 2015). Financial exploitation can be devastating for older adults who may lose a lifetime of accumulated assets with limited opportunities to recover (Dessin, 2003; James et al., 2014). Factors contributing to older adults' susceptibility to fraud include demographics such as income and literacy (James et al., 2014), as well as psychological factors such as depression (Lichtenberg et al., 2013), age-related changes in the brain resulting in declining executive functioning and decision-making capacity (Calso et al., 2020; Fenton et al., 2022; Spreng et al., 2016; Weissberger et al., 2020), and increased levels of trust (Castle et al., 2012; Ebner et al., 2022; Frazier et al., 2019; Spreng et al., 2021). In fact, compared to younger adults, older adults are typically less accurate at detecting deception (Ruffman et al., 2012; Stanley & Webster, 2019) and exhibit a greater truth bias, which is the tendency to believe others are telling the truth rather than lying (Gunderson & ten Brinke, 2022; O'Connor et al., 2019). These findings are in accordance with evidence that interpersonal trust increases across the adult life span (Bailey et al., 2015; Poulin & Haase, 2015).

A growing body of research suggests that people may have unique physiological reactions (i.e., changes in skin temperature and heart rate) to liars and truth-tellers (ten Brinke et al., 2019; van 't Veer et al., 2015). However, this differential physiological reactivity to lies versus truths is not

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Table 1. Sample Descriptive Information for Health, Cognition, and Affect

Variable	Younger adults	Older adults	Age-group difference
	M (*SD*)	*M* (*SD*)	Cohen's *d*
Health			
Physical health	8.14 (1.56)	8.05 (1.78)	0.05
Mental health	**6.93 (1.85)**	**8.23 (1.93)**	**−0.68**
Cognition (BTACT)			
Word list recall (immediate)	**9.08 (1.98)**	**7.42 (2.43)**	**0.75**
Backward digit span	**5.66 (1.25)**	**5.19 (1.46)**	**0.34**
Category verbal fluency	**24.66 (5.67)**	**20.81 (5.16)**	**0.71**
Number series	**3.63 (1.20)**	**2.97 (1.40)**	**0.50**
30 s and counting	**46.34 (11.81)**	**36.64 (8.71)**	**0.93**
Word list recall (delay)	**7.35 (2.60)**	**4.42 (2.56)**	**1.13**
Affect			
BDI	**11.84 (7.75)**	**6.73 (6.60)**	**0.71**
STAI	**45.81 (11.99)**	**33.11 (10.44)**	**1.13**

Note: Subjective physical and mental health were assessed on single-item scales ranging from 1 (*poor*) to 10 (*excellent*). Cognition was measured via the six subtests of the Brief Test of Adult Cognition by Telephone (BTACT; Tun & Lachman, 2006). Affect was measured via the Beck Depression Inventory (BDI; Beck et al., 1996), ranging from 0 (*minimal depression*) to 63 (*severe depression*); and via the 20-item T-Anxiety scale of the State-Trait Anxiety Inventory for Adults (STAI; Spielberger et al., 1983), ranging from 20 to 80. Bold print indicates significant age-group difference at $p < .05$.

directly associated with greater performance on lie detection tasks (Gunderson et al., 2023; ten Brinke et al., 2019), suggesting that unique physiological reactions to viewing liars do not directly result in higher accuracy at detecting lies. Rather, a study by ten Brinke et al. (2019) showed increased deception detection following an interoception intervention in which participants were trained to attend to their physiological signals, suggesting that interoceptive accuracy, defined as the ability to detect internal functions such as heartbeats (Schandry, 1981), is needed to incorporate physiological reactions into lie detection. Research on the relationship between interoception and deception detection is limited, however, and has not yet been extended to older adults. This is surprising as older compared to younger adults typically have lower interoceptive accuracy (Khalsa et al., 2009; Murphy et al., 2018). This age-related reduction in interoceptive accuracy may be associated with decreased deception detection among older adults, rendering them more vulnerable to exploitation (Ebner et al., 2022, 2023). This assumption also aligns with emerging evidence of older adults' reduced sensitivity to negative information such as deceptive cues (Castle et al., 2012; Frazier et al., 2019; Mather & Carstensen, 2003).

In a growingly interconnected, digitalized world, people increasingly encounter deception in the cyber realm, where various tactics are employed to deceive and exploit unsuspecting individuals. Email phishing, in particular, has become an ever more sophisticated form of online attack. This method largely relies on deception, in which seemingly legitimate emails attempt to manipulate the receiver into providing sensitive information or access to a system (McAlaney & Hills, 2020). Prior research has documented worsening of the ability to discriminate between fraudulent and legitimate emails with greater age (Ebner et al., 2020; Grilli et al., 2021; Lin et al., 2019). A better understanding of factors influencing susceptibility to fraud among older adults is needed as older adults are often targeted by financial scammers online (National Council on Aging, 2022).

Building on these considerations, this study investigated the effect of interoceptive accuracy on deception detection and determined the extent to which this association was moderated by age. We assessed deception detection abilities across two real-life contexts: detecting interpersonal lies in video recordings of truth versus lie tellers; and identifying text-based deception in the form of email phishing. In particular, in the Lie Task, participants viewed highly salient videos of family members pleading for the safe return of their loved one. In half of the videos, the pleader in the video was responsible for the disappearance and was subsequently convicted of kidnapping/murder. Based on evidence that attending to physiological reactions to deceit increases lie detection accuracy, we hypothesized that greater interoceptive accuracy, assessed via a heartbeat-counting task, would be associated with enhanced lie detection accuracy, particularly in older adults given age-related decline in both interoceptive accuracy (Ulus & Aisenberg-Shafram, 2022) and deception detection (Ruffman et al., 2012; Stanley & Webster, 2019; *Hypothesis 1*). Participants also completed the short Phishing Email Suspicion Test (S-PEST), an ecologically valid lab-based measure of phishing susceptibility (Hakim et al., 2021) in which participants make judgments about their suspiciousness toward both safe and phishing emails. Accordingly, here we hypothesized that greater interoceptive accuracy would be associated with enhanced accuracy in distinguishing safe from phishing emails, and again particularly so among older adults (*Hypothesis 2*).

Method

Participants

Initially, 76 younger ($M = 21.8$ years, $SD = 3.6$ years, 84.2% female) and 74 older ($M = 68.8$ years, $SD = 7.3$ years, 68.9% female) adults were recruited throughout North Central Florida as part of a larger study investigating susceptibility to exploitation in aging (see Table 1 for sample descriptives). Seven younger and 7 older adults were excluded from all analyses due to missing data on covariates (i.e., health, cognition, and affect). In addition, for Lie Task analyses, one younger adult was excluded due to missing data, resulting in a final analysis sample of 68 younger (*M* = 21.9 years, *SD* = 3.6 years, 85.3% female) and 67 older (*M* = 69.1 years, *SD* = 7.3 years, 71.6% female) adults. For S-PEST analyses, one younger adult and four older adults were excluded due to missing data, resulting in a final analysis sample of 68 younger (*M* = 21.7 years, *SD* = 3.5 years, 85.3% female) and 63 older (*M* = 69.0 years, *SD* = 7.3 years, 71.4% female) adults. A sensitivity analysis showed that these sample sizes allowed us to detect a small effect (e.g., Cohen's $f^2 > 0.05$; see Supplementary Materials for details about the sensitivity analysis) with a power of 80%.

Participants were recruited between March 2020 and September 2022 via flyers, advertisements on websites for research studies (e.g., ResearchMatch), mailouts via geolocator address purchases, newspaper and radio advertisements, and word-of-mouth. This research was approved by the university's Institutional Review Board, and all participants provided informed written consent and were reimbursed at study conclusion. As shown in Table 1, younger and older participants were comparable in their self-reported physical health, younger participants had higher scores than older participants on all cognitive measures, and older participants reported better mental health, lower depression, and lower anxiety than younger participants.

Measures

Heartbeat-counting task

Participants completed seven experimental trials in which they counted their own heartbeats for 9–13 s (jittered) and reported their responses via a slider scale (modified after Schandry, 1981). Participants also completed seven control trials, which entailed tone counting, thus unrelated to interoception and not included in the analysis (see Author Note 1). During experimental trials, participants were instructed to count their heartbeats by focusing inward rather than by manually feeling their pulse. During the task, heart rate was recorded with a sampling frequency of 100 Hz using a photoplethysmogram lead on the participants ring finger of their nondominant hand and BIOPAC Acqknowledge acquisition software (Biopac Systems, MP160, CA, USA). Interoceptive accuracy was calculated as the ratio of perceived to real heartbeats averaged across all trials, according to the following formula:

$$1/7\sum(1-(\,|\,\text{recorded heartbeats}-\text{counted heartbeats}\,|\,)/\text{recorded heartbeats})$$

Interoceptive accuracy scores could range from 0 to 1, with higher scores indicating better interoceptive accuracy.

Lie task

Participants viewed 16 short video clips of individuals (10 male, 6 female) pleading for the safe return of a missing relative (modified after ten Brinke & Porter, 2012). The videos were gathered from news agencies in Australia, Canada, the United Kingdom, and the United States. Half of the pleaders were deceptive (5 male, 3 female) and half were genuine (5 male, 3 female). Each video lasted 20 s. Pleaders were classified as either deceptive or genuine based on criminal conviction (i.e., all deceptive pleaders were convicted of participating in the murder of the missing person), supported by overwhelming evidence (e.g., DNA and security camera footage). After each truth/lie video, participants determined pleader veracity ("Is this person telling the truth or lying?") (see Author Note 2). Participants also completed control trials with scenarios unrelated to deception detection, which were not included in the analysis here (see Author Note 3). Video presentation was pseudorandomized with no repeated video types (truth, lie, or control) presented in succession. To counter potential order effects, half of the participants received the reversed pseudorandomized video presentation order. Lie Task accuracy was coded as either correct or incorrect for each trial.

Short Phishing Email Suspicion Test

Participants completed the S-PEST (see Hakim et al., 2021 for the long PEST), which presents 40 emails in randomized order from one of four categories (real-phishing, simulated-phishing, real-safe, and simulated-safe), with 10 emails per category. To maintain consistency of real-life deception stimuli between S-PEST and the Lie Task, only the 20 real (10 real-safe and 10 real-phishing) email trials were included in the present analysis. The real-phishing emails used in S-PEST were sampled from websites (e.g., "Information Security at UVA," "Phishing and Scam Emails: A Realtime Database of Phishing Emails") that collect and publish phishing emails. The real-safe emails were sourced from inboxes of authors in Hakim et al. (2021) and included messages from banks, PayPal, password resets, general account management, etc. Real-safe and real-phishing emails were matched for length, topic, and requested action (e.g., click a link, download an attachment; see Hakim et al., 2021 for details). Participants were informed that they would see a series of emails, some of which were phishing and some of which were safe messages and were asked to rate each email on a four-point scale from "definitely safe" to "definitely suspicious." Participants were told to maximize their score by maximizing accuracy. S-PEST accuracy was coded as either correct or incorrect for each trial, regardless of whether participants selected the "definitely" or the "possibly" response option.

Analysis

We examined associations between interoceptive accuracy, measured by the Heartbeat Counting Task, and two measures of deception detection (Lie Task, S-PEST) in generally healthy younger and older adults (see Table 2). We conducted multilevel logistic regression models to accommodate the hierarchical structure of the data set (e.g., task trials nested under participants). Accuracy (0 = incorrect, 1 = correct) served as the outcome variable for both the Lie Task and S-PEST in the respective models. To test *Hypothesis 1*, interoceptive accuracy (continuous and centered around the sample mean), video type (0 = truth, 1 = lie; within-subject), age, and their interactions served as predictors of Lie Task accuracy. In particular, age group (0 = younger, 1 = older; between-subject) and chronological age (standardized within each age group; within-subject), and their interactions, were added as moderators to capture both extreme age-group differences as well as variations by chronological age within each age group on Lie Task accuracy. To test *Hypothesis 2*, interoceptive accuracy (continuous), email type (0 = safe, 1 = phishing; within-subject), age group (0 = younger, 1 = older; between-subject), chronological age (standardized within each age group; within-subject), and their interactions served as predictors of S-PEST accuracy. In addition, the six subtests of the BTACT,

Table 2. Descriptive Data for Central Variables

Variable	Younger adults	Older adults	Age-group differences
	M (*SD*)	*M* (*SD*)	Cohen's *d*
Heartbeat-counting task			
Interoceptive accuracy	**0.79 (0.15)**	**0.70 (0.20)**	**0.48**
Lie task			
Truth video	0.63 (0.25)	0.70 (0.27)	−0.29
Lie video	0.25 (0.20)	0.25 (0.24)	−0.04
S-PEST			
Safe email	0.61 (0.18)	0.56 (0.24)	0.23
Phishing email	0.75 (0.16)	0.75 (0.19)	0.01

Note: S-PEST = Short Phishing Email Suspicion Test. Bold print indicates significant age-group differences at $p < .05$.

self-reported mental health, the BDI, and the STAI were entered as covariates given significant age-group differences in these variables (see Table 1). All models considered the random effect of the intercept, which accounted for interindividual variability in accuracy across trials.

Supplementary Tables 1 and 2 present all parameter estimates of effects from these two analytic models, respectively. To maintain model simplicity and facilitate interpretation of regression coefficients, nonsignificant interactions were dropped unless significant higher-order interactions justified their inclusion. We focused on the results of effects related to interoceptive accuracy in the main text; significant effects and interactions not involving interoceptive accuracy are reported in Supplementary Materials.

Results

Lie Task

The four-way interaction between interoceptive accuracy, video type, age group, and chronological age was significant ($\chi^2 = 6.74$, $p = .01$), supporting that the relationship between interoceptive accuracy and deception detection varied as a function of video type and participant age. Follow-up analyses within the older adult group showed a significant interaction between interoceptive accuracy and video type ($\chi^2(1) = 10.23$, $p = .001$). In particular, older participants with greater interoceptive accuracy were better at detecting lies ($\chi^2 = 4.27$, $p = .04$), confirming *Hypothesis 1*. This same effect was not significant for truth detection in older adults ($\chi^2 = 1.95$, $p = .16$). The three-way interaction between interoceptive accuracy, video type, and chronological age in older adults was also significant ($\chi^2(1) = 6.50$, $p = .001$), indicating that the association between greater interoceptive accuracy and better lie detection increased with greater chronological age among the older adults (see Figure 1). In contrast, for younger participants neither the interaction between interoceptive accuracy and video type ($\chi^2 = 3.70$, $p = .06$) nor the three-way interaction between interoceptive accuracy, video type, and chronological age ($\chi^2 = 0.80$, $p = .37$) were significant.

Short Phishing Email Suspicion Test

The four-way interaction between interoceptive accuracy, email type, age group, and chronological age was not significant ($\chi^2 = 0.01$, $p = .94$). However, the three-way interaction between interoceptive accuracy, age group, and chronological age was significant ($\chi^2 = 6.65$, $p = .01$). Follow-up analyses within the older adult group further showed a significant interaction between interoceptive accuracy and chronological age ($\chi^2 = 4.17$, $p = .04$), in that greater interoceptive accuracy was associated with better email phishing detection accuracy with greater chronological age among the older participants, in line with *Hypothesis 2* (see Figure 2). Again, neither the effect of interoceptive accuracy ($\chi^2 = 0.79$, $p = .38$) nor its interaction with chronological age ($\chi^2 = 1.59$, $p = .21$) were significant in the younger participants.

Discussion

This study investigated the impact of interoceptive accuracy on deception detection among younger and older adults. There were two central findings: among older adults, greater interoceptive accuracy was associated with (i) better lie detection and (ii) better phishing email detection (with greater chronological age). Integrating previously parallel lines of research on age and deception detection (Ruffman et al., 2012; Stanley & Webster, 2019) and interoceptive accuracy (Khalsa et al., 2009; Murphy et al., 2018), we provide evidence that greater interoceptive accuracy enhances deception detection in older adulthood, observed on two independent, naturalistic deception tasks (detecting interpersonal lies in videos and identifying text-based deception in phishing emails).

Greater interoceptive accuracy was associated with greater lie detection accuracy in older adults. Detecting deceptive individuals likely demands sensitivity to emotional cues indicative of deception. Our finding suggests that older adults rely on different perceptual processes (i.e., intrinsic vs extrinsic) when making deception judgments in emotionally charged contexts. This interpretation also aligns with previous studies indicating that older adults experience challenges with accurate emotion recognition tasks (Stanley & Blanchard-Fields, 2008), potentially heightening the influence of intrinsic signals and interoceptive accuracy in facilitating deception detection with age.

Consistent with these findings for the Lie Task, we also found that greater interoceptive accuracy was associated with better email classification with greater age among older adults in S-PEST. Identifying phishing emails likely requires cognitive control to accurately assess the risk of each email. As age is associated with declines in cognitive control (Wu et al., 2019), older adults may increasingly rely on interoceptive signals to compensate for cognitive deficits. This reliance on interoceptive accuracy may be particularly relevant in the

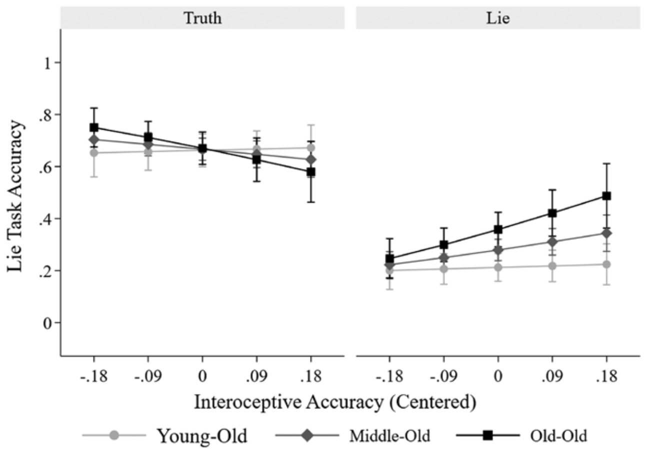

Figure 1. Greater interoceptive accuracy was associated with better lie detection among older adults. Lie Task accuracy (predicted value from the model) varied as a function of interoceptive accuracy, video type (truth on the left, lie on the right), and chronological age among older adults. For graphical depiction of the results, chronological age (continuous variable) was categorized into young-old, middle-old, and old-old by the mean of the standardized *z*-score. The middle-old (diamond) line represents older adult participants with the sample mean age, the young-old (circle) line and old-old (square) line represent older adult participants with one standard deviation below and one standard deviation above the sample mean age, respectively. Interoceptive accuracy was centered around the sample mean. The *x*-axis ranges from one standard deviation below the sample mean in interoceptive accuracy to one standard deviation above. Error bars indicate 95% confidence intervals.

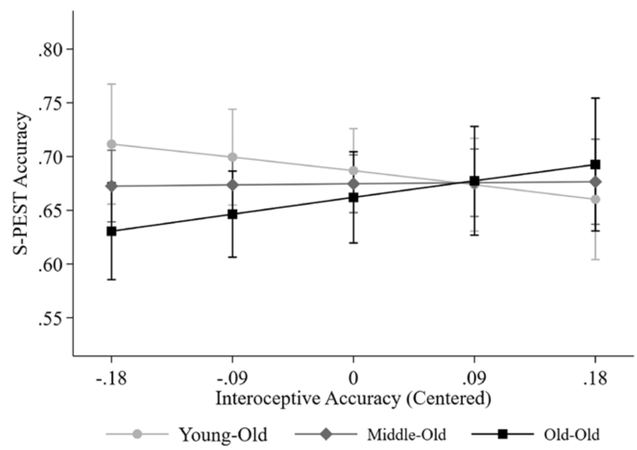

Figure 2. Greater interoceptive accuracy was associated with better phishing email detection with greater age among older adults. Phishing email detection accuracy in S-PEST varied as a function of interoceptive accuracy and chronological age among older adults. For graphical depiction of the results, chronological age (continuous variable) was categorized into young-old, middle-old, and old-old by the mean of the standardized *z*-score. The middle-old age line (medium dark) represents older adult participants with the mean age, the young-old (light blue) and the old-old (dark blue) lines represent older adult participants with one standard deviation below and one standard deviation above the sample mean age, respectively. Interoceptive accuracy was centered around the sample mean. The *x*-axis ranges from one standard deviation below the sample mean in interoceptive accuracy to one standard deviation above. Error bars indicate 95% confidence intervals.

context of financial decisions, as past research has demonstrated reduced financial risk-taking in later life (Spreng et al., 2021), potentially due to heightened sensitivity to potential threats (Rolison et al., 2014). Our findings suggest that greater interoceptive accuracy aids older adults in detecting deceptive individuals and deceptive emails, potentially mitigating the impact of age-related declines in perceptual processing (Stanley & Blanchard-Fields, 2008) and cognitive control (Wu et al., 2019).

Across both tasks, we observed that greater interoceptive accuracy was associated with better deception detection in older adults. However, we observed different response biases across the two deception contexts. In particular, for the Lie Task, accuracy was better for truth than lie videos in line with evidence of a truth bias commonly reported in deception detection research (Bond & DePaulo, 2008; Levine, 2014). For S-PEST, in contrast, accuracy was better for phishing than safe emails, indicating a "suspiciousness" bias. This pattern of findings aligns with the tipping point framework (ten Brinke et al., 2019), which suggests that lie detection accuracy improves when perceived threat to the individual confronting a truth/lie surpasses social consequences for accusing someone of lying. That is, in the context of the Lie Task, the social risk of falsely accusing an individual of telling a lie is high, leading to a truth bias. In S-PEST, in contrast, the social risk of falsely reporting an email as phishing is low, leading to a suspiciousness bias. This observed difference in response biases across our two deception tasks, alongside improved performance in both tasks with greater interoceptive accuracy, suggests that interoceptive accuracy may enhance deception detection through diverse mechanisms depending on context. Interoceptive accuracy may mitigate the truth bias when the social risk of wrongful accusation is high (i.e., Lie Task) and enhance discriminability between genuine and fake information when the social risk is low (i.e., S-PEST). Future research should systematically test these hypotheses by directly assessing subjective perception of social risk in its impact on interoceptive accuracy and deception detection across contexts.

Our findings suggest that interoceptive accuracy plays a significant role in enhancing deception detection among older adults, consistently across two quite different deception tasks, characterized by different contents (i.e., emotionally charged vs neutral) and communication modalities (i.e., video vs text). Moving forward, it will be interesting to integrate these findings on interoceptive accuracy in human-based decision-making with novel machine learning approaches that allow the identification of specific distinguishing features in real-life deceptive versus genuine contents, such as by detecting cues of influence in text, images, or videos and flagging deception (Shi et al., 2021). Such human–machine interactions have the potential to significantly enhance the decision-making process and the detection of deception.

Although this study does not address the neural mechanisms underlying the observed associations between interoceptive accuracy and deception detection in older adulthood, we note that the anterior insula cortex has been associated with trust perception/evaluation (Castle et al., 2012) and interoceptive accuracy (Craig, 2002; Critchley et al., 2004) as well as with cognitive control (Wu et al., 2019) and financial risk-taking (Wu et al., 2012). Thus, reduced insula volume with age (Good et al., 2001; Raz et al., 2010) may be a neural marker of lower deception detection related to reduced interoceptive accuracy in later life. Although speculative, this hypothesis is consistent with a report showing reduced insula volumes for older adults who had fallen victim to financial exploitation compared to those who had avoided fraud attempts (Spreng et al., 2017). Specifying neural markers and mechanisms associated with deception risk is an important direction for future research (Spreng et al., 2016).

Taken together, the present findings suggest greater interoceptive accuracy as a protective factor against fraud susceptibility. Critically, we identified this protective effect on two independent, naturalistic deception detection tasks, simulating environmental contexts wherein older adults may be particularly vulnerable (deceptive videos and email phishing). Our findings highlight interoceptive accuracy as a crucial intervention target, toward reducing susceptibility to deception and exploitation risk in aging. Future interventions may employ strategies such as conscious modulation of interoceptive focus via mindfulness training (Lima-Araujo et al., 2022; Weng et al., 2021) or heartbeat perception training (Schillings et al., 2022). Older adults may benefit particularly from increased in-the-moment interoceptive awareness when confronted with deceptive cues in real-world settings (ten Brinke et al., 2019). By informing the design of more targeted training interventions, these results advance the longer-term goal of reducing the burden from deception, which can be especially devastating in later life.

Supplementary Material

Supplementary data are available at *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* online.

Author Notes

1Participants also completed seven control trials in which they counted tones played through headphones, using the same slider scale. No interoception was required for the tone counting. The number of tones per trial ranged from 8 to 18, all played at the same pitch and each lasting 200 ms. Presentation of heartbeat and tone experimental and control trials was pseudorandomized with no repeated trial types (heartbeat or tone) presented in succession. To counter potential order effects, half of the participants received the reversed trial order. A control analysis with tone counting accuracy as outcome variable did not reveal the effects observed for heartbeat counting, and a control analysis with tone counting accuracy as covariate did not change the effects reported here.

2Participants also provided confidence ratings for their responses, reported how much sympathy they felt for each pleader, and indicated how much hypothetical money they would donate to the pleader's cause. These additional variables were not analyzed here.

3During each control trial, participants watched a 20-s video that depicted emotionally intense scenarios that were, however, unrelated to deception detection (e.g., a person discussing flooding in their apartment). For these control videos, participants were asked to indicate the impact of the narrated scenario (i.e., *Is this a high or low impact situation for this person?*). The present study focused on participants' accuracy in deception detection and, thus, control trials were not included in the analysis.

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Conflict of Interests

The authors have no conflict of interest to disclose and have complied with APA ethical standards in human subjects research.

Data Availability

The data set and analysis code can be found in the OSF repository (https://osf.io/5726y/?view_only = 20c2267f71fa439ebd8456f78336dcff).

Author Contributions

N. C. Ebner, D. Pehlivanoglu, R. C. Wilson, G. R. Turner, and R. N. Spreng designed the study. Z. Hakim, P. A. V. Hernandez, M. D. Grilli, and L. T. Brinke contributed study measures. A. Heemskerk collected the data. T. Lin and N. C. Ebner developed the formal analytical strategy. A. Heemskerk processed data. T. Lin conducted analyses. A. Heemskerk and N. C. Ebner wrote the introduction and discussion. A. Heemskerk, T. Lin, and N. C. Ebner wrote the methods and results. All authors contributed to manuscript conceptualization and editing and approved the final manuscript.

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