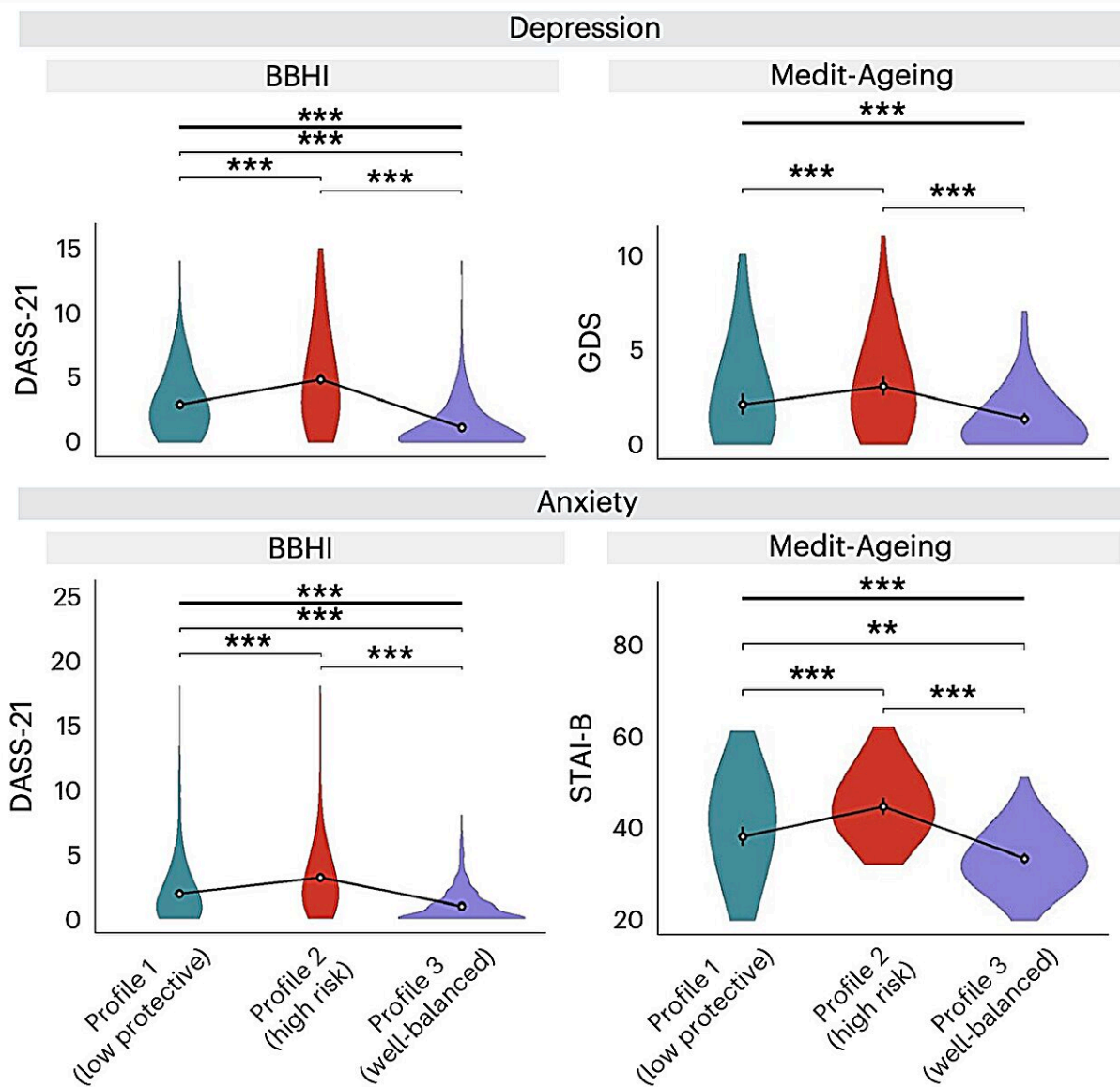


Study uncovers psychological profiles associated with mental and brain health in middle-aged and older adults

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Association between psychological profiles and mental health in the BBHI and Medit-Ageing cohorts. Credit: *Nature Mental Health* (2025). DOI: 10.1038/s44220-024-00361-8

As humans age, their brain function can progressively decline and they become more vulnerable to developing neurodegenerative diseases, such as dementia. Dementia and other progressive neurological conditions can significantly impair their memory, thinking skills and daily functioning, significantly reducing their quality of life.

Many psychology and neurological studies have tried to identify biological markers and lifestyle factors that can contribute to the development of dementia. Yet the contribution of psychological characteristics (e.g., traits, emotional well-being and cognitive resilience) to a decline in mental functions remains poorly understood.

Researchers at University of Barcelona, University College London (UCL), Normandy University and other institutes across Europe recently set out to fill this gap in the literature, by trying to determine whether specific sets of psychological characteristics relate to brain health in middle and late adulthood. Their paper, [published](#) in *Nature Mental Health*, identified three key psychological profiles that were linked to different cognitive and [mental health](#) trajectories after middle-age.

"Psychological characteristics are associated with varying dementia risk and protective factors," wrote David Bartrés-Faz, Harriet Demnitz-King and their colleagues in their paper. "To determine whether these characteristics aggregate into psychological profiles and whether these profiles differentially relate to aging health, we conducted a cross-sectional investigation in two independent middle-aged and older adult

cohorts, supplemented by longitudinal analyses in the former."

Bartrés-Faz, Demnitz-King and their colleagues used a person-centered approach, an analysis method designed to group individuals based on some shared characteristics, to analyze the questionnaire responses of 750 middle-aged and 282 [older adults](#) who were surveyed as part of the Barcelona Brain Health Initiative. They were ultimately able to uncover three main profiles that grouped together specific psychological characteristics.

The participants of this study were surveyed again 2–3 years later, to determine whether their mental health and brain function had declined. Interestingly, the researchers found that the three distinct profiles they uncovered were linked to different levels of cognitive and brain decline.

"Using a person-centered approach, three profiles emerged in both cohorts: those with low protective characteristics (profile 1), high risk characteristics (profile 2) and well-balanced characteristics (profile 3)," the researchers wrote. "Profile 1 showed the worst objective cognition in older age and middle age (at follow-up), and most rapid cortical thinning. Profile 2 exhibited the worst mental health symptomology and lowest sleep quality in both older age and middle age."

Overall, the results of this study suggest that [psychological characteristics](#), such as the tendency to worry, neuroticism, self-reflection, extraversion, agreeableness, and so on, are in fact associated with the extent to which people's mental and brain health declines with aging. The three distinct profiles they uncovered were found to be linked to different mental health outcomes.

The first profile, marked by some degree of worrying and neuroticism, with a lack of openness, agreeableness, extraversion, conscientiousness, and purpose in life, was found to be linked to the greatest level of

cognitive decline and cortical thinning (i.e., a marker of brain aging). The second profile, which was marked by high levels of brooding, worrying and neuroticism, as well as self-reflection and very little openness, conscientiousness and purpose in life, was associated with the worst mental health outcomes and poorer sleep quality.

The third profile was the most psychologically "well-balanced," as it was marked by some degree of brooding but low worrying and neuroticism, as well as considerable levels of [self-reflection](#), extraversion, agreeableness, openness, conscientiousness and purpose in life. Notably, this profile was found to be associated with the best cognitive and mental health outcomes at follow-up (i.e., when the participants were surveyed again a few years later).

These results offer new insight about the [psychological factors](#) that could contribute to a decline in [brain function](#) and mental health in the later stages of life. In the future, the work by Bartrés-Faz, Harriet, Demnitz-King and their collaborators could pave the way for further research focusing on the psychological profiles they uncovered and their contribution to aging-related neurological disorders.

"We identified profile-dependent divergent patterns of associations that may suggest two distinct paths for mental, cognitive and [brain health](#), emphasizing the need for comprehensive psychological assessments in dementia prevention research to identify groups for more personalized behavior-change strategies," wrote Bartrés-Faz, Demnitz-King and their colleagues.

More information: Psychological profiles associated with mental, cognitive and brain health in middle-aged and older adults. *Nature Mental Health*(2025). [DOI: 10.1038/s44220-024-00361-8](https://doi.org/10.1038/s44220-024-00361-8).

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