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High levels of work-related stress in mid-life were associated with higher compared to those with low levels or no work-related stress. Were categorized so that those with high or medium levels of stress were related to meeting demands at work, and constant hurry at work. Groups centered in mid-life. The questions asked participants to rate their stress Work-related stress comprised the total score of two questions administratively. Where 1,511 subjects participated in at least one re-examination. The re-examinations occurred when participants were 50 years old on average, in 1972, 1977, 1982, or 1987. A random sample of 2,000 individuals. Datasets included the Alzheimer’s Disease Neuroimaging Initiative (ADNI), Rush Memory and Aging Project, Religious Orders Study, Cache County Study on Memory and Aging, Myriad Tarenflurbil phase III clinical trial, AddNeuroMed, Adult Changes in Thought, and the National Alzheimer’s Disease Coordinating Center. To compare precision, we used the Alzheimer’s Disease Neuroimaging Initiative (ADNI) as a common test across datasets, (2) standardizing and averaging together all tests, (3) confirmatory factor analysis (CFA) with continuous indicators, and (4) CFA with categorical indicators. Datasets included the Alzheimer’s Disease Neuroimaging Initiative (ADNI), Rush Memory and Aging Project, Religious Orders Study, Cache County Study on Memory and Aging, Myriad Tarenflurbil phase III clinical trial, AddNeuroMed, Adult Changes in Thought, and the National Alzheimer’s Disease Coordinating Center. To compare precision, we determined minimum sample sizes necessary to detect a 25% decline with 80% power using each approach. To compare criterion validity, we examined the association of cognitive change using each approach with changes over up to six years in whole brain cortical thickness and hippocampal volume with available MRI data from ADNI in joint process latent growth curve models. Results: Summary cognitive measures were highly correlated (all r’s > 0.88). CFA with categorical indicators required the lowest sample size to detect 25% cognitive decline with 80% power (N = 50) compared to the common test (N = 283), standardize and average (N = 300), and CFA with continuous indicators (N = 329) approaches. Associations with changes in whole brain cortical thickness and hippocampal volume were strongest for the CFA with categorical indicators approach (Z = 7.0; Z = 5.2, respectively) compared to the common test (Z = 6.2; Z = 4.5), standardize and average (Z = 5.5; Z = 3.7), and CFA with continuous indicators (Z = 6.1; Z = 4.1) approaches. Conclusions: CFA with categorical indicators demonstrated the best precision and thus greater power to detect change. It also was more strongly correlated with biological markers than other approaches. This approach has wide applicability to directly compare cognitive performance across studies, making it a good operational phenotype for genetic analyses of cognitive decline in AD.