

## **Patients with Major Depression With Vs. Without Cardiovascular Risk Factors do Significantly Differently on Neurocognitive Tests that Separate Dementia from Controls**

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**Background:** Computerized neurocognitive testing can be useful in separating age-matched controls from those with early dementia. Specifically, tests of verbal and visual memory, the Continuous Performance Test, the Stroop Test, and the Perception of Emotions Test have been shown to separate these 2 diagnostic groups, and indeed, poor performance on these tests may represent a dementia profile or factor (DEMFACT). Major depression may be a risk factor for the development of dementia. The mechanism may be related to vasculopathy. We hypothesized that patients with major depression and cardiovascular risk factors (diabetes, hypertension, hyperlipidemia, or obesity) would do significantly worse on the tests of DEMFACT than major depression patients without cardiovascular risk factors.

**Methods:** This was a cross-sectional study with 931 patients with major depression and cardiovascular risk factors (MDDCV) and 71 with major depression without cardiovascular risk factors (MDD).

**Results:** Controlling for gender, age, race, and computer familiarity, patients with MDDCV were significantly worse on all the tests that compose DEMFACT ( $p < 0.02$  in each case, and with partial eta square values of .013, .025, .054, .060, and 0.082, suggesting mostly medium effect sizes).

**Conclusion:** Cardiovascular risk factors may at least partially mediate the putative association between major depression and dementia. Here, we provide evidence that patients with major depression and cardiovascular risk factors perform poorly on neurocognitive tests sensitive and specific for dementia, much more so than depressed patients without these risk factors. Although causality cannot be established with a cross-sectional study, these results are suggestive, and prospective randomized studies should be done.