

# Psychomotor Vigilance Test (PVT)

The original 10-minute PVT was invented by Dr. David F. Dinges, through support from the U.S. Office of Naval Research. It has been validated to detect slowing of psychomotor speed and lapses of attention, as well as vigilance decrements and instability in behavioral alertness, which are common adverse effects of fatigue on performance due to inadequate sleep, wakefulness at night, and prolonged time-on-task. The original 10-minute PVT has been validated to be sensitive to fatigue in more than 100 published scientific studies that include a range of experimental, simulated, and some occupational (real-world) evaluations (e.g., transportation operators, health care professionals, and first responders).

Through research supported by the National Space Biomedical Research Institute (NSBRI) via a National Aeronautics and Space Administration (NASA) cooperative agreement, Dr. Dinges and colleagues empirically developed an algorithm for PVT stimulus delivery rate and response quantification that resulted in the briefer 3-minute PVT-B. Using experiments supported by the National Institutes of Health, NSBRI/NASA, and the Department of Homeland Security on the performance effects of total and chronic partial sleep loss in healthy adults, they demonstrated that performance on the 3-minute PVT-B tracked performance on the 10-minute PVT throughout total and partial sleep loss. Thus, this study will incorporate the PVT-B.

