

## Whole-Body Vibration Exercise and Training Increase Regional CBF in Mild Cognitive Impairment with Enhanced Cognitive Function

Power Plate® whole body vibration training can be a critical tool in mitigating the progression of cognitive decline.

This is a summary of a study published in the Annals of Nuclear Medicine in 2022. By Ikuo Odano, Fumio Maeyatsu, Mami Asari, Sayaka Yamaguchi, Tsukasa Miura, and Yasuyuki Taki, The Japanese Society of Nuclear Medicine.

### Background:

Mild cognitive impairment (MCI) is defined as the boundary between memory loss and impairment.

Scientists from two of Japan's leading medical institutes have published exciting new research concluding that whole body vibration, delivered by Power Plate, increased cerebral blood flow and enhanced cognitive function in patients with mild cognitive impairment, a pre-clinical stage of dementia. The average rate of progression of dementia is 5-15% each year.

Using advanced brain imaging technologies, these researchers discovered increased regional cerebral blood flow ratio (rCBF) in the parietal and occipital lobes.

The authors assert that due to the lack of effective drug therapies for Alzheimer disease, "preclinical and non-medical interventions are essential for preventing and treating cognitive decline in patients with mild cognitive impairment." This suggests that Power Plate can be a critical tool in mitigating the progression of cognitive decline.

### Method:

There were 16 subjects in this study, all of which visited Miyagi Koseikyokai Izumi Hospital with forgetfulness. The mean age was 63.5 and there were 7 men and 9 women that participated.

A baseline single photon emission computer tomography (SPECT) study and CBF measurements were performed at rest with the eyes closed. Four weeks later, whole body vibration (WBV) exercise was conducted using Power Plate Pro5™. WBV exercises were performed on the platform and continued for approximately 20 min. The WBV exercise requirement was 30s at a frequency of 35-40Hz with a low amplitude.

Six patients underwent a 24-week WBV exercise protocol twice a week using the same protocol with the eyes open. Following training, SPECT with CBF measurements was conducted with the eyes closed.

### Results:

Neuropsychological tests in 6 out of the 16 patients with Amnesic MCI (aMCI), who performed 24 weeks of WBV training, revealed a significant improvement in cognitive assessment and a slight improvement in Mini-Mental State Examination after training.

### Conclusion:

- Exercise and training with whole body vibration may increase rCBF in patients with aMCI, which is expected to delay the conversion of MCI to dementia.
- This study suggests that Power Plate can be a critical tool in mitigating the progression of cognitive decline.
- The conclusions of this research further support and strengthen other high quality clinical research studies on whole body vibration and vascular health.

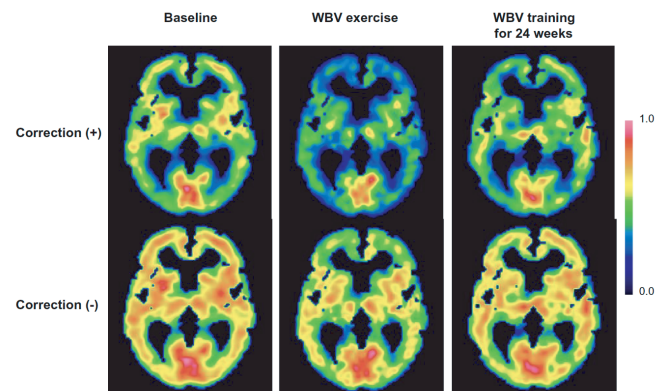


Figure 1 Images of rCBF ratio of 56 y.o. male patient with aMCI with Lassen's correction and without. The rCBF ratio is apparently reduced in the frontal region of WBV exercise image.