

Psychosocial factors and environmental design / Environmental design and technology

# Global cognitive performance is not influenced by diurnal rhythm

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## Abstract

**Background:** There are conflicting reports on the extent to which cognitive performance varies over the course of the day and whether such effects change with advancing age.

**Method:** We used data collected in two longitudinal studies of cognitive reserve: Cognitive Reserve & Reference Ability Neural Network. We reviewed study documents and extracted the time of the day during which an individual's cognitive battery. Of 543 subjects with available cross-sectional data, 281 were tested in the AM and 242 in the PM. Mean age was 55 yo. 178 subjects were <50 yo. Multivariate models were used to evaluate the data.

**Result:** We found expected effects of age on cognitive performance, but we found no evidence supporting a difference in either global cognitive performance or of performance in one of the four tested domains in relation to time of day. Further, we saw no evidence for an interaction by age: age did not influence performance differences relative to time of day.

**Conclusion:** We have analyzed a large dataset of prospectively collected data in which we see no evidence that time of day influences results of cognitive testing. This analysis settles an important issue that could have implications on study design when subjects select study visits that are convenient for their schedule.