

## **THE APPLICATION OF COGNITIVE NEUROSCIENCE TO CLINICAL RESEARCH II: TESTING COGNITIVE FUNCTION VIA THE INTERNET**

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**Introduction:** Late 2012 saw FDA approval for a yearlong study in which the assessments are made remotely. Such trials, in which cognitive function was the endpoint, would benefit from remote assessment from the home or workplace. The present study compares data from a large recently completed internet study of cognitive function, to data from the same tests administered under laboratory conditions.

**Methods:** A website offered feedback on cognitive function. Individuals clicked on the link entered their age and gender, and could perform 4 tests lasting 10 minutes (a 3-minute vigilance task, simple & choice reaction time and picture recognition). Five language versions could be selected.

**Results:** Over an 18 month period 120,171 individuals logged on and entered demographics, 111,203 completed the first task and 97,171 all tasks; this latter cohort then receiving graphical feedback on the degree to which they may have favourably exceeded their age-norms. The age range of participants was 4 to 105 yrs. compared to laboratory data; patterns over the age-range on all task measures were directly comparable as were gender differences.

**Conclusions:** Remote cognitive testing is feasible and can be utilised in a wide range of existing clinical trials while offering the opportunity to conduct novel types of clinical trials. Trials which could utilise this methodology include post-marketing safety or efficacy trials, studies of nutritional products, long-term follow-up studies in childhood cancer survivor cohorts, and the long duration trials which are now starting in the new indication of preclinical Alzheimer's disease.