

TRACK-HD reports baseline findings

We've been covering the findings that are emerging from the Predict HD study that follows volunteers from pre-manifest status through the progression of the disease. Europe and Canada have their own longitudinal study to document HD progression and discover and validate biomarkers to be used for improved, shorter clinical trials. TRACK-HD has been operating in the UK, Canada, France, and the Netherlands since January 2008 and has now published an analysis of the baseline data.



Dr. Sarah Tabrizi

The new study compares volunteer spouses and siblings who do not have the HD gene with pre-manifest gene carriers and people with early stage HD. The pre-manifest gene carriers were divided into two groups at the median estimated number of years to onset. The formula used to estimate years until onset was the Langbehn formula also used in the Predict-HD study. The early stage group was divided into two based on their scores on the total functional capacity scale.

The term pre-manifest has replaced pre-symptomatic to refer to those not yet diagnosed according to standard criteria. Predict HD and other studies have shown that psychiatric and cognitive changes occur before the disease can be diagnosed based on movement symptoms which is how onset has traditionally been defined.

The researchers found clear difference among the groups. Advanced neuroimaging techniques show a progressive reduction in whole brain volume, in both grey and white matter, in the caudate nuclei, and in the cortex across the continuum from normal-gene controls to stage 2 early HD. Progressive ocular-motor and motor impairment was also found as determined by quantitative measures of the anti-saccade error rate, tongue force variability, precision of self-paced fingertapping, and variation in stride length. Progressive cognitive impairing was also found along the continuum as measured by recognition of negative emotions, visual working memory, and smell identification. Progressive neuropsychiatric impairment occurred in apathy and irritability.

These findings are based on the comparison of five groups of volunteers, control, later and closer pre-manifest gene carriers, and very early stage and later-early stage people with HD. If the clear movement, cognitive, and brain imaging results that so clearly differ along the continuum of stages are duplicated longitudinally, that is over time in each participant, then the researchers will have identified biomarkers that can be used to test treatments before classic onset and determine when patients need to begin treatment.

Reference:

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- *Marsha L. Miller, Ph.D., , September 30, 2009*