



# Intellectual Property Office

## The BULB Test – Better Upper Limb Bradykinesia Test

**Technology Reference**  
R208

**Keywords**  
Diagnostic Tool  
Research Tool

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Neurological Sciences

**Field**  
Movement Disorders

**Status**  
Marketable Tool

This tool provides an easy to use quantitative measure of Bradykinesia in Parkinson's disease patients in whom upper limb movement is impaired. An abstract of this tool was presented at the 54<sup>th</sup> Annual Meeting of the American Academy of Neurology in April 2002.

### AREAS OF APPLICATION

- Measures slowness of movement (bradykinesia) in Parkinson's Disease
- Measures general motor control of the upper limbs
- Characterize clinical condition of patients and/or measures disease progression over a period of time
- Measures motor control response to medications in drug trials
- Assist in optimizing deep brain stimulation parameters

### ADVANTAGES

- Accurately measures speed of pronation and supination of the upper extremities in diseases affecting gross motor skills
- Compatible with functional MRI when made out of plastic (aluminum can also be used to manufacture this device)
- Light bulb shape is very similar to the household light bulb increasing the likelihood that a person would have prior experience with this type of movement making the test a more reliable indicator of gross motor function.
- Superior sensitivity in detecting right – left differences
- Reduces confounds associated with other widely used testing methodologies such as the subjective test in which pronation/supination of the hand on the knee are timed.

### THE TECHNOLOGY

This device consists of a "light bulb" shaped handle attached to a counting device, the handle can be turned left or right. Upper limb gross motor function, or slowness of movement, is quantitatively measured by the number of times the handle is turned during a two or three minute period that is timed by a timing device.

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