**Use of the Saccadometer to detect saccadic peak velocity in Myasthenia Gravis and visually normal subjects**

Authors: Craig Murray1, David Newsham1, Fiona Rowe1, Ian Marsh2, Carmel Noonan2

Institutions: 1University of Liverpool, 2Aintree Hospitals NHS Foundation Trust

**Purpose**

This is a pilot study to ascertain whether the Saccadometer is able to identify characteristic increased peak velocity of saccades in Myasthenia Gravis (MG) patients and compare this to the peak velocities of healthy subjects.

**Methods**

Saccadic parameters were measured in a group of healthy volunteers using a Saccadometer. The Saccadometer is a head mounted device that projects laser targets as the participant faces a blank surface at a distance of between one and three meters. Measurements of saccadic velocity, amplitude and duration were obtained during 10 degree saccades via infra-red oculography. Data are transferred to a laptop containing specialist software and analysed to produce mean values for saccadic parameters as well as individual trial results. Participants were recruited from the staff population of the University of Liverpool and were assessed by an orthoptist to ensure that they met the inclusion criteria. Patients with myasthenia gravis (MG) were identified and recruited from the patient database of two Ophthalmologists based at Aintree Hospitals NHS Foundation Trust. All had a confirmed MG diagnosis by either acetyl choline antibodies serum test or single fibre electromyography (sfEMG).

**Results**

Mean saccadic peak velocity for healthy participants (n=4) was 553.5 deg/s (±24.0). Data of patients with MG is currently being collected.

**Conclusions**

The mean peak velocity of healthy subjects tested using the Saccadometer is comparable with previously published reports in healthy subjects. This will enable the Saccadometer to potentially detect saccadic characteristics found only in MG patients. This could therefore provide a valuable diagnostic tool in a condition that can be difficult to diagnose.