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Fight for Sight, Thomas Pocklington collaborate to fund new neuro-ophthalmology research

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Retinal activity in autism, ADHD and Duchenne muscular dystrophy

Brain disorders that affect behaviour, movement and mental health often cause visual impairment, but this disability is frequently overlooked. Leading UK eye research and sight loss charities Fight for Sight and Thomas Pocklington Trust are partnering to fund new neuro-ophthalmology research to help improve diagnosis.

Eyes are sensors that detect light and turn it into an electrical signal that is sent via the optic nerve to the brain. The brain interprets the signals to produce what we see. We also know that the retina, the nerve layer at the back of the eye, does quite a bit of processing of signals even before they are sent to the brain.

Clinical assessment for visual impairment in patients with neurological disorders such as autism or attention deficit hyperactivity disorder (ADHD) can be neglected for many reasons. Neurological and psychiatric symptoms may be more visibly disabling and it can be hard to check vision in people with these disorders.

It may also be harder to recognise subtle disorders in the way visual signals are transmitted from the retina or within the brain. There may be no link to common problems such as lens opacity or diabetic retinopathy that can be detected by screening and imaging.

Dr Omar Mahroo is leading the research and is based at Moorfields Eye Hospital. He said:

“*It has been shown that the electrical signals generated in the retina are altered in some neurological conditions, but we do not know why or how. This project aims to explore this in more detail, initially looking at people with autism, ADHD and*

Duchenne muscular dystrophy.

Electroretinograms (ERG) will be recorded from participants via electrodes placed around the eye. The electrodes pick up electrical activity generated by the retina in response to light in a similar way to ECG recordings of the heart.

“We will use mathematical modelling to analyse the recordings in detail,” continues Dr Mahroo. “We hope to learn more about the nature of any dysfunction in retinal signalling and how common it is in different conditions. We may even improve understanding of the brain itself as the retina has some of the same circuitry.”

Dr Dolores M Conroy is Director of Research at Fight for Sight. She said:

“ERG recording may have potential as a tool to identify people with visual impairment due to neurological disorder and allow them an early referral for support that they otherwise would not get. We’re delighted to co-fund this research with Thomas Pocklington Trust that might also serve to monitor the effects of new and existing therapies for these conditions.”

Phil Ambler, Research and Policy Director at Thomas Pocklington Trust, commented:

“It is important that we can identify issues around sight loss in all individuals. We are pleased to be co-funding this valuable piece of research with Fight for Sight which may lead to identifying unmet needs and provide the opportunity for individuals to have a better quality of life.”

Source:

<http://www.fightforsight.org.uk/>
