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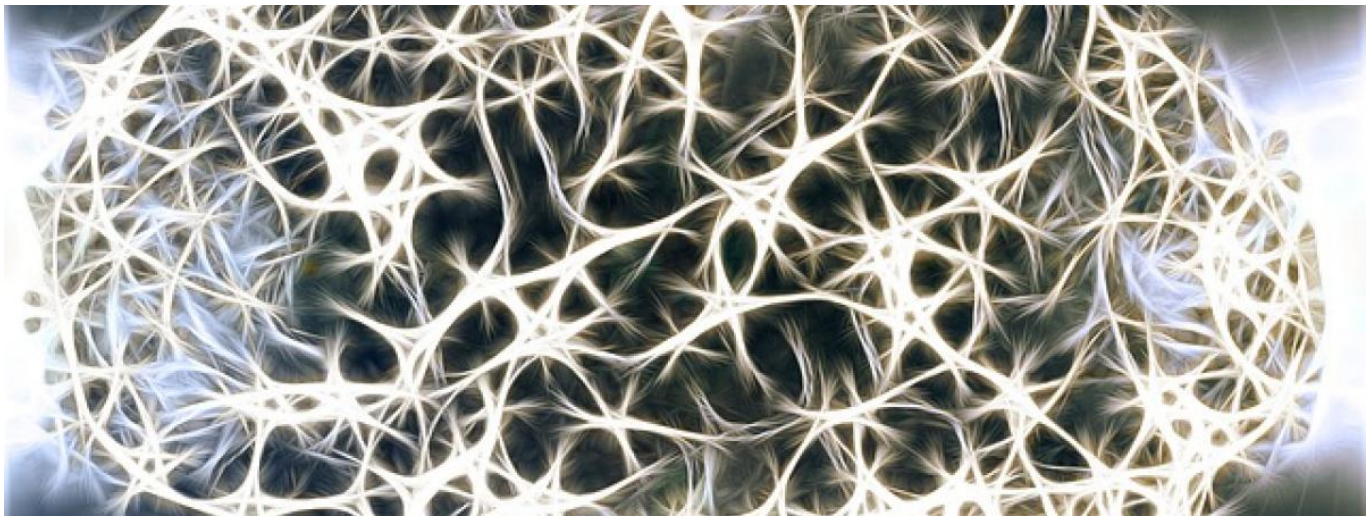
brain [2] disability [3] surgery [4]



Not quite a cure, but electrical stimulation deep within the Parkinson's brain can reduce some of the most disabling symptoms. Helen Cowan interviews consultant neurologist Dr Binith Cheeran PhD, MRCP (Neurology) about this procedure.

Who could benefit from DBS?

"Previously, only people with more severe Parkinson's were offered DBS. However, DBS is now approved for people who have had Parkinson's for more than 4 years, and have just started to experience fluctuations in the control of their symptoms despite taking medication.

The hope is that DBS will better control symptoms in these patients, enabling them to maintain friendships, social interaction, employment and activity, translating into improved quality of life.

DBS is also used to treat other diseases causing tremor, muscle spasms and contractions. It is being evaluated as a treatment for some forms of epilepsy, Tourette's and some psychiatric diseases."

The hope is that DBS will better control symptoms.

What happens in the procedure?

"Surgeons drill a small hole in the skull and place specially-made wires (leads) into specific parts of the brain with careful precision, guided by a special guidance frame or robot. The leads are connected to an electrical pulse generator (like a pacemaker) placed under the skin over the chest.

The procedure, which can last as little as 3 hours, is often done with the patient awake. This allows the experienced DBS neurologist to check that the wires are correctly placed to control symptoms without stimulating unintended parts of the brain.

DBS is then switched on (often a few weeks later), and the 'dose' of electrical stimulation is programmed by a specialist to suppress symptoms of the disease."

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Are there any risks?

"DBS should only be carried out by experienced teams, after careful evaluation of the risks and potential benefits. Potential risks, though rare, include bleeding in the brain, infection, and the risk that the leads delivering the therapy are not optimally placed (leading to side-effects with stimulation)."

What are the alternatives?

"If tablets are not controlling symptoms, other therapies include pumps that deliver gel or liquid medicines directly into the gut or through a needle placed just under the skin. These treatments may suit some people with Parkinson's, but for most DBS delivers a better quality of life.

Scientists are looking into therapies like stem cell treatments and growth factors [5], but these have not yet delivered the improvements in quality of life that DBS can offer."

What does the future hold for DBS?

"DBS is going through a phase of rapid innovation. Traditionally, the electrical currents from the leads in the brain resembled light coming from a bulb, travelling in all directions. Technology has been developed to 'steer' the electrical current in a specific direction in the brain, away from unwanted structures and towards the target brain structure – rather like light from a torch, making it even safer.

In the future, DBS systems will be able to automatically adjust the 'dose' of stimulation to symptom severity, crucial in a disease that varies in severity from day to day like Parkinson's [6]. Some DBS systems being implanted today are already equipped to respond to measurements from devices like an Apple Watch [7], and such technology should be available in clinical trials within a year."

MEDICAL JOURNALISTS' ASSOCIATION

Source URL:https://www.helencowan.co.uk/how-deep-brain-stimulation-can-help-parkinsons

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[1] http://www.readersdigest.co.uk/health/health-centre/how-deep-brain-stimulation-can-help-parkinson%E2%80%99s [2] https://www.helencowan.co.uk/../tags/brain [3] https://www.helencowan.co.uk/../tags/disability [4] https://www.helencowan.co.uk/../tags/surgery [5] http://www.parkinsons.org.uk/content/video-clinical-trial-test-gdnf-parkinsons [6] http://www.readersdigest.co.uk/health/health-centre/lesser-known-symptoms-parkinsons [7] http://www.readersdigest.co.uk/technology/gadgets/apple-watch-revolutionise-healthcare-not-just-yet