

'If you want to stop the condition, you need to regrow brain cells': Inside the 'hugely complex' fight against Parkinson's disease

"Parkinson's is a hugely complex condition and there's probably no single cure," says Katherine Fletcher, a research communications manager at Parkinson's UK. "It's the progressive loss of dopamine-producing cells in the brain. If you want to slow or stop the condition, you somehow need to protect those cells or maybe even regrow those cells in the brain. That is the ultimate goal."

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The main treatment for Parkinson's aims to boost flagging levels of dopamine in the brain. The drug, levodopa, tends to be taken with other medicines to make it work for longer with fewer side-effects. Not all patients respond to the drugs, however, and in some cases doctors perform surgery to run electrodes deep into the brain. Electrical pulses fired from an implant in the chest can then alleviate tremors and other symptoms.

Far more radical therapies are in clinical trials. Japanese doctors are [monitoring seven patients](#) who had millions of [dopamine-producing neurons implanted](#) into the most affected regions of the brain. The neurons were made by reprogramming stem cells in the lab. Results from the trial are due out soon.

Other approaches target troublesome proteins involved in the disorder. One, called alpha-synuclein, is found in clumps inside the neurons of people with Parkinson's. Many researchers believe these contribute to the disease and drive its spread through the brain. But while scientists have tried to clear alpha-synuclein with infusions of synthetic antibodies, trials so far [have not](#) shown [any benefit](#).

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