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# Parkinson's disease breakthrough: diagnosis and treatment possible for the first time ever

Today, about 140,000 people in the UK are living with Parkinson's disease, an incurable disorder of the nervous system that causes


There are no medications to slow or stop disease progression either

But in 2004, a research team at UCL found that certain mutations in the *LRRK2* gene underlay several kinds of Parkinson's disease, opening doors to potential new diagnostic techniques and treatments

By 2010, a genetic diagnostic test had been developed for Parkinson's disease

The test is now being routinely used in the NHS

**In addition to precise diagnosis, the test makes possible**

- An understanding of disease risk for relatives
- Prenatal testing
- Testing before symptoms appear

At present collaborative research—involving the UCL team, other research organizations, medical centres, and pharmaceutical companies—is ongoing to develop medications targeting these mutations

A Phase 1 clinical trial called the REASON trial, involving the largest assembled group of people with these *LRRK2* mutations, is testing the safety and tolerability of these new medications

## UCL's research on Parkinson's disease has

- Revolutionized its diagnosis and prognosis
- Enabled the development of new treatments
- Created an opportunity to understand and treat other related nervous system disorders

Paisan-Ruiz *et al.*, *Neuron* (2004) | Gilks *et al.*, *The Lancet* (2005) | Jabbari *et al.*, *The Lancet Neurology* (2021)