

Parkinson's research: New hope when treatment options seem exhausted

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As Parkinson's progresses, more invasive therapies are used, for example, those that require brain surgery. When these therapies no longer deliver the desired results, physicians often conclude that

treatment options are exhausted. A study led by researchers at the Technical University of Munich (TUM) now shows that such patients can still benefit from a change in treatment. So far, however, this option has only been used very rarely.

Parkinson's disease is the world's second-most common neurodegenerative disease after Alzheimer's. So far it has proved incurable. Only the symptoms can be treated. In early stages, tablets can generally provide relief from the complaints. As the disease progresses, this is often no longer enough.

In these cases, invasive treatments are used. Apart from the [high costs](#), these involve interventions of varying severity. The best-established of these treatments is [deep brain stimulation](#), in which electrodes are implanted in the brain, similar to the use of pacemakers for [heart patients](#).

A more recent development is pump technology: the automated infusion of drugs directly into the intestines through a tube or into the abdominal wall with a needle. But even these advanced treatments do not always achieve the desired results or lose effectiveness over time.

When that happens, physicians and patients are often reluctant to try a different invasive treatment or combine the current treatment with a second method. The conclusion is often reached that all options are exhausted. This can have a serious impact on quality of life and life expectancy.

Data from 22 Parkinson's centers

A study by a team working with Prof. Paul Lingor, co-director of the Parkinson's Outpatient Center at TUM Klinikum rechts der Isar, now offers new hope for these patients. The researchers collected data from

22 treatment centers all over Germany in the Competence Network Parkinson (Kompetenznetz Parkinson, KNP) covering the period from 2005 to 2021.

"Among the approximately 11,000 people undergoing advanced treatments at those centers during the study period, we were able to identify 116 persons in which advanced treatments were replaced or combined with an additional method," says first author Dr. Dominik Pürner. Because some patients underwent more than one change in treatment, the researchers were able to analyze a total of 148 cases.

The analysis of the data shows that most of these interventions were successful. For example, the physicians and patients reported a subjective improvement in mobility that was also reflected in objective tests. The study is [published](#) in the journal *Neurology*.

Germany-wide registry planned

"With people living longer, we will be faced more and more often with the question of what we can do for people when an advanced treatment fails," says Lingor. "We were able to show: The improvement for patients from a change in treatments is almost the same as when the original treatment is introduced. This is an enormous benefit."

Very few studies on changes in treatment have taken place to date in Germany or other countries. The researchers believe that their study has greatly improved the data situation, making it easier, for example, to determine which patient groups will benefit more from which strategy. This makes it possible to select a change in treatments on the basis of the dominant complaints.

"Based on the results of our study, we can now make a clear recommendation for action," says Lingor. "If an advanced treatment

does not produce results or bring about the desired effects, a change in treatment should be considered. This insight is far from trivial, because it would have been entirely possible that all available treatments would fail at an advanced stage of the disease."

In the future, the researchers wish to set up a Germany-wide registry including the data of all Parkinson's patients undergoing device-based treatments in order to develop scientifically sound guidelines for the combination of advanced treatments.

More information: Dominik Pürner et al, Nationwide Retrospective Analysis of Combinations of Advanced Therapies in Patients With Parkinson Disease, *Neurology* (2023). [DOI: 10.1212/WNL.0000000000207858](https://doi.org/10.1212/WNL.0000000000207858)

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