

# STUDIES RELATED TO PARKINSON'S DISEASE

Survival with Parkinson's Tied to Age at Onset,  
Cognition in Study

Regular Acupuncture Seen to Ease Anxiety in  
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# Survival With Parkinson's Tied to Age at Onset, Cognition in Study

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September 28, 2022



Older age at onset, a faster rate of disease progression, and severe cognitive impairment are key factors in poorer survival rates for people with Parkinson's disease, a study that followed patients in northern China for 10 years found.

Fatigue may also be an indicator of poorer survival, while physical exercise and deep brain stimulation, a surgery to ease Parkinson's motor symptoms in select patients, may help to extend life.

The researchers were looking specifically to create a standardized mortality ratio (SMR) for patients attending their hospital in Dalian, as no SMR data — of help in both clinical and family care — existed for patients “in the northern Chinese mainland.” Nonetheless, 10-year survival for this Parkinson's group was “not significantly different from that of the general population in China,” the team reported.

The study “[Survival in patients with Parkinson's disease: a ten-year follow-up study in northern China](#)” was published in the journal *BMC Neurology*.

Recommended Reading

September 12, 2022 News by Margarida Maia, PhD

## Dosing Begins in Phase 2a Trial of Oral Treatment to Aid Cognition

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Currently, four main aspects are thought to affect survival with Parkinson's: demographics, clinical characteristics, intervention measures, and environmental factors. Older age at disease onset and cognitive impairment are recognized risk factors for reduced survival.

The standardized mortality ratio is a common indicator for survival analyses; SMR in this study compares the death rate among Parkinson's patients to a reference population. Some studies in other countries demonstrated regional differences in mortality; for example, studies have suggested that the SMR of patients in the US is higher in its northern than southern regions.

Researchers at the First Affiliated Hospital of Dalian Medical University investigated survival among 218 Parkinson's patients being followed at their clinic. Patients, all with idiopathic (unknown cause) disease, were recruited between 2009 to 2012 and followed until May 31, 2021, or their death.

## Respiratory and heart diseases were common causes of death

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These patients (53.2% women) had mean age at disease onset of 57, and had been living with Parkinson's for a mean of four years when they entered the study. Fatigue was reported by 52.8% of them, and a majority (68.8% or 150 people) also engaged in regular physical "leisure time" exercise.

Over 10 years of follow-up, 50 of these 218 people died — 24 men and 26 women — representing 22.9% of the total group. The most common causes were respiratory diseases (29 patients, 58%), mainly pneumonia (48%), and heart disease (seven patients, 14%). Other causes were digestive system disorders (five patients), stroke (four patients), suicide (two), urinary system disorders (one patient), and heat stroke (one patient).

These deaths, analyses showed, amounted to an overall SMR of 1.32.

"This survival survey in the northern Chinese mainland gave an SMR of 1.32, which means that the 10-year mortality rate for [Parkinson's disease] patients is similar to that expected for the general population nationwide," the researchers wrote, noting that "there seems to be no survival difference between the South and the North."

Previous studies set the SMR for Parkinson's patients in Shanghai, in southern China, at .87, and that for patients in Hong Kong at 1.10, they also noted.

## **Survival benefit seen for regular exercise, deep brain stimulation**

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During this study, 90 patients (41.3%) underwent deep brain stimulation surgery, which involves implanting a device to stimulate targeted regions of the brain with electrical impulses.

The researchers identified above-average, regular physical exercise and deep brain stimulation as factors that aid survival for Parkinson's patients' — the SMR was 1.13 for patients who underwent surgery during follow-up.

Physical exercise improves motor function and sleep, and delays the motor and cognitive decline associated with Parkinson's, they noted. At the molecular level, it reduces oxidative stress and inflammation and increases the levels of factors that protect brain cells.

"It is speculated that the neuroprotective effect of exercise and its clinical benefits may be the reason for the final prolongation of survival," the scientists wrote.

In contrast, a higher risk of death was associated with fatigue, older age at disease onset, stage 3 or above on the Hoehn and Yahr scale (H&Y; this scale assesses Parkinson's progression and stage 3 marks "moderate bilateral disease"), postural instability and gait disorders (PIGD; gait characterized by a stooped posture, decreased arm swing, and a shuffling gait), dysphagia (difficulty swallowing), severe cognitive impairment, and poor sleep quality.

A later analysis based on multiple variables — called a multivariate analysis, looking at the relationship between several variables — confirmed that older age at onset, a H&Y stage of 3 or greater, and severe cognitive impairment were independent predictors of poorer survival.

Of note, the H&Y scale is used to evaluate functional disability associated with disease progression, with higher staging meaning the loss of more dopaminergic neurons and reduced posture balance.

Overall, "we concluded that older age at onset, higher baseline H&Y staging, and severe cognitive impairment independently predicted a higher risk of death. Fatigue was another indicator that may lead to a deterioration in survival," the researchers wrote.

No association was found for factors that include a patient's gender, education, and lifestyle. Likewise, survival was not tied to tremors as an initial symptom, hallucinations, depression, or comorbidities.

"Identifying and understanding factors related to survival will provide a novel direction for disease modification therapy, which is expected to increase the life expectancy of [Parkinson's] patients," the team concluded.

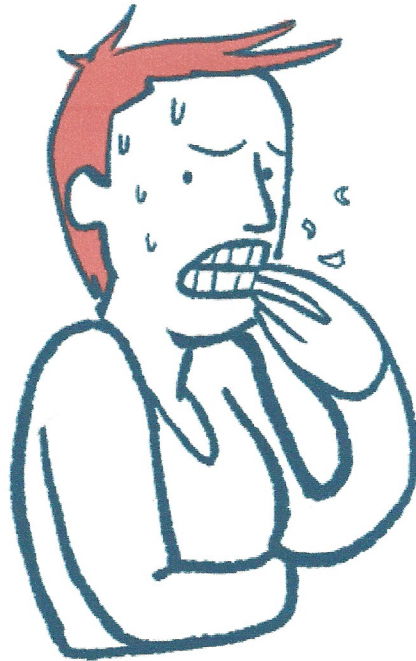
A potentially key study limitation, the researchers noted, was that data used came from patients treated at one "specialist clinic rather tha[n] the community."

# Regular Acupuncture Seen to Ease Anxiety in Parkinson's Patients

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October 3, 2022



People with Parkinson's disease who underwent acupuncture for eight weeks had significantly lower levels of anxiety at a follow-up visit two months later than those who received a sham procedure, a clinical trial from China reported.

Trial findings also suggested that acupuncture may be an effective way to improve patients' emotional well-being, overall motor function, and quality of life.

The study, "[Effectiveness of Acupuncture for Anxiety Among Patients With Parkinson Disease](#)," was published in the journal *JAMA Network Open*.

Recommended Reading

September 12, 2022 News by Margarida Maia, PhD

*Now Recruiting*

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## Dosing Begins in Phase 2a Trial of Oral Treatment to Aid Cognition

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Anxiety is a common nonmotor symptom of Parkinson's disease, and is associated with difficulties in concentration, feelings of worry, muscle tension, and more severe tremors.

Approximately 31% of patients with Parkinson's show symptoms of anxiety, the researchers reported. Yet, treatment options to specifically deal with anxiety in those with Parkinson's are lacking, and available anti-anxiety medications appear to have limited efficacy.

### **Significant drop in anxiety levels seen two months after treatment**

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Some studies report that cognitive behavioral therapy (CBT), also called psychotherapy, can help to treat anxiety in this patient population. But its costliness can limit its use, they added, while acupuncture, despite limited data, has shown promise in treating the disease's neuropsychiatric symptoms.

Researchers at Guangzhou University of Chinese Medicine conducted a clinical trial to provide confirmatory evidence.

"To our knowledge, this is the first randomized clinical trial of the effectiveness of an acupuncture treatment regimen targeted for anxiety in patients with [Parkinson's]," they wrote.

Individuals were randomized to receive acupuncture or a sham acupuncture procedure for 30 minutes a day, three times a week for eight weeks. Patients continued taking their usual medications during this period.

To evaluate the degree of anxiety, researchers used the Hamilton Anxiety Scale (HAM-A score), consisting of 14 items, each defined by a series of symptoms. Higher scores indicate higher levels of anxiety, with a total possible score of 56.

A total of 64 patients — 30 women and 34 men — with a mean age of almost 62 completed the study.

Immediately after the eight-week treatment, both groups saw a similar reduction in their anxiety levels. However, at a follow-up two months later, patients in the acupuncture group had a significantly lower HAM-A score compared to those patients given sham acupuncture (10.97 vs. 18.56).

Blood levels of the adrenocorticotrophic hormone (ACTH) and cortisol, stress hormones that can reflect anxiety levels, were also determined before and after treatment. The increase in ACTH levels in the sham group after the treatment period was higher than that of the acupuncture group. No differences were found in terms of cortisol levels between the two groups.

“It may be preliminarily confirmed that acupuncture can reduce the level of ACTH in serum, a finding that is in line with previous results, [where] the authors have proved that acupuncture can alleviate increased stress hormone levels and mitigate anxiety,” the researchers wrote.

To help reflect participants’ mental health, the team used the Unified Parkinson Disease Rating Scale part I (UPDRS I) and the 39-item Parkinson Disease Questionnaire emotional well-being (PDQ-39 EW) scores. At the end of follow-up, patients who underwent acupuncture had significantly lower (better) scores than those who received a sham procedure.

Total UPDRS and PDQ-39 scores, used to evaluate patients’ overall condition and life quality, showed the same trend, possibly because “anxiety symptoms leads to reduction of [Parkinson’s] motor symptoms,” the researchers wrote.

Four mild, and no serious, side effects were reported, including two cases of “slight hematoma” or swelling due to minor bleeding around the needle site, the team noted.

“It can be preliminarily concluded that although there is a certain placebo effect in the short term, acupuncture is clinically effective on anxiety in patients,” the scientists wrote.

“This study’s results suggest that acupuncture with clinical monitoring may alleviate anxiety of patients with Parkinson disease,” they concluded.



# Older Age and Motor Symptom Severity Tied to Fall Risk After DBS

 [parkinsonsnewstoday.com/news/older-age-motor-symptoms-tied-falls-deep-brain-stimulation/](https://parkinsonsnewstoday.com/news/older-age-motor-symptoms-tied-falls-deep-brain-stimulation/)

October 5, 2022



Older age at onset, more severe motor symptoms, and cognitive impairment are risk factors for the progression of gait and postural instability in Parkinson's disease patients who undergo deep brain stimulation, a new study suggests.

Researchers, who followed patients for up to 15 years after the surgery, found a higher risk of falls in those whose symptoms started at older ages, and had longer disease duration and worse motor symptoms prior to the intervention. People whose Parkinson's is characterized by slowness in initiating movements and rigidity were also at greater risk.

"Overall, axial [motor] signs progressively worsened over the long-term period following [deep brain stimulation], likely related to the progression of [Parkinson's disease], especially in a subgroup of subjects with specific risk factors," the team wrote.

The study, "[Axial impairment and falls in Parkinson's disease: 15 years of subthalamic deep brain stimulation.](#)" was published in the *npj Parkinson's disease*.

Recommended Reading

September 20, 2022 News by Andrea Lobo



## **Phase 1/2 Trial Supports Ketamine for Levodopa-induced Dyskinesia**

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Subthalamic nucleus deep brain stimulation (DBS) is given to ease motor symptoms with advanced Parkinson's, and its positive effects are known to be largely maintained as progression continues. However, symptoms such as axial impairment (gait, posture, and balance disorders) and falls are resistant to medical and surgical treatments, representing a high burden for patients and a challenge to those caring for them.

"A definite consensus concerning the evolution of axial impairment and falls in people with [Parkinson's] after [subthalamic nucleus deep brain stimulation] surgery is still absent," the researchers, led by a team in France, noted.

## **302 study patients given deep brain stimulation between 1993 and 2010**

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The scientists analyzed data on axial impairment and fall frequency in 302 patients — 183 men and 119 women — followed at the Grenoble Alpes University Hospital. All underwent bilateral subthalamic deep brain stimulation surgery there between 1993 and 2010.

Their mean age at the study's start (baseline) was 55.61, and they had been living with Parkinson's for a mean of 11.75 years. Sixteen people at baseline (5.3%) were identified as frequent fallers.

All were evaluated before surgery and again one year later, with 102 patients being followed up to 10 years after the procedure, and 57 patients evaluated 15 years later.

Gait, posture, and balance parameters (axial scores) were similar at baseline and the one-year follow-up, but they progressively worsened at 10 and 15 years after surgery.

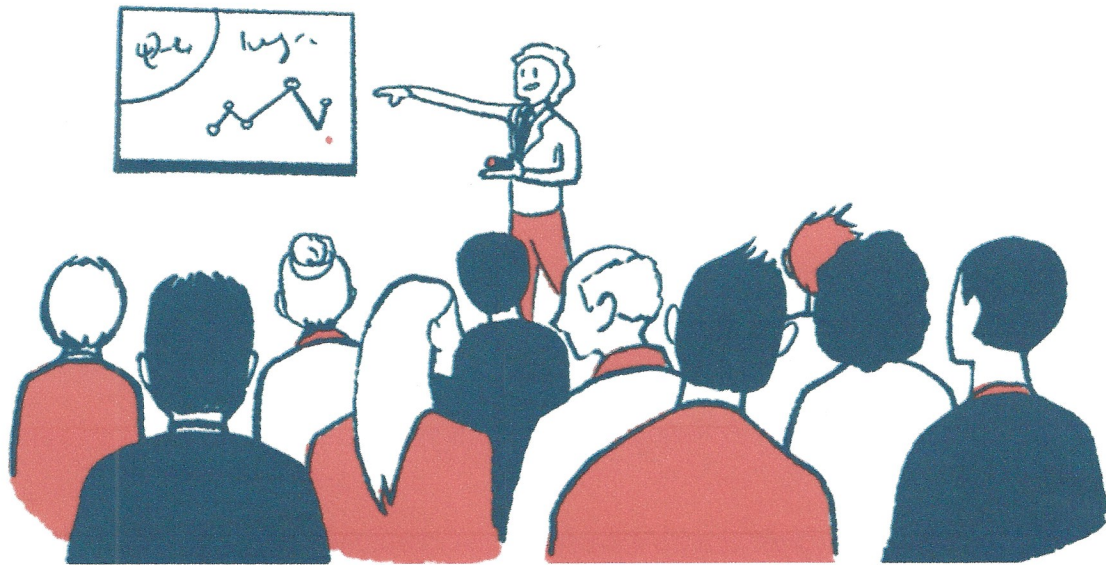
Specifically, patients' axial scores during "on periods" with levodopa — a standard Parkinson's treatment — increased from 1.97 at one year post-surgery to 6.11 at 10 years and 7.39 at 15 years. Those identified as frequent fallers likewise rose, from 28 people (9.6% of 292 patients) at one year to 35 (36.1% of 97 patients) at 10 years and 19 (37.3% of 51 patients) at 15 years post-DBS.

Axial scores were determined "as the sum of specific items" in Part III of the Unified Parkinson's Disease Rating Scale (UPDRS), those that "directly referred to static and dynamic postural control" but not facial expression or speech, the study noted. Fall

# Faster Progression Found in ‘Body-involvement’ Parkinson’s in Study

 [parkinsonsnewstoday.com/news/faster-progression-found-body-involvement-parkinsons-study/](https://parkinsonsnewstoday.com/news/faster-progression-found-body-involvement-parkinsons-study/)

October 10, 2022



People with Parkinson’s disease who show early dysfunction in the nerves controlling heartbeat tend to experience faster disease progression, a new study shows.

According to researchers, these results support a new approach differentiating “brain-predominant” Parkinson’s from disease with “body-involvement.”

“These findings correspond well to the results of [an] earlier study that classified brain-first and body-first [Parkinson’s disease],” the team wrote, noting

that patients with body involvement “had more severe symptoms and steeper motor deterioration.”

The study, “Comparison of disease progression between brain-predominant Parkinson’s disease versus Parkinson’s disease with body-involvement phenotypes,” was published in *Neurobiology of Disease*.

Recommended Reading

April 6, 2020 News by

Marisa Wexler, MS



## **Proposed Parkinson’s Subtypes May Best Capture Disease Stages**

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Parkinson’s is characterized by the death and dysfunction of dopamine-producing cells in the brain, but the biological mechanisms underlying the disease remain obscure. In recent years, some scientists have proposed that it may be possible to divide Parkinson’s patients into subgroups based on patterns of how the nervous system is affected.

### **‘Brain-predominant’ versus ‘body-involvement’**

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Specifically, some researchers think that Parkinson’s can be divided into two types: brain-predominant Parkinson’s, or br-PD, in which the

damage is mostly limited to cells in the brain, or Parkinson's with body-involvement, called bo-PD, where nerves throughout the body also are affected early in the disease course. In bo-PD, the peripheral nervous system is affected, according to these scientists.

Now, a team of scientists at the Catholic University of Korea tested whether patients classified as br-PD or bo-PD showed differences in terms of clinical outcomes, specifically Parkinson's progression.

The study included data on 132 Parkinson's patients, ages 50 to 75, who were divided into the subtypes based on whether they showed signs of dysfunction in the nerves that control heart rate. This was measured with an imaging technique called 123I-MIBG scintigraphy.

The 103 patients with signs of this cardiac nerve dysfunction on their first evaluation were classified as bo-PD, while the remaining 29 without symptoms of dysfunction on initial evaluation were labeled br-PD. The age at Parkinson's onset, sex distribution, and educational status were comparable between the two groups, as were rates of high blood pressure and diabetes, though disease duration was longer in the br-PD group.

Motor symptoms, measured with the Unified Parkinson's Disease Rating Scale (UPRDS) part III, were significantly worse in the bo-PD group compared with the br-PD group at the study's start, though tremor severity was comparable in both groups. Over time, motor symptoms worsened more quickly in the bo-PD group than the br-PD group.

“Motor symptoms were more severe at the initial presentation in the bo-PD group. In addition, motor symptoms deteriorated more steeply in the bo-PD phenotype than in the br-PD phenotype,” the researchers wrote.

Overall cognitive measures were generally similar between the groups both at the study's start and over follow-up, though the bo-PD group scored worse on memory tests initially. The researchers noted that while both groups showed decline over time in measures of cognition related to language, other specific cognitive changes varied by group: patients with bo-PD more commonly had issues with attention and working memory, while those with br-PD were more likely to have executive function challenges.

At the study's start, rates of depression, urinary dysfunction, and unspecified pain were similar in both groups. However, rates of rapid-eye-movement sleep behavior disorder (RBD), excessive daytime sleepiness, constipation, and orthostatic

hypotension (when blood pressure drops upon standing) were significantly higher in the bo-PD group.

“The two groups in our study showed a different frequency in non-motor manifestations” of Parkinson’s, the researchers wrote. They concluded that, overall, “the bo-PD subtype is more aggressive phenotype than the br-PD subtype.”

A noted limitation of this study is that the follow-up times were not standardized and varied from patient to patient. The researchers also stressed that this study focused specifically on individuals in the earliest stages of diagnosed Parkinson’s.