Diagnosis And Treatment Of Parkinson's Disease - State Of The Art Read Online

See your doctor if you have any of the symptoms associated with Parkinson's disease — not only to diagnose your condition but also to rule out other causes for your symptoms.

In Parkinson's disease, certain nerve cells (neurons) in the brain gradually break down or die. Many of the symptoms are due to a loss of neurons that produce a chemical messenger in your brain called dopamine.

When dopamine levels decrease, it causes abnormal brain activity, leading to impaired movement and other symptoms of Parkinson's disease. The cause of Parkinson's disease is unknown, but several factors appear to play a role, including:

- Researchers have identified specific genetic mutations that can cause Parkinson's disease. But these are uncommon except in rare cases with many family members affected by Parkinson's disease. However, certain gene variations appear to increase the risk of Parkinson's disease but with a relatively small risk of Parkinson's disease for each of these genetic markers.

- Researchers have also noted that many changes occur in the brains of people with Parkinson's disease, although it's not clear why these changes occur.

  These changes include: Depression and emotional changes. You may experience depression, sometimes in the very early stages. Receiving treatment for depression can make it easier to handle the other challenges of Parkinson's disease. You may also experience other emotional changes, such as fear, anxiety or loss of motivation. Doctors may give you medications to treat these symptoms.

  Sleep problems and sleep disorders. People with Parkinson's disease often have sleep problems, including waking up frequently throughout the night, waking up early or falling asleep during the day. People may also experience rapid eye movement sleep behavior disorder, which involves acting out your dreams.

  Medications may help your sleep problems. Because the cause of Parkinson's is unknown, proven ways to prevent the disease also remain a mystery. Some research has shown that regular aerobic exercise might reduce the risk of Parkinson's disease.

  Some other research has shown that people who consume caffeine — which is found in coffee, tea and cola — get Parkinson's disease less often than those who don't drink it. Green tea is also related to a reduced risk of developing Parkinson's disease. However, it is still not known whether caffeine actually protects against getting Parkinson's, or is related in some other way.

  Currently there is not enough evidence to suggest drinking caffeinated beverages to protect against Parkinson's. Parkinson's disease care at Mayo Clinic. Mayo Clinic does not endorse companies or products. Advertising revenue supports our not-for-profit mission. This content does not have an English version.

This content does not have an Arabic version. Request an appointment. Overview Parkinson's disease is a progressive nervous system disorder.
that affects movement.


It is well known that vision issues can be prominent in PD. This includes difficulty with visuospatial perception the ability to perceive spatial relations in the environment. Poor visuospatial skills affect depth and distance perception as well as navigational skills, which can directly translate into difficulty with activities such as reading, driving, and even walking. As visuospatial challenges increase, so do gait dysfunction and falls. Problems in a number of eye and brain areas affected by PD can contribute to these difficulties including the retina, the eye movement apparatus and the thinking parts of the brain that process vision and integrate it with other cognitive functions.

Whether art therapy, through art creation, can improve these deficits is a promising avenue of investigation. Art therapy may also be a tool that enhances the lives of people with PD more generally. One small study investigated clay art in people with PD and showed improvements in hand dexterity, mood, and quality of life. More studies are necessary to determine whether these effects are clinically relevant and if so, to define the optimal type and duration of the therapy.

Also, despite the visuospatial challenges of some people with PD, there is evidence that people with PD might experience an increase in creativity, or even develop a new interest in creative pursuits with their diagnosis, possibly fueled by dopaminergic medications.

In conclusion, a stronger research methodology and a clearer definition of the exact medium or parameter in music related to specific output of rehabilitation are needed. This will allow the development of adequate, and increasingly specific and effective music therapy approaches. The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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In this sense, research should increase the number of studies based on strong methodological criteria, also including a clear description of the intervention — whether it be relational or rehabilitating — a consistent and numerically significant sample, in addition to more sensitive tools to evaluate motor and psychological outcomes.

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Dopamine can't be given directly, as it can't enter your brain. These medications increase or substitute for dopamine. People with Parkinson's disease have low brain dopamine concentrations. However, speech problems. Medications may help you manage problems with walking, movement and tremor. In some cases, physical therapy that focuses on balance and stretching also is important. A speech-language pathologist may help improve your

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movement disorders to evaluate your condition and symptoms over time and diagnose Parkinson's disease. Our caring team of Mayo Clinic

Sometimes it takes time to diagnose Parkinson's disease. Doctors may recommend regular follow-up appointments with neurologists trained in movement disorders to evaluate your condition and symptoms over time and diagnose Parkinson's disease. Our caring team of Mayo Clinic experts can help you with your parkinson's disease-related health concerns Start Here. Parkinson's disease can't be cured, but medications can help control your symptoms, often dramatically.

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In some cases, physical therapy that focuses on balance and stretching also is important. A speech-language pathologist may help improve your speech problems. Medications may help you manage problems with walking, movement and tremor.

These medications increase or substitute for dopamine. People with Parkinson's disease have low brain dopamine concentrations. However, dopamine can't be given directly, as it can't enter your brain.
You may have significant improvement of your symptoms after beginning Parkinson's disease treatment. Over time, however, the benefits of drugs frequently diminish or become less consistent. You can usually still control your symptoms fairly well. Levodopa, the most effective Parkinson's disease medication, is a natural chemical that passes into your brain and is converted to dopamine.

Levodopa is combined with carbidopa Lodosyn, which protects levodopa from early conversion to dopamine outside your brain. This prevents or lessens side effects such as nausea. After years, as your disease progresses, the benefit from levodopa may become less stable, with a tendency to wax and wane "wearing-off".

Also, you may experience involuntary movements dyskinesia after taking higher doses of levodopa. Your doctor may lessen your dose or adjust the times of your doses to control these effects. Carbidopa-levodopa infusion. Duopa is a brand-name medication made up of carbidopa and levodopa. However, it's administered through a feeding tube that delivers the medication in a gel form directly to the small intestine. Duopa is for patients with more-advanced Parkinson's who still respond to carbidopa-levodopa, but who have a lot of fluctuations in their response.

Because Duopa is continually infused, blood levels of the two drugs remain constant. Placement of the tube requires a small surgical procedure. Risks associated with having the tube include the tube falling out or infections at the infusion site.

Dopamine agonists. Unlike levodopa, dopamine agonists don't change into dopamine. Instead, they mimic dopamine effects in your brain. They aren't as effective as levodopa in treating your symptoms. However, they last longer and may be used with levodopa to smooth the sometimes off-and-on effect of levodopa. Dopamine agonists include pramipexole Mirapex, ropinirole Requip and rotigotine Neupro, given as a patch.

Apomorphine Apokyn is a short-acting injectable dopamine agonist used for quick relief. Some of the side effects of dopamine agonists are similar to the side effects of carbidopa-levodopa. But they can also include hallucinations, sleepiness and compulsive behaviors such as hypersexuality, gambling and eating.

If you're taking these medications and you behave in a way that's out of character for you, talk to your doctor. MAO B inhibitors. These medications include selegiline Zelapar, rasagiline Azilect and safinamide Nadda.

They help prevent the breakdown of brain dopamine by inhibiting the brain enzyme monoamine oxidase B MAO B. This enzyme metabolizes brain dopamine. Selegiline given with levodopa may help prevent wearing-off. Side effects of MAO B inhibitors may include headaches, nausea or insomnia. When added to carbidopa-levodopa, these medications increase the risk of hallucinations.

These medications are not often used in combination with most antidepressants or certain narcotics due to potentially serious but rare reactions. Check with your doctor before taking any additional medications with an MAO B inhibitor. Entacapone Comtan is the primary medication from this class. This medication mildly prolongs the effect of levodopa therapy by blocking an enzyme that breaks down dopamine. Side effects, including an increased risk of involuntary movements dyskinesia, mainly result from an enhanced levodopa effect.

Other side effects include diarrhea, nausea or vomiting. Tolcapone Tasmar is another COMT inhibitor that is rarely prescribed due to a risk of serious liver damage and liver failure. These medications were used for many years to help control the tremor associated with Parkinson's disease. Several anticholinergic medications are available, including benztropineCogentin or trihexyphenidyl. However, their modest benefits are often offset by side effects such as impaired memory, confusion, hallucinations, constipation, dry mouth and impaired urination.

Doctors may prescribe amantadine alone to provide short-term relief of symptoms of mild, early-stage Parkinson's disease. It may also be given with carbidopa-levodopa therapy during the later stages of Parkinson's disease to control involuntary movements dyskinesia induced by carbidopa-levodopa.

Deep brain stimulation involves implanting an electrode deep within your brain. The amount of stimulation delivered by the electrode is controlled by a pacemaker-like device placed under the skin in your chest. A wire that travels under your skin connects the device to the electrode.

Deep brain stimulation. In deep brain stimulation DBS, surgeons implant electrodes into a specific part of your brain. The electrodes are connected to a generator implanted in your chest near your collarbone that sends electrical pulses to your brain and may reduce your Parkinson's disease symptoms.

Your doctor may adjust your settings as necessary to treat your condition. Surgery involves risks, including infections, strokes or brain hemorrhage.

Some people experience problems with the DBS system or have complications due to stimulation, and your doctor may need to adjust or replace some parts of the system. Deep brain stimulation is most often offered to people with advanced Parkinson's disease who have unstable medication levodopa responses.

DBS can stabilize medication fluctuations, reduce or halt involuntary movements dyskinesia, reduce tremor, reduce rigidity, and improve slowing of movement. DBS is effective in controlling erratic and fluctuating responses to levodopa or for controlling dyskinesia that doesn't improve with medication adjustments. However, DBS isn't helpful for problems that don't respond to levodopa therapy apart from a tremor.

A tremor may be controlled by DBS even if the tremor isn't very responsive to levodopa. Although DBS may provide sustained benefit for Parkinson's symptoms, it doesn't keep Parkinson's disease from progressing. Because there have been infrequent reports that the DBS therapy affects the movements needed for swimming, the Food and Drug Administration recommends consulting with your doctor and taking water safety precautions before swimming.
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If you've received a diagnosis of Parkinson's disease, you'll need to work closely with your doctor to find a treatment plan that offers you the greatest relief from symptoms with the fewest side effects. Certain lifestyle changes also may help make living with Parkinson's disease easier.

While no food or combination of foods has been proved to help in Parkinson's disease, some foods may help ease some of the symptoms. For example, eating foods high in fiber and drinking an adequate amount of fluids can help prevent constipation that is common in Parkinson's disease. A balanced diet also provides nutrients, such as omega-3 fatty acids, that might be beneficial for people with Parkinson's disease.

Exercising may increase your muscle strength, flexibility and balance. Exercise can also improve your well-being and reduce depression or anxiety. Your doctor may suggest that you work with a physical therapist to learn an exercise program that works for you. You may also try exercises such as walking, swimming, gardening, dancing, water aerobics or stretching. Parkinson's disease can disturb your sense of balance, making it difficult to walk with a normal gait.

Exercise may improve your balance.


