CONDITION

Secondary parkinsonism

Secondary parkinsonism is a group of movement problems caused by medicines, toxins, brain injury, or another medical condition.

WHAT IT IS
Parkinson-like movement problems caused by another condition

BODY SYSTEM
Nervous system

MAIN SYMPTOMS
Slowness, stiffness, tremor, balance or walking problems

WHAT CAUSES IT
Medicines, toxins, brain injury, or other medical conditions

HOW IT IS DIAGNOSED
Neurological examination and tests for the suspected cause

MAIN TREATMENT
Treating the cause, rehabilitation, and symptom-relieving medicines

CAN IT BE CURED?
Sometimes - reversible causes may resolve

IS IT AN EMERGENCY?
Sometimes - sudden stroke signs require emergency care

LONG-TERM OUTLOOK
Improvement or lasting disability based on the cause

Overview

Secondary parkinsonism is a condition that causes movement problems similar to those of Parkinson's disease. These problems include slowed movement, muscle stiffness, shaking, and difficulty with balance or walking.

"Parkinsonism" is the name for this pattern of symptoms. "Secondary" means that it results from an identifiable cause, such as a medicine, toxin, stroke, head injury, or another condition affecting the brain.

Secondary parkinsonism is not the same as Parkinson's disease. Parkinson's disease is a progressive neurological disease linked to the loss of brain cells that make dopamine, a chemical involved in controlling movement. In secondary parkinsonism, something else interferes with the brain's movement systems.

Finding the cause matters because some forms can improve when the cause is removed or treated. Others result from permanent brain damage and may cause lasting symptoms. Treatments used for Parkinson's disease do not always work as well for secondary parkinsonism.

Symptoms

The key symptom is bradykinesia , meaning movement becomes slower and smaller. Everyday tasks such as getting dressed, turning in bed, or rising from a chair may take longer.

Other symptoms can include:

The pattern can give clues about the cause. Medicine-induced symptoms often affect both sides of the body, although this is not always the case. Parkinsonism related to blood vessel damage may mainly affect the legs, causing short steps, freezing, and poor balance.

Symptoms that begin suddenly, progress in steps, or occur soon after starting or increasing a medicine are less typical of Parkinson's disease. Early falls, major memory changes, urinary problems, or weakness may also suggest another cause. These features cannot confirm the cause on their own.

- Muscle stiffness or resistance when moving an arm or leg
- Shaking, usually called tremor
- Short, shuffling steps or difficulty starting to walk
- Reduced arm swing while walking
- Poor balance, unsteadiness, or falls
- A softer voice or less facial expression
- Difficulty with fine movements, such as fastening buttons
- Trouble swallowing or managing saliva

Causes and risk factors

Several types of brain injury or disruption can produce secondary parkinsonism.

Medicines are a common cause. Medicines that block dopamine can interfere with movement control. These include some antipsychotic medicines and certain medicines used for nausea or digestive symptoms. Some other medicines have also been associated with parkinsonism.

Do not stop a prescribed medicine suddenly. Stopping or changing it without guidance may cause withdrawal symptoms or allow the condition it treats to worsen.

Other causes include:

Risk factors relate to the underlying cause. They may include using a dopamine-blocking medicine, working around specific toxins without adequate protection, repeated head trauma, or having conditions that increase the risk of stroke.

Some people who develop symptoms while taking a medicine have underlying Parkinson's disease that had not yet become noticeable. The medicine may reveal, rather than fully cause, their symptoms.

- Multiple small strokes or long-term damage to small brain blood vessels
- Carbon monoxide, manganese, or certain other toxic exposures
- Repeated head injuries or a severe traumatic brain injury
- Brain tumours or other structural pressure on movement pathways
- Infections or inflammation involving the brain
- Lack of oxygen to the brain, such as after cardiac arrest
- Normal pressure hydrocephalus, a build-up of fluid in brain cavities
- Certain metabolic conditions, including disorders that affect copper storage

Diagnosis

There is no single test that confirms every form of secondary parkinsonism. Diagnosis combines a neurological examination with a search for the underlying cause.

A clinician will ask when the symptoms began, how quickly they changed, and whether both sides are affected. A complete list of prescription medicines, non-prescription products, and recent medicine changes is important. Questions may also cover strokes, head injuries, infections, work exposures, and possible carbon monoxide exposure.

During the examination, the clinician may assess walking, balance, muscle tone, tremor, eye movements, strength, reflexes, and the speed of repeated movements.

Tests are chosen according to the suspected cause. They may include:

A dopamine transporter scan shows whether certain dopamine-producing nerve endings are reduced. It may help separate some medicine-induced cases from degenerative parkinsonism, but it does not identify every cause or replace a clinical assessment.

Improvement after a suspected medicine is safely withdrawn can support the diagnosis. This improvement may take weeks or months, so an immediate change is not expected.

- MRI or CT imaging to look for strokes, fluid build-up, tumours, or injuries
- Blood or urine tests for metabolic conditions or toxin exposure
- Tests of memory, thinking, speech, or swallowing
- A dopamine transporter scan in selected cases
- Spinal fluid testing when infection or inflammation is suspected

Treatment and management

Treatment focuses on the underlying cause while helping you maintain movement, communication, safety, and independence.

If a medicine may be responsible, the prescriber may gradually reduce it, replace it, or adjust the treatment plan. The safest choice depends on why the medicine was prescribed. Symptoms do not always disappear after the medicine is stopped.

Other causes may need specific treatment. For example, care may involve reducing future stroke risk, treating an infection, stopping exposure to a toxin, or relieving pressure caused by fluid build-up. A structural brain problem may require specialist assessment or surgery.

Medicines used for Parkinson's disease, such as levodopa, may be tried in some cases. They are more likely to help when the dopamine system is affected, but the response in secondary parkinsonism is often limited or unpredictable.

Rehabilitation can be central to treatment:

Regular activity suited to your abilities can help preserve strength and mobility. If balance is affected, an assessment can help you choose safer forms of exercise.

Treatment may also address pain, constipation, sleep problems, low mood, anxiety, or memory changes. These symptoms may come from the underlying condition, reduced mobility, or medicine effects.

- Physiotherapy can work on strength, flexibility, walking, and fall prevention
- Occupational therapy can help with dressing, bathing, work, and home adaptations
- Speech and language therapy can address a quiet voice or swallowing problems
- Walking aids may improve stability when selected and fitted correctly

Complications

Balance and walking problems can lead to falls and injuries. Freezing, where the feet briefly feel stuck to the floor, may make doorways, turns, and crowded spaces difficult.

Swallowing problems can cause weight loss, dehydration, or food and liquid entering the airway. This can lead to aspiration pneumonia, a lung infection caused by material entering the lungs.

Reduced mobility may contribute to muscle weakness, joint stiffness, pressure injuries, constipation, and loss of independence. Speech changes can make communication harder even when thinking remains clear.

Some underlying causes also affect bladder control, mood, memory, or decision-making. Complications are not inevitable, and early rehabilitation or practical changes may reduce their impact.

Prevention

Secondary parkinsonism cannot always be prevented. A stroke, brain infection, or structural condition may occur despite reasonable precautions.

Some causes may be partly preventable. Helpful measures include using potentially responsible medicines only as prescribed and having them reviewed when new movement symptoms appear. Never change them without speaking with the prescriber.

Workplace protection can reduce exposure to manganese and other neurological toxins. A working carbon monoxide alarm can help detect this colourless, odourless gas. Appropriate protective equipment can lower the chance of head injury during sports, work, or cycling.

Managing blood pressure, diabetes, cholesterol, smoking, and other vascular risks may reduce the chance of further strokes. It cannot reverse brain damage that has already occurred.

Living with it and what to expect

The course of secondary parkinsonism is tied closely to its cause.

Medicine-induced parkinsonism may improve over weeks or months after the medicine is safely changed. Some people have persistent symptoms, particularly if the medicine revealed underlying Parkinson's disease or if the movement system was already vulnerable.

Parkinsonism caused by strokes often affects walking and balance more than the hands.

Symptoms may remain stable for a time, worsen gradually, or change in steps if further strokes occur. Preventing additional vascular injury is an important part of long-term care.

Symptoms related to normal pressure hydrocephalus may improve after treatment that drains excess fluid, although the response is not guaranteed. Parkinsonism caused by infection, oxygen loss, toxins, or head injury may leave lasting problems if brain tissue has been damaged.

Routine follow-up may include reviewing medicines, checking walking and swallowing, assessing falls, and adjusting rehabilitation or equipment. New symptoms should be discussed rather than assumed to be part of the condition.

Some people remain independent with minor adjustments. Others need help with personal care, mobility, transport, or medication management. Planning ahead for changes at home or work can make daily life safer without removing more independence than necessary.

Driving ability is based on symptoms rather than the diagnosis alone. Slowed reactions, freezing, poor vision, sleepiness, or thinking changes may affect safety. A formal driving assessment may be useful when there is uncertainty.

When to get medical help

Arrange a routine appointment if you develop ongoing slowness, stiffness, tremor, shuffling steps, or repeated balance problems. Seek a review if symptoms appear after a medicine is started or changed, but keep taking it unless you are told otherwise.

Contact a clinician promptly for:

Call emergency services for sudden facial drooping, arm or leg weakness, trouble speaking, loss of vision, or a severe new balance problem. These may be signs of a stroke.

Emergency assessment is also needed for severe muscle rigidity with fever, confusion, heavy sweating, or reduced alertness, especially after a medicine change. Sudden breathing difficulty, repeated choking, or possible carbon monoxide exposure also requires immediate help.

- Increasing falls or a sudden decline in walking
- Coughing, choking, or a wet-sounding voice during meals
- Unexplained weight loss or difficulty taking enough fluids
- New confusion, hallucinations, or marked daytime sleepiness
- Symptoms that are progressing faster than expected

Common questions

Is secondary parkinsonism the same as Parkinson's disease?

No. They can cause similar movement problems, but secondary parkinsonism has another identifiable cause. Parkinson's disease is a progressive neurological disease. Sometimes the distinction only becomes clear after follow-up and testing.

Can secondary parkinsonism go away?

It can improve or resolve when the cause is reversible, such as a medicine effect or treatable fluid build-up. Recovery may take months. Symptoms caused by permanent brain injury may remain.

Which medicines can cause parkinsonism?

Medicines that block dopamine are the main concern. These include some antipsychotic and anti-nausea medicines. The risk differs between medicines and people. Do not stop one suddenly; ask the prescriber to review it.

Does levodopa work for secondary parkinsonism?

It helps some people but is generally less reliable than it is for Parkinson's disease. The response depends on which parts of the brain have been affected. A supervised trial may sometimes help guide management.

Is secondary parkinsonism inherited?

Secondary parkinsonism itself is usually not inherited. Rare inherited metabolic conditions can produce parkinsonism, but most cases are linked to acquired causes such as medicines, strokes, toxins, or injuries.

Can I still drive with secondary parkinsonism?

Possibly, if your movement, alertness, vision, and thinking remain safe for driving. Freezing, slow reactions, sleepiness, or cognitive changes may make driving unsafe. Local reporting and licensing rules apply.

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