



BREATHING

The Parkinson's Plot Twist

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Have you ever felt short of breath from just crossing the room or even while sitting at rest? Maybe you have noticed it feels difficult to take a deep breath. Could this be related to Parkinson's disease (PD)?

Trouble breathing is not usually the first thing people think of when it comes to Parkinson's. The first step is always to rule out other causes by having your heart and lung function checked. People with PD can still develop health issues that are not related to PD. But if other causes are ruled out, PD itself can sometimes contribute to breathing difficulties. Let us go over some of the more common issues that

might happen and then we will talk about what can be done to help manage them.

So, what is going on?

Dopamine helps all muscles move smoothly, not just the big ones in your arms, legs, or core. Think about all the muscles involved in breathing: the chest wall, the muscles between the ribs, and the diaphragm all play a key role. When the brain does not have enough dopamine, these muscles do not work as efficiently.

Common Respiratory Issues in Parkinson's:

Restrictive Respiratory Dysfunction:

Basically, means your breathing muscles have become slower or stiffer, so your lungs can not fill up as much as they normally would. On top of that, things like a stooped posture, head drop, leaning to one side, or bending at the waist can make it even harder to take a full breath.

Shortness of Breath (Dyspnea):

People often describe it as a tight feeling in the chest, like you just can not get a deep breath or that breathing suddenly takes a lot more effort. It can show up when you are resting or when you are active, like during exercise or any more demanding activity. Sometimes it happens when medication is “wearing off,” meaning symptoms start creeping back before the next dose. The breathing muscles can get stiff or not work smoothly, which leads to that shortness of breath. Anxiety, another common symptom of PD, can make the whole thing feel even worse.

Respiratory Dyskinesia:

Dyskinesia is involuntary muscle movement. This can happen to larger muscle groups in the body and can also impact the muscles that help with breathing. Respiratory dyskinesia looks like irregular, rapid breathing and is often linked to when levodopa medications reach their peak effect. You might be experiencing uncontrolled or ‘surprising’ sharp breaths in or out.

Fluctuations in the effectiveness of levodopa tends to happen more frequently the longer a person lives with PD and can contribute to dyskinesia. Something to keep in mind is that the irregular breathing that occurs with respiratory dyskinesia can raise your risk of choking or inhaling food or liquids. If trouble breathing involves severe confusion, dizziness, loss of consciousness or causes significant fear or anxiety, it is crucial to seek medical advice immediately.

Upper Airway Obstruction (UAO):

We mentioned earlier the importance of the neck and throat muscles in breathing. When these muscles are affected by a lack of dopamine, upper airway obstruction (UAO) can happen. Symptoms can include hypophonia (a soft or quiet voice), a shaky voice, stridor (noisy or rattly breathing), or wheezing, sometimes caused by a narrowed airway.

There are two main types of UAO1:

1. Respiratory flutter – This is like a resting tremor in the airway and leads to a partial reduction in airflow. It can feel like a trembling or vibrating feeling when you breathe in. It can also feel like breathing that comes in quick little bursts or pulses.
2. Intermittent airway closure – In this type, irregular, jerky movements of the vocal cords and surrounding muscles (including some involved in swallowing), can temporarily

block the airway. It feels like your breathing gets blocked for a moment, like a doorway suddenly closing and then reopening. It can cause short pauses in breathing, gasping, coughing, or a feeling of tightness that comes and goes.

Phlegm buildup and impaired coughing (dystussia):

Parkinson's can also cause a buildup of phlegm and mucus due to less effective swallowing, coughing, and clearing of the throat. This can make it feel like you need to clear your throat or cough more often; your voice might feel wet or “gurgly.” It is important to see a specialist (respiratory or speech therapist) to address this to reduce the risk of aspiration and aspiration pneumonia.

Sleep Apnea:

Parkinson's can be associated with sleep apnea, a disorder where breathing stops and starts during sleep, leading to low oxygen levels. Again, the muscles in the neck and throat can be affected by a drop in dopamine levels, notably at night when medications may be wearing off.

Aspiration Pneumonia:

People with PD are at higher risk of pneumonia, particularly aspiration pneumonia, where food or liquid enters the lungs. This happens when the protective mechanism, the epiglottis (that dangly bit at the back

of the throat), fails to block the trachea (windpipe) during swallowing. You might have heard someone say: “it went down the wrong pipe.” The inhaled material can carry bacteria, leading to lung infections.

What can help?

Breathing exercises. Strengthen and stretch your chest muscles, intercostal muscles (muscles between the ribs) and diaphragm to help increase lung capacity.

- Belly breathing (consciously breathing into your stomach to stretch and strengthen your diaphragm).
- Triple-part breathing: Sip your breath in three parts with a pause at the top of the inhale. Exhale slowly and divide the exhale into three parts.
- Box breathing – Inhale 4 counts, hold 4 counts, exhale 4 counts, hold 4 counts.

Being mindful of posture: Doing exercises to make sure your posture is straight, and shoulders are not curving in around our chest cavity. The stooped posture makes it much harder for your lungs to fill with air as it shrinks the space available for the lungs to inflate.

Medication adjustments: Your health care provider (typically your neurologist) will assess if there is a need to adjust levodopa dosages/timings or add a medication like a COMT inhibitor or amantadine to help manage respiratory dyskinesia.

Managing anxiety through counseling therapy and/or prescribed medication. This can help manage breathing difficulties tied to anxiety. You can speak to your doctor to see if prescription medication is appropriate for you or reach out to a local therapist to discuss if counseling is a good fit for you.

Respiratory therapists and speech-language pathologists: They can help you strengthen respiratory and swallowing muscles, improve your breathing patterns and airflow control, and teach you strategies to reduce the risk of complications like aspiration and pneumonia. Ask your doctor for a referral to access one of these specialists.

EMST device (Expiratory Muscle Strength Trainer) This is like a tiny gym for your lungs. It is a small device that helps strengthen muscles to improve breathing, cough, swallowing, and speech by creating

resistance when breathing out of the device. There are also inspiratory (inhale) attachments available. It is adjustable so you can change the resistance throughout your training. You can purchase these online or at medical supply stores. You can ask your speech or respiratory therapist for instructions and there are also detailed training videos available online to teach you how to use one.

Sleep Apnea machine to help make sure you get enough oxygen at night. It is often called a Continuous Positive Airway Pressure (CPAP) machine. The process to get one starts with an assessment by a healthcare provider for diagnosis and then referral for a sleep study. After receiving a prescription for the device, you can purchase through a retailer, and coverage may be available through insurance. Many CPAP providers also offer payment plans to make the cost more manageable.

Experiencing respiratory issues can be distressing and navigating them starts with identifying what is occurring. You are not alone if you are experiencing respiratory changes in Parkinson's' and most importantly support exists to help you feel more like you. ■

References:

1 Respiratory dysfunction in Parkinson's disease: a narrative review. (2020) European Respiratory Review (ERS) Publications. Retrieved from: <https://publications.ersnet.org/content/erjor/6/4/00165-2020?implicit-login=true%26843>

Diagram retrieved from JNP Journal of Neurophysiology <https://journals.physiology.org/doi/full/10.1152/jn.00363.2021>

