MERCOLA
Take Control of Your Health

Smoking and Lung Conditions Increase Risk of Dysfunctional Breathing

Analysis by Dr. Joseph Mercola | December 24, 2025

STORY AT-A-GLANCE

- More than one in 10 adults experience dysfunctional breathing symptoms like air hunger and chest tightness, even without having diagnosed lung disease
- People who currently smoke, or have a history of smoking and respiratory illness, face a dramatically higher risk of developing dysfunctional breathing patterns
- Dysfunctional breathing leads to overuse of neck and chest muscles, creating tension, fatigue, and shallow breathing that feeds a vicious cycle of stress and exhaustion
- Poor breathing habits interfere with heart function by reducing heart rate variability and disrupting the body's natural balance between oxygen and carbon dioxide
- Smoking worsens immune function, promotes oxidative stress, and triggers long-term biological changes that increase your risk for cancer, chronic illness, and dysfunctional breathing

Dysfunctional breathing refers to abnormal or erratic breathing patterns that disrupt normal respiration, and is characterized by symptoms like chest tightness, air hunger, dizziness, palpitations, and breathlessness — even in the absence of exertion or confirmed lung disease. This condition mimics other serious illnesses but often gets missed because it flies under the radar of standard medical testing.

You might think these breathing problems only show up in people with severe lung disease or hospitalizations, but the opposite is true. According to a recent study, those who smoke or have smoked cigarettes before are far more likely to experience dysfunctional breathing — providing yet another reason why tobacco use is one of the most damaging habits for your health.

Smoking and Respiratory Disease Create a Breeding Ground for Dysfunctional Breathing

A recent study out of Osaka Metropolitan University, published in Respiratory Investigation, examined over 29,000 people in Japan to better understand just how common dysfunctional breathing really is, and what makes it worse. While dysfunctional breathing is often associated with asthma or chronic obstructive pulmonary disease (COPD), this research took it a step further.

The researchers also investigated how tobacco use influences this already underdiagnosed problem in everyday people, not just those in clinical care.[1,2]

- **Researchers designed the study as a cross-sectional online survey —** They used the Nijmegen Questionnaire, which is one of the most widely used tools to detect abnormal breathing symptoms like breathlessness, chest tightness, and dizziness. The researchers wanted to identify who's at risk, what conditions were linked to dysfunctional breathing, and how smoking played into the picture.

- **The results —** About 11% of all the respondents showed signs of dysfunctional breathing. That means more than one in 10 people may be walking around misdiagnosed or totally unaware that their symptoms are coming from a dysfunctional breathing pattern.

- **The researchers noted that those with any type of lung-related condition had a higher risk —** People with asthma, COPD, or a history of bronchitis or pneumonia had significantly higher odds of dysfunctional breathing symptoms.

- **However, smoking also emerged as a major trigger —** The researchers reported that people who currently smoked had significantly higher rates of dysfunctional breathing compared to those who had never smoked or had quit. What's more, smoking combined with any existing lung condition increased the risk even more dramatically.

- **The study also uncovered a surprising association with non-respiratory disorders —** Individuals with epilepsy or a past stroke were found to be more likely to have dysfunctional breathing symptoms. These connections suggest the problem is much more systemic than previously thought, and that dysfunctional breathing isn't just a lung issue — it might be a nervous system issue, a recovery issue, or even an energy regulation issue, depending on what's happening in the body.

The research team's use of multivariate logistic analysis (a method that looks at multiple overlapping risk factors) showed just how interconnected smoking, disease history, and breathing dysfunction are. If you've ever smoked and have a history of respiratory illness, your chances of having dysfunctional breathing symptoms are higher.

The study closes with a strong call to the medical community: Dysfunctional breathing needs to be on the radar of primary care physicians, not just lung specialists. This shift in awareness could mean fewer prescriptions, fewer dead-end diagnoses, and far more relief for the people who are silently struggling to breathe right every day.

> *"DB remains poorly understood by healthcare professionals worldwide; accordingly, it is frequently underdiagnosed and misdiagnosed in clinical practice ...*
>
> *Our findings suggest that DB may be common in primary clinical settings and the need to increase awareness among medical professionals. Current tobacco use in individuals with respiratory comorbidities could contribute to an increased prevalence of DB,"* the authors concluded.

How Dysfunctional Breathing Impacts Your Body and Mind

Dysfunctional breathing is an often misunderstood and frequently misdiagnosed respiratory condition characterized by irregular, inefficient, or inappropriate breathing patterns. Unlike respiratory diseases rooted in structural abnormalities or clear physiological dysfunction, DB is largely considered a psychophysiological disorder — meaning it arises from the intricate interplay between body and mind.

Although it affects people of all ages and backgrounds, dysfunctional breathing remains widely overlooked in clinical settings. As a result, many individuals experience persistent and distressing symptoms without receiving proper diagnosis or effective treatment.

A recent narrative review published in the Jornal Brasileiro de Pneumologia explored the wide-ranging effects of dysfunctional breathing, aiming to address why it remains underdiagnosed and misunderstood despite being common in both healthy individuals and those with chronic illnesses. This research reviewed multiple studies that covered everything from breathing muscle function to how your heart reacts when your breathing becomes irregular, painting a clearer picture of why this matters for your overall well-being.[3]

- **The review looked at adults across a broad age range —** These included both those with known physical conditions like asthma and those with DB symptoms but without any diagnosed disease. One of the review's striking findings was how often DB goes hand in hand with anxiety, depression, and poor quality of life. The researchers said that DB isn't simply a matter of breathing wrong — it's a complex physiological and psychological interaction with deeper implications.

> *"DB induces significant changes in the respiratory rate, breath-holding time, and depth of breathing that are primarily mediated by current or previous traumatic experiences or psychological conditions (e.g., anxiety). These symptoms may also occur chronically, which leads to deterioration of the QoL [quality of life] of the individual."*[4]

- **The link between breathing muscles and posture —** According to the review, in people with DB, the body often compensates by relying heavily on the accessory muscles of respiration. These include muscles in your chest, shoulders, and neck, which are not typically used during normal breathing. This overuse happens especially in stressful situations, leading to chronic tension, muscle fatigue, and even physical discomfort in those areas.

  Interestingly, the researchers pointed out that during stress, the body shifts from relaxed, deep belly breathing to shallow chest breathing. This switch restricts diaphragmatic movement and increases breathing effort. Over time, this results in what they call "thoracic dominant breathing," which is a hallmark sign of DB. This maladaptive pattern can lead to chronic breathlessness and further entrench poor breathing habits.

- **The researchers point out the domino effect —** Stress leads to chest breathing; chest breathing leads to poor oxygen exchange and tension; the tension feeds back into stress. For someone experiencing this cycle, even minor exertion might feel overwhelming, which can discourage physical activity and spiral into anxiety about breathing itself.

Dysfunctional Breathing Alters Heart Function and Drains Your Energy

The review also highlights that normal, slow, controlled breathing promotes something called respiratory sinus arrhythmia (RSA), a healthy fluctuation in heart rate that reflects good nervous system balance. But when breathing becomes erratic or rapid, as it often does in DB, this natural synchronization between heart and breath breaks down.

This leads to reduced heart rate variability (HRV), a measure often used to gauge the health of the autonomic nervous system. A lower HRV is associated with worse outcomes in many chronic conditions, from heart disease to kidney failure.

"Low HRV has been associated with negative prognostic indicators in a number of patient populations (e.g., patients with COPD and patients on hemodialysis)," the researchers said. *"Accordingly, given the well-established synchrony between the respiratory and cardiovascular systems, it is likely that, in patients with DB, cardiovascular activity is atypical (e.g., an altered pattern of arterial blood pressure and HRV)."*[5]

- **In dysfunctional breathing, the culprit appears to be hyperventilation —** This refers to breathing too fast or too deeply, which throws off the carbon dioxide balance in your body. That imbalance causes blood vessels to constrict, reducing blood flow to your brain and triggering symptoms like dizziness, blurred vision, and even fainting.

- **The review also notes that people with DB use more energy just to breathe, even when resting —** This inefficiency is driven by two factors: increased muscle work and a tendency to breathe more than necessary, especially when upright. One study in the review found that patients with hyperventilation syndrome had lower expired CO_2 levels and higher ventilation rates when standing, compared to healthy people.

- **What does this mean for you?** Imagine your body acting like it's running a marathon, even while sitting still. Over time, this could lead to fatigue, reduced stamina, and even avoidance of physical activity — all of which worsen health outcomes. For those who already have conditions like asthma, this added burden can accelerate disease progression.

The review also noted that these energy and ventilation imbalances aren't well researched yet, but they could be a missing piece in understanding why some people feel exhausted despite "normal" medical test results. This suggests a need for more personalized assessments that go beyond standard lung function tests.

Beyond Dysfunctional Breathing — The Devastating Biological Effects of Smoking

The Japanese study highlighted one important point — smoking is clearly a significant risk factor in the development of dysfunctional breathing, as it exacerbates the respiratory symptoms and underlying comorbidities associated with this disorder. However, DB is just one of the many effects associated with smoking; in fact, tobacco causes devastating changes to your biology that allow diseases to thrive and cut your life short.

- **When tobacco smoke enters your lungs, it sets off a cascade of damage —** Immune cells, such as **macrophages and T lymphocytes**, lose their ability to function properly, making you more vulnerable to infections and chronic inflammation. Over time, this compromised immunity creates a breeding ground for serious diseases, including lung cancer and COPD.

- **Smoking also triggers the production of reactive oxygen species (ROS) —** These are highly reactive molecules that lead to cellular damage. Smokers have significantly elevated levels of ROS, which leads to oxidative stress — a condition where your body's antioxidants are unable to neutralize harmful free radicals. Oxidative stress not only accelerates tissue damage but also weakens immune responses, creating a dangerous loop of damage and immune suppression.[6]

- **Smoking also drives cancer growth —** In one study published in Cancer Discovery, researchers examined how **chemicals in cigarette smoke drive pancreatic cancer growth** by changing the behavior of your immune system. They found that smokers build up more regulatory T cells, which shut down natural anti-cancer immunity and make treatment outcomes worse.[7]

- **Secondhand smoke is just as dangerous —** Tobacco smoke doesn't just harm the smoker; in fact, those in the immediate vicinity, many times partners and children, also fall victim to the damaging effects of this habit. According to the U.S. Centers for Disease Control and Prevention (CDC), every year secondhand smoke causes 7,300 deaths due to lung cancer and 34,000 deaths from heart disease.[8]

- **Vaping is NOT a safe alternative —** E-cigarette manufacturers continue to tout their products as a safer alternative to cigarettes, but nothing could be further from the truth. In fact, research has now linked this habit to multiple health problems like a higher COPD risk, gum problems and oral disease, and organ damage, including your brain, lungs, and arteries.

Start by Fixing How You Breathe

If dysfunctional breathing is leaving you tired, breathless, or anxious — even when your lungs are technically "fine" — then addressing the source of the problem is non-negotiable. You don't need another inhaler or vague reassurance. You need a clear, actionable path to retrain your breath and take back control over your body.

If you're a smoker or former smoker, this is especially urgent. Smoking isn't just damaging your lungs; it's rewiring your breathing system in harmful ways that keep your body stuck in stress mode. To get lasting relief, you need to interrupt that cycle at the source. Here's how I recommend you start:

1. **Quit smoking today —** If you're still smoking, this is the first and most important thing to change. Tobacco not only inflames your airways but also trains your body to adopt dysfunctional breathing patterns that are harder to reverse the longer you wait. You might already feel chest tightness, shallow breathing, or lightheadedness — all signs of disrupted breathing rhythm. Quitting immediately lowers your body's need to compensate, giving your respiratory system a chance to recalibrate.

   Don't underestimate the power of quitting even after years of smoking. Your lungs begin healing almost immediately, and within weeks, your breathing muscles regain efficiency. This one decision unlocks the rest of your healing process. For more tips on quitting smoking, read "Quitting Smoking Linked to Slower Memory Decline in Midlife and Older Adults."

2. **Rebuild your natural breathing pattern, starting with the diaphragm —** Most people with DB breathe using their chest and shoulders instead of their diaphragm. If you've been under stress, injured, or smoke, chances are your diaphragm isn't doing its job well. Here's how to fix that: Lie on your back, place one hand on your belly and one on your chest, and breathe in through your nose. Only the hand on your belly should rise. Practice this for five minutes a day.

   This trains your nervous system to shift back into the rest-and-digest state, helping your breath slow down naturally. It also brings more oxygen to your tissues while reducing unnecessary muscular effort.

3. **Stretch and release the overworked muscles that are hijacking your breath —** If you're someone who feels tension in your shoulders, neck, or chest, your body's backup breathing muscles are overdoing it. You're likely using them more than your diaphragm without even realizing it.

   To start loosening their grip on your breathing, I recommend gentle daily stretching, such as chin-to-chest for the neck, doorway chest stretches, and shoulder rolls. This reduces muscle fatigue and helps shift the breathing workload back to where it belongs — your core.

4. **Stop breath-holding and overbreathing and find a natural rhythm —** Many people with DB unknowingly hold their breath during concentration or anxiety, which starves your brain of oxygen and worsens symptoms like dizziness or panic. Others breathe too quickly or too deeply, a pattern known as hyperventilation. These patterns throw off your carbon dioxide balance, which affects everything from blood flow to mental clarity.

   The fix? Start using a gentle "box breathing" method — Inhale for four counts, hold for four, exhale for four, and hold for four. This resets your CO_2 balance and trains your brain to stop treating daily life like an emergency.

5. **Track your triggers and progress —** If you're unsure what sets off your breathlessness or discomfort, keeping a daily log can make a huge difference. Track your symptoms, what you were doing before they started, and whether you felt stressed, tired, or were smoking or vaping. This builds awareness and gives you something to measure your improvements against.

   As your breath retraining becomes more natural, you'll see fewer episodes of air hunger, fewer dizzy spells, and a more grounded sense of calm in both your mind and your body.

Frequently Asked Questions (FAQs) About Dysfunctional Breathing

Q: What is dysfunctional breathing, and why does it matter?

A: Dysfunctional breathing is when your breathing pattern becomes irregular or inefficient, causing symptoms like chest tightness, air hunger, dizziness, or fatigue even when your lungs are "normal." It matters because it drains your energy, stresses your nervous system, and often gets misdiagnosed as asthma, anxiety, or heart trouble.

Q: How does smoking increase the risk of dysfunctional breathing?

A: Smoking irritates your airways, disrupts normal breathing rhythms, and forces your body into shallow chest breathing. The research shows current smokers have significantly higher rates of dysfunctional breathing, and the risk skyrockets when smoking occurs alongside asthma, bronchitis, pneumonia, or COPD.

Q: Can dysfunctional breathing affect people without lung disease?

A: Yes. The studies show dysfunctional breathing also shows up in people with conditions like epilepsy or past strokes, and even in healthy adults who've never been diagnosed with any respiratory illness. Stress, trauma, posture issues, and nervous system imbalance all contribute.

Q: How does dysfunctional breathing affect the rest of my body?

A: Poor breathing reduces heart rate variability, alters blood flow to the brain, increases muscle tension in the neck and chest, and forces your body to spend more energy just to breathe. This leads to fatigue, dizziness, anxiety, and reduced stamina — even when tests say your lungs look fine.

Q: What can I do to retrain my breathing and feel better?

A: Fixing the root causes gives you the fastest relief: Quit smoking, rebuild diaphragmatic breathing, release overworked neck and chest muscles, stop breath-holding or overbreathing, and track your triggers in a daily log. These steps help restore your natural rhythm, reduce symptoms, and calm your nervous system.

Sources and References

- [1] Respiratory Investigation, November 2025, Volume 63, Issue 6, Pages 1377-1382
- [2] News-Medical.net, November 25, 2025
- [3, 4, 5] J Bras Pneumol. 2019 Jan-Feb;45(1):e20170347
- [6] International Journal of Environmental Research and Public Health May 21, 2018, 21;15(5):1033
- [7] Cancer Discov. 2025 Sep 4
- [8] CDC, January 31, 2025