

# Clearing the Way: Understanding Mucus Plugs and AER-01 Clinical Trials



## Living with COPD:

Chronic Obstructive Pulmonary Disease (COPD) is a long-term lung disease that makes it hard to breathe. Common symptoms include coughing, wheezing, and shortness of breath. For many people, these symptoms continue even while taking inhalers or other prescribed treatments. One reason symptoms may persist is the build-up of thick, sticky mucus in the lungs – sometimes called **mucus plugs**.

## What Are Mucus Plugs?

Normally, the mucus in the lungs help to trap dust, germs, and particles that we inhale every day, so they can be cleared away to keep our lungs healthy. In COPD, this mucus can become thick and hard to move. When this happens, it may block airways and make breathing more difficult.

Mucus plugs can contribute to:

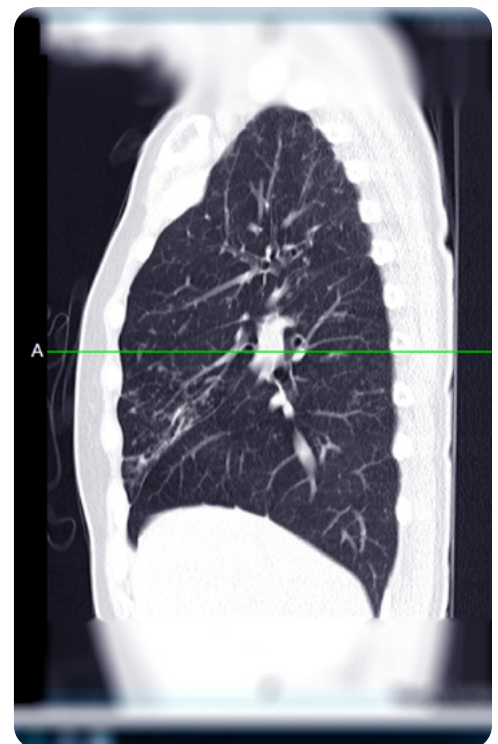
- Increased shortness of breath
- More frequent flare-ups (exacerbations)
- Greater risk of hospital visits
- Reduced quality of life

## How Do I Know If I have Mucus Plugs in My Lungs?

Doctors cannot usually detect mucus plugs with a stethoscope or routine exam. Instead, they may use:

- **CT scans of the chest:** Lung imaging can be used to identify whether mucus is blocking parts of the lungs. CT scans are less invasive than other forms of direct observation like bronchoscopy.
- **Breathing tests (like spirometry):** Can show signs of obstruction that may be linked to mucus.
- **Symptom history:** Frequent flare-ups, persistent breathlessness, or a cough that doesn't clear much mucus can suggest plugging.

These tools help doctors determine whether mucus plugs could be contributing to symptoms.



“Clinical trials aren’t just about testing a new treatment. They’re also an opportunity to help researchers and doctors better understand COPD and improve care for everyone living with the disease.”

— Irina Gitlin, PhD.  
VP, Research and Development,  
Aer Therapeutics



## How Are Mucus Plugs Treated?

Traditional treatments, like bronchodilators, corticosteroids, and biologics, are important for managing COPD but **do not directly remove mucus plugs**.

Aer Therapeutics is developing **AER-01**, an investigational therapy (still being studied in clinical trials) designed to rapidly break down thick mucus and help clear mucus plugs from the lungs. Unlike treatments that focus only on inflammation or on relaxing the airways, AER-01 works by targeting the mucus directly. Early research suggests that AER-01 may:

- **Work within minutes to loosen mucus.**
- **Be generally well-tolerated without common side effects of older drugs.**
- **Support the effectiveness of other COPD treatments by clearing the way for inhalers and medicines to reach deeper into the lungs.**

Because AER-01 is still in clinical trials, it is not yet approved for general use.

## How Do Clinical Trials Work?

Normally, clinical trials are carefully monitored research studies that test new treatments in people. They are reviewed by independent ethics boards to ensure safety of the treatment and protect participants’ rights. Clinical trials move through several phases:

**Phase 1:** Tests safety and dosage in small groups of healthy volunteers, or sometimes in patients.

**Phase 2:** Looks at how well the treatment works in patients with the disease and determines the optimal dose for the best treatment effect.

**Phase 3:** Confirms benefits in larger groups and compares to standard care or to a placebo.

**Phase 4:** Follows approved treatments for long-term safety.

## The AER-01 Clinical Trial:

Aer Therapeutics is currently conducting a **Phase 2a clinical trial** in Australia, New Zealand, and the United Kingdom. This study focuses on patients with **moderate-to-severe COPD who are likely to have mucus plugs**.

Researchers are studying whether AER-01, when inhaled using a nebulizer once a day for 28 days, can:

- **Clear mucus plugs from the lungs.**
- **Improve lung function and breathing capacity.**
- **Reduce COPD symptoms such as coughing and chest tightness.**

Participants in the AER-01 clinical study receive regular health assessments at no cost—including CT lung scans, breathing tests, medical check-ups, and monitoring—provided by a specialized study team. Volunteers may also be eligible for compensation to help cover their time and travel.

In addition to contributing to research, volunteers gain valuable insights into their own lung health through study visits and evaluations, and may have early access to a potential new therapy that could improve care for them or others in the future.

If you live in Australia, New Zealand, or the United Kingdom, you may be eligible to participate in the clinical trial. To learn more about Aer Therapeutics and our research, visit: [www.aertherapeutics.com](http://www.aertherapeutics.com).



## Questions and Answers:

**Q: What are mucus plugs?**

**A:** In COPD, mucus can become thick and sticky. When it blocks the airways, it's called a mucus plug. These plugs can make breathing harder, cause flare-ups, and increase hospital visits.

**Q: Why don't current treatments clear mucus plugs?**

**A:** Inhalers, steroids, and biologic medicines help reduce inflammation and open airways, but they do not directly remove mucus plugs.

**Q: What is AER-01?**

**A:** AER-01 is an investigational therapy (still in clinical trials) designed to break down thick mucus so it can be cleared from the lungs. AER-01 comes as a solution that is inhaled using a nebulizer. It is not yet approved for general use.

**Q: What is a clinical trial?**

**A:** A clinical trial is a carefully monitored study that tests new treatments in people to make sure they are safe and effective.

**Q: Where is the AER-01 trial taking place?**

**A:** Aer Therapeutics is currently running a Phase 2a trial in Australia, New Zealand, and the United Kingdom for patients with moderate-to-severe COPD who are likely to have mucus plugs.

**Q: Why should I participate in a clinical trial?**

**A:** Patients may get early access to potential new treatments and help researchers learn more about improving care for people with COPD.

**Q: How can I support my lungs today?**

**A:** Stay hydrated, take medications as prescribed, avoid smoking and irritants, and discuss your symptoms regularly with your doctor.

**Q: Where can I learn more?**

**A:** Visit [www.aertherapeutics.com](http://www.aertherapeutics.com) or talk with your healthcare provider about clinical trial options.

## Next Steps

Patients interested in clinical trials with AER-01 can contact Aer Therapeutics at [clinical@aertherapeutics.com](mailto:clinical@aertherapeutics.com).