

What is popcorn lung, a rare condition caused by vaping? Know signs and symptoms

Vaping can expose one to a mix of harmful chemicals and flavouring which can seriously damage lung health. All you want to know about popcorn lung.



Popcorn lung, or bronchiolitis obliterans, is a rare lung disease that harms the small air sacs and passages in the lungs, known as bronchioles(Freepik)

Vaping may seem like a less harmful substitute to traditional smoking, but it can cause serious damage to the lungs. Unfortunately, e-cigarettes are gaining popularity with each passing year among youth, a disturbing trend which can wreak havoc with people's lungs. Vaping can expose one to nicotine, ultrafine particles, flavourings such as diacetyl, cancer-causing chemicals, heavy metals such as nickel, tin, and lead, which can be harmful to [respiratory health](#). Popcorn lung, or bronchiolitis obliterans, is a rare lung disease, which can cause damage to the tiny airways in lungs and can lead to scar tissue formation, blocking airways. People with this condition have symptoms like coughing, wheezing and shortness of breath. There is no cure to popcorn lung as the damage done to lungs cannot be reversed but the symptoms can be managed, and further damage can be prevented. (Also read: [Indians suffered worse post Covid lung damage than others, says study: how to improve lung function](#))

What is popcorn lung?

"Popcorn lung, or bronchiolitis obliterans, is a rare lung disease that harms the small air sacs and passages in the lungs, known as bronchioles. This damage causes the formation of scar tissue, which can block the airways and make it hard to breathe. This condition gained attention when it was associated with workers in a microwave popcorn plant, particularly those involved in flavouring the popcorn. Also vaping is another important cause along with other conditions like connective tissue diseases. important component linked to the development of bronchiolitis obliterans has been found as the inhalation of diacetyl, a chemical used to provide a buttery flavour," says Dr Arunesh Kumar, Sr Consultant & Head - Respiratory Medicine, Paras Health, Gurugram.

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"As e-cigarette usage continues to rise, it can cause various lung diseases, including bronchiolitis obliterans (BO) or popcorn lung. You will be shocked to know that diacetyl found in e-cigarettes can lead to inflammation and permanent scarring in the airways, resulting in breathing difficulties related to popcorn lung. This is how vaping can further impact your lungs. Lipoid pneumonia caused by vaping is different from typical pneumonia and happens when fatty acids enter the lungs

instead of an infection. Inhaling oily substances from e-liquid triggers inflammation in the lungs, and one may experience symptoms such as persistent cough, difficulty breathing, and coughing up blood or blood-tinged mucus. Primary spontaneous pneumothorax, or collapsed lung, occurs when there is a hole in the lung that allows oxygen to leak out. Smoking and vaping have been linked to an increased risk of rupturing these blisters, leading to lung collapse," says Dr Samir Garde, Director of Dept of Pulmonology and Lung Transplant, Global Hospitals, Parel.

When heated and inhaled, diethyl has been related to lung damage to the tiny airways, which can result in scar tissue formation and subsequent airway blockage. Although popcorn lung is uncommon, those who have it may experience severe symptoms like coughing, wheezing, and shortness of breath.

Who's at risk?

People who might get popcorn lung include those around diacetyl or other harmful chemicals, those who had a lung transplant, those with serious respiratory infections, and those with autoimmune diseases, says Dr Arunesh.

Dr. Ashish Kumar Prakash, Consultant, Respiratory & Sleep Medicine, Medanta, Gurugram shares the common causes of popcorn lung:

Chemical exposure: Inhaling harmful chemicals is the primary culprit. Diacetyl, once used in buttery flavourings, was initially the main concern. However, other chemicals like acetaldehyde, formaldehyde, and acrolein, found in various settings like food processing, chemical manufacturing, and e-cigarette vaping, can also contribute.

Inflammatory response: Sometimes, lung inflammation triggered by various factors, including chemical exposure or autoimmune diseases, can damage and scar the small airways over time, leading to popcorn lung.

What are the signs and symptoms of popcorn lung?

"The symptoms of BO such as coughing, wheezing, chest pain, and shortness of breath can be managed with appropriate treatments. It is important to consult the doctor on noticing the symptoms without any delay. Lipoid pneumonia caused by vaping is different from typical pneumonia and happens when fatty acids enter the lungs instead of an infection. Inhaling oily substances from e-liquid triggers inflammation in the lungs, and one may experience symptoms such as persistent cough, difficulty breathing, and coughing up blood or blood-tinged mucus. Primary spontaneous pneumothorax, or collapsed lung, occurs when there is a hole in the lung that allows oxygen to leak out. Smoking and vaping have been linked to an increased risk of rupturing these blisters, leading to lung collapse," says Dr Samir.

According to Harvard Health, the common symptoms of popcorn lung include wheezing, shortness of breath, and coughing that is not related to an asthma attack or cold. These sensations often get worse with time and can get worse while you're physically active. Early detection of these symptoms is essential for an efficient diagnosis and course of care.

Diagnosis

Dr Ashish says early diagnosis is crucial for managing popcorn lung effectively.

Doctors typically consider:

Medical history and physical examination: Discussing symptoms and potential exposure to harmful substances.

Lung function tests: Measuring lung capacity and airflow to assess lung function.

Forced oscillometry (FOT) or Impulse oscillometry is also one of the new diagnostic modalities to find out the small airway disease.

Imaging tests: Chest X-rays or CT scans to visualize potential abnormalities.

Bronchoscopy: Inserting a flexible tube with a camera through the airways to examine and collect tissue samples for biopsy.

Treatment or management of popcorn lung

Dr Arunesh says popcorn lung can be managed with various methods from drugs to oxygen therapy.

- Anti-inflammatory drugs like prednisone to reduce swelling.

- Breathing aids through inhalers, like albuterol.
- Oxygen therapy.
- In very severe cases, a lung transplant might be considered, but it's only recommended as a last resort.

"When it comes to treating vaping-related conditions such as popcorn lung, early detection and intervention are crucial. While there is no specific cure for popcorn lung, treatment options focus on managing symptoms and preventing further damage. In severe cases, lung transplantation may be considered as a last resort. One promising approach in the treatment of popcorn lung is pulmonary rehabilitation, which includes exercise, education, and emotional support to improve lung function and overall quality of life. Avoiding exposure to harmful chemicals found in e-cigarettes and other vaping products will prevent further damage to the lungs. It is important to be aware of the potential risks associated with these products and seek medical help if they experience any respiratory symptoms. By prioritizing lung health and making informed choices about vaping habits, one can reduce their risk of developing popcorn lung and other serious health complications," says Dr Garde.

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<https://www.hindustantimes.com/lifestyle/health/what-is-popcorn-lung-a-rare-condition-caused-by-vaping-know-signs-and-symptoms-101708668571913.html>