WHAT IS POPCORN LUNG?

"Popcorn lung" is the nickname for bronchiolitis obliterans. That's a condition that damages your lungs' smallest airways and makes you cough and feel short of breath. It's sometimes caused by breathing in a chemical used to flavor microwave popcorn. But other chemicals or lung illnesses can also cause popcorn lung.

Your lungs are where your blood picks up oxygen before carrying it to cells in the rest of your body. When you breathe in, air flows into your lungs through your windpipe, or trachea. Your windpipe divides into two tubes called the bronchi, which lead to your left and right lungs.

Inside your lungs, those tubes split again and again, like the branches of a tree. The smallest of those branches are called bronchioles, and they end in tiny air sacs called alveoli. The alveoli are where the oxygen is picked up by your blood.

When you have "popcorn lung," those tiny air passages get irritated and inflamed. That leads to scarring that makes them narrower. That makes it harder for you to get enough air.

What Causes Popcorn Lung?

The chemical that gave this condition its nickname is diacetyl. After workers at a factory that packaged microwave popcorn were found to have bronchiolitis obliterans more often than other people, some companies stopped using diacetyl as a flavoring. But it's still used in some electronic cigarette flavors in the US. Many e-cigarette makers state they aren't using this chemical in their products and its use in e-cigarettes is banned in Europe.
Another common cause is acetaldehyde, a chemical found in the smoke from marijuana and some electronic cigarettes. Acetaldehyde also can damage the lining of your mouth, throat, and stomach.

Other chemicals that can cause popcorn lung include:

- Metal oxide fumes, a common byproduct of welding
- Formaldehyde, a cancer-causing chemical used in some glues and building materials
- Sulfur dioxide, a pollutant released by burning fossil fuels
- Ammonia
- Chlorine
- Nitrogen oxides
- Hydrochloric acid
- Sulfur mustard, a chemical weapon known as "mustard gas"

Popcorn lung causes lasting damage, so it's important to catch it early. If you do, you might be able to slow it down or keep it from getting worse.
© 2021 WebMD, LLC. All rights reserved.

A NEW AND UNIQUE HAZARD TO CONSUMERS

The e-cigarette/lithium-ion battery combination presents a new and unique hazard to consumers. No other consumer product places a battery with a known explosion hazard such as this in such close proximity to the human body. It is this intimate contact between the body and the battery that is most responsible for the severity of the injuries that have been seen. While the failure rate of the lithium-ion batteries is very small, the consequences of a failure, as we have seen, can be severe and life-altering for the consumer.
Responsible battery and e-cigarette manufacturers are working hard to develop remedies for the known lithium-ion battery failures. Indeed, good and successful solutions have been put into production by responsible manufacturers. Unfortunately, the manufacturers cannot control what modifications are made by the consumer, or what replacement battery is installed into the e-cigarette by the consumer. The impact of safety features on consumer safety can be dampened by consumer behavior.

Lithium-ion batteries should not be used in e-cigarettes. While the number of batteries that explode and catch fire is statistically small, the catastrophic nature of the injuries that can occur warrants the use of another battery technology for e-cigarettes. As long as lithium-ion batteries continue to be used in e-cigarettes, severe injuries will continue to occur. As the number of e-cigarettes in use increases, the number of severe injuries from lithium-ion battery explosions and fires will likely continue to increase.

Suppliers, industry associations, user groups, and fire prevention educators should all stress the importance of using UL-listed devices and proper charging practices to reduce the number of incidents. Stronger warnings in the literature and user manuals may be helpful.