

SESSION 3: PRE-EXISTING HEALTH CONDITIONS

PRE-EXISTING CONDITIONS THAT CAN INCREASE THE RISK OF ADVERSE HEALTH OUTCOMES

For most healthy individuals, bioaerosols cause few adverse health effects because their immune systems can protect them from infectious particles. However, exposure to bioaerosols can cause acute (short-term) and chronic (long-term) adverse health effects and diseases in individuals who suffer from pre-existing conditions and allergy.

There are many different types of conditions that can cause a person to be at a higher risk from serious illness from exposure to bioaerosols, and it would take too much space to name them all. We can, however, widely group these conditions into the following:

Respiratory conditions

Some people suffer from respiratory conditions that may make them more at risk of serious illness after inhaling particles. These conditions include asthma, chronic obstructive pulmonary disease (COPD), cystic fibrosis, chronic bronchitis, and emphysema. All these conditions affect a person's ability to breathe normally and can be genetic or develop over a person's lifetime. Because their immune response is already modified, exposure to particles in bioaerosols can make people with these conditions more susceptible to infections, allergies or a worsening of their symptoms, which, in some cases, can be life-threatening.

Infections



When someone is ill from a respiratory infection such as a cold or flu, this can affect their immune system. Because the immune system is already working hard to try and get rid of one infection, this means the infected person is more susceptible to further infection and complications after being exposed to bioaerosols. For example, someone who has flu may be at risk of also catching COVID-19, which could lead to life-threatening health problems.

Immune-compromised individuals

There are certain conditions, diseases, and medication that cause some people's immune system to stop functioning properly, placing them at more risk from catching infections. Immune-compromising conditions include HIV, AIDS, and immune-deficiency disorders. People who are going through cancer treatment, organ transplant or have autoimmune diseases are also likely to be taking medication that suppresses the immune system, putting them more at risk.



Other conditions and lifestyle factors



There are a wide range of conditions and lifestyle factors that affect individuals, and some can increase the risk of illness from exposure to bioaerosols. These include heart disease and diabetes, as well as lifestyle factors such as malnutrition, smoking, alcohol consumption, and obesity.