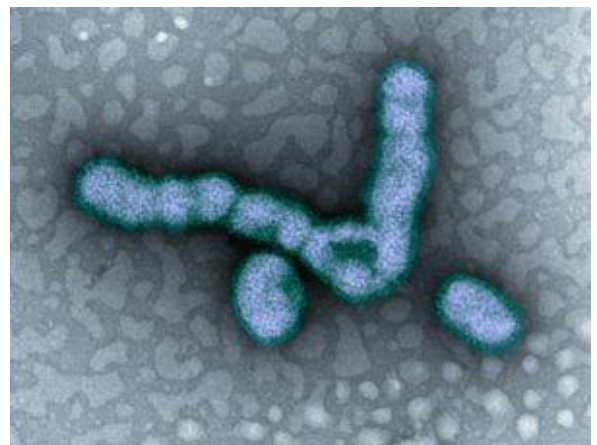
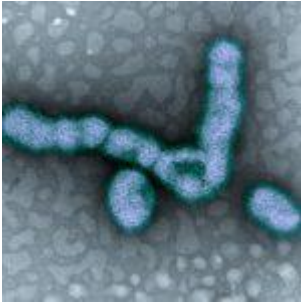


Asthma increases susceptibility to influenza



H1N1 influenza virus particles (NIAID, Wikimedia Commons)

Researchers, led by Phillip Monk, have found that having asthma increases susceptibility to influenza infections. This phenomenon is due to people with asthma have a reduced immune response.

Influenza still causes major health problems for people around the world, despite the fact that there is a influenza vaccine. Individuals with lung disease have been shown to have increased morbidity and mortality caused by influenza.

People with asthma have been found to be more susceptible to influenza. However, studies have also shown that people without asthma are more likely have severe symptoms and die from influenza than individuals with asthma.

Before this study, it was still unclear why individuals with asthma are generally more susceptible to viral infections. The immunosuppressive role of inhaled corticosteroids (ICSs) which are taken by asthma patients is also not well understood in the context of influenza susceptibility. Therefore, the authors compared both susceptibility and inflammatory responses directed towards the influenza virus in asthma patients treated with ICSs and controls.

The researchers took lung samples from the participants and exposed them to the influenza virus. They then analysed how the samples reacted to the infections. The researchers found that there was no difference in epithelial cell infection between the asthma patients and controls. However, there was significantly less viral shedding in asthma patients. T cell activation and certain chemokines and proinflammatory cytokines were much lower in asthma patients. The asthma patients had lower levels of CXCL-10 which implied that they had deficient innate immune responses.

This study shows that ICS-treated individuals with asthma had decreased immune responses to influenza. The study is limited in that the findings did not determine the impact of ICSs on this reduced response to viral infections.

Journal article: [Nicholas et al., 2017. Susceptibility to influenza virus infection of bronchial biopsies in asthma. *Journal of Allergy and Clinical Immunology*](#)

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