**Health Risk Of Pneumonia with Air Pollution**

A case study was done to find the correlation between long-term exposure to air pollution and the risk of hospitalization with community-acquired pneumonia (CAP) in people who were 65 years or older in Ontario, Canada.[[1]](#footnote-1) The study used 345 hospitalized patients and 494 control cases, and was carried out between 2003 and 2005, measuring exposure between 1-2 years, which is considered long-term.

Their findings showed that there is independent association between NO2 and PM2.5 and cases of hospitalization from CAP. These two pollutants do not only make it worse for people who already have the disease but they also cause it. For instance nitrogen dioxide impairs the function of alveolar macrophages and epithelial cells, thereby increasing the risk of lung infections such as influenza, which can predispose to causative bacterial agents of pneumonia such as Pneumococcus.

SO2 was not seen to have any direct association with pneumonia. This study however, only studied people 65 years and older and cannot therefore be used to say if these findings apply to younger age groups.

Another study was done in two neighborhoods in two neighborhoods in Quito, Ecuador[[2]](#footnote-2) to test the correlation between air pollution and pneumonia hospitalization in children. The subjects were children aged between 18-42 months. One of the neighborhoods ha higher pollution rates than the other. It was observed that there were more cases of hospitalization in the area with higher pollution. Of the 22 cases of hospitalizations from pneumonia, 15 came from the more polluted region. These children who were affected were observed to have lower oxygen saturation. Air pollution is shown to be responsible for increased morbidity and mortality from respiratory diseases.

Several other studies have been done in different areas to show how air pollution contributes to various respiratory diseases including pneumonia and it can be concluded that different air pollutants affects the respiratory system leading to infections or worsening and triggering existing conditions. Reduction of air pollution has been shown to lower such infections and even increase life span especially for children and older people.

1. <http://www.atsjournals.org/doi/pdf/10.1164/rccm.200901-0160OC> [↑](#footnote-ref-1)
2. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3223143/> [↑](#footnote-ref-2)