

Living in damp river valleys leads to lung problems

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Amsterdam, The Netherlands: A new study has shown that living in a river valley at low altitude can increase the risk of developing lung problems.

The research will be presented tomorrow (25 September 2011) at the European Respiratory Society's (ERS) Annual Congress in Amsterdam. The ERS Congress will officially open today (24 September 2011).

In the first study of its kind, researchers from the UK aimed to assess the impact of weather, pollution and geography on the symptoms of people with [chronic obstructive pulmonary disease](#) (COPD). This is the first evidence to find a link between increased [respiratory symptoms](#) and lower altitude areas of river valleys.

River valleys are typically damp areas in which cool layers of air get trapped below layers of warmer air. Known as a temperature inversion, this leads to mists and fogs which keep suspended droplets of water in the air, causing humid conditions.

Over the course of a year, daily respiratory symptoms of 52 people with COPD were monitored. The frequency of symptom exacerbation was then compared with the altitude and how close the subjects lived to the river, as well as with selected weather and pollution variables. These variables included humidity, temperature and dew point, which is the temperature below which [water droplets](#) begin to condense and dew can form.

To measure the impact of these factors, the researchers compared their data with the average number of exacerbations and the usual symptoms experienced by all participants.

The results demonstrated that there were a number of links between the [weather conditions](#) in a river valley and an exacerbation of COPD symptoms. The findings revealed that patients experienced a higher frequency of COPD [exacerbations](#) the lower the altitude they lived at, and symptoms were also exacerbated by [high humidity](#) and low dew point.

The authors conclude that [lung problems](#) can be heightened due to the unique climate in a river valley. The suspended droplets of water in the air retain particles and pollutants, leading to adverse symptoms.

Prof Richard Lewis, one of the lead authors from the Worcestershire Acute Hospitals NHS Trust, said: "Our study is the first to assess the impact that living in a [river valley](#) has on the symptoms of COPD patients. As a result of this unique combination of weather and climate, toxic particles and pollutants – which would otherwise be small enough to be inhaled but subsequently exhaled – become attached to droplets and are then retained within the lung causing exacerbation of symptoms."

Provided by European Lung Foundation

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