

## HELSINGIN SANOMAT INTERNATIONAL EDITION - HOME

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### Finnish study links child asthma with structural dampness in buildings

A fresh study by the Environmental Health section of the National Public Health Institute shows a strong link between asthma in children and dampness in the building structures of the home.

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According to an article in the upcoming edition of the *European Respiratory Journal*, at least one in ten, and possibly as many as one in five cases of asthma among children are linked with water damage in the building.

**The onset of asthma** is the result of the cumulative effect of many factors. Nevertheless, in the 1990s there was a rapid increase in cases of asthma in Finland, as well as an increase in damage caused by dampness in buildings.

More recently, cases of asthma have declined.

The prognosis for young children being treated for asthma is quite good; many are completely cured.

When the small children involved in the study were diagnosed with asthma, two building engineers were sent to the home to look for signs of dampness: leaks of water and stains they may have left behind, discolouration in building materials, flaking paint on walls, fungal odour, or visible fungus.

The engineers also visited the homes of children in a control group. These children, who did not have asthma, were of the same age as the ones who did, living in the same kinds of buildings and in the same area.

**It was found that the homes** of children with asthma were more likely to have windows that fogged up in cold weather, as well as humidifiers and supplementary heaters.

Dampness and visible fungus in living areas had a significant correlation with the frequency of asthma; fungus in cellars and saunas, where children spend less time than in their bedrooms, were less significant.

The researchers recommended that closer attention be paid to the planning, implementation, and maintenance of buildings.

The degree of the damage also affected the risk of illness. The more serious the damage, the greater the danger that a child might come down with asthma.

The mechanism that leads to the onset of the disease is not known, but materials damaged by dampness and fungus put out particles similar to microbes and spores, as well as even smaller fragments.

It has been estimated that between 84 and 95 per cent of fungus spores and 27 to 46 per cent of

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fragments can end up in the lungs, and it is believed that the fragments can get into the lower respiratory tracts of small children more easily than that of others, according to laboratory nurse **Aino Nevalainen** and researcher **Anne Hyvärinen** in an article in the Finnish medical journal *Lääkärilehti*. Nevalainen and Hyvärinen conducted the new study along with research professor **Juha Pekkarinen**.

**Dust mites are not seen** to be major culprits. Researchers note that there are few dust mites in Finnish homes and that they emerge irregularly, because indoor air tends to be dry most of the year.

Dust mites were as common in the beds of children without asthma as in those of children who have the disease.

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