

# FOCUS ON RESEARCH

## **RANDOMISED CONTROLLED TRIAL TO EVALUATE THE EFFECT OF DOMESTIC MECHANICAL HEAT RECOVERY VENTILATION ON ASTHMA CONTROL OF PATIENTS ALLERGIC TO THE HOUSE DUST MITE**

### **Researchers**

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### **Aim**

To find out if improving the ventilation of homes can lower humidity enough to reduce the levels of house dust mites and give adults with allergic asthma better control of their symptoms.

### **Project Outline/Methodology**

House dust mite allergy is commonly associated with asthma in the UK. A warm, humid environment favours the growth of the house dust mite population. However, humidity can be reduced by improving ventilation in the home. 120 home ventilation units (called mechanical heat recovery ventilation or MHRV units) were installed in the homes of people with asthma who were allergic to house dust mites. 60 MHRV units were switched on at the beginning of the study and the other 60 remained off to allow the 2 groups to be compared. The families involved did not know if their MHRV unit was on or off! All homes had house dust mite control measures at the beginning of the study: steam cleaning of carpets and new bedding and mattress covers. The main measurement of asthma control, called peak flow, was a simple breathing test that patients could do at home. This was done using a hand-held device that measured how easily they could breathe.

### **Key Results**

After 12 months there was a significant improvement in the evening peak flow rate in the group of patients who had the MHRV unit switched on. They also had fewer admissions to hospital for asthma. However, the study did not show any significant improvements in other assessments of asthma control including the morning peak flow rate, the amount of asthma medication used, scores in questionnaires of asthma symptoms, or in specialised breathing tests. The MHRV units although effective in reducing humidity in bedrooms, particularly in the winter did not reduce house dust mite levels compared to the control group.

### **Conclusions**

The addition of mechanical heat recovery ventilation to conventional house dust mite eradication strategies did not achieve a reduction in house dust mite levels, but did improve some indices of asthma control.

### **What does this study add to the field?**

This is the first large study in the UK which has shown an improvement in some measures of asthma following improved home ventilation. However, the mechanisms accounting for the improvement in asthma control remains to be established.

### **Implications for Practice or Policy**

Improved ventilation of homes of subjects with asthma may have a role in the management of asthma.

### **Where to next?**

Further research is indicated into understanding why asthma control is improved by better home ventilation. It would also be important to know whether the beneficial effect of improved home ventilation helps individuals with non-allergic asthma and children with asthma.

### **Further details from:**

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