

Abstract

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Title: The effect of heating and ventilation on the prevalence of allergies
in children

Diploma work

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Study program: Pharmacy

BACKGROUND: We investigated the protective or risk effects of different ways of heating and ventilation on the prevalence of allergies and their symptoms in children. We found available scientific literature with relation to our theme and compared their and our results.

METHODS: We sent 2793 questionnaires to 69 elementary schools in the Czech Republic. The questionnaires were retrospectively filled in by parents of children from seventh or eighth grade of elementary school. We got back 1697 questionnaires which were statistically evaluated. We focused on the part with the questions about heating and ventilation of children's bedrooms.

RESULTS: Some results have statistical significance. Using central heating in children's bedrooms of 4 and 5-year-old children and gas heating in bedrooms of 6-year-old and older children has adverse effect on the prevalence of allergies. Heating with solid fuels was the risk factor for asthma in children up to the age of 3 years and for eczema in children over the age of 6 years. Floor heating has adverse effect on the prevalence of eczema in 4 and 5-year-old children and on the prevalence of allergic rhinitis during the first year of life. We found the protective effect of direct heaters on the prevalence of allergies especially in children between the age of 4 and 5 years.

Regular ventilation is the risk for prevalence of allergic diseases. Permanent night ventilation in children's bedrooms has adverse effect on the prevalence of asthma and eczema in children between the age of 2 and 5 years and allergic rhinitis in 4 and 5-year-old children. Permanent ventilation before sleep is the risk factor for allergic rhinitis in children during the first year of life.

Similarly, night ventilation at least half of the year has adverse effect on the prevalence of asthma in the first year of life. Permanent ventilation before sleep is the only way of ventilation with protective effect on the prevalence of eczema in children up to the age of 1 year.

CONCLUSIONS: We got several statistically significant results. The impacts of different ways of heating on the allergies in children and regular ventilation during the night and before sleep are worthy of further research.

Key words: allergy, heating, ventilation, asthma, allergic rhinitis, eczema, children