



## Cold-related cardiorespiratory symptoms among subjects with and without hypertension: the National FINRISK Study 2002.

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Abstract:

**BACKGROUND:** Exposure to cold weather increases blood pressure (BP) and may aggravate the symptoms and influence the prognosis of subjects with a diagnosis of hypertension. We tested the hypothesis that subjects with hypertension alone or in combination with another cardiovascular disease (CVD) experience cold-related cardiorespiratory symptoms more commonly than persons without hypertension. This information is relevant for proper treatment and could serve as an indicator for predicting wintertime morbidity and mortality.

**METHODS:** A self-administered questionnaire inquiring of cold-related symptoms was obtained from 6591 men and women aged 25-74 yrs of the FINRISK Study 2002 population. BP was measured in association with clinical examinations. Symptom prevalence was compared between subjects with diagnosed hypertensive disease with (n = 395) or without (n = 764) another CVD, untreated diagnosed hypertension (n = 1308), measured high BP (n = 1070) and a reference group (n = 2728) with normal BP.

**RESULTS:** Hypertension in combination with another CVD was associated with increased cold-related dyspnoea (men: adjusted odds ratio 3.94, 95% confidence interval 2.57-6.02)/women: 4.41, 2.84-6.86), cough (2.64, 1.62-4.32/4.26, 2.60-6.99), wheezing (2.51, 1.42-4.43/3.73, 2.08-6.69), mucus excretion (1.90, 1.24-2.91/2.53, 1.54-4.16), chest pain (22.5, 9.81-51.7/17.7, 8.37-37.5) and arrhythmias (43.4, 8.91-211/8.99, 3.99-20.2), compared with the reference group. Both diagnosed treated hypertension and untreated hypertension and measured high BP resulted in increased cardiorespiratory symptoms during the cold season.

**CONCLUSION:** Hypertension alone and together with another CVD is strongly associated with cold-related cardiorespiratory symptoms. As these symptoms may predict adverse health events, hypertensive patients need customized care and advice on how to cope with cold weather.

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