

Symptoms of chronic bronchitis are associated with lower heart rate variability - SAPALDIA 2 - Swiss cohort study on air pollution and lung diseases in adults

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Background: The autonomic nervous system (ANS) plays a role in regulating airway caliber and may be relevant to the development and treatment of COPD. ANS function is reflected in Heart Rate Variability (HRV). **Aim:** To determine whether symptoms of chronic bronchitis are related to HRV. **Methods:** In 2002, respiratory health was measured by questionnaire and HRV recorded with 24-hour ECG in a general population sample of 1709 adults (50-72 yrs, 49% male). Chronic bronchitis was defined as cough or phlegm during the day or night on most days for as much as three months each year for at least 2 years. Participants with a physician's diagnosis of asthma or wheeze in the last 12 months were excluded from analyses (13%). **Results:** 10% of participants had chronic bronchitis. In regression analysis, after adjusting for sex, age, blood pressure, medication, smoking, month of examination, exercise and alcohol consumption chronic bronchitis was associated with changes in HRV: total power -11.2% (95% CI $-20.6, -0.7$), very low frequency -9.3% (95%CI $-18.8, 1.3$), and ultra low frequency -12.0% (95%CI $-22.1, -0.6$). **Conclusion:** Symptoms of chronic bronchitis are associated with a depression of HRV possibly indicating ANS dysfunction. Submitted on behalf of the SAPALDIA Team.

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