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Title: Change in respiratory symptoms in young adults as they age: European community respiratory health survey 3 (ECRHS 3)

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Body: Aim: To describe change in prevalence of asthma/asthma-like symptoms in European adults over 20 years. Method: In 1991/2, research centres sent a questionnaire to community based samples of adults (20-44yrs) asking about asthma symptoms (ECRHS1). A random sample of responders had clinic-based assessment. In 27 centres (12 countries) these intensively studied adults completed the same postal survey in 2000/2 & 2010/2 (ECRHS 2 & 3). Absolute change in symptoms from ECRHS 1 to 3 was estimated from logistic generalized estimating equations. Inverse propensity weights (for sex, age, smoking & symptoms at ECRHS1) were used to adjust for non-response. Results: Overall, 60.9% (8373/13747) of eligible adults took part in ECRHS3. Response was higher in women, older adults, non-smokers & those without wheeze in ECRHS1. Over the 20 yr period, the prevalence of symptoms fell or changed little but use of treatment for asthma increased.

Change in symptoms ECRHS1-ECRHS3

Symptom	Prevalence (%) at ECRHS1	Absolute change in prevalence (%) over 20 yrs (95% CI)
Wheeze	20.8	-2.0 (-3.1 to -0.9)
Wheeze + SOB	9.6	0.9 (0.0 to 1.7)
Wheeze - no cold	12.5	-1.3 (-2.2 to -0.4)
Woken by chest tightness	12.9	-1.4 (-3.0 to 0.3)
Woken by SOB	5.5	0.9 (-0.2 to 1.9)
Woken by coughing	27.4	0.8 (-0.8 to 2.4)
Asthma attack	3.4	0.7 (0.2 to 1.2)
Use asthma medication	3.4	3.5 (2.8 to 4.1)

This broad pattern was seen in a) most centres b) the first, and the second, 10yrs of follow-up c) men and women d) younger and older participants. Conclusion: In young adults followed from 1992-2012 there was a marked increase in the use of asthma treatment, with a smaller reduction in wheeze and less marked changes in other symptoms.