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Title: Lifetime body shapes and COPD-related symptoms

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Body: Background: Little is known about how body shapes at different stages in life is associated with COPD-related symptoms in a general population. Aim: To examine associations between lifetime body shapes and chronic cough and cough with phlegm. Methods: In the RHINE study (2010-12), 12765 subjects 38-65yrs old answered questions regarding body shapes during childhood, adolescence and adulthood, and respiratory symptoms. We examined body shapes as risk factors for chronic cough and cough with phlegm using logistic regression adjusted for age, smoking habits and education. Results: Obesity was associated with cough with phlegm for men in childhood (OR 8.8 (95%CI 1.3, 60.0) and adolescence (OR 3.6 (95% CI 1.3, 10.2). No associations were found for women. In adulthood, lean body shape was associated with chronic cough in women. Increasing body shape and obesity was associated with both chronic cough and cough with phlegm in both genders, with higher ORs for men.

Adjusted ORs (95% CI) for body shape at time of study and COPD-related symptoms

	Shape #1 (lean)	2	5	6	7	8	9 (obese)
WOMEN							

Chronic cough	1.8(1.0,3.2)	1.3(1.0,1,8)	1.2(1.0,1.4)	1.7(1.4,2.1)	1.8(1.4,2.4)	1.6(1.0,2.7)	2.6(1.2,5.6)
Phlegm	0.9(0.4,1.9)	1.3(0.9,1.8)	1.2(1.0,1.5)	1.5(1.2,1.9)	2.1(1.6,2.9)	2.0(1.2,3.4)	2.6(1.2,5.8)
MEN							
Chronic cough	1.4(0.8,2.5)	0.9(0.6,1.3)	1.0(0.7,1.3)	1.3(1.0,1.7)	1.6(1.2,2.1)	2.3(1.6,3.4)	3.5(1.6,7.6)
Phlegm	1.4(0.8,2.5)	1.0(0.7,1.5)	0.9(0.7,1.2)	1.3(1.0,1.6)	1.5(1.2,1.9)	2.3(1.6,3.2)	5.0(2.4,10.4)

Shape #4 is used as reference, #3 did not differ from the ref. and is excluded

Conclusion: Body shape in adulthood is associated with COPD-related symptoms for both genders. In addition, obesity in childhood and adolescence is associated with COPD-related symptoms for men.