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**Title:** Fixed ratio or lower limit of normal for the FEV1/VC ratio: Relation to symptoms and extended lung function tests

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**Body:** There is no generally accepted agreement on the spirometric definition of chronic obstructive pulmonary disease (COPD). A fixed ratio FEV1/VC <0.7 (FR) or a use of the age-related lower limit of normal for FEV1/VC (LLN) are the most common definitions. We analysed respiratory symptoms and extensive lung function in groups of subjects fulfilling none, either or both of the spirometric criteria for COPD. The study population comprised 450 subjects from a random population sample, who answered a questionnaire on respiratory symptom, underwent spirometry, body plethysmography, measurements of pulmonary reactance (AX) and diffusing capacity for CO (DL,CO). Results:

Symptoms and lung function

	<b>N - never-smokers (n=82)</b>	<b>N - ever-smokers (n=236)</b>	<b>FR+ (n=57)</b>	<b>FR+LLN+ (n=66)</b>
Long-standing cough (%)	10	14	16	26
Dyspnoea on exertion (%)	20	26	38	52
FEV1/VC	0.79 ± 0.05	0.78 ± 0.05	0.68 ± 0.02	0.57 ± 0.08
FEV1 (% pred)	110 ± 16	103 ± 13	93 ± 15	78 ± 18
RV/TLC	96 ± 11	96 ± 13	101 ± 15	108 ± 18
AX (kPa L-1)	0.28 ± 0.38	0.36 ± 0.41	0.52 ± 0.56	0.77 ± 1.3
DL,CO (% pred)	89 ± 16	83 ± 15	79 ± 17	69 ± 20

Values are mean (SD). (N=ratio  $\geq$ 0.7, FR+=ratio $<$ 0.7, LLN+=ratio  $<$ LLN)

For symptoms, there was a significant ( $p<0.05$ ) difference between groups. For FEV1, RV/TLC and DL,CO there was a significant difference between FR+LLN+ and FR+ and between FR+ and normal ever-smokers. Conclusion: Subjects with FEV1/VC $<$ 0.7 had worse lung function and more respiratory symptoms compared to subjects with normal ratio but less impairment and respiratory symptoms compared to subjects with FEV1/VC $<$ 0.7 and  $<$ LLN. Careful evaluation of respiratory symptoms and extensive lung function testing may be warranted if FEV1/VC $<$ 0.7 and  $>$ LLN.