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Title: Lung function in preschool children born very preterm with sleep-disordered breathing

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Body: Background: Children born preterm are reported to snore more frequently than those born at term. Aim: To investigate the association between snoring and lung function at age 5 in a cohort of children born very preterm. Methods: As part of the ACTION Study, all 22-31 wk gestational age (GA) infants discharged from July 2003 to June 2004 and those <28 wk GA discharged between July 2004 and June 2005 in Tuscany (Italy) were invited to measure interrupter resistance (Rint), respiratory resistance at 8 Hz (Rrs8) and respiratory reactance at 8 Hz (Xrs8) at age 5. A validated questionnaire was filled in by parents. Snoring was reported as never, occasional (<once/wk), frequent (1-4 times/wk), or constant (5-7 times/wk). Results: Children enrolled were 194 [median (range) age 5.2 (4.5-7.0) yr, GA 28.1 (23-31) wk]. Rint was performed by 193 children, Rrs8 and Xrs8 by 185. Mean (SD) results by snoring group are reported in the table.

Snoring	Rint KPa.L^{-1}.s	Rrs8 hPa.L^{-1}.s	Xrs8 hPa.L^{-1}.s
never n=100	0.90 (0.21)	8.12 (1.83)	-2.49 (1.15)
occasional n=46	0.91 (0.23)	8.39 (1.80)	-2.75 (1.33)
frequent n=31	0.86 (0.22)	7.78 (1.86)	-2.68 (1.42)
constant n=17	1.01 (0.34)	9.16 (2.21)	-3.00 (1.31)

No difference was found in Rint, Rrs8 or Xrs8 among the first 3 categories of snoring. When comparing those who snored constantly to the other categories grouped together Rint was borderline higher (1.01 vs 0.89 kPa.L^{-1}.s; p=0.062) and Rrs8 was significantly increased (9.16 vs 8.14 hPa.L^{-1}.s; p 0.032), while no difference was found for Xrs8 (-3.00 vs -2.59 hPa.L^{-1}.s; p= 0.191). Conclusion: Children born very preterm

with constant snoring have increased respiratory resistance that can be detected at preschool age using feasible techniques.