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**Title:** LSC 2013 abstract - Volatile organic compounds in day care centers constitute a risk factor for absence due to wheezing

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**Body:** Background: Wheezing episodes could be associated with day care center (DCC) absences, suggesting in these cases a more severe disease. Objectives: To study the association between potential risk factors and DCC due to wheezing. Methods: In the Phase II of ENVIRH study (Environment and Health in children day care centers) were studied 19 DCC from Lisbon and Porto. The selection of schools was accomplished by stratified sampling followed by cluster analysis. An indoor air quality (IAQ) assessment was performed during November and December 2011. A questionnaire (n= 1229) which addressed the DCC absence due to wheezing was distributed. For data analysis, three-level logistic random-intercept models were used. Results: 583 questionnaires were considered in the analysis. From those, 54% concerned to boys. The mean age was 38 months (SD  $\pm$  19 months). In the period of time considered, 82 children (14%) were absent from DCC more than one day due to wheezing. Among several variables under scrutiny, in the multivariable analysis only increments of 100  $\mu\text{g}\cdot\text{m}^{-3}$  of total volatile organic compounds (VOCs) in the classroom (OR: 1.05, CI 95%: 1.01 - 1.09, p = 0.017) and children's age (OR: 0.98, CI 95%: 0.96 - 0.99, p = 0.002) remained significant for absence due to wheezing. Conclusions: Besides children's age, each 100  $\mu\text{g}\cdot\text{m}^{-3}$  increment of VOCs in the classroom raises the chance of being absent due to wheezing by 5%. More attention should be dedicated to IAQ in DCC. Fund: Fundação para a Ciência e Tecnologia – ENVIRH Project PTDC/SAU-ESA/100275/2008.