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**Title:** Multi-symptom asthma (MSA) and comorbidities in a cohort of Italian young asthmatic subjects

Dr. Stefania 32065 La Grutta stefania.lagrutta@ibim.cnr.it MD <sup>1</sup>, Dr. Sara 32066 Maio saramaio@ifc.cnr.it <sup>2</sup>, Dr. Sandra 32067 Baldacci baldas@ifc.cnr.it <sup>2</sup>, Dr. Sonia 32068 Cerrai cerraio@ifc.cnr.it <sup>2</sup>, Dr. Giuseppe 32069 Sarno sarnogiu@ifc.cnr.it <sup>2</sup>, Mr. Francesco 32070 Di Pede dipedef@ifc.cnr.it <sup>2</sup>, Dr. Francesco 32126 Pistelli pistelf@ifc.cnr.it MD <sup>2</sup>, Dr. Laura 32140 Carrozzi carrozzl@ifc.cnr.it MD <sup>2</sup> and Dr. Giovanni 32145 Vieggi viegig@ifc.cnr.it MD <sup>1,2</sup>. <sup>1</sup> Allergologic Pulmonary Pediatrics Unit, CNR Institute of Biomedicine and Molecular Immunology, Palermo, Italy, 90146 and <sup>2</sup> Pulmonary Environmental Epidemiology Unit, CNR Institute of Clinical Physiology, Pisa, Italy, 56126 .

**Body:** MSA was used as indication of disease severity in adult cross-sectional surveys. Aim of our study was to investigate the characteristics of multi-symptom asthma score (MSAs) in a longitudinal survey. A cohort of subjects living in Pisa, Central Italy, was selected, based on subjects included in the IMCA study (2007-2011) who had participated as children either in PISA1 (1985-1988) or PISA2 (1991-1993) previous surveys, making at least two points of data collection available for each subject. All subjects completed self-administered questionnaires on past and current respiratory symptoms, concomitant allergic disease, personal information, smoke/pets exposure, health care utilization, comorbidities. MSAs was defined as reporting "physician-diagnosed asthma", "asthma medication", "attacks of shortness of breath" last 12 months and at least one additional respiratory symptom. The demographic characteristics included 143 children (M=58%; 11.7±3.4yr - PISA1), 179 adolescents (M=55%; 15.9±4.4yr - PISA2), 186 adults (M=56.5%; 34.3±6.2yr - IMCA). MSAs was present in 2.7%, 3.2% and 2.2% of PISA1, PISA2 and IMCA subjects, respectively. 20.7%, 28.5% and 20.7% of asthmatics reported MSAs, despite use of asthma medication, in PISA1, PISA2 and IMCA, respectively. MSAs was associated with rhinitis (p<0.022), eczema (p.<0.001), chronic bronchitis (p<0.023), snoring (p<0.028), and other comorbidities such as hypertension (p<0.063), problems with sleeping through the night (p<0.022). Thus, MSAs is likely to describe an asthmatic population with elevated frequency of comorbidities.