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Oral Presentation

An Easy Clinical Sign to Help with the Screening and Diagnosis of Childhood Obesity. Preliminary Results from the PESCA Study.

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Introduction: Prevention and early diagnosis should be capital tools to cut down childhood obesity epidemic worldwide and probably the best way to avoid the rising rates of related cardiovascular diseases: Hypertension, Type II Diabetes, Metabolic Syndrome, and others. Involving schools, family, and health providers in promoting Physical Activity and healthy Nutrition in children seems to be a main priority in public health. PESCA program, which design was presented in 10th EIP, has begun to work in these two directions in Spain.

Purpose: To present results from a very wide data set from the first-year PESCA study, describing the Orange Skin Sign (OSS) as a clinical exploration tool which may be useful for an easy obesity screening in children and adolescents.

Materials and Methods: Our first-year sample includes 618 children and adolescents (aged 3 to 17, 301 girls) from three schools in Madrid and Toledo. Data were collected from October 17, 2018 to January 29, 2019. There are no inclusion or exclusion criteria, and every student parent had to agree upon participation. Subjects underwent a physical examination, anthropometric measurements, and assessment of body composition and physical fitness: stadiometer, bioimpedance (BIA), and dynamometer. They also carried out a questionnaire on the child's and family's cardiovascular health data. We define "Orange Skin Sign" (OSS) as the abdominal-located cellulitis appearing like an «orange peel» due to underlying fat deposits.

Results: In our cohort of children ages 2.9 to 17, 10.52 % were overweight, and 5.99% were obese. BIA was assessed from primary school second grade (aged 6.9 and older): 16.58% had overfat, and 16.32% had an obese fat percentage. We found that 7.77% had OSS. From those who had OSS, 61.29% were overweight compared to only 8.53% of children without OSS that were overweight (RR = 7.18); Furthermore, 58.62% of children with OSS were obese compared to only 3.87% of obesity among children without OSS (RR = 15.14). When using BIA to assess body composition, we

found that 50% of children with OSS had an overfat BIA; 20.38% of children without OSS had overfat BIA (RR = 2.45); 82.35% of children with OSS had an obese BIA while 13.52% of children without OSS had an obese BIA (RR = 6.08) (Figure 1).

Conclusion: In our cohort, we found a significant relation between the presence of "Orange Skin Sign" in a physical examination and a higher fat average in BIA, and this relationship grows stronger when we take into account BMI. Orange Skin Sign may be used as an easy clinical marker for overweight and obesity diagnosis and screening and in children.