Objective: To study the effect of birth weight (BW) on health status development

Design and Methods: 1015 school children (girls: 475 boys: 540; 11-12 years) participated in a screening for cardiovascular risk factors that took place in the suburban area of Pisa. During the baseline examination, systolic (SBP) and diastolic (DBP) BP, body mass index (BMI) were taken; spirometric function, including forced vitality capacity (FVC), forced expiratory volume in one second (FEV1), forced expiratory ratio (FEV1/FVC x100) and peak expiratory flow (PEF) were measured. The parents were asked to fill in a questionnaire that included demographic data, family history, parent’s weight and height, children’s perinatal measurements (birth weight, birth length and head circumference) and his or her involvement in physical activity (PA).

Results: BW and children’s blood pressure (BP) at baseline examination are not correlated (p 0.1); BW is also unrelated to children’s (p 0.1) and parent’s (p 0.1) BMI; we observed a positive correlation between parental and children’s BMI (paternal BMI p < 0.01 r 0.2; maternal BMI p < 0.001 r 0.4) and a negative correlation between PA and SBP (p < 0.001 r 0.3), DBP (p < 0.001 r 0.4), children’s BMI (p < 0.001 r 0.4). BW and spirometric function are not correlated (p 0.5). Parent’s smoking was additive predictor in children of lower physical activity (p < 0.01); furthermore children’s body mass index (p < 0.001), BP values (p < 0.001) and incidence of asthma (p < 0.02) were significantly greater if parents smoked. Step-wise multiple regression analysis with BP values as dependent variable and children’s, birth’s and parent’s anthropometric measurements, familial history of disease and PA as independent variables showed that PA and children’s BMI were the variables carrying the greatest weight on BP values; furthermore step-wise multiple regression analysis with children’s BMI as dependent variable and birth’s and parent’s anthropometric measurements, familial history of disease and PA as independent variables showed that PA was the variables carrying the greatest weight on children’s BMI.

Conclusions: These findings seem to suggest that 1) the intrauterine environment does not influence BP values, BMI and spirometric function in children; 2) we need to consider others factors to explain the epidemiology of BP levels at the upper limits and asthma in children.

Key Words: Epidemiology, Hypertension, Children