

Health Risk Assessment of Weight Gain and Allergic Rhinitis

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The environment in utero has been suggested to predispose the developing child to allergic disease in later life. However birth weight and allergic diseases relevant evidence is inconsistent. These differences may be modified by factors after birth that exaggerate or moderate the prenatal influence. In this study, we evaluated the relationship between low birth weight and allergic rhinitis, especially focusing on whether it can be modified by growing up Body Mass Index (BMI) during adolescence or not. The study population was a random sample of nation-wide junior high students in Taiwan. We used standardized childhood allergic rhinitis questionnaires to receive samples and collect data and then also link to birth registry information for information validation and further analyses. Birth registry information was based on the birth registration system built and maintained by ministry of Interior, Taiwan. The results showed that adolescents born with low birth weight and growing up with higher BMI during adolescence could have significantly higher risk of developing Allergic Rhinitis (AR), especially potentially causing the highest risk for boys. BMI showed significant interaction with birth status for AR for both genders. Adolescence born with low birth weight, potentially going through overcompensating and later found to be obese appeared to increase the risk of developing AR. Boys potentially showed the highest risk. Further research is suggested.

Keyword: Low Birth Weight, Obesity, Allergic Rhinitis, Gender, Adolescents