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## Ad36 infection can lead to overweight and obesity?

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**Introduction:** Ad36 is the first human adenovirus reported that causes obesity in experimentally infected animals and shows association with obesity in humans. More human studies, all over the world, are related to the relationship between Ad36 infection and obesity, and till now have not been explanatory, studies show contradictory results.

**Aim:** The main aim of our study is to assess the association between Ad36 infection and obesity in high-school students from Eastern Slovakia.

**Methods:** Two hundred and twenty-four randomly selected students (17.72±1.20 years of age, 120 female) from 7 high-schools in Kosice were included in the study. Subjects with secondary causes of obesity were excluded and none were taking medications or had a history of cardiovascular disease. In 224 healthy students, anthropometric parameters, fasting plasma glucose and insulin were measured. Ad36 antibody was detected by ELISA test.

**Results:** No significant differences were found between Ad36 positive and Ad36 negative high-school students in prevalence of obesity (chi-kv: 1.91, p=0.16). Study found no significant differences between high-school students with and without IR in prevalence of Ad36 positivity (chi-kv: 0.66, p=0.41). We confirmed significant differences between Ad36 positive and Ad36 negative in normal weight high-school students (p<0.05, U=2221.50). We also confirmed the high prevalence of overweight and obesity in healthy high-school students (23.66%).

**Conclusion:** The current study shows a possible association between Ad36 infection and the risk of development of obesity in normal weight children and adolescents. Our results do not support that any Ad36 adipogenic adenovirus effect on body composition is operating in human through an insulin-resistance-related mechanism. Further studies in different age groups of children and adults are required to elucidate this biological mechanism of such complex relationship.

### Biography

Alzbeta Tohatyova is currently a PhD student at Medical Faculty, P J Safarik University in Kosice, Slovakia. Her research interests focus on pediatric cardiology and preventive cardiology.

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