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**Title:** Climate change: The impact of different pollen burden on hay fever peculiarities

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**Body:** The aim of the study: To compare hay fever peculiarities and clinical duration in children and adolescents of the same region in the conditions of different pollen burden. Material and methods: the study conducted in seasons of 2010 and 2011. The special allergological questionnaires were completed. Pollen burden count was assessed by the standard method. Correlation between intensity of clinical manifestations and meteorological factors like average temperature, atmospheric moisture capacity and precipitations were determined. Meteorological data were obtained in the Civil Aviation Meteorological Station of Astana airport. Results: We compared two different pollen loads in two consequent pollination seasons of 2010 and 2011. Due to unusually warm April of 2011 with average temperature more than 17oC, a great shift in pollination duration and intensity ascertained. The total pollen load in August 2010 was from 14 to 37 pollen grains per one air liter<sup>3</sup>, whereas in the same period in August 2011 it varied from 31 to 64 pollen grains per one air liter<sup>3</sup>. Totally 467 patients with hay fever were examined. In comparison to 2010, the season of 2011 showed high incidence of firstly diagnosed hay fever cases (36.4% instead of 17.3%, P<0.001) and increase of morbidity rate from 4.3% to 7.4%, (P<0.01) in young age children. Pollen asthma incidence increased from 26.8% to 42.4%, (P<0,001) and the incidence of dermatological symptoms increased from 24.0% to 29.8%, (P<0.05). The consultation rate increased with the atmospheric moisture capacity higher than 42% and with temperature above 31.0oC. Conclusions: Climate change has a great influence on hay fever clinical peculiarities in children and adolescents.