We hypothesized that inconsistent SIgA response to exercise is caused by the different adaptative status of subjects to a cold environment. The purposes of the study were to examine whether moderate-intense exercise in a cold environment decreases SIgA and whether adaptation to a cold environment has any effect on SIgA. Young male skaters, either short track (n=9) or inline (n=10), participated in this study. All subjects cycled for 60 min at 65% VO2max in cold (ambient temperature: 5±1 C, relative humidity 41±9%) and thermoneutral conditions (ambient temperature: 21±1 C, relative humidity 35±5%). Samples of their saliva were collected as follows: before and after 1 hour of environmental exposure; immediately, 30-min, 60-min and 120-min after the exercise. Salivary SIgA and saliva flow rate decreased after the exercise in both groups only in thermoneutral conditions. The SIgA secretion rate did not decrease after moderate-high intensity exercise in a cold environment, and the SIgA response to exercise was not affected by the different adaptative status of subjects to the cold environment.

Keywords: Temperature, Adaptation, Immunology