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"IMMUNE SYSTEM DISEASES IN MEXICAN  
UNIVERSITY ATHLETES",  
has been accepted by FISU Conference Shenzhen  
2011, and participated in the Conference in the  
form of poster presentation.

FISU Conference Organizing Committee  
Of the 26<sup>th</sup> Summer Universiade  
August 13, 2011

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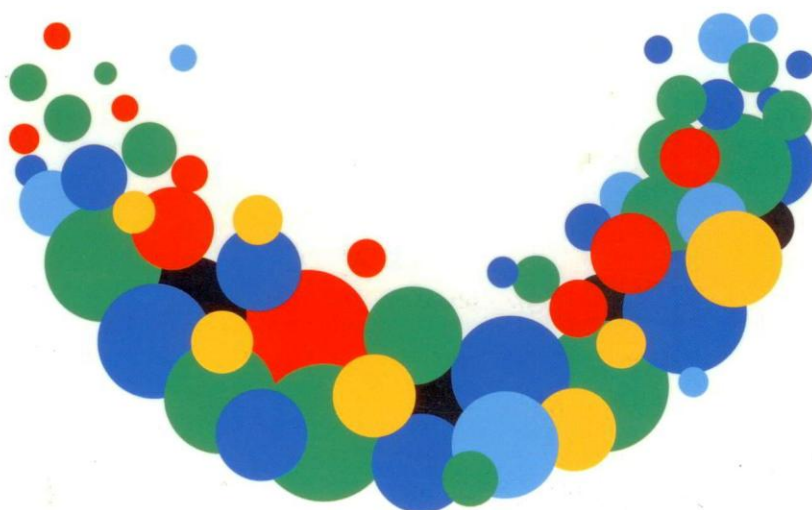


**FISU Conference Shenzhen 2011**

**2011 国际大体联学术大会**

**Proceedings**

**论文集**



**Universiade SHENZHEN 2011**



中国 · 深圳

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## IMMUNE SYSTEM DISEASES IN MEXICAN UNIVERSITY ATHLETES

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Exercise can modulate the human immune and inflammatory states. Most of the reports of the diseases produced by the decline of the immune response after an intense training or after a competition are related to upper respiratory tract infections, even when other causes seem be available, such as gastrointestinal, urinary or skin problems. They also mention that the most vulnerable period could be after one or two weeks following a strong physical activity for example a marathon or a similar event. This is explained because after a prolonged exhausting physical activity, some components of the immune system are suppressed during few hours (one to nine hours), creating a vulnerability state to infections produced of disease-generating microorganisms.

The purpose of this research was to study the incidence of diseases related to the immune system in Mexican university athletes attending the Mexican National Universiade 2010. The employed methodology was the application of a survey by hard copy to assess the incidence of diseases related to the immune system diseases during the past 12 months. 915 athletes participated in this survey ( $M = 21.01$ ,  $SD = 1.96$ ); 53.7% females and 46.3% males, from all 31 states of the Mexican Republic and representing 18 different sports. The surveys showed the incidence of several diseases: *respiratory* (cold, cough, flu, nasal congestion, sinusitis and sore throat); *gastrointestinal* (diarrhea, stomach pain, vomiting, indigestion, gastritis and colitis); *skin* (skin fungus, nail fungus, athlete's foot, cold sore, rashes and skin infections) and *muscle injuries* involving the inflammatory process (muscle tear, muscle pain and muscle strain). The following factors were also determined: Frequency with which these diseases are presented (more than once a month, once a month, more than five times a year, one to four times a year, seldom and never). Stages of the sport process (during training, during competition, after competition and during recovery).

The analysis of multiple answers showed that muscle injury and strain or fatigue are presented with the highest incidence (23.7% and 24.8%, respectively), followed by respiratory diseases (19.7%), gastrointestinal diseases (10.4%), and skin diseases (3.0%). According to their answers, the remaining athletes have not experienced any of these diseases. As to the frequency of these diseases, "one to four times a year" was the most relevant answer (21.6%). "During recovery" was the stage of the sport process with the highest incidence (35.8%).

The findings of this research are: Muscle injuries, related to the inflammatory process, as well as respiratory diseases, are the most frequent (one to four times a year) within a population composed of Mexican university students. These findings are related to the background, which indicates respiratory disease as first incidence and that the time of increased susceptibility to disease is after an intense training or a competition. Diseases related to the immune system occurred most frequently during recovery and resting periods. This study suggests to clinically monitoring athletes training to prevent he survey a decline in his immune response and other markers of overtraining. Using this information, the intensity of the training would be customize in order to prevent the athlete has a disease that reduces its successful in the sport.