



## Exercise Biochemistry Review

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### **Analysis of Body Composition and Body Function of Athletes in Freestyle ski Half-pipe National Team**

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**Objective** The objectives were to analyze the body composition and body functions of the freestyle ski half-pipe national team athletes, to understand the body composition characteristics of the athletes, and to explore the relationship between body composition and body function in the sports program, in preparation for 2022 The Winter Olympics provides a theoretical reference.

**Methods** 9 members of the freestyle ski half-pipe national team were used as subjects (average age  $15.78 \pm 0.97$ , exercise age  $6.38 \pm 2.75$ ), and they were tested and analyzed using an ultrasonic body composition tester and Wingate anaerobic power bike. Body composition test indicators: body fat rate, lean body mass. Body function test indicators: maximum anaerobic power. This paper uses literature, experimental and mathematical statistics. And the mathematical statistics method: using SPSS 2.0 to analyze the data by Pearson correlation.

**Results** 1. The body fat rate of male and female athletes in freestyle half-pipe national team was:  $7.60 \pm 1.16$ ;  $19.75 \pm 1.25$ . The lean body mass of male and female athletes was:  $53.8 \pm 1.85$ KG;  $44.75 \pm 0.62$ KG.

2. The maximum anaerobic power of male and female athletes in freestyle half-pipe national team was:  $453.80 \pm 17.87$ ;  $345.50 \pm 3.01$ .

3. The lean body mass of male athletes was significantly positively correlated with the maximum anaerobic power ( $r=0.995$ ,  $P<0.01$ ). Female athletes' lean body mass was positively correlated with maximum anaerobic power, but not significant.

4. There is no correlation between the body fat rate and the maximum anaerobic power of male and female athletes in the freestyle ski half-pipe national team.

**Conclusions** 1. Freestyle ski half-pipe players have a positive correlation between lean body mass and anaerobic capacity. According to the characteristics of the sports program, the higher lean body weight has a positive impact on improving the athletic ability and thus ensuring the completion of difficult movements.

2. Due to the relationship between athletes' age and sample size, the data in this paper is only a recommended reference for this sports program. It is not applicable to all programs. It is necessary to continue to supplement the data to establish a body composition evaluation system for the freestyle ski half-pipe team.