



### The Effects of Different Intensity Treadmill Exercise to Kidney Functions

Ling Yang<sup>1</sup>, Wen tao Lin<sup>2</sup>, Xi quan Weng<sup>2</sup>

1. ShaoGuan university

2. Guangzhou sport university

**Objective** To provide more scientific and authoritative theoretical basis for body-building exercises after analyzing the changes of exercises of different intensities for the kidney functions.

**Methods** The objects of the research are eight male students from Guangzhou Sport College, being exerted the treadmill exercises according to their own maximum oxygen intake. The intensities of exercises are respectively 55%VO<sub>2</sub>max, 75%VO<sub>2</sub>max, 85%VO<sub>2</sub>max, 95%VO<sub>2</sub>max. The urine 40ml and venous blood 3ml will be collected and tested before sport and 15minutes after the exercises.

**Results** After four different intensities of exercise, the renin of each exercise group increased compared with the quiet value, and the greater the intensity, the more obvious the trend of change. Compared with the quiet value, the expression of angiotensin II increased in all groups after exercise, but there was no significant difference between the 55%VO<sub>2</sub>max intensity group and the 75%VO<sub>2</sub>max intensity group ( $P > 0.05$ ), and there was significant difference between the 85%VO<sub>2</sub>max intensity group and the 95%VO<sub>2</sub>max intensity group ( $P < 0.05$ ). Compared with the quiet value, the expression of aldosterone increased after each exercise. The mean value of 55%VO<sub>2</sub>max intensity group, 75%VO<sub>2</sub>max intensity group and 85%VO<sub>2</sub>max intensity group increased, but the difference was not significant ( $P > 0.05$ ), and the 95%VO<sub>2</sub>max intensity group had a very significant difference ( $P < 0.01$ ). The expression of urine beta 2 microglobulin was compared with the quiet value. There was significant difference in 85%VO<sub>2</sub>max intensity group and 95%VO<sub>2</sub>max intensity group ( $P < 0.05$ ).

**Conclusions** High-intensity exercise causes renal function and body function decline. It is more appropriate to select 75% intensity exercise for body-building.