

EFFECT OF JUMP PERFORMANCE ON DIFFERENT COMPRESSION GARMENTS

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INTRODUCTION: Recently, more people like to wear the compression garments in athletics and fitness activities. Previous studies showed that Lycra-type compression shorts could enhance athletics performance such as repetitive jump power (Kraemer et al, 1998), improve proprioception and increase endurance. However, there comes up a new type of compression garment with muscle support system composed of high elastic band bordered on garments. Therefore, the purpose of this study is to examine the jumping performance with varied kind compression garments.

METHODS: 8 women (height 163.1 ± 5.9 cm, age 22.75 ± 2.49 years, body mass 55.76 ± 5.55 kg) were recruited to randomly wear general sport shorts, compression garment (644290, Adidas) and one new type of compression garment (HXY-109,CW-X) with high elastic band along the quadriceps femoris muscle as executing countermovement jump (CMJ) with hands always on waist. Three parameters were analyzed including flight height of CMJ was measured the difference of the centers of mass (COM) from standing position to highest position in air by Vicon motion analysis system. The concentric impulse and rate of force development (RFD) were calculated from Kistler force plate. Impulse was the integral of the force from the lowest COM as squatting to takeoff, and the RFD referred to the speed at which force can be produced. One-way ANOVA was used to compare the difference of jumping performance with three different garments.

RESULTS: Jumping performance with CW-X is better than others shorts but without significance (table 1).

Table 1: The parameters of counter movement jumps wearing different compression garments.

	Height (mm)	Impulse (N*ms)	RFD (N/s)
general sport shorts	34.51 ± 3.87	119.36 ± 15.99	2158.0 ± 998.7
ADIDAS	34.65 ± 3.75	120.53 ± 16.51	2207.5 ± 753.5
CW-X	35.26 ± 4.05	121.69 ± 16.97	2593.4 ± 1293.5

DISCUSSION: The new type compression shorts with muscle system support based on anatomical research would reinforce the agonist strength by retaining material strain while subject doing stretching movement. However, the high elastic tension may increase the workload to squat among general women who don't have strong muscle strength to oppose that. Therefore, we attempt to recruit more female athletes to exam the subject effects as well.

CONCLUSION: This research is still undergoing, however, there has been a trend of better jumping performance with the compression garments with muscle system support so far.

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