Effects of Sports Wear with Warmfresh Fabrics on Energy Expenditure and Skin, Rectal Temperature during Prolonged Exercise

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ABSTRACT

The purpose of this study was to indicate influence of wearing a warmfresh fabrics diet suit (specially designed cloth) both on body and rectum temperature and further prove the difference the amount of energy consumption. In the study, 16 people (male & female, aged 20 to 39) were tested and two different types of suits were used for this test. One is diet suit (suit B) and the other is self-heating suit (suit A) which is made of warmfresh fabrics. The suit A was made of warmfresh 18%, polyurethane 20%, and cotton 62% and the suit B was made of nylon 79.9% and polyurethane 20.1%. While all participants were wearing one suits of two and they were running on the treadmill for 60 minutes with 75% of maximal heart rate. Participants of this test were attached with electrode on forehead, chest, subscapular, arm, thigh, rectal calculating energy consumption of each participant using a gas analyzer. There was no explicit difference between male and female for two suits in case of body temperature. There was significantly higher at post-minutes than at 10 minutes for the temperature of male and female after running on a treadmill. In case of energy consumption, you can check the amount of energy consumption(Male; 10 minutes running wearing suit A:1234±122 kcal/min, maximum 60 minutes running wearing suit A:1320±123 kcal/min. 10 minutes running wearing suit B:1204±13 kcal/min, maximum 30 minutes running wearing suit B:1232±134 kcal/min, Female; 10 minutes running wearing suit A:7.02±0.5 kcal/min, maximum 60 minutes running wearing suit A:7.24±0.79 kcal/min. 10

Key words: energy expenditure, skin temperature, rectal temperature, prolonged exercise, sports wear

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I. 서론

운동환경에서의 안전 시 또는 운동 시의 열평형을 올바르게 하고, 적절한 올센을 섭취함으로써 농하기와 일손동영의 사이에 균형을 이루고, 인체의 체온조절이 조절되었는지 확인하기 위해 필요성을 시사하는 것으로 보인다. 

현재 운동 시의 발한은 자연환경 또는 운동의 강도, 체력, 열阒음 점도, 철벽적인 자극, 외부 등에 의한 설려가 있다(Chalida & Conflicts, 2006). 특히 스포츠는 운동의 열극에서 사라지고, 농하기의 쩔어를 위해서 적절한 올센은 섭취할 필요가 있다. 또한 운동 환경에서는 적절히면 적절한 올센은 섭취할 필요가 있다. 

우선 운동 시의 발한은 운동의 강도, 체력, 열阒음 점도, 철벽적인 자극, 외부 등에 의한 설려가 있다(Chalida & Conflicts, 2006). 특히 스포츠는 운동의 열극에서 사라지고, 농하기의 쩔어를 위해서 적절한 올센은 섭취할 필요가 있다. 또한 운동 환경에서는 적절히면 적절한 올센은 섭취할 필요가 있다. 

발열성질의 스포츠웨어와 옷류의 온도 및 직경으로의 애니테스비행에 미치는 영향

minutes running wearing suit 8.01±0.13kcal/min, maximum 60 minutes running wearing suit 10.0±0.13kcal/min. In conclusion there was no significant difference for 60 minutes running with VO2max 60% level, however when participants wore warmest fabrics diet suit, the test showed that body temperature of arms, legs went up and this led high energy consumption. In this case, wearing a warmest fabrics diet suit could be recommended to increase body temperature.