

Jitrada Phongkularb 2009: Effects of Central and Peripheral Body Cooling after Exercise on Blood Lactate Level in Male Taekwondo Players. Master of Science (Sports Science), Major Field: Sports Science, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Ratre Reungthai, Ed.D. 118 pages.

The purpose of this research was to study the effect of rest, central body cooling and peripheral body cooling on blood lactate concentration. The study group consisted of ten males who age between 18–22 years old from Taekwondo Sports Club of Kasetsart University. All subjects performed round kick exercise program at 85-90 percent of maximal heart rate. At first visit, After subjects performed round kick exercise then following by one type of recovery treatment and performed another treatment in next visit for three visits. Blood lactate concentration, core temperature and heart rate during pre-exercise, post-exercise and 15 minute post-recovery have been recorded. Data were statistically analyzed using one-way analysis of variance with repeated measure and multiple comparison (Tukey's method) testing procedure.

As a result, the data revealed that peripheral body cooling group had statistically lower blood lactate concentration than control group ($p < 0.5$) whereas heart rate in central body cooling were significantly lower than control group ($p < 0.5$). On the other hand, core temperatures in both treatment groups during 15 minute post-recovery were significantly lower than pre-exercise. However, there was no statistical difference noticed in core temperature among three groups. RPE and feeling scale were difference among three groups.

In conclusion, this study suggests that peripheral body cooling helps reducing blood lactate concentration in post-exercise. Conversely, central body cooling can decrease heart rate during post-exercise. Nevertheless, core temperatures among three groups are not statistically different

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Thesis Advisor's signature

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