Khatawut Naksutt 2010: Effects of Recovery by Hot Water Immersion Cold Water Immersion and Alternating Hot - Cold Water Immersion After Intermittant Exercise upon Blood Lactate and Agility. Master of Science (Sports Science), Major Field: Sports Science, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Udorn Ratanapakdi, M.A. 114 pages.

The purposes of this study were to determine the effects of hot water immersion, cold water immersion, and alternating hot and cold water immersion on the recovery after intermittent exercise measured by alternation of the blood lactate and agility. Fifteen male students, age 19-20, were randomly chosen from the Kasetsart University Futsal Team. All subjects were performed intermittent exercise up to the maximum level of the Yo-Yo test program. Immediately after the program, all subjects were exposed to four experimental treatments; 1) sit and rest, 2) hot water immersion, 3) cold water immersion and 4) alternating hot and cold water immersion, each treatment alternation for the period of a week. Blood lactate from all four experimental treatments were measured prior and after exercise. The agility performance for both pre-exercise and post-treatments were also evaluated. The body temperature and heart rate were determined before exercise, immediately after exercise at 4, 8, 12 and 15 minutes after exercise. The data were statistically analyzed with the one way analysis of variance and Tukey's multiple comparison method. The significance level was determined at $p<0.05$.

Results indicated that blood lactate, agility performance, body temperature and heart rate of four treatments were significantly different with the varied treatments ($p<0.05$). Moreover, the subjects who were exposed to hot and cold water immersion exhibited decreased levels of blood lactate and heart rate, and thus enjoyed better recovery in comparison to those exposed to other treatments.

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