

Development of Stretching PNF and Cryotherapy Model in Delayed Onset Muscle Soreness (DOMS) Prevention

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ABSTRACT

Delayed onset muscle soreness (DOMS) occurs with intense training, especially those that involve a lot of eccentric muscle contractions or unaccustomed exercise. This conditions is a problem for both coaches and athletes. The large number of DOMS cases and the variability in the results of research related to the prevention and treatment of DOMS, implies the importance of finding an effective DOMS prevention model. The aim of the study is to develop Proprioceptive Neuromuscular Facilitation (PNF) stretching and cryotherapy models in the prevention of DOMS. This research uses Research & Development design, through preliminary study stages, literature review, development of PNF stretching models and cryotherapy for DOMS prevention, expert validation and revision, feasibility testing of models and revisions, and effectiveness and revision tests. The research subjects were members of the UNY sports unit and SMK2 Yogyakarta students. The feasibility of the model is assessed from aspects of accuracy, ease, safety, time adequacy, and movement variations. Effectiveness tests carried out with indicators of effectiveness were assessed from pain, range of motion (ROM), lower limb function, and creatine kinase levels. Wilcoxon tests were applied to assess the effectiveness of the DOMS prevention model. The results of the study found a PNF stretching model and lower extremity cryotherapy (ice massage) for prevention of DOMS ($p < 0.05$). The PNF stretching model consists of 9 movements, each movement was carried out for 30 seconds, carried out 4 sets with one repetition for each movement. The total stretching duration of PNF for DOMS prevention was carried out for 18-20 minutes. While cryotherapy developed in the form of self-ice massage consists of 8 movements, each movement lasts 20 seconds for 3 sets. The total duration of cryotherapy for approximately 8 minutes.

Kata Kunci: *Stretching PNF, Cryotherapy, DOMS*