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ABSTRACT SUBMISSION – DEADLINE 10 May 2013

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Effects of detraining on functional fitness and lymphocyte subsets in postmenopausal females

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ABSTRACT

This is my abstract introducing the interesting study I recently completed. Reference lists are not generally included. The text is limited to **400 words** and must fit on a single page. See notes on figures and tables above. Remember to direct any questions you may have about this online submission process to Dr. Brian McFarlin (brian.mcfarlin@unt.edu) to ensure your abstract is formatted properly and submitted successfully.

Introduction: Aging leads to declines of functional fitness and regular exercise has been recognized to be beneficial for keeping health and preventing degenerative diseases in older adults. Limited evidences connect the relationships among detraining, functional fitness, immunosenescence, and vascular integrity in aged individuals. Thus, the aims of this study was to inspect: How training and detraining influence functional fitness, mobilization of circulating leukocytes and lymphocyte subsets?

Method: Twenty-two female volunteers aged 50 to 65 years were recruited as participants in this study. Participants were assigned into training group (TG, n=13) and control group (CG, n=9). The participants in TG were asked to attend exercise program, including aerobic exercise at 70% HRR for 60 min twice per week and resistance training at 60-70% 1RM, 3 sets and 9 exercises for 60 min per week for 16 weeks and subsequently avoid exercise for 6 weeks to investigate detraining effects. CG were asked to stay in their regular lifestyles. A six-items measurement of functional fitness and resting (at fasting status) venous blood samples were collected at before training program (Pre-training), 8th week of training (Mid-training), after training program (Post-training), and 6th week of detraining 6 weeks (Detraining). Blood cell counts (WBC, RBC, HCT, LYM) were measured using an automated cell counter and lymphocyte subsets (CD4, CD8, CD19, CD56) were analyzed by flow cytometry. Data were analyzed by descriptive statistic, mixed two-factors (time × group) measures ANOVA or ACOVA and the significance was set at $p < .05$. **Result:** Functional fitness of TG was not significantly improved following the training program although it was significantly better than CG in Pre-training. Blood cell counts were not changed and all in normal range. A significant difference in CD19 counts were observed between TG and CG (71.23 ± 32.05 vs. $116.45 \pm 67.95 \times 10^3 / \text{mL}$) in Post-training. CD19 counts in TG were increased at Detraining compared with Mid-training and Post-training (138.08 ± 50.22 vs. 74.92 ± 31.20 , $71.23 \pm 32.05 \times 10^3 / \text{mL}$). No alterations in quantity and percentage of CD4, CD8, and CD56 were observed in this study. **Conclusion:** Findings of this study suggest that both a 16-week moderate exercise program and a 6-week detraining did not significantly change the functional fitness and lymphocyte subsets in postmenopausal females.

Key words: haemopoietic progenitor cells, endotelial progenitor cells, Th1 / Th2 cytokine.