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Cardiovascular responses to stretching exercise in younger and older adultsYuko Gando¹, Reira Hara², Isao Muraoka¹¹Faculty of Sport Sciences, Waseda University²Graduate School of Sport Sciences, Waseda University

Stretching exercise induce cardiovascular responses through the modulation of muscle mechanoreceptors and metaboreceptors. Previous study showed that the cardiovascular responses to graded intensities of passive stretch were positively correlated to muscle tension. Subjects with low level of flexibility probably display greater muscle stiffness. Therefore their muscle tension will more increase to sustain the stretching position. Because flexibility decreases with age, we hypothesized that cardiovascular responses to stretching exercise would be more likely to occur in older subjects compared to younger subjects. The purpose of this study was to determine the acute effects of stretching exercise on arterial stiffness, blood pressure, and heart

rate in younger and older adults. Forty nine healthy adults (24 younger and 25 older adults) participated in this study. Arterial stiffness (baPWV; brachial-ankle pulse wave velocity), systolic blood pressure and heart rate were measured before and immediately after the stretching exercise. There were no significant interactions (age × time) of baPWV, systolic blood pressure, and heart rate. There were only significant effects ($P < 0.01$) of time for baPWV, systolic blood pressure, and heart rate. The baPWV and systolic blood pressure significantly increased and heart rate decreased after stretching exercise. These results suggest that stretching exercise acutely increases arterial stiffness and systolic blood pressure and decrease heart rate in both age groups.