**2C06-1** Effect of 30-month weight change on arterial stiffness: a randomized controlled trial focused on group-based weight-loss support

Yoshio Nakata¹, Seiji Maeda²

¹Faculty of Medicine, University of Tsukuba
²Faculty of Health and Sport Sciences, University of Tsukuba

**Purpose:** The purpose of this study was to examine the effect of long-term weight change on arterial stiffness.

**Methods:** Participants of this study were 125 overweight men and women, aged 40–65 years, randomly assigned to 2 groups: the education-only (n=62) and the group-based support groups (n=63). Arterial stiffness was assessed by brachial-ankle pulse wave velocity (baPWV). Changes in body weight and baPWV were examined during 6-month weight loss and 2-year weight loss maintenance.

**Results and Discussion:** The 6-month weight loss in the group-based support group was 7.7 kg and was significantly greater than that in the education-only group (4.7 kg). At 30 months, the amounts of weight lost in the two groups were equivalent (3.3 kg). No significant differences were observed in 6-month and 30-month changes in baPWV between the groups. The mean baPWV of all the participants (n=125) was 1401 cm/s at baseline, decreased to 1321 cm/s at 6 months, and increased to 1375 cm/s at 30 months, whereas the baPWV at 30 months remained significantly lower than that at the baseline. These results suggest that long-term weight loss maintenance improves arterial stiffness. However, changes in body weight do not always paralleled with changes in baPWV.

**Key words:** baPWV, obesity, weight loss

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**2C06-2** Effect of single bout of eccentric and concentric cycling exercise on arterial stiffness

Takanobu OKAMOTO¹, Sho YOSHIDA¹, Kazushige GOTO²

¹Nippon Sport Science University, ²Ritsumeikan University

**Purpose:** The purpose of this study was to investigate the acute effect of eccentric and concentric cycling exercise on arterial stiffness.

**Methods:** The eleven subjects performed one concentric cycling (CON1) and two eccentric cycling (ECC1, ECC2) bouts for 30 min at 60% of maximal concentric power output with 2 weeks between bouts. Moreover, two weeks later, subjects performed on eccentric cycling (CON2) for 30 min at the same intensity as oxygen uptake (V'O₂) during ECC2. Heart rate (HR) and V'O₂ were collected during cycling. Brachia-ankle pulse wave velocity (baPWV) measured before (baseline), 30 min, 60 min, 24 hour and 48 hour after exercise. Maximal voluntary isometric knee extensor strength (MVC) and plasma creatine kinase (CK) activity were measured before (baseline), 24 hour and 48 hour after exercise.

**Results:** Average HR and V'O₂ were lower (P < 0.05) during ECC1, ECC2 and CON2 than CON1. baPWV in the ECC2 and CON2 significantly decreased at 48 hour after compared with baseline (P < 0.05), MVC in the ECC1 significantly decreased at 24 hour after compared with baseline. Plasma CK activity did not change at any time points on the all cycling bouts.

**Conclusion:** These results suggest that second ECC cycling exercise decrease arterial stiffness at 48 hour after.

**Key words:** Eccentric cycling, Concentric cycling, Arterial stiffness