**SUPPLEMENTARY MATERIAL**

**Effects of resistance training community program in older adults**

**Short title: Resistance training in older adults**

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**This document includes**

Supplementary Methods

Supplementary Table S1

Supplementary Table S2

Supplementary References

**SUPPLEMENTARY METHODS**

Nerve conduction studies: Nerve conduction studies were performed on a Cadwell Sierra Wave EMG machine (Kennewick, WA) with integrated neurostimulator and amplifier (1). Subjects were seated for median nerve conduction studies and were supine for peroneal nerve conduction studies. Skin temperature was measured using a skin temperature probe (Cadwell, Kennewick, WA) and considered acceptable if at or greater than 320C in the upper extremities, and at or greater than 300C in the lower extremities. The median motor response was recorded over the mid-belly of the abductor pollicus brevis and stimulated at two sites: 8 cm proximal to the recording electrode and at the antebrachial fossa. Nerve conduction velocity was calculated by dividing the distance across the segment by the latency between the proximal and distal stimulation sites (1). The peroneal motor response was recorded over the mid-belly of the extensor digitorum brevis and stimulated at three sites: 8 cm proximal to the recording electrode, distal to the fibular head, and proximal to the fibular head. The distal onset latencies and amplitudes were also recorded.

Calculations:

Percent calculations for body fat: total fat % - [total fat mass (kg) / total body weight (kg)], trunk fat % - [trunk fat mass (kg) / total body weight (kg)], arms fat % - [(left arm fat mass (kg) + right arm fat mass (kg)) / total body weight (kg)], legs fat % - [(left leg fat mass (kg) + right leg fat mass (kg)) / total body weight (kg)]. Similar calculations were utilized to calculate total lean mass percent and regional lean mass percent. HOMA-IR was calculated as [(glucose in mg/dL \* insulin in µU/mL)/405] (2) and adipose tissue insulin resistance (AdipoIR) was calculated as [NEFA in mmoles/L \* insulin in pmol/L] (3).

**Supplementary Table S1: Nerve conduction studies participants' characteristics a**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Anthropometrics (n=10)** | **Baseline** | | | **Follow-up** | | | **P-value** |
| Age (years) | 64.9 | ± | 2.0 |  |  |  |  |
| Height (meters) | 1.62 | ± | 0.03 |  |  |  |  |
| Weight (kg) | 87.3 | ± | 5.2 | 87.3 | ± | 5.2 | 0.888 |
| Body mass index (kg/m2) | 32.6 | ± | 1.9 | 32.6 | ± | 1.9 | 0.953 |
| Heart rate (bpm) | 78 | ± | 4 | 75 | ± | 4 | 0.125 |
| Systolic blood pressure (mmHg) | 137 | ± | 7 | 147 | ± | 10 | 0.280 |
| Diastolic blood pressure (mmHg) | 79 | ± | 3 | 82 | ± | 5 | 0.601 |
| Nerve conduction velocity (m/s) |  |  |  |  |  |  |  |
| Median | 56 | ± | 1 | 54 | ± | 1 | 0.147 |
| Peroneal | 49 | ± | 2 | 50 | ± | 2 | 0.418 |

*Note.* a Data are reported in Mean ± SE.

**Supplementary Table S2: Suggested progression**

|  |  |  |  |
| --- | --- | --- | --- |
| **Exercise Class #** | **Sets of Reps** | **Weights** | **Single-Leg Exercises** |
| 1 | 1 set of 5 repetitions (1x5) | No weights | alternate legs each repetition (R,L,R,L,R,L,R,L,R,L) |
| 2 | 2x5 | No weights | Alternate legs each rep |
| 3 | 2x6 | No weights | Alternate legs each rep |
| 4 | 2x6 | Add weights | Alternate legs each rep |
| 5 | 2x8 | With weights | Alternate legs each rep |
| 6 | 2x10 | With weights | Alternate legs each rep |
| 7 | 2x10 | With weights | Alternate legs each rep |
| 8 | 2x10 | With weights | Alternate legs each set  (1x10 R; 1x10 L, repeat) |
| 9 | 2x10 | With weights | Alternate legs each set |
| 10 | 2x10 | With weights | Alternate legs each set |
| 11 | 2x10 | With weights | No alternating (2x10 R; 2x10 L) |
| 12 | 2x10 | With weights | No alternating |
| 13 | 2x10 | 1-2 adaptations With weights | No alternating |
| 14 | 2x10 | same Adaptations with weights | No alternating |
| 15 | 2x10 | 1-2 new adaptations with weights | No alternating |
| 16 | 2x10 | Same adaptations with weights | No alternating |

**SUPPLEMENTARY REFERENCES**

1. Buschbacher R, Prahlow N. Manual of nerve conduction studies. 2nd edition ed. New York, NY 10036: Demos Medical Publishing; 2006.

2. Matthews DR, Hosker JP, Rudenski AS, Naylor BA, Treacher DF, Turner RC. Homeostasis model assessment: insulin resistance and beta-cell function from fasting plasma glucose and insulin concentrations in man. Diabetologia. 1985;28(7):412-9.

3. Gastaldelli A, Harrison SA, Belfort-Aguilar R, Hardies LJ, Balas B, Schenker S, et al. Importance of changes in adipose tissue insulin resistance to histological response during thiazolidinedione treatment of patients with nonalcoholic steatohepatitis. Hepatology. 2009;50(4):1087-93.