**Info for readme file to accompany *PLOS ONE* data archive**

Archived data pertaining to article: Perkin, O.J., McGuigan, M.P., Thompson, D., & Stokes, K. (2016). **Habitual physical activity levels do not predict leg strength and power in healthy, active older adults.** *PLOS ONE.* **Under-review.**

Height

Distance from the floor (feet against the wall, barefoot, ankles together) to the top of the head (against the wall, looking ahead) after maximal inspiration and straight legs was measured to the nearest 0.1 cm using a wall-mounted stadiometer (SECA GmbH, Birmingham).

Mass

The weight of each patient was measured to the nearest 100 g using electronic scales (TANITA Inner Scan Body Composition Monitor-BC453, Tokyo) whilst they wore minimal clothing (lightweight shorts only for males; lightweight shorts plus lightweight vest-top for females), with the same clothing standardised between baseline and follow-up.

BMI

The BMI of each participant was calculated by dividing body mass (in kg) by height (in m) squared:

BMI = mass [kg] / height2 [m]

SPPB Score

The cumulative score of the three tests of the Short Physical Performance Battery (5 x sit-to-stand test, standing balance test, 2.4m timed walk test), as per Guralnik JM, Simonsick EM, Ferrucci L, Glynn RJ, Berkman LF, Blazer DG, et al. A short physical performance battery assessing lower-extremity function- Association with self-reported disability and prediction of mortality and hursing-home admission. J Gerontol A Biol Sci Med Sci. 1994;49(2):M85-M94.

VL thickness

Measurements of vastus lateralis (VL) muscle thickness were taken using ultrasound. Transverse images were taken at 50% of thigh length from the left leg using a 128 element linear array transducer (LV7.5/60/96Z, TELEMED, Lithuania) operating in B-mode at 8.0 MHz. Three images were taken from each participant. Muscle thickness was measured adjacent to the muscle fascia at the thickest part of muscle belly between the inside edges of the muscle fascia in each of the images and a mean calculated for each participant. All images were processed by the same researcher (OJP) using ImageJ software (1.44p, Wayne Rasband, National Institutes of Health, USA).

Vmax, Fmax, Pmax

A Keiser A420 seated pneumatic leg press dynamometer (Keiser®, Fresno, CA) was used to measure lower limb force and power. Participants performed an incremental power test in which approximately 10 discrete leg press repetitions were performed at maximum voluntary movement velocity for each repetition. Resistance and duration of rest between efforts increased with each repetition and were calculated by the manufacturer’s software, with resistance of the tenth repetition corresponding with the previously achieved 1-RM.

Pedal velocity (m/s) and resistance force (N) were calculated from linear displacement and pressure within the pneumatic pistons creating resistance at the foot pedals of the leg press machine at 400 Hz. These data were sampled for the duration of the concentric phase of each discrete repetition of the incremental power test, with the first and last 5% of pedal displacement discarded from analysis by the manufacturer’s software. Velocity and force at the instant of peak power were recorded for each repetition, and data analysed manually using Microsoft Excel to determine theoretical maximum velocity (Vmax) and force (Fmax) were extrapolated from a linear regression of velocity and force, and interpolated peak power (Pmax) determined by numerical differentiation of the second-order polynomial equation calculated from the force-power profile.

Physical activity data

A chest mounted physical activity monitor (Actiheart™, Cambridge Neurotechnology, UK) collected six free-living days of habitual physical activity in one-minute epochs using the default equations in the manufacturer’s software. Daily physical activity level (PAL) was calculated as a ratio of total energy expenditure (TEE) to basal metabolic rate (BMR), with BMR calculated using participant height, weight, age, and sex as described by Schofield. Age specific physical activity thresholds were; sedentary time = ≤1.5 METs for both groups; and for the older group moderate to vigorous activity (MVPA) = ≥3.2 METs, and for the younger group MVPA = ≥4.8 METs.