Timed Stair Climb Power

Name: _____ Date: _____

Stair climb power is an important clinical measure of lower-extremity power, has excellent test-retest reliability, explains a greater amount of variance in the SPPB than other leg power measurements, and describes equivalent amounts of variance in Habitual Gait Speed.

Equipment:

4 (or more) stair flight

- 0.15 meters high (5.9 inches)
- 0.30 meters long (11.8 inches)

Purpose:

- Test lower limb muscle power. Muscle power (force generation x speed) may be more relevant than muscle strength for performance and function in aging adults (Foldvari, M, Clark, M et al 2000).

Procedure:

1. Instruct individual to safely ascend stairs as fast as they can; they may use handrail if thought necessary for safety (but not to help go faster) and they begin climbing when the PT says "Ready, set go".
2. Timing begins aft PT says "go" and once the individual begins moving.
3. When both feet reach the top step, the timing stops.
4. Three trials with 2 minutes of rest between trials
5. Best of three trials used

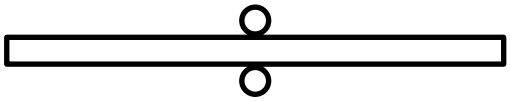
Needed Data:

- Body Weight in kg. = _____ (use google to convert pounds to kg)
- Stair Ht. in meters = _____ (use google to convert inches to meters)
- # of Steps = _____

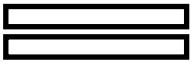
(Seynness, O, Flatarone Singh, MA et al 2004).

Calculate Stair Climbing Power (SCP):

(body wt in kg_____) x (9.8 m/s²) x (step height in meters_____) x (# steps_____)



_____Time to ascend (sec)



_____Watts

Gravity = 9.8 m/s²

For use of 4 Stairs (M. Ni et al, 2017)
MDC for 4SCPT was 44.0 watts
SEM for 4SCPT was 18.9 watts, and for SCPT was 19.6 watts