

## **The Effect of Alter Gravity Body Weight Supported Running on Workload: A Protocol PILOT Study.**

Joseph B. McCormick, PT

Dyess AFB *Tuscola, TX*

Christopher Riley Ratliff, SPT

*Manhattan, KS*

Justin C. Sazon, SPT

*Abilene, TX*

Andrea Sarai Ward, SPT

*Cedar Park, TX*

### **Abstract Text:**

**Purpose/Hypothesis:** Bodyweight supported (BWS) running is commonly used during the rehabilitation process in runners. However, there has been no method of determining appropriate parameters required to allow subjects to run at consistent steady-state heart rates (SSHR) during unweighting. The purpose of this study was to determine the percent change in speed required to achieve steady-state heart rates at 10%, 20%, and 30% BWS on the Alter G treadmill (AlterG). Secondly, we wished to test for gender differences in SSHR and RPE at these 3 exercise levels.

**Number of Subjects:** Thirty participants recruited from being secured in the AlterG, participants performed

2.0 mph at 0% BWS then began Trial 1 (the control trial) by self-selecting a pace that is below their calculated lactate threshold. After 3 minutes at that pace, the participant's control and baseline steady state heart rate (SSHR) were recorded. BWS and treadmill speed were increased by 10% and 0.3 mph, respectively. SSHR was recorded during the last 10 seconds of the interval. If SSHR was achieved the participant progressed to the next trial. If SSHR was not achieved, the current 3-minute trial was repeated, adjusting treadmill speed  $\pm 0.1$  mph in relation to a high or low heart rate compared to the control trial. The same protocol was used for 20% and 30% BWS. After all trials, participants walked for five minutes at 2.0 mph at 0% BWS.

**Conclusions:** For the majority of participants, a 10% increase in BWS and 4.56% increase in speed maintained a SSHR. Despite the increase in speed at higher BWS percentages, the participant RPE remained consistent suggesting no increase in