



# HOW MUCH DOES COACHING LIFTERS FOR MAXIMAL INTENT MATTER? FORCE AND RPE COMPARISONS

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## Introduction

Velocity-based training (VBT) has been an emerging trend that focuses training on intention to lift at a prescribed speed regardless of the percentage of strength maximal prescribed. This is different qualitatively, from percentage of maximum based training (PBT) as intention to reach a velocity criteria changes feedback during each repetition. This concept has been understudied despite the emerging popularity of VBT practice.

VBT would also likely impact perception of effort during a training session. Accountability of velocity output would focus athletes on power output consistency and create cognitive effort. Thus, perception of exertion (RPE) would be instructive when comparing standard and intentional coaching instruction to compare performance recordings.

## Purpose

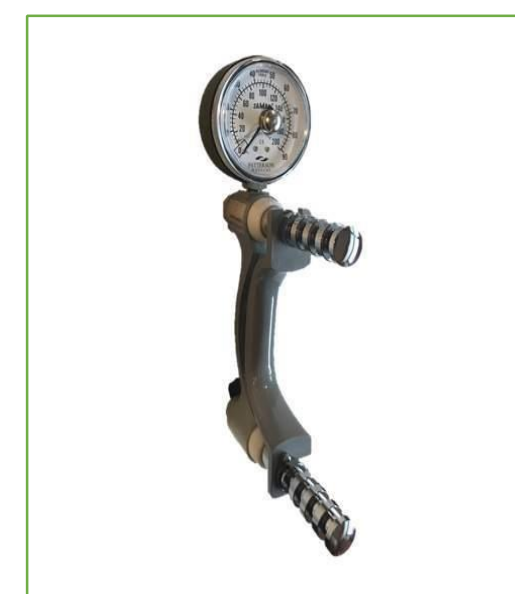
The purpose was to comparing intent to exert maximally to uninstructed effort. Also, RPE comparisons between two different isometric strength indices were measured. Demographic characteristics that impact intention were also examined.

## Methods

Sixty-four college students were recruited for the current study.

Two counterbalanced, randomly ordered sessions (4 sessions total) were performed.

These included mid-thigh pull and handgrip isometric assessments.



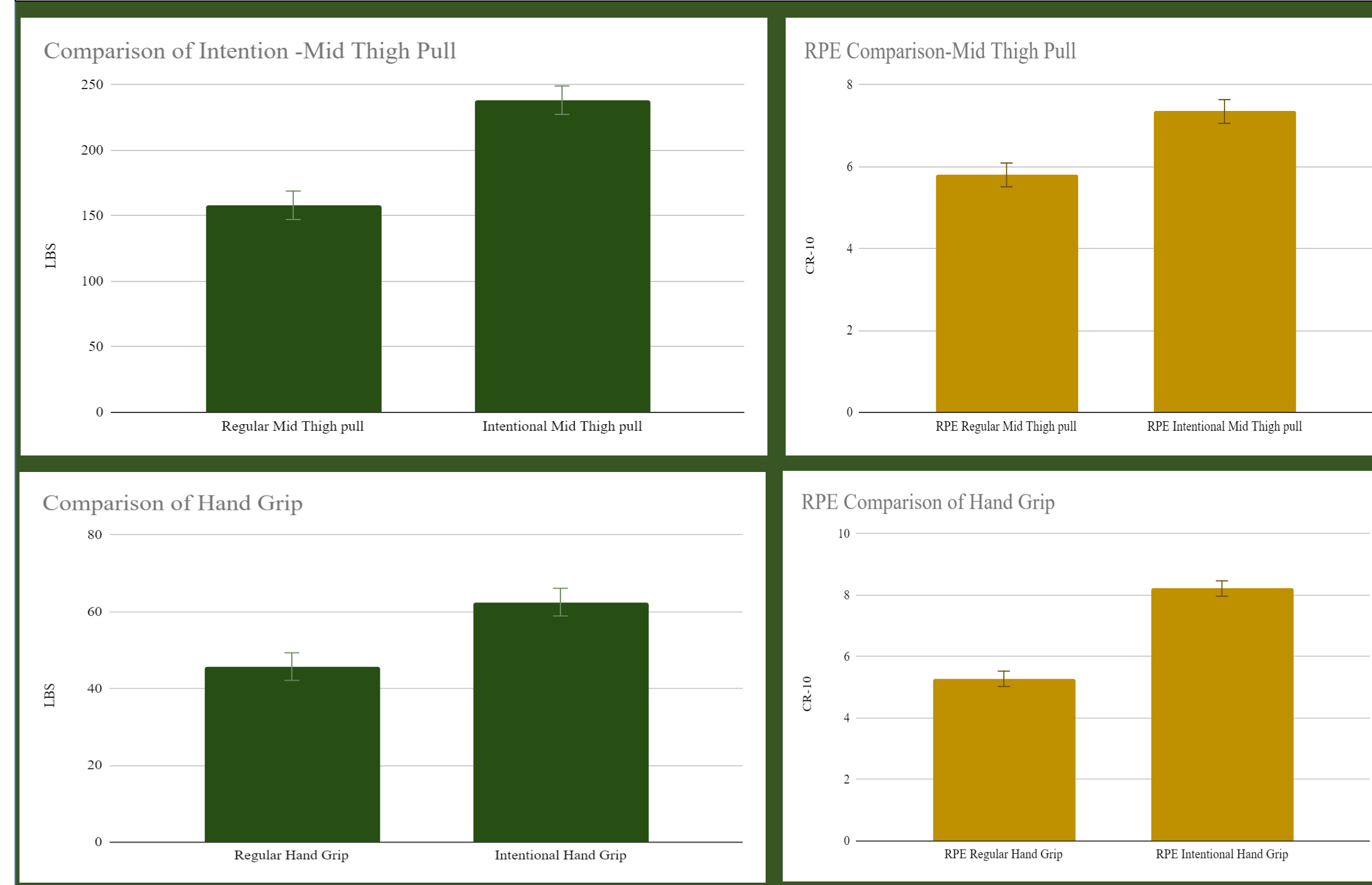
After a brief exercise warm-up, one session instructed participants to “pull or grip hard” the mid-thigh isometric dynamometer with force to get an initial reading (Romech Crane Strain Gauge Scale).

Then participants were instructed to intentionally give a maximal force “as hard as possible”. These same instructions were given for the isometric handgrip (Jamar handgrip dynamometer) and two sessions were performed.

Counterbalanced, the sessions were randomly assigned based on the participant’s entry into the lab. Performance measures were recorded in pounds for both hand grip and mid-thigh pull and RPE was measured using a category ratio scale of 0-10.

## Results

Order effect was calculated and found to be non-significant. When comparing intention versus regular instructions on mid-thigh pull, a 33.5% difference was observed and it was statistically significant ( $p < 0.01$ ) with intention scoring much higher. To a lesser degree, this trend was observed for hand grip, a 27% difference ( $p < 0.01$ ) again in favor of intention. Related to RPE during the mid-thigh pull, a 21% difference was observed in favor of intention ( $p < 0.01$ ). This same trend was observed with hand grip, a 37% difference ( $p < 0.01$ ). A linear regression analysis revealed that sex (men), age, and exercise status (more frequent exercise participation) accounted for a large portion of variance observed in the intention mid-thigh pull condition ( $r^2 = 0.65$ ,  $F(3, 59) = 36.24$ ,  $p < 0.001$ ). No other significant regression models were found for either hand grip or RPE analyses.



## Results Continued...

Model	Standardized Coefficients		t	Sig.
	Beta			
1	(Constant)			
	Sex	0.66	8.33	0.01
	Exercise Status	0.34	4.3	0.01
	Age (years)	0.03	0.37	0.71

a. Dependent Variable: Intentional Mid-Thigh Pull

## Conclusions

Intention to exert maximally had a significant effect on isometric strength parameters and perceptions of effort. This coaching technique enhanced strength by 21 to 37%. Moreover, sex and exercise status were the most predictive factors for mid-thigh pull readings during intention of maximal force. These preliminary results suggest that men and individuals who exercise regularly demonstrated an enhanced effect of intention to exert maximally. However, perception of effort was less impacted by intent to exert maximally.

## Practical Applications

From a coaching vantage, intention to exert maximal force positively impacted performance from 21-37%, was modified by sex and exercise frequency, but perception of effort was mildly impacted by this coaching cue. Coaching to lift with maximal exertion could be beneficial to increase force output even if perceptions of exertion isn't sensitive enough to detect the magnitude of change in force.