

## Effects of Dehydration on Resistance Training: An Ongoing Study

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### ABSTRACT

**INTRODUCTION:** Dehydration via hot bath has been shown to impair resistance training performance when performed the same day. The performance decrements in this instance could potentially be due to a combination of the dehydration and residual effects of the heat exposure and not of the dehydration alone. To date, no research has examined the effects of previous night dehydration on resistance training performance. **PURPOSE:** The purpose of this ongoing study was to determine the effects of previous night dehydration on performance and perceptual measures during a full-body resistance training protocol. **METHODS:** Healthy, resistance trained males ( $n = 4$ ) completed two bouts of a full body resistance training protocol (three sets to failure for bench press, lat pull, overhead press, bicep curl, triceps push down, and leg press), dehydrated ( $\sim 3\%$  body weight) (DT), or heat exposed with fluid replacement (HT). Heart rate (HR) was taken after every set, and participants estimated ratings of perceived exertion (RPE) after each exercise. Session RPE (SRPE) was estimated 5 minutes following completion of the protocol and estimations for feelings of recovery (PRS), perceived readiness to exercise (PR), thirst, and sleep quality. **RESULTS:** Analysis revealed a significantly less ( $p < 0.001$ ) total reps were completed for DT ( $163.0 \pm 4.8$ ) compared to HT ( $191.3 \pm 10.3$ ), though no differences were found for reps per exercise. No significant differences were found for HR (DT vs HT) at any time point. RPE was significantly higher for DT following bicep curl ( $p = 0.03$ ) (DT:  $7.8 \pm 0.96$ , HT:  $6.0 \pm 0.82$ ) and triceps push down ( $p = 0.03$ ) (DT:  $7.5 \pm 0.58$ , HT:  $6.0 \pm 0.82$ ). SRPE was significantly higher ( $p = 0.003$ ) for DT ( $8.0 \pm 0.0$ ) vs HT ( $6.3 \pm 0.5$ ). Significant differences for PRS ( $p = 0.004$ ) (DT:  $5.0 \pm 1.4$ , HT:  $7.5 \pm 0.58$ ) and PR ( $p < 0.001$ ) (DT:  $5.0 \pm 0.0$ , HT:  $2.5 \pm 0.58$ ) indicate participants expected impaired performance during DT. Feelings of thirst were significantly higher ( $p = 0.001$ ) for DT ( $7.98 \pm 0.94$ ) vs HT ( $2.73 \pm 1.11$ ). No differences were found for estimations of sleep quality ( $p = 0.59$ ). **CONCLUSION:** Even though only preliminary data from a study presently ongoing, the present results suggest that previous night dehydration has a negative influence on both performance and perceptual measures.