

# THE INCIDENCE OF RULE CHANGES ON PHYSIOLOGICAL CHARACTERISTICS OF MALE AND FEMALE CANOE SLALOM PADDLERS: A 14-YEAR LONGITUDINAL STUDY.

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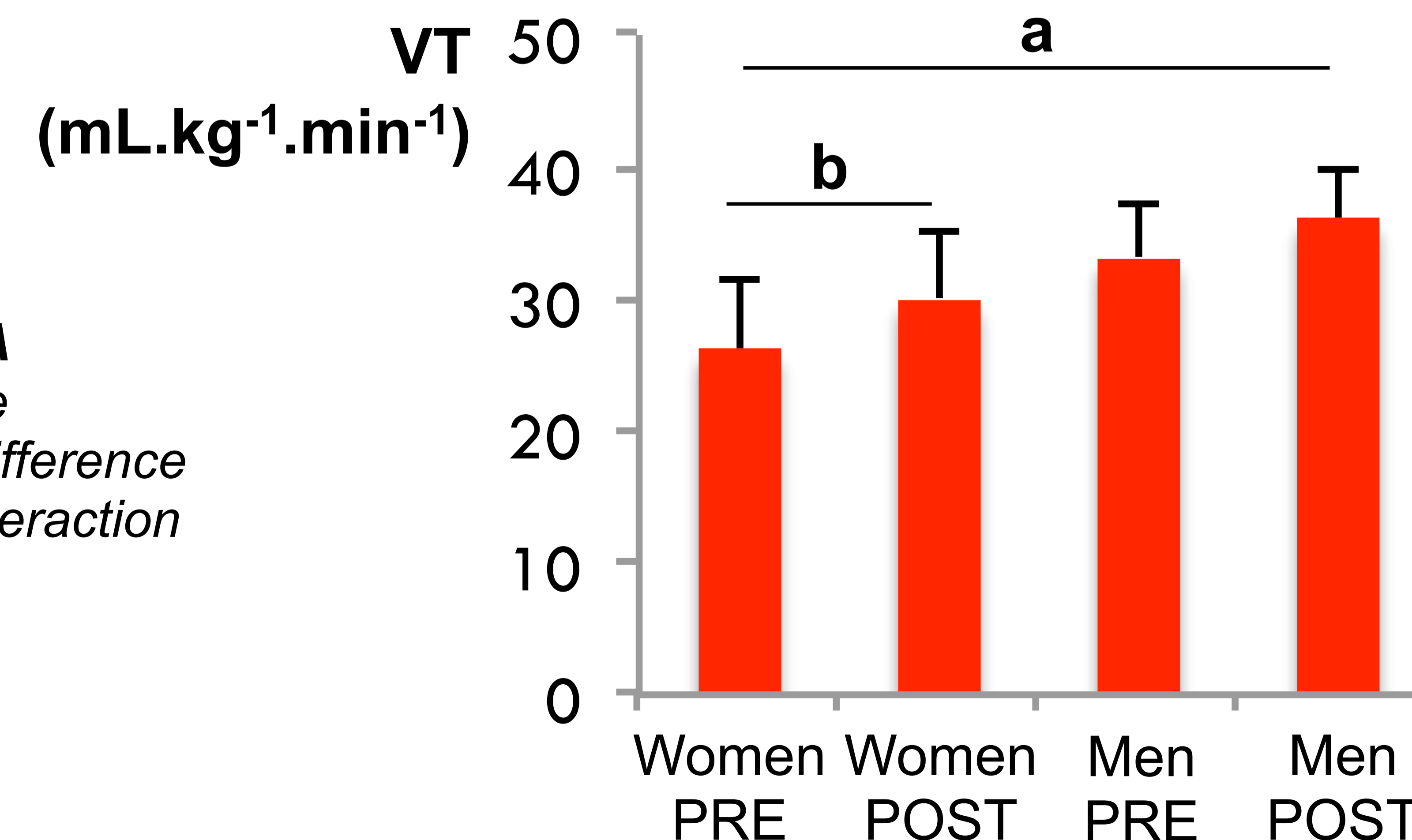
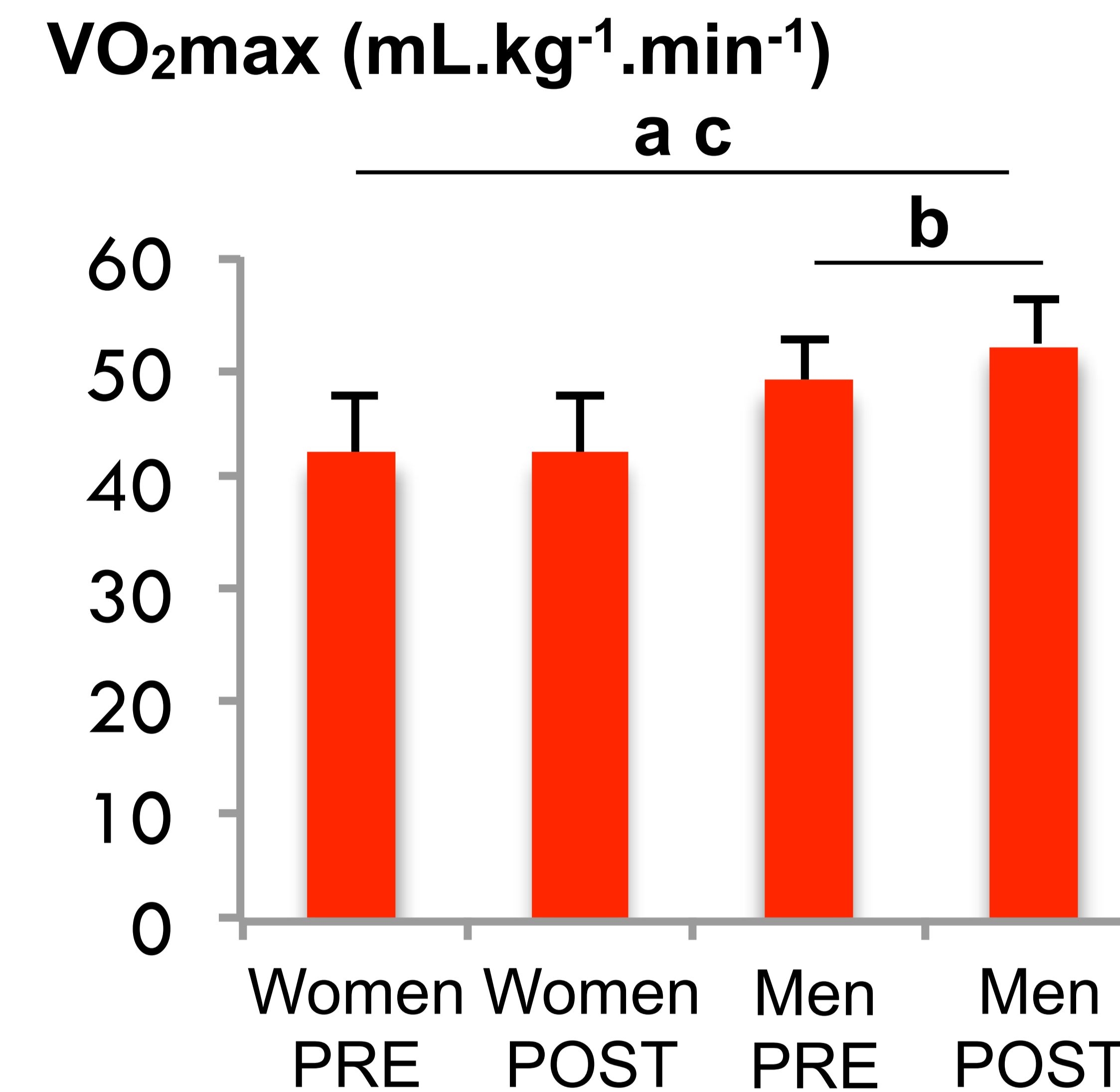
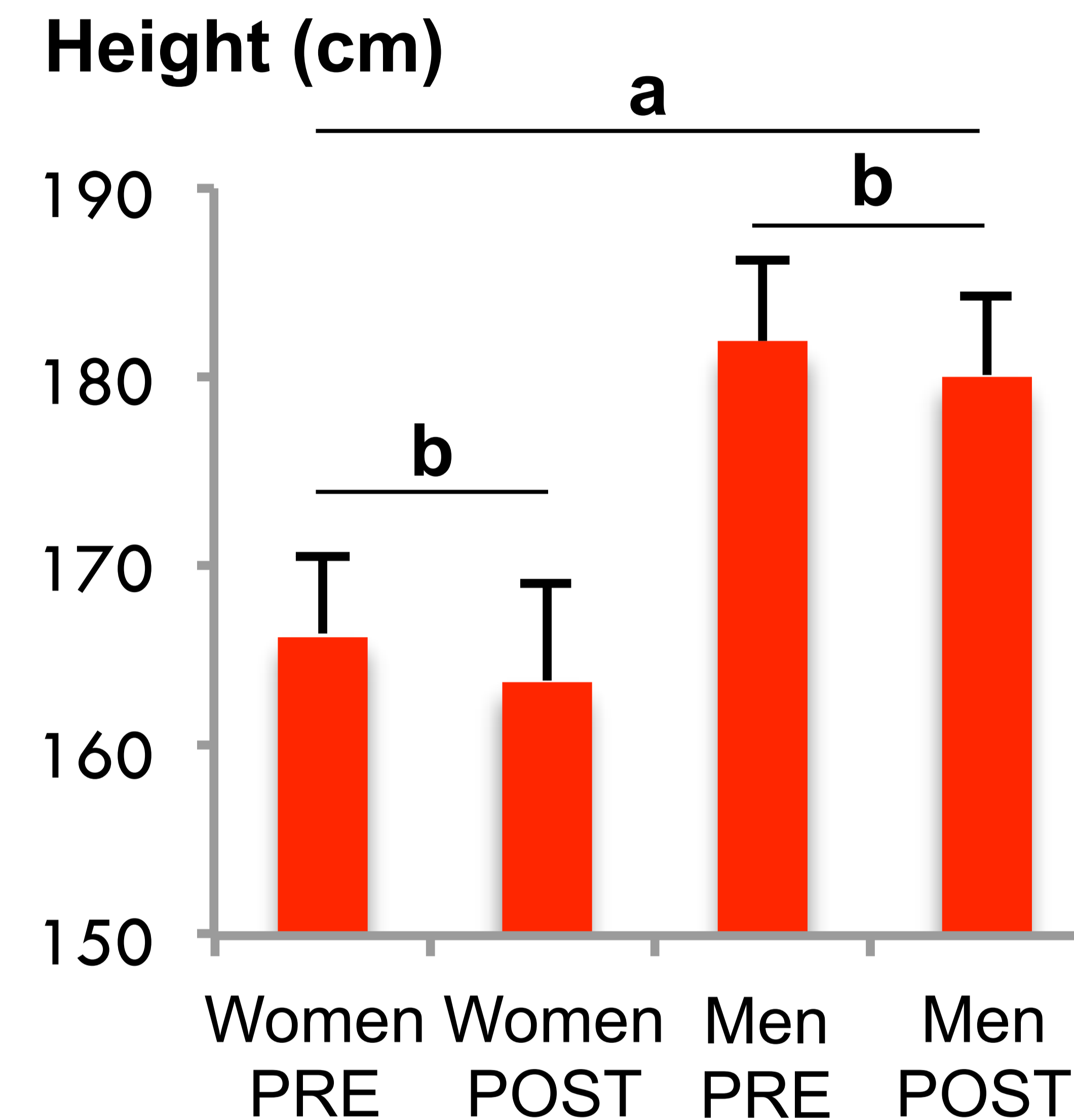
## INTRODUCTION

The sport of competitive canoe slalom has greatly evolved within the last fifteen years. Both changes in the competition demands (race duration, course difficulty, equipment, etc.) and the improved conditioning support provided to the athletes led to slight modifications in the physiological profile of elite athletes in the sport.

## MATERIAL & METHOD

31 men and 22 women elite french canoe slalom paddlers were screened on a yearly basis using various tests. Anthropometric measurements included height (cm), weight (kg) and body composition using skinfold measurements (Durnin & Womersley, 1969). Maximal oxygen consumption (VO<sub>2</sub>max) and ventilatory threshold (VT) was assessed using an incremental exercise test on a Monark arm ergometer until volitional exhaustion and a 6s all-out force-velocity test to determine maximal power with the upper limbs.

## RESULTS



**ANOVA**  
**a:** Sex Difference  
**b:** PRE-POST Difference  
**c:** Time x Sex interaction  
*p* < 0.05

## DISCUSSION & CONCLUSION

- Decrease in standing height in men and women related to a lowering of center of mass possibly allowing increased agility in the gates (Hunter, 2009).
- Increase in VO<sub>2</sub>max in men associated with improved conditioning and repeated bouts of high-intensity efforts in training (Gibala, 2008).
- Increase in VT in women and slight but insignificant increase in men could be related to greater ability to sustain higher training loads.

## REFERENCES

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