

# EFFECT OF PRESEASON CONDITIONING ON FIELD BASED VO<sub>2</sub>MAX ESTIMATION IN COLLEGIATE DIVISION III WOMEN'S LACROSSE PLAYERS

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## Introduction

- Preseason is an essential component of sport preparation in the collegiate setting, with intense training allowing for improvements in performance and fitness for the upcoming competitive season.
- While the benefits of preseason training on performance variables like maximal aerobic capacity (VO<sub>2max</sub>) have been reported in men's sports, less is known on women's sports such as lacrosse, especially at lower collegiate levels.

### Purpose:

- To determine team and position group estimated VO<sub>2max</sub> differences using the Yo-Yo Intermittent Recovery Test Level 1 (YYIR1) following a three-week preseason training period on a NCAA Division III women's lacrosse team.

## Methods

- 17 Division III women's lacrosse athletes
  - Attack (A) = 6; Midfield (M) = 5; Defense (D) = 6

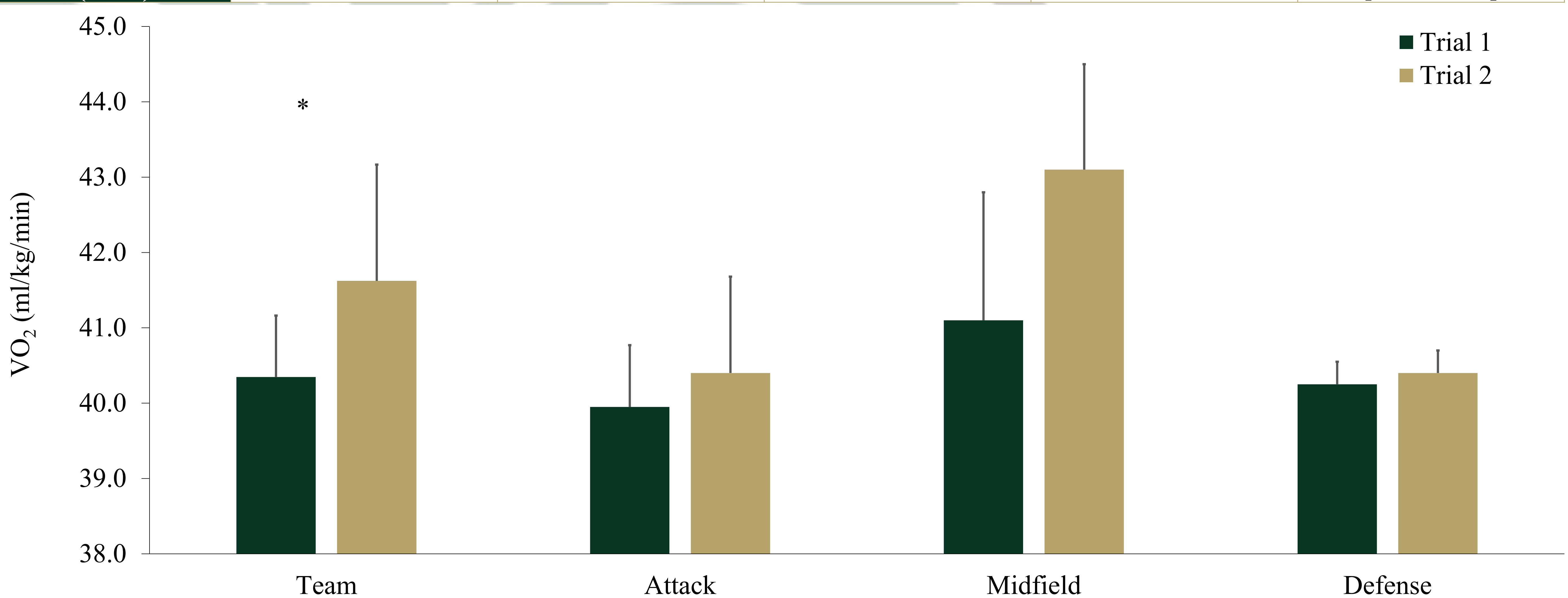


### Statistical Analyses:

- Paired samples t-test on estimated VO<sub>2max</sub> for the two time points.
- Wilcoxon signed-rank tests (due to small sample sizes) on each position group.
- Significance set at  $p \leq 0.05$ , and all data presented as Mean  $\pm$  SD or Median  $\pm$  IQR with Effect Size and 95% Confidence Intervals.

## Results

	VO <sub>2max</sub> Trial 1 (ml/kg/min)	VO <sub>2max</sub> Trial 2 (ml/kg/min)	%Change	p-value	Effect Size [95% CI]
<b>Team (n = 17)</b>	40.35 $\pm$ 0.82	41.62 $\pm$ 1.54	3.2%	< 0.01	-1.02 [-1.60, -0.42]
<b>Attack (n = 6)</b>	39.95 $\pm$ 0.82	40.40 $\pm$ 1.28	1.1%	0.06	-1.32 [-2.41, -0.16]
<b>Midfield (n = 5)</b>	41.10 $\pm$ 1.70	43.10 $\pm$ 1.40	4.9%	0.06	-1.67 [-3.05, -0.22]
<b>Defense (n = 6)</b>	40.25 $\pm$ 0.30	40.40 $\pm$ 0.30	0.4%	0.21	-0.57 [-1.42, 0.33]



## Conclusion

- Statistically significant improvements were noted in Team estimated VO<sub>2max</sub> following preseason training.
- However, there was minimal overall practical improvement (~3%) and lack of significant improvement within position groups.
- Due to limited sample size, caution is warranted before drawing major conclusions within position groups.

## Practical Applications

- **Strength and conditioning professionals and coaches may want to emphasize the importance of year-round conditioning to maintain or improve athletic performance in sports that require higher VO<sub>2max</sub> contributions from players to be successful.**
- **These findings suggest that three weeks of preseason training may not be enough time or stimulus to allow women's lacrosse athletes to train their way into playing shape leading up to the competitive season.**