

# Analyzing Pain Perception in Male and Female Outdoor Athletes

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## Background

•Historically, pain studies have faced challenges and biases in representing women.

•Bridging this gap is essential, particularly in athlete-focused pain research, where biases persist despite advancements in other areas of pain study.

•Additionally, athletes provide a valuable model for studying acute pain, offering insights into pain processing in humans without the confounding influence of pain medications.

## Aim of the Study

To explore potential differences in pain intensity, threshold, and tolerance between male and female recreational outdoor athletes.

## Method

•181 recreational outdoor athletes (56 sky runners, 77 hikers, and 52 rock climbers).

•54% identified as male and 46% as female.

• Maximum and average pain intensity during their respective sport events was assessed using Numeric Rating Scale (NRS).

•Maximum and average pain intensity were aggregated as Pain Composite Score (PCS)

• Activity intensity was expressed objectively as kilometer-effort/hour, and subjectively using NRS.

• Cold Pressor Test (CPT), performed before and after the sport event, was used to determine pain threshold and tolerance, and to record pain intensity during 20s intervals of the test.

• Generalized linear models were employed to investigate the relationship between gender and pain outcomes.

## Conclusion

***Our results suggest similar pain perception in outdoor athletes of both genders with the exception of female rock climbers who had lower pain tolerance.***

## Results

**Table 1. Pain intensity, threshold and tolerance between male and female athletes.**

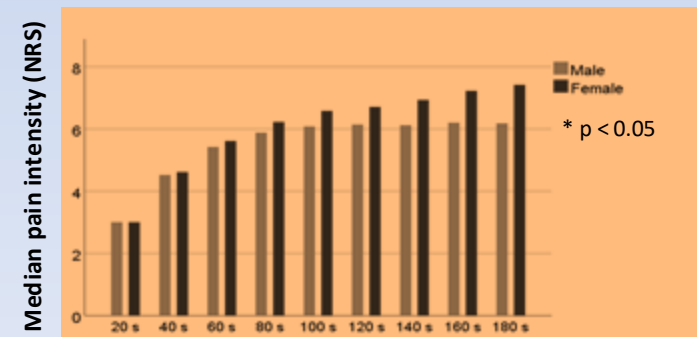
	Sky Runners		Hikers		Rock Climbers	
	Male	Female	Male	Female	Male	Female
Average pain intensity	3 [1 – 5]	3 [2 – 5]	1 [0 – 3]	2 [1 – 3]	3 [2 - 5]	3 [2 - 4]
Maximum pain intensity	6 [3 – 9]	5.5 [4 – 7]	2 [0 – 4]	3 [2 - 5]	6 [4 - 7]	5 [4 - 7]
Pain threshold (s)	20 [10 - 45]	25 [11 - 116]	-	-	10 [9 - 16]	11 [4 - 15]
Pain tolerance (s)	180 [180 - 180]	180 [111 - 180]	-	-	180 [180 - 180]	180 [156 - 180]*

Mann-Whitney U test, \* p < 0.05.

**Table 2. Predictors of pain intensity.**

	B	95% C.I.	p
Intercept	0.392	-0.100 – 0.885	0.118
<b>Gender (male)</b>	<b>-0.064</b>	<b>-0.273 – 0.145</b>	<b>0.548</b>
Subjective activity intensity	0.145	0.099 – 0.190	0.001
Activity duration	0.000	-0.001 - 0.001	0.725

Generalized Linear Models (Gamma, Log link)



**Figure 1. Cold Pressor Test in rock climbers.**

