

# The Effectiveness of Topical Application of Cannabinoid on DOMS in Collegiate Athletes Measured by Neuropathic Pain Scale

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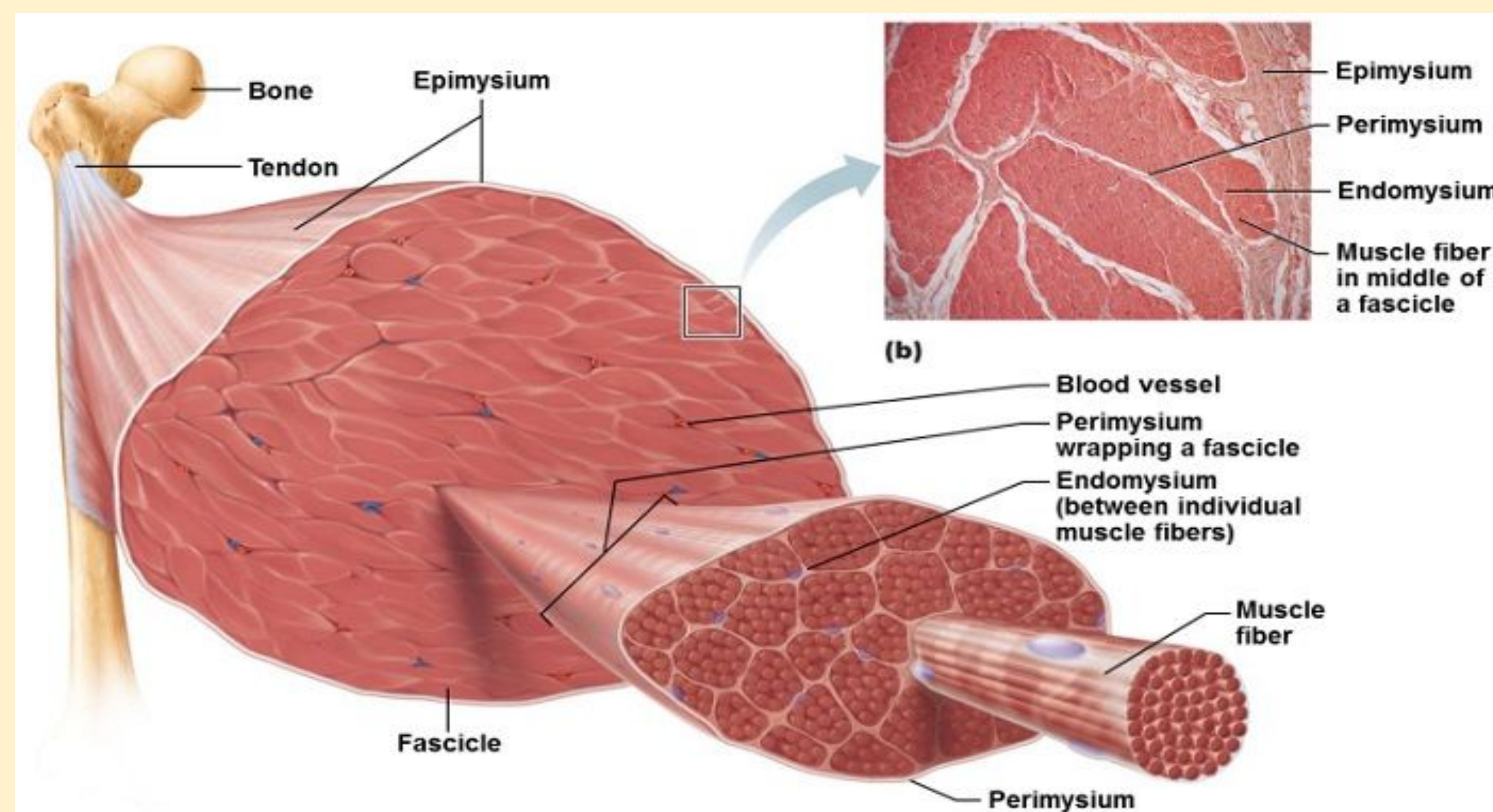
## Abstract

The purpose of this study was to further the research on the influence of using CBD on delayed onset muscle soreness (DOMS). It was hypothesized that CBD would have a positive effect on athletes' recovery process from DOMS induced exercises. It remains important for athletes and practitioners to know the potential benefits of topical CBD in the treatment for and recovery from strenuously repetitive exercise.



## Introduction

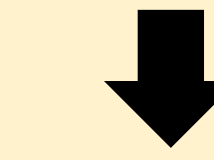
- ❖ Athletes train more than 5 days a week, which causes DOMS. They rarely have any time to recover so the soreness never goes away, which may impact performance.
- ❖ DOMS described as inflammation of the muscles and occurs after exercising 24 to 48 hours, then disappearing within 5 to 7 days.
- ❖ This soon leads to injuries of the athlete that can take a long recovery.
- ❖ CBD offers a way to speed up the recovery process of athletes and decrease pain.
- ❖ research found that that one of the common usages of CBD is on chronic pain, which offers the best symptom relief with few adverse effects.



## Methods

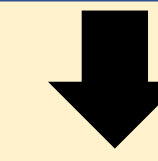
### Participants

100 participants (50 males and females) collegiate athletes.



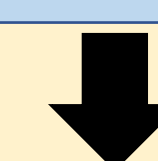
### Criteria

In order to participate, students had to be on an athletic team at the University for at least a year and is dealing with chronic pain or other medical conditions. Also, they had to be on either the lacrosse or soccer team.



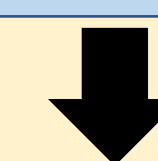
### Research Design

These explained methods were exploited to measure two dependent variables: effectiveness of CBD reducing pain and how quickly. The independent variables are the remaining athletes that don't use CBD. The controlled variables include the time of day, amount of CBD applied, and form of application.



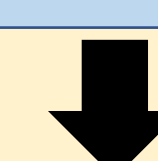
### Instrumentation

The participants were to answer 10 questions and rate the pain on a scale of 0 to 10, with 0 being no pain or was asked to describe the feeling and 10 being the most severe pain or feeling possible. Pain and specific sensations were assessed and measured by the Neuropathic Pain Scale (NPS).



### Procedures

This was a 10-month trial to evaluate the efficacy of topical CBD oil in patients with delayed onset muscle soreness. Participants went through an assessment prior to the study as well to make sure they were eligible for the study. The treatments of every participants were taken place in a designated training room at the University. The NPS was administered to the participants before treatment and again every 2 weeks throughout the entire study for 10 months.

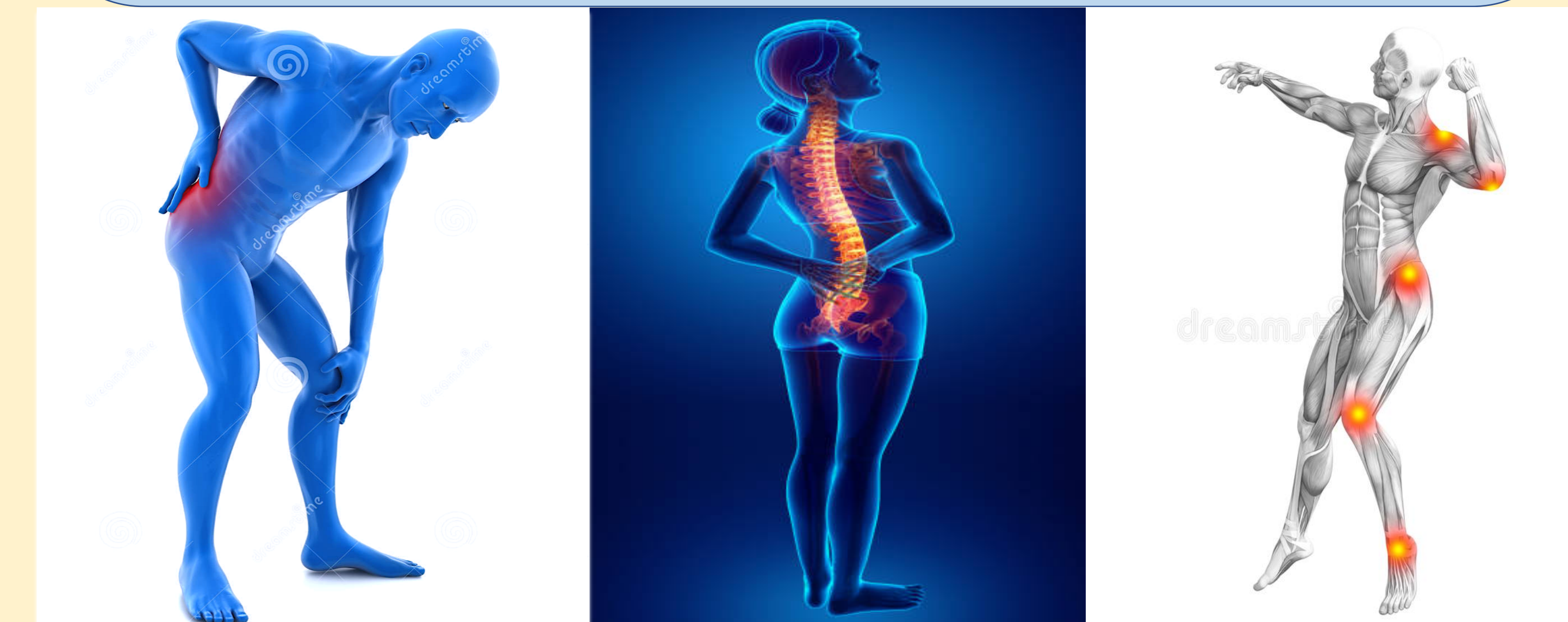


### Data Analysis

Each of the questions on the NPS scale evaluated by using Analysis Of Covariance (ANCOVA) to determine the effect of CBD on each of the 10 areas. The time effect associated with each measurement of ANCOVA determined whether NPS is sensitive to the expected changes in pain experience that is associated with the treatment conditions.

## Review of Literature

- ❖ Hatchett et al. (2020) study indicates that CBD oil can have a significant effect on delayed onset muscle soreness from exercise induced muscle damage.
- ❖ Kasper et al. (2020) study on professional rugby players found that the efficacy of CBD does help alleviate pain, enhance recovery, and promote sleep.
- ❖ Ashton (2020) found that CBD has potent anti-inflammatory effects on the body and can stop inflammatory responses by interacting with cannabinoid receptors located in the immune cells.



## Discussion

### Limitations:

- ❖ Focused on primarily two sports, lacrosse and soccer.
- ❖ How much CBD was applied to each of the participants in the study.
- ❖ The study was only conducted for 10 months, so there may be long-term effects from the CBD.

### Further Applications:

For further studies, using CBD on acute pain in athletes should be looked at as well to see if it is just as effective as chronic pain.

## Acknowledgements

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