

# A Barefoot Running Program for a College Lacrosse Player with Chronic Exertional Compartment Syndrome: A Case Report

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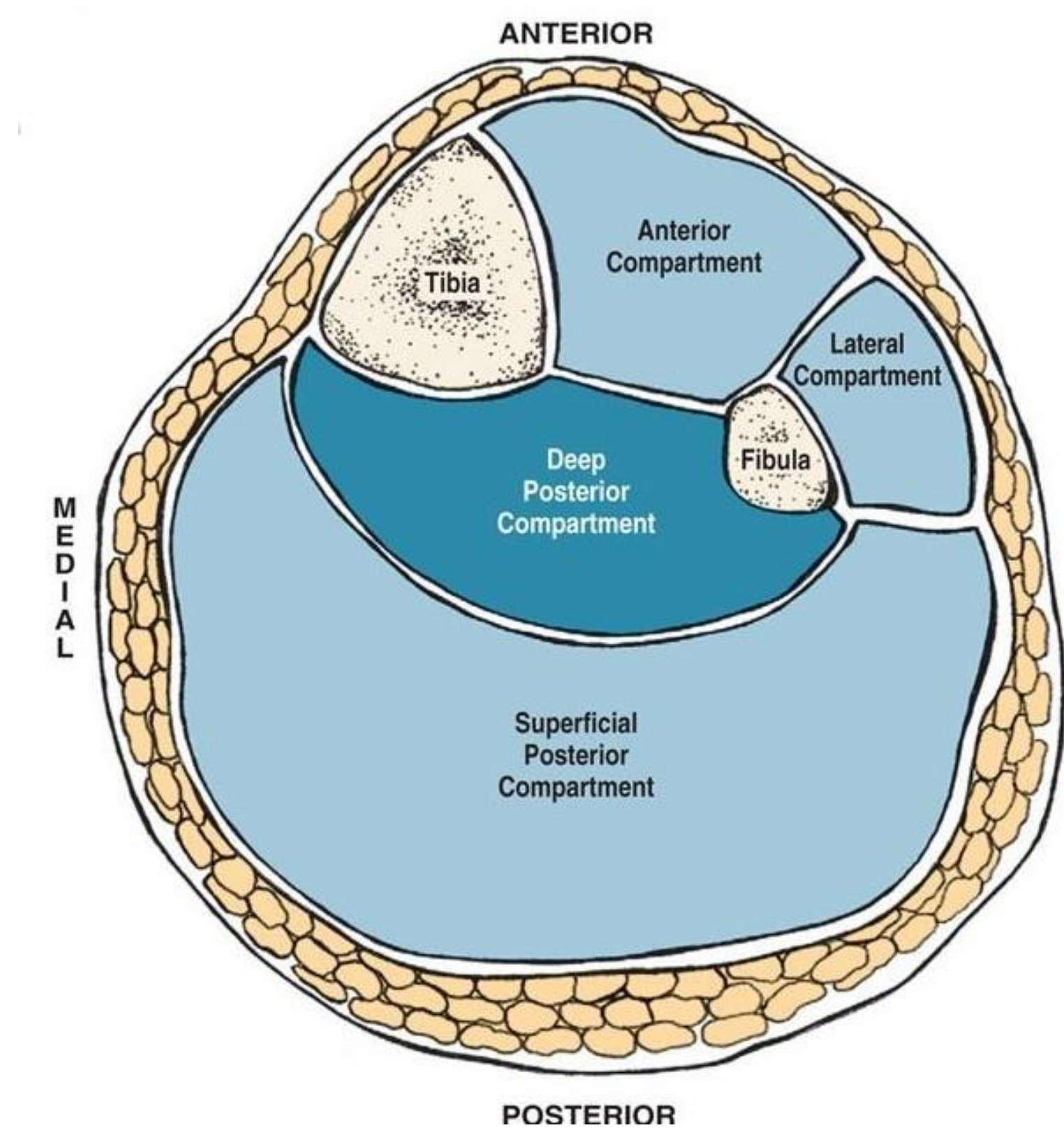


## Unique

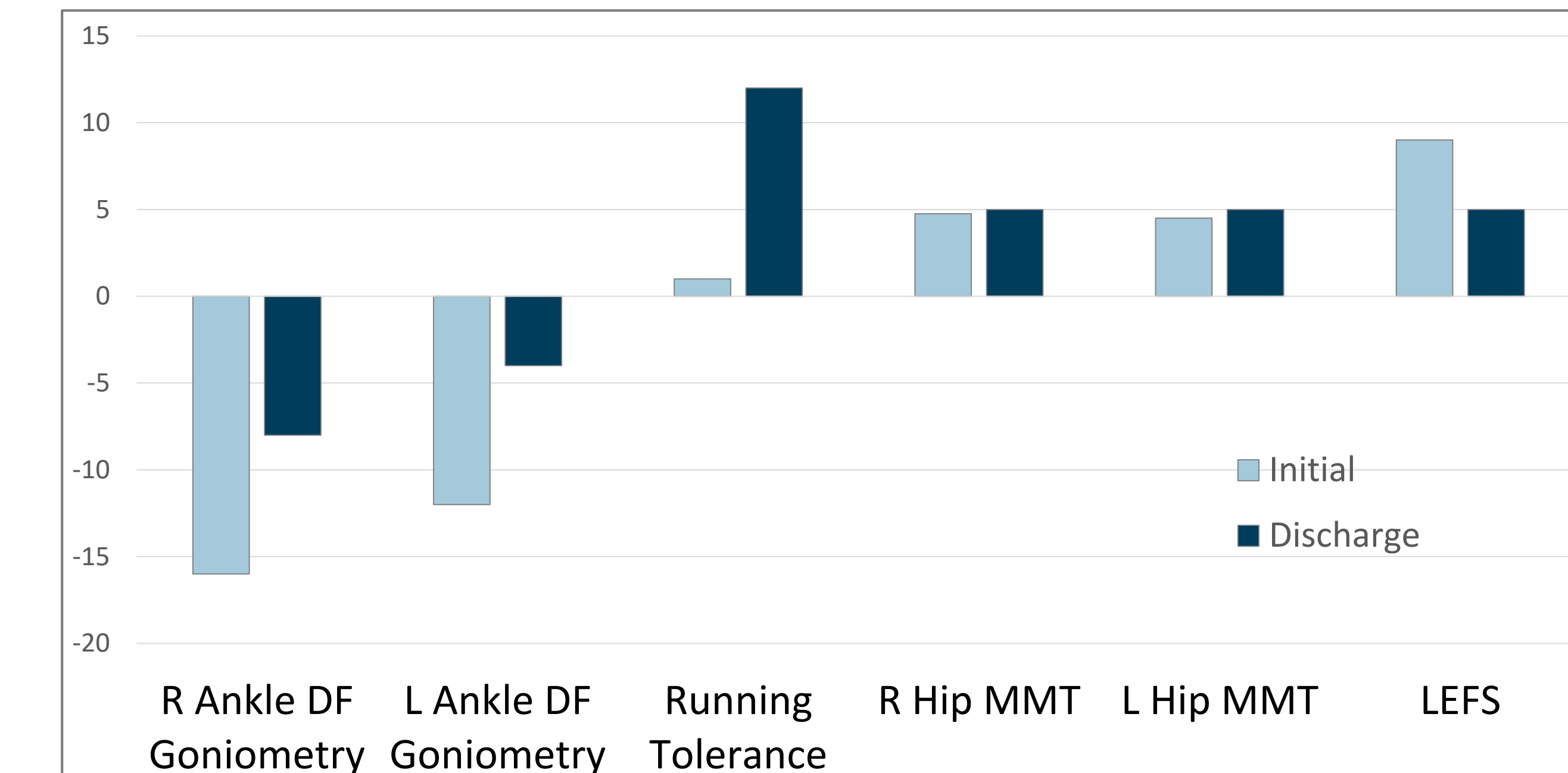
- Barefoot running protocols have been effective in decreasing anterior and lateral chronic exertional compartment syndrome (CECS)<sup>1</sup>; they have not been studied in patients with posterior CECS.
- Additionally, there is a lack of research that has investigated a barefoot running protocol in a college lacrosse athlete.

## Case Description

- 20 year-old female college lacrosse player
- Bilateral tightness and throbbing in lower leg, numbness and tingling into feet
- Brought on by running on pavement, up hills, and longer than 5-10 minutes
- Diagnosis:**  
Bilateral posterior chronic exertional compartment syndrome (CECS)



## Observations



Graph: Goniometry (°), Running Tolerance (minutes), MMT (0-5/5), LEFS (% disability)

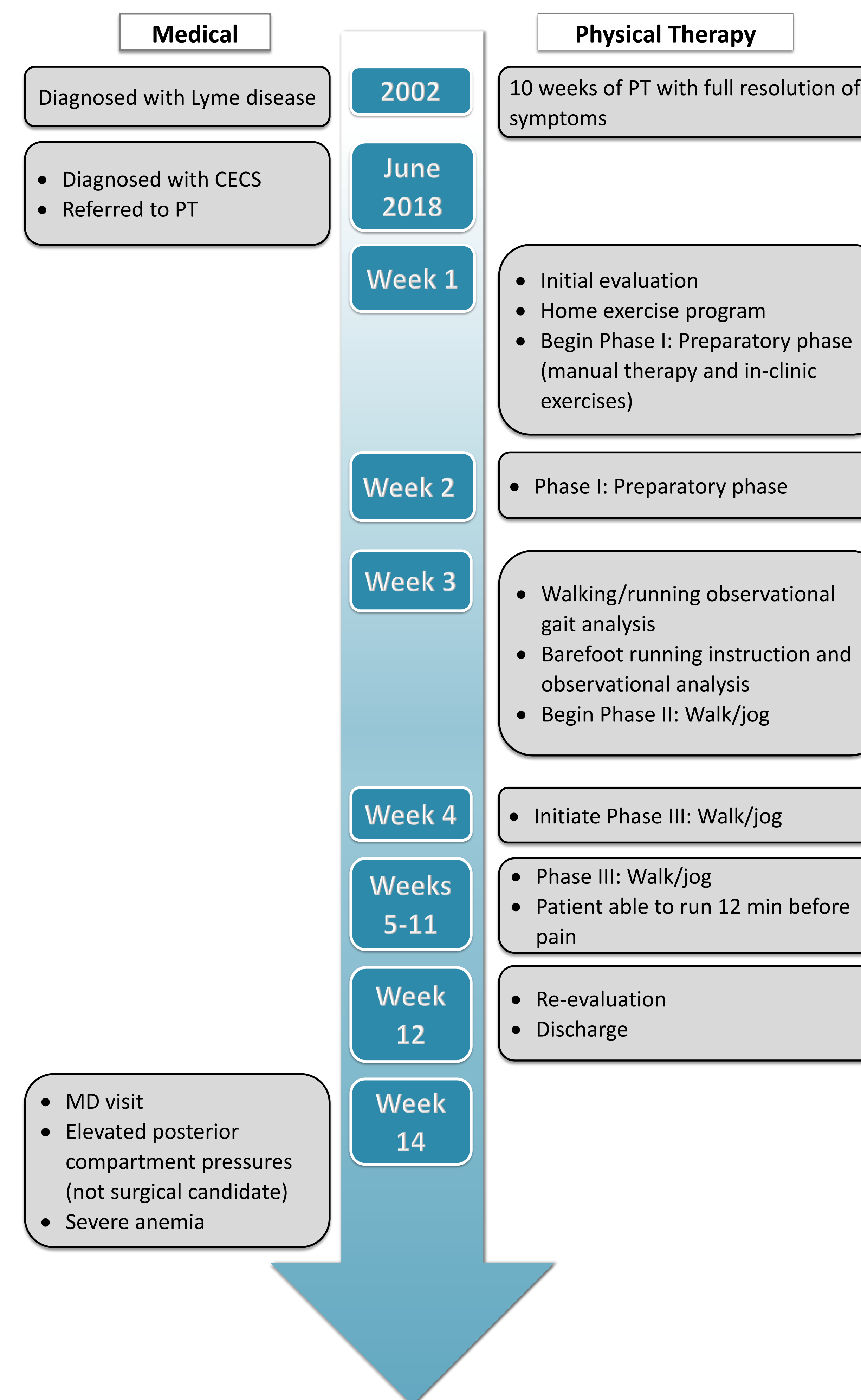
## Purpose

The purpose of this case report was to examine the effects of adopting a forefoot strike pattern, through a barefoot running program, in a 20-year-old college lacrosse player with posterior chronic exertional compartment syndrome (CECS).

## Intervention

Day	Barefoot Activity <sup>6</sup>
<b>Weeks 2-3</b>	
1	Walk 30 min
2	Walk 9 min/jog 1 min (x3)
3	Rest
4	Walk 8 min/jog 2 min (x 3)
5	Walk 7 min/jog 3 min (x3)
6	Rest
7	Walk 6 min/jog 4 min (x 3)
8	Walk 5 min/jog 5 min (x3)
9	Rest
10	Walk 4 min/jog 6 min (x3)
11	Walk 3 min/jog 7 min (x3)
<b>Weeks 4-6 - 3 days/week</b>	
12	Jog 12 min
13	Rest
14	Jog 15 min
15	Rest
16	Jog 17 min
17	Rest
18	Jog 20 min
19	Rest
20	Jog 20 min
21	Rest

## Timeline



## Discussion/Conclusion

- The patient reported a decrease in symptoms following the barefoot running program, however, she was not able to immediately return to lacrosse due to continued pain with longer running distances.
- A barefoot running program may be an effective way of decreasing ground reaction forces in individuals with lower extremity running injuries but may take an extensive period of time to see significant changes.
- Future research should investigate appropriate timelines and progression for barefoot running interventions.
- Studies should also explore barefoot running interventions for a larger population of individuals with posterior CECS.

## Foundation

- CECS is the second most common cause of activity-induced leg pain.<sup>2</sup>
- Twenty-two percent of CECS cases affect the posterior compartments.<sup>3</sup>
- A forefoot strike pattern has been shown to decrease ground reaction forces, shorten stride length, and increase cadence.<sup>4</sup>
- Barefoot running has not been extensively explored in patients with posterior CECS.

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## References

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