

DOES INDUCED FATIGUE ALTER DYNAMIC BALANCE IN ATHLETES? A SYSTEMATIC REVIEW.

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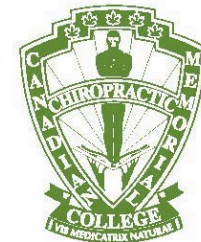
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CMCC

Canadian Memorial Chiropractic College



Background:

Dynamic balance has previously been identified as a key characteristic of skillful performance among athletes

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Deficit of dynamic balance has been shown to be a risk factor for injuries particularly in the lower extremities.

Previous studies have identified an increase of musculoskeletal injuries toward the end of soccer matches.

∴ fatigue has been called into question...



Objective:

This study aimed to identify, critically appraise, and synthesize the literature discussing the **influence of induced fatigue on dynamic balance** in healthy athletes.



Methods:

PUBMED, MEDLINE, CINAHL, Sports Discus, and the Cochrane library from onset to May 28, 2019.

Inclusion criteria: any study examining the effects of induced fatigue on dynamic balance in healthy athletic populations. Data included design parameters, as well as healthy athletic subjects undergoing dynamic balance, as measured by the SEBT/YBT assessment before and after induced fatigue.

Evidence was stratified based on population recruited into one of two categories: recreational and competitive athletes.

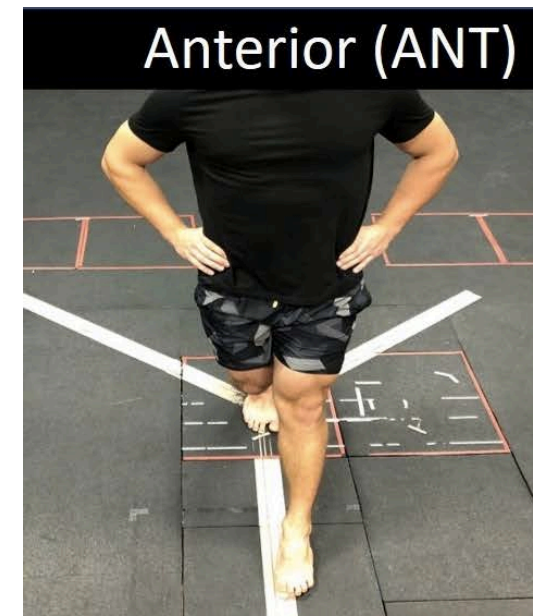
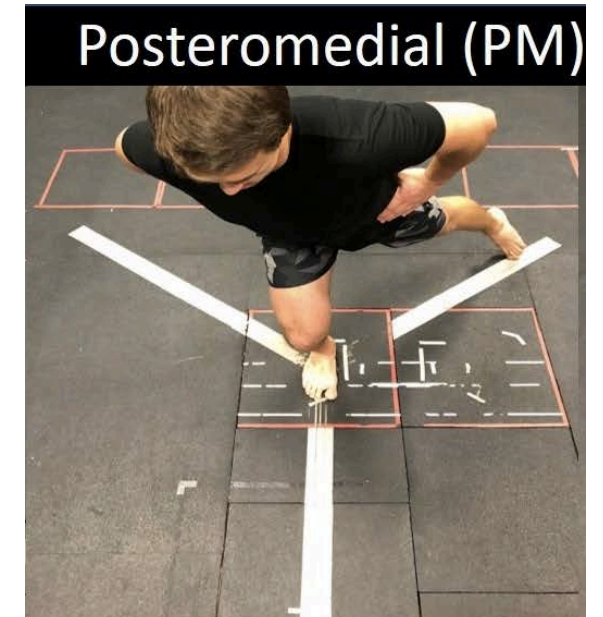
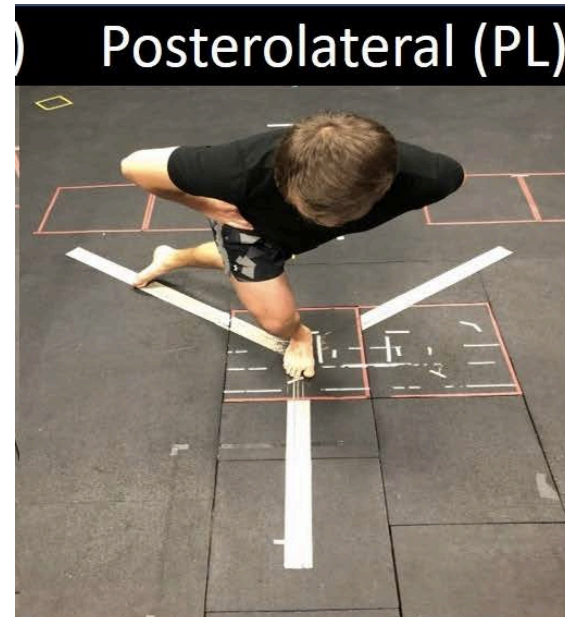


Results:

15 studies with low risk of bias were included:

In the recreational population, five of the studies found significant decrease in dynamic balance following the fatiguing intervention. However, the remaining two concluded with insignificant changes.

In the competitive population, three studies showed significant effects of induced fatigue on dynamic balance, while five showed no effects.



Conclusion:

There are conflicting results regarding the effects of induced fatigue on dynamic balance.

The majority of studies focused on competitive athletes found that fatigue did not alter their dynamic balance.

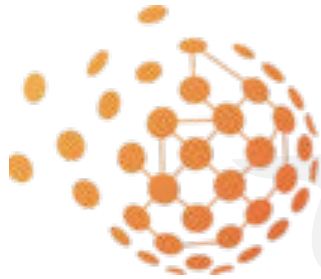
Per contra, the majority of studies focused on recreational athletes concluded the opposite - fatigue did indeed affect dynamic balance.



Future Research considerations:

- Careful elaboration of training regiments
- Heterogeneity of the athletic population recruited
- Heterogeneity of fatigue protocols
- Adequate sample size with control groups
- Assessment of outcomes over longer temporal intervals





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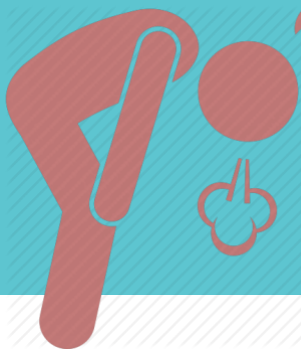
Association
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Thank you!

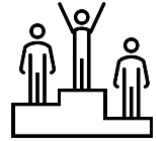
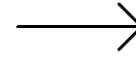
- 2021 WFC Biennial Congress: abstract poster presentation
- 2021 SPIN Summit (Own the Podium): abstract poster presentation
- 2021 Trevor Wallace Academic Achievement Award
- 2021 FOUNDATION for the RCCSS(C) Outstanding Paper Award.
- Accepted for publication in the December 2021 Annual Sports Chiropractic issue of the Journal of the Canadian Chiropractic Association.



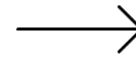
DOES FATIGUE ALTER BALANCE IN ATHLETES?

SYSTEMATIC REVIEW

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Does induced fatigue alter dynamic balance in athletes?



METHODS

Inclusion criteria: any study examining the effects of induced fatigue on dynamic balance in healthy athletic populations. Data included subjects undergoing dynamic balance, (SEBT/YBT) assessment before and after induced fatigue.

RESULTS

15 studies were included:

In the recreational population, 5 of the studies found significant decrease in dynamic balance following the fatiguing intervention. However, 2 studies concluded with insignificant changes.

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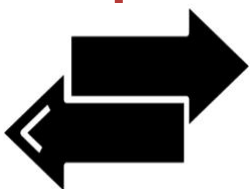


CONCLUSION

There are conflicting results regarding the effects of induced fatigue on dynamic balance.

The majority of studies focused on competitive athletes found that fatigue did not alter their dynamic balance.

Per contra, the majority of studies focused on recreational athletes concluded the opposite - fatigue did indeed affect dynamic balance.



Dr. Nader Abdelkader

Andrew Romanelli

Sheilah Hogg-Johnson

Outstanding Paper Award

“Does induced fatigue alter dynamic balance in athletes? A systematic review”

Dr. Nader Abdelkader has recently completed his Sport Sciences residency from the Royal College of Chiropractic of Sport Sciences. In addition to sports-related academic courses and rotations, the Sport Sciences residency offered various opportunities such as on-field and clinical experience, teaching experiences, as well as a research project with an original thesis and an in-depth systematic review. Dr. Abdelkader’s research topic of choice focused on the effects of fatigue on balance.



When considering the dynamic nature of sports and the demand it imposes on athletes, Dr. Abdelkader finds it of importance to evaluate the consequences of lack of balance to meet these athletic demands. Because of this, he chose to investigate the effects of fatigue on dynamic balance in the athletic population. He intends on using this knowledge to provide optimal care for his patients both in the clinical setting and on the field.

Dr. Abdelkader is currently the Chair of the Medical and Health Committee of the Ontario Fencing Association, as well as the Lead Medical Consultant for the Canadian National Fencing team. Notably, he was most recently part of the medical team for the pre-Olympic Canadian fencing training camp in Japan for Tokyo 2020 and prior to that, the medical team for the 2019 Canada Cup Squash (a Professional Squash Association event), and Fencing World Championships 2018 and 2019.