



Cultural Differences in Hydration Practices Among Physically Active Individuals: A Narrative Review

<u>Clarence HW LEOW^{a,b}</u>, Beverly TAN^a, Masashi MIYASHITA^c, Jason KW LEE^{a,b} ^aHuman Potential Translational Research Programme, Yong Loo Lin School of Medicine, National University of Singapore, Singapore ^bCampus for Research Excellence and Technological Enterprise (CREATE), Singapore ^cFaculty of Sport Sciences, Waseda University, Saitama, Japan

Introduction

It is well-established that appropriate hydration practices are essential in promoting health, and optimizing performance and recovery. The National Athletic Trainers' Association and the American College of Sports Medicine provide guidelines on fluid replacement. However, evidence-based fluid replacement guidelines may not be adopted due to cultural differences across countries. Cultural forces affecting hydration practices may be a result of religious beliefs and traditions, preferences, and beverage availability.

| Beer | Ramadan Fasting | Warm water |
|---|---|---|
| 90% water. Commonly consumed after amateur sports. Varying findings about its effect on performance, thermoregulation, and hydration due to different study design and individual | Abstinence from eating or drinking during daytime. Differences in adaptations to fasting | |
| alcohol tolerance levels. | and climate may explain varying results of fasting on hydration and | Promoted by Traditional Chinese Study showed greater decrease in |
| Popularised as sports drinks. | performance. | Medicine to avoidbody core and skin'shocking' organs,temperature, and |

Research shows fluid balance not fully restored after consumption.

5%

ABV

Na



- Can result in hypohydration before exercise and/or inability to rehydrate after exercise.
- Fasting individuals should ensure sufficient hydration during predawn meals.
- heart rate when and allows for natural water is consumed at body cooling. 4°C than at 28 °C. • No scientific

for hydration.

May improve evidence of benefits performance in endurance sports.

• Sports beers are infused with electrolytes.

• Lack of research on its nutritional content.

marketed due to high alcohol percentage.

• Might not be as good for hydration as

Acai juice



- Popular in Brazil.
- Known as "superfood" due to antioxidant and anti-

inflammatory properties.

• High Na+ and K+ help restore fluid-



May not improve exercise performance



Popular among Ethiopian athletes.

CH₂OF



Sugarcane juice

000/

- Popular among Indian athletes
- Rehydration effects similar to sports drinks during exercise.
- Antioxidants can reduce exercise-induced oxidative stress.

Non-coloured sports drinks

- Transparent beverages
 - popular in Japan due to
 - its professionalism and
 - perceived health
 - benefits.
- Aids hydration and

electrolyte balance after exercise.



- Antioxidants reduces exerciseinduced oxidative stress and high protein content aids muscular recovery.
- Uncertain effects on exercise performance – possibly due to majority of carbohydrates being dietary fibres.



- 11 Na







Conclusion

It is difficult to ensure individuals follow hydration guidelines due to cultural forces. The effects of cultural hydration practices are not well-established due to limited literature

available. More research on cultural hydration practices is worthwhile to better understand their effects on hydration, exercise performance, and recovery.

Acknowledgment: This research is supported by the National Research Foundation, Prime Minister's Office, Singapore under its Campus for Research Excellence and Technological Enterprise (CREATE) programme