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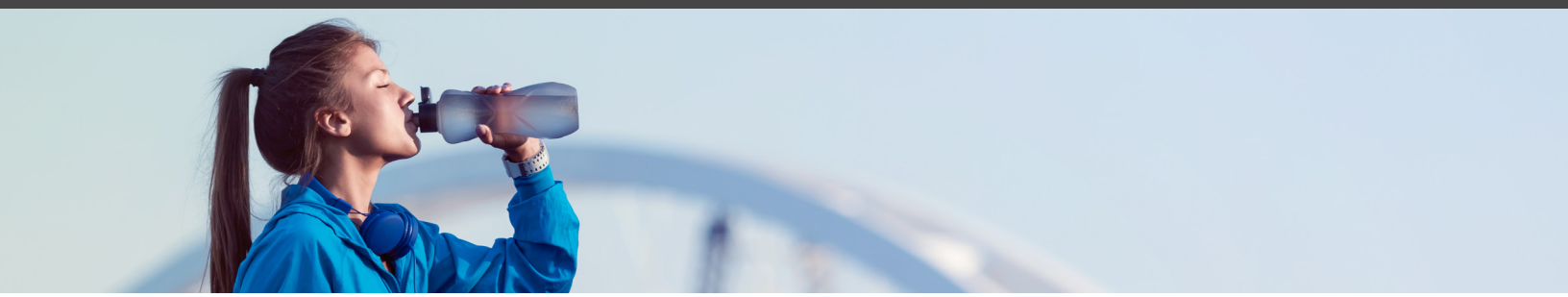
THE HYDRATION DEBATE:
MAKING SENSE OF THE MIXED MESSAGES

Hydration strategies used during exercise, training and competition seek to prevent over-/under-hydration and preserve performance, but it isn't as simple as drinking throughout exercise. **Robert W. Kenefick, PhD, FACSM,** and **Kurt Sollanek, PhD, CISSN,** describe the current research on hydration strategies and provide practical applications for each method.



Losing more than 2% of body mass through sweat is a sign of significant dehydration, and dehydration can increase the risk of heat illness and decrease performance by affecting muscle and cognitive function.[1]
The **goal** is to **minimize dehydration** and **preserve performance**.

MAIN HYDRATION STRATEGIES

- **PROGRAMMED DRINKING:** Pre-established drinking plan based on an individual's sweat rate and sweat electrolyte content
- **DRINK TO THIRST:** Using the sensation of thirst as the only stimulus to drink

KEY TAKEAWAYS

- Fluid intake should approximate sweat loss to prevent significant dehydration *(>2% body mass loss)* or over-hydration *(body mass gain)* during exercise
- ~30-60gm carbohydrate per hour of exercise = ~0.5 – 1.0L per hour of a 6-8% carbohydrate solution[2, 3, 4]

PUTTING IT INTO PRACTICE

PROGRAMMED DRINKING is best for:

- Longer duration activities greater than 90 min, particularly in the heat
- Higher intensity exercise
- Individuals with high sweat rates
- Exercise where performance is a concern

DRINK TO THIRST is best for:

- Short duration activities less than 90 min
- Exercise in cooler conditions
- Lower intensity exercise

Determine sweat rate under conditions *(exercise intensity, pace)* and environments similar to anticipated competition environments. Tailor the programmed drinking plan to prevent greater than 2% body mass losses in athletes with high sweat rates or those concerned with exercise performance.

For tools and resources to use with athletes, visit **PerformancePartner.Gatorade.com**
To dive deeper into the the science and check out a sweat rate calculator, visit **GSSIWeb.org**

REFERENCES

1. Joint Position Statement: Nutrition and Athletic Performance. (2016). Medicine & Science in Sports & Exercise. 48:543-68.
2. American College of Sports Medicine Position Stand. Exercise and Fluid Replacement. (2007). Medicine & Science in Sports & Exercise. 39(2):377-90.
3. National Athletic Trainers' Association Position Statement: Fluid Replacement for the Physically Active. (2017). Journal of Athletic Training. 52(9):877-95.
4. Casa, Douglas. Proper Hydration for Distance Running Identifying Individual Fluid Needs, A USA Track & Field Advisory. (2004).