

## HANDOUT:

# DURING-TRAINING/-COMPETITION NUTRITION AND HYDRATION

### THE BASICS

**Drinking fluids while you train and compete can stave off the performance-robbing effects of dehydration. And for extended exercise, refueling with carbohydrates can help you go longer and harder. But you need to know what to eat and drink during exercise, how much to take in, and how frequently. Otherwise, cramping and other intestinal problems can result. Get it right and the payoff is more energy and better hydration, leading to enhanced performance, less chance of injury, and faster recovery.**

### HYDRATE TO REPLACE SWEAT LOSSES

Drink fluids during exercise at a rate that prevents you from either losing more than 2% of your body weight or gaining weight due to excess fluid consumption. This averts dehydration and overhydration, both of which impair performance and can lead to serious health consequences.

- Since fluid needs can vary, calculate your sweat rate for the various conditions in which you exercise, using the [Sweat Rate Calculator](#) at PowerBar.com.
- To help meet your hydration needs, drink small amounts of fluid every 15 minutes or so — start early during exercise.

### KNOW WHAT TO HYDRATE WITH

Match your rehydration choice to the exercise you're doing and the weather conditions.

Duration of Exercise	Weather Conditions	What to Rehydrate With
Under 60 minutes	Moderate conditions	Water is usually fine
Any length	High temperature or humidity	Sports drink
60 minutes or more	All conditions	Sports drink

## ADVANTAGES OF A SPORTS DRINK OVER WATER

In high-temperature/high-humidity conditions, and for exercise lasting an hour or more, the advantages of a sports drink over plain water are many:

- A sports drink provides carbohydrates to help sustain blood glucose level during exercise.
- A flavored beverage leads to greater fluid consumption during exercise.
- Sodium and carbohydrates help the fluid in the beverage to be absorbed more quickly.
- Sodium helps maintain the drive to continue drinking fluids during exercise, which is crucial to meeting fluid needs.
- Sodium also helps with the retention of consumed fluids.

## STAY IN YOUR HYDRATION ZONE

Weigh yourself before and after exercise to see whether you've met your fluid needs. Stay within your "hydration zone" — where you can perform at your best — by losing no more than 2% of your body weight due to fluid loss during exercise, and by avoiding weight gain from consuming too much fluid.

- If you lose more than 2% of your body weight — 3 lbs (1.4 kg) for a 150-lb (68-kg) athlete — take in a bit more fluids during exercise in order to avoid dehydration.
- If you gain weight during exercise, you took in too much fluid. Cut back a bit next time.

## KNOW WHEN REFUELING HELPS

Whether to take in carbohydrates or not during exercise depends on the length and intensity of exercise:

- For exercise sessions of under 60 minutes, you generally have adequate carbohydrate fuel reserves on board, so you don't need to consume carbs during exercise.
- For moderate- to high-intensity exercise of 60 minutes or more, 30–60 grams of carbs per hour is recommended, preferably in smaller amounts consumed frequently.
- For moderate- to high-intensity exercise of more than 2 hours, a 2:1 ratio of glucose to fructose promotes a faster delivery of carbohydrate fuel to working muscles than glucose alone, as well as improved performance. PowerBar® C2MAX dual source energy blend features this research-tested 2:1 ratio and is in all PowerBar® products designed to be taken during exercise. C2MAX carbs can be consumed at 45–90 grams per hour during exercise — again, in smaller amounts taken frequently.

## REFUELING OPTIONS

Type of Activity	What to Use	PowerBar Options for Maximal Performance	How Frequently
Moderate- to high-intensity exercise such as running and cycling	Sports drink	Ironman Perform™ sports drink	Multiple sips every 10–15 minutes
	Energy gels	PowerBar® Energy Gel	Packet every 20–45 minutes*
Intermittent moderate- to high-intensity exercise such as team sports	Sports drink	Ironman Perform sports drink	Multiple sips every 10–15 minutes
	Energy gels	PowerBar Energy Gel	Packet every 20–45 minutes*
	Energy chews	PowerBar® Energy Blasts gel filled chews	1–3 chews every 10 minutes*
	Energy bars	PowerBar® Performance Energy bar PowerBar® Fruit Smoothie Energy bar	1 bar every 30–60 minutes*
	Energy bites	PowerBar® Energy Bites	4 bites every 30–60 minutes*
Moderate-intensity exercise such as climbing, hiking, snowboarding, skiing, skating, and skateboarding	Sports drink	Ironman Perform sports drink	Multiple sips every 10–15 minutes
	Energy bars	PowerBar Harvest® Energy bar PowerBar® Nut Naturals Energy bar PowerBar® Triple Threat® Energy bar	1 bar every 60 minutes*

\*For exercise lasting over 1 hour

## TAKE-HOME TIPS

- Calculate your sweat rate to determine your fluid needs — consume fluids early and consistently to adequately replace sweat losses.
- For moderate- to high-intensity exercise of 60 minutes or more, and anytime it's hot or humid, a sports drink is a better option than plain water.
- The time to experiment with different fluids, different fuel sources, and timing of intake is during practices and workouts.