



Module 8



Tactical Performance Nutrition & Hydration



Endurance Events



- **Carbohydrate-Loading**
- **Eat a high carbohydrate diet**
 - **3-5 days prior to events**
 - **60-70% of your diet**





Endurance Events



- **Events where exercise may last more than 75 minutes**
 - ***Military exercises and operations***
 - ***Pack marches***
 - ***Marathon, half-marathon***
 - ***Triathlon***
 - ***Bike race***
 - ***Long, hard workouts***





Endurance Events



- **Reduce your training while carbohydrate-loading**
 - **Allows muscles to repair**
 - **Allows muscles to replenish**
 - *Increase glycogen*
 - *Maximize hydration*





Carbohydrate & Exercise Guide for Endurance Events



Number of days before race	Exercise Time Frame	Training diet: % Carbohydrates
6	90 min	60%
5	40 min	60%
4	40 min	60%
3	20 min	70%
2	20 min	70%
1	Rest Day	70%
Event	Go For IT!	Meal before event, depending on your tolerance



Sports Drinks/Gels



- **Use sports drinks or gels during glycogen depleting events**
 - **Events greater than 60-75 minutes**
 - **Food is not available**
 - **Food will not be tolerated**
- **Talk to your doctor or a sports dietitian about electrolyte pills**





Sports Drinks



- **Provide**

- Carbohydrate (6-8%)
- Potassium (K)
- Sodium (Na)
- Water

- **Help to:**

- Hydrate
- Maintain hydration
- Re-hydrate
- Maintain blood glucose
- Keep up with calorie needs

Endurance athletes can need 2-5 times the calories of sedentary people





Gels



- **Gel packets can also be used for these endurance events**
- **Most gels contain about 25-30 grams of carbohydrate per packet**
- **Drink 5+ ounces of fluid with each gel pack consumed**
- **Some companies add caffeine and protein to there packets**



Sports Drinks with Protein



Some companies use small amounts of amino acids to enhance sports drinks

- Accelerade
- Endurox
- Amino Vital



387 Marine Corps Recruits



- **3 post-exercise groups**

- **Placebo**

- *0 carbohydrate, 0 protein, 0 fat*

- **Carbohydrate**

- *8 carbohydrate, 0 protein, 3 fat*

- **Protein**

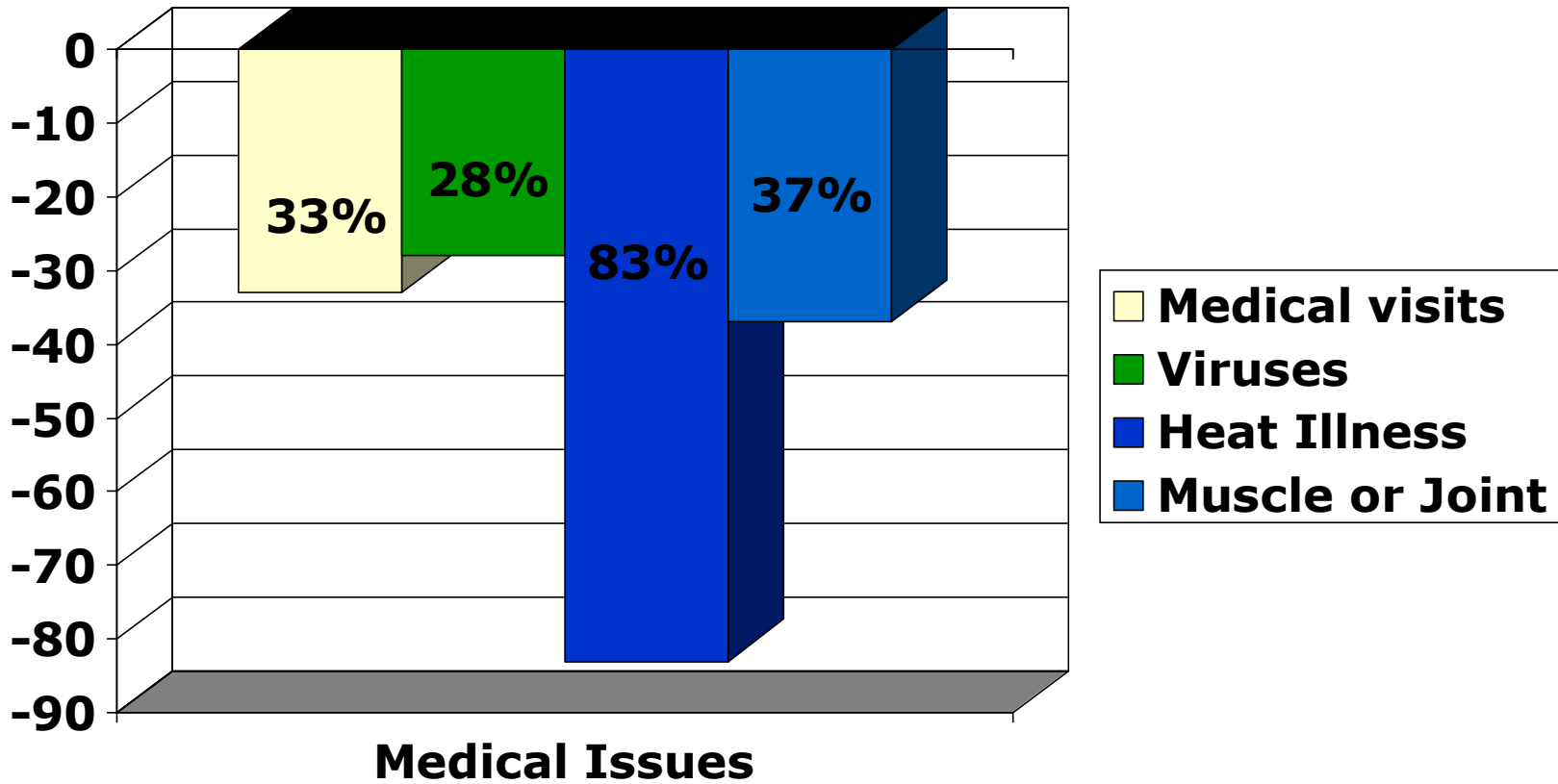
- *8 carbohydrate, 10 protein, 3 fat*



Flakoll PJ, Judy T, Flinn K, Carr C, Flinn S. Post exercise protein supplementation improves health and muscle soreness during basic military training in marine recruits. *J Appl Physiol.* 96:951-956,2004.



Protein Group Had Fewer Issues





Non-endurance Athletes



- **No specific diet**
 - (5K, PRT, PFT, CFT, track & field, recreational sports)
- **Priority is to optimize skill and body composition**
 - Carbohydrate should be 45-70%
 - Fat should be 20-30%
 - Protein should be 12-20%



Non-endurance Athletes



- **Sport-specific diets are not always healthy!**

- **Weight sports:**

- *Bodybuilding*
- *Boxing*
- *Wrestling*
- *Rowing*
- *Horse jockeys*

- **Aesthetic Sports**

- *Figure-skating*
- *Gymnastics*





Wrestlers and Weight Loss



- **In the appendix**
 - **"Reprinted with permission of the American College of Sports Medicine, *ACSM Current Comment "Wrestlers and Weight Loss"***



Pre-event Meals



- **Carbohydrate and Protein**
 - **300-500 calories about 3-4 hours prior to event**
 - **50-100 calorie snack about 1 hour prior**
 - *Granola bar*
 - *Low-fat milk*





Pre-event Meals



- **Cold cut sandwich**
- **Pasta with meat or meat sauce**
- **Rice and beans**
- **Meat with mashed potatoes or rice**
- **Yogurt with banana**
- **Fruit smoothie**
- **Ready-to-drink shake**





Pre-event Meals



- **In the appendix**
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Sports Nutrition Recovery



- **Recover immediately post-event with a shake or beverage**

- **Liquid meal**

- *Flavored milk*
- *Skim milk*

...Then a well balanced post-event meal with protein and carbohydrate similar to pre-event meal.



Low-Fat Milk



- **Perfect for non-endurance athletes**
- **Very good for endurance athletes**
- **Provides**
 - **Carbohydrate**
 - **Protein**
 - **Electrolytes**
 - **Vitamins**
 - **Minerals**