Tips for Running

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Rehydration

Fluid absorption

There are two main factors that affect the speed at which fluid from a drink gets into the body:

- the speed at which it is emptied from the stomach
- the rate at which it is absorbed through the walls of the small intestine

The higher the carbohydrate levels in a drink the slower the rate of stomach emptying. Isotonic drinks with a carbohydrate level of between 6 and 8 and a optimum level of potassium and sodium is emptied from the stomach the fastest.

What's wrong with water?

Drinking plain water causes bloating, suppresses thirst and thus further drinking. It stimulates urine output and therefore is inefficiently retained. A poor choice where high fluid intake is required. Water contains no carbohydrate or electrolytes.

Calculating personal fluid needs

During an endurance event you should drink just enough to be sure you lose no more than 2% of pre-race weight. This can be achieved in the following way:

- Record your naked body weight immediately before and after a number of training sessions, along with details of distance/duration, clothing and weather conditions
- Add the amount of fluid taken during the session to the amount of weight lost - 1 kilogram (kg) is roughly equivalent to 1 litre of fluid.
- After a few weeks you should begin to see some patterns emerging and can calculate your sweat rate per hour
- Once you know what your sweat losses are likely to be in any given set of environmental conditions, you can plan your drinking strategy for any particular event

Sports Drinks

There are three types of Sports drink all of which contain various levels of fluid, electrolytes and carbohydrate.

Type	Content
Isotonic	Fluid, electrolytes and 6 to 8% carbohydrate
Hypotonic	Fluids, electrolytes and a low level of carbohydrate
Hypertonic	High level of carbohydrate

The osmolality of a fluid is a measure of the number of particles in a solution. In a drink these particles will comprise of carbohydrate, electrolytes, sweeteners and preservatives. In blood plasma the particles will comprise of sodium, proteins and glucose. Blood has an osmolality of 280 to 330mOsm/kg. Drinks with an osmolality of 270 to 330mOsm/kg are said to be in balance with the body's fluid and are called Isotonic. Hypotonic fluids have fewer particles than blood and Hypertonic have more particles than blood.

Consuming fluids with a low osmolality, e.g. water, results in a fall in the blood plasma osmolality and reduces the drive to drink well before sufficient fluid has been consumed to replace losses.

Which is most suitable?

Isotonic - quickly replaces fluids lost by sweating and supplies a boost of carbohydrate. This drink is the choice for most athletes - middle and long distance running or team sports. Glucose is the body's preferred source of energy therefore it may be appropriate to consume Isotonic drinks where the carbohydrate source is glucose in a concentration of 6% to 8% - e.g. Nutrilite Strive, Lucozade and Isotonic Game

Hypotonic - quickly replaces fluids lost by sweating . Suitable for athletes who need fluid without the boost of carbohydrate - jockeys and gymnasts. E.g. Rehydrate or diluted sports drinks

Hypertonic - used to supplement daily carbohydrate intake normally after exercise to top up muscle glycogen stores. In ultra distance events high levels of energy are required and Hypertonic drinks can be taken during exercise to meet the energy requirements. If used during exercise Hypertonic drinks need to be used in conjunction with Isotonic drinks to replace fluids.

Seven Rules of Hydration

1. The rate of passage of water from your stomach into your small intestine depends on how much fluid is actually in your stomach. If there is lots of water there, fluid flow from stomach to intestine is like a springtime flood; if there is little water, the movement resembles a lightly dripping tap. Therefore, to increase stomach-intestinal flow (and overall absorption of water) you need to deposit a fair amount of liquid in your stomach just before you begin your exercise. In fact, 200-300ml of fluid is a good start. This will feel uncomfortable at first, so practise funelling this amount of beverage into your "tank" several times before an actual competition.
2. To sustain a rapid movement of fluid into your small intestine during your exertions, take three to four sips of beverage every 10 minutes if possible, or five to six swallows every 15 minutes.
3. If you are going to be exercising for less than 60 minutes, do not worry about including carbohydrate in your drink; plain water is fine. For more prolonged efforts, however, you will want the carbohydrate. (You could also use a beverage called Nutrilite FitH20 which contains no carbohydrates but contains nutrients such as B-vitamins and ROC (Red orange complex) that helps the body release it’s own energy and improves recovery after)
4. Years of research have suggested that the correct concentration of carbohydrate in your drink is about 5 to 7%.
5. Contrary to what you've heard, cold drinks aren't absorbed into your body more quickly than warm ones. However, cold drinks are often more palatable than warm ones during exercise, so if coldness helps you to drink large quantities of fluid while you exert yourself, then keep your drinks cool.
6. Swilling drinks during exercise does NOT increase your risk of digestive-system problems. In actuality, most gut disorders that arise during exercise are caused by dehydration, not from taking in fluid. Dehydration induces nausea and discomfort by reducing blood flow to the digestive system, so by all means keep drinking!
7. Train with the drink that you will use during an important event beforehand.

Water Intoxication

During sweating the skin excretes sodium as well as water. Coupled with replacement of fluid volume with plain water, these conditions can quickly produce a sodium deficit in the blood. The decrease in sodium concentration in the interstitial fluid lowers the interstitial fluid osmotic pressure and establishes an effective water concentration gradient between the interstitial fluid and the

intracellular fluid. Water moves from the interstitial fluid into the cells, producing two results that can be quite serious:

- The first result, an increase in intracellular water concentration, called overhydration, is particularly disruptive to nerve cell function. In fact, severe overhydration, or water intoxication, produces neurological symptoms ranging from disoriented behavior to convulsions, coma, and even death.
- The second result of the fluid shift is a loss of interstitial fluid volume that leads to a decrease in the interstitial fluid hydrostatic pressure. As the interstitial hydrostatic pressure drops, water moves out of the plasma, resulting in a loss of blood volume that may lead to circulatory shock.

Exercise Nausea: What Causes Nausea When Running?

1. Delay in gastric (stomach) emptying

Nausea while running may be related to what or how much you eat before a workout. Running requires a great deal of leg work - which requires energy. To meet the energy demands of the hard-working leg muscles, the body directs more blood flow to them. Unfortunately, this decreases the amount of blood flow the intestines get. If you eat too much before running, your pre-exercise snack won't be digested as quickly. If what you eat happens to contain fat, it'll further delay intestinal emptying.

At a VO2 Max of 60-70% (i.e. with longer runs like half and full marathons, trail running and hill work) the gastric emptying is delayed even more. If you consume fluids that is not absorbed quickly like plain water or fluids that is high in Fructose or low in electrolytes, the delay may cause discomfort , nausea and vomiting.

2. **Hypoglycemia (low blood sugar)**

Sometimes nausea when running comes from not eating or drinking enough. If you haven't eaten carbohydrates in many hours and you try to run "the long one", you may experience glycogen depletion or even a drop in blood sugar levels. This can cause fatigue, light headedness, and nausea. Dehydration from not drinking enough fluids can do the same thing.

TIP: Eat a small snack that contains complex carbohydrates and protein, but little or no fat, about two hours before running

(e.g. Nutrilite Positrim Protein bar – contains long chain Carbohydrates *, low amounts of fats (Mono-unsaturated fats – which is the best source of fat for exercise) and high amounts of protein – see product promotion below.)

Other snacks: Cold meat sandwich, high protein smoothie, Yogurt and banana, Sports drink with a scoop of protein powder.

Drink plenty of water to stay well hydrated - and avoid caffeine. Take along a water bottle if you plan on running for more than an hour, or if it's warm outside. Sip, but don't guzzle water during your workout.

Other Causes of Nausea When Running

Another common cause of exercise nausea is GERD. This is a condition where the lower esophageal sphincter doesn't close firmly, and food, liquids, and digestive juices move backwards into the esophagus. This leads to abdominal bloating, nausea, and burning in the chest.

Snacking too close to running, eating too much or eating the wrong foods, and drinking caffeinated beverages (Like Coke) makes the symptoms worse. Again, the key is to eat a small snack two hours before a run - and stay away from caffeine. If you have frequent GERD that's unrelated to running, see a doctor for treatment.

Another underappreciated cause of exercise nausea is aerophagia. Aerophagia simply means swallowed air. Some people swallow air subconsciously when they're anxious, and others do it when they exercise or run. Aerophagia can lead to uncomfortable stomach bloating, burping, and nausea.

One way to prevent this aerophagia is to make a conscious effort to breathe through your nose rather than through your mouth.

Nausea When Running: The Bottom Line?

If you continue to have symptoms despite making these changes, see your doctor. Some medical problems such as a peptic ulcer or gall bladder disease can cause nausea when running - and you don't want these conditions to go undiagnosed.

References:

Merck Manual. Eighteenth Edition. 2006.

PRODUCT PROMOTIONS

Nutrilite Strive With ROC (Red Orange Complex)

Nutrilite Strive is the only sports drink that supplies 100mg of ROC (red orange Complex). This is a food extract made from 3 species of Red Citrus fruits that grows in extreme conditions in Sicilian areas in Italy. The Anti-oxidants supplied by these nutrients has been shown to improve recovery and reduce muscle fatigue in exercise. This makes it an excellent recovery drink to prepare you for the next workout.

Strive can be used as a rehydration drink for high intensity exercise that lasts less than 1hour or endurance exercise that lasts more thank 1 hour

What makes Nutrilite Strive Different?

Like some other sports drinks, Strive contains the optimal amount of Carbohydrates (14g/250ml) for effective blood sugar control

It contains 220mg Sodium and 70mg Potassium per stick pack which is the optimal amount to prevent low sodium levels (which may cause “water intoxication”) and replace amounts lost by sweat. It also makes it more palatable and stimulate thirst.

Mixed with 400ml water Strive is an ISOTONIC drink which is the optimum concentration for gastric emptying (and delivery of fluid and carbohydrates) for maximum benefit during exercise. Mixed with more than 400ml water yields a hypotonic drink which is also good for rehydration (Typically for shorter 1 hour events)

Available in 2 flavours: Grapefruit and Mixed fruit in convenient **Stick packs** to add to your water bottle

R 18 per stick pack or R 333 for a box of 20.

Magnesium and Zinc Mineral Stick Packs

These mineral stick packs are especially convenient for busy active people and athletes. Magnesium improves muscle contraction and reduces fatigue. It also promotes healthy nervous system functioning

Zinc Sticks promote a healthy immune system especially for the prevention of upper respiratory tract infections.

Take 1 of each every day before training for maximum benefit.

R 195 for a box of 30 or R 7 each

Rhodiola Rosea

This relatively unknown herb is grown by Nutrilite on Certified organic farms for the best possible quality ingredients. Rhodiola contains 6 bioactive ingredients which helps the body recover from mental and physical stress. It has anti-oxidant properties which helps the body recovers from exercise stress and it boosts the production of endorphins which is released when exercising. It is a perfect supplement to take before training sessions or before a race. It can also be taken to boost energy levels and decrease stress hormone production on a daily basis. (Contains Green tea extraxt which increases anti-oxidant content and supplies caffeine to increase energy production)

R320 for 60 tablets

Positrim Protein bars

Provide high quality protein which is important for maintenance of muscle mass, muscle growth and energy production. These bars contain 22g of high quality protein derived from milk, 23 g of carbohydrates of which only 0.5g is derived from sugar and 9g of fat of which 6.4g are monounsaturated fats. These are the most healthy form of fatty acids for the body and is released quickly for energy production

It is suitable for diabetics and people with high cholesterol

R30 per bar or R278 for a box of 9.

Available in Chocolate mint, Orange or Vanilla Toffee flavour.

Positrim bars are perfect to take along on long Cycling events, Ultramarathons, Hikes or as a high protein, high carbohydrate snack to take before an event.
(Take at least 1-2 hours before an event for maximum benefit)