



Philippa Parish Nutrition

BSc (Hons) Dip ION MBANT NTC & CNHC Registered Practitioner

Phone: 0117 9863700 Mobile: 07970 950 839

E-mail: philippaparish@blueyonder.co.uk Web: www.philippaparish.com

Hydration

Why is it important to focus on drinking?

- Muscles contain 75% water.
- Joints rely on water to keep them "spongy"
- Sweating/ exercising muscles produce a lot of heat.
- Humans have a poor ability to judge their level of hydration.
- Water in the body used for:
 - Cooling
 - Nutrient transport and waste removal
 - Joint lubrication
 - Blood component

Effects of dehydration

- Cumulative- the body cannot adapt
- 2% dehydration has 10-20% loss in physical performance

Physical effects:

- Reduction in blood volume (thicker blood moves more slowly round the body AND less blood to deliver nutrients and remove waste products from muscle cells)
- Increase in body temperature- exercising muscles
- Reduced digestive activity
- Reduced ability to absorb water into the body- from drinks
- Headaches

Mental effects:

- "Brian fog" – can't think clearly
- Leading to reduced skill ability, judgment and decision-making.
- Are you crabby and irritable?

What to drink

- Little during a meal to allow efficient digestion
- Water
- Milk and milk drinks
- Hypotonic drinks- less than 4g carbohydrate /100ml- good for before and during training
- Isotonic drinks- 4-8g carbohydrate /100mls- more concentrated- better for replenishing glycogen stores after training
- **NOT high sugar and carbonated/caffeinated drinks** (dehydrating and may cause cramping and nausea)
- Drinks should be cool, palatable and accessible

When to drink

- Do not guided by thirst alone
- Thirst reflex results in only 80% hydration- **adding a pinch of salt to your drink makes you drink more!**
- When urine is a pale straw colour the body is within 1% of optimum hydration
- Drinking to keep you hydrated takes practice.

Drinking Strategies

Before training/competition

- Need to be hydrated days before
- 500mls fluid about 2 hours before
- 125-250 mls fluid just before (volume will depend on what is comfortable for the individual)

During training/competition days

- Water for exercise of less than an hour
- (Iso/hypotonic drinks between races)
- Start drinking as early as possible
- Drink at regular intervals

After training/competition

- Need to fully rehydrate
- Need 150% of the amount of fluid lost during exercise
- 500mls hypo/isotonic drink within ½ hour of end of exercise. (some protein powder or eat some protein)
- Chocolate milk
- Protein to help repair muscle fibres and aid immunity.
- Keep drinking for the next few hours (urine pale straw coloured)

Branded Sports Drinks Ingredients

Aspartame

Discovered in 1965 when researching into an anti-ulcer drug

200 times sweeter than sugar

Once in the digestive tract, the body can digest aspartame into

- aspartic acid, (causes serious chronic neurological disorders- MS, Parkinsons, hypoglycaemia)
- phenylalanine
- methanol. (the prime constituent in methylated spirits- may cause blindness), which in turn is broken down to:
- formaldehyde (used for preserving dead bodies) within the body- a neuro-toxin, carcinogen

The Side Effects of aspartame

The sweetener has been implicated as the cause of many side effects, including:

- Skin Rashes/Flushing
 - Panic-like Agitation
 - Dizziness and Numbness
 - Diarrhea
 - Swelling
 - Muscle aches/shooting pains/cramps/joint pain
 - Headaches/tinnitus
 - Intestinal cramping
 - Bladder issues
 - Stomach pain
- Abdominal obesity

Acesulfame Potassium

Discovered by accident in 1976

- 200 x sweeter than sugar
- suspected of causing benign thyroid tumors
- may also increase the appetite
- contains the carcinogen methylene chloride
- exposure to methylene chloride for long periods of time may lead to such side effects as:
 - Breast tumors
 - Chronic respiratory disease
 - Depression
 - Headaches

- Kidney and liver problems
- Leukemia
- Lung tumors
- Mental confusion
- Nausea
- Visual disturbances

Fructose

- Over 10 weeks, 16 volunteers on a controlled diet including high levels of fructose produced new fat cells around their heart, liver and other digestive organs. They also showed signs of food-processing abnormalities linked to diabetes and heart disease.
- Fructose, a sweetener usually derived from corn, can cause dangerous growths of fat cells around vital organs. Increases the levels of inflammatory omega 6 fatty acids
- Insulin resistance and obesity
- Elevated blood pressure
- Elevated triglycerides and elevated LDL
- Depletion of vitamins and minerals
- Cardiovascular disease, liver disease, cancer, arthritis and even gout.

Caffeine

- affects blood sugar levels - energy peaks and troughs
- Causes the release of adrenaline and cortisol - stress hormones. This can lead to a feeling of anxiety and aggression

Red Bull

Taurine

- When given to test rats in an experimental laboratory, it was found that the taurine caused anxiety, irritability, high sensitivity to noise, and self-mutilations. However, this data does not mean that the same effects will occur in humans
- One study in a medical journal stated that high levels of taurine could help lower blood pressure in people with high blood pressure.
- In the cell, taurine keeps potassium and magnesium inside the cell while keeping excessive sodium out. In this sense it works like a diuretic. Good for fighting tissue swelling and fluid accumulation. People with heart failure, liver disease.
- Affects neurotransmitters in the brain, which a sedative effect.

Hydration Drink Recipes

Hypotonic drinks

1. 100mls High juice fruit squash

900mls water

¼ - ½ teaspoon salt

2. 250mls fruit juice

750mls water

¼ - ½ teaspoon salt

Isotonic Drinks

1. 200mls High juice fruit squash

800mls water

¼ - ½ teaspoon salt

2. 500mls fruit juice

500mls water

¼ - ½ teaspoon salt

Considerations

- Salt is included to replace lost sodium in sweat, encourage water absorption from the intestines and the thirst reflex.
- Drinks should be palatable – use juices you like
- Kept cool (but not cold), if possible.
- Tip- drink until you are no longer thirsty, then have 4 more gulps.

Before Exercise

- Drink plenty of water for days before.
- 500ml fluid (water, or hypotonic drinks) about 2 hours before. This promotes hydration and allows enough time for excretion of excess water.
- 125-300mls fluid just before. (volume will depend on the individual). This volume is enough to distend the stomach and encourage gastric emptying and absorption of water from the intestines.

During Exercise

- 125-250mls (of however much is comfortable) of **hypotonic drinks** every 10-20 mins, or during breaks.
- Do not wait until you feel thirsty.
- Water acceptable for moderately intensive exercise lasting less than 1 hour

After Exercise

- 500mls hypotonic, or isotonic drink, or flavoured milk drink, **within ½ hour** of the last race
- Continue to drink regularly for the next few hours until your urine is pale-straw coloured (almost colourless)

It is advisable to consult your doctor of any changes you intend to make to your diet, especially if you are on medication. Nutritional therapy should not be considered a replacement for conventional treatment.