



Sheffield

Therapy
Centre

Basic Hydration for Sport

If you want to perform at the top of your game, staying well hydrated is vital. Water is an essential component for the body to function efficiently – particularly when playing sports.

When we exercise, the body produces heat, and in order to lose this heat, we sweat. However, if we don't replace the fluid we lose when we sweat, our bodies become dehydrated, which increases the strain on the body, decreasing work rate and increasing feelings of exertion. The consumption of fluid before, during and after exercise is therefore vital for the safe and effective functioning of the body.

The amount we sweat depends on the individual and is influenced by exercise duration and intensity as well as environmental and external conditions. Our individual characteristics such as body weight, genetics, and fitness levels will also influence sweat rate. With this in mind it is clear that necessary fluid intake is different for everyone. As a general guide, 3% fluid loss is equal to a 10% loss in strength and 8% loss in speed, as well as mental performance such as concentration.

Sports drinks are designed to tackle a drop in carbohydrate stores and dehydration (the main causes of fatigue), by absorbing quickly into the body. They are categorized according to their osmolality – or in other words how many particles are in the solution. Osmolality is dependant on the carbohydrate type and concentration as well as how much sodium is in the solution, and is compared to blood plasma levels of osmolality

Hypotonic sports drinks (osmolality lower than blood) are effective at transporting fluid and carbohydrate into the blood stream, (although the actual carbohydrate supply is relatively low). They provide effective hydration, principally by increasing an individual's voluntary fluid intake, and are excellent for exercising to maintain fitness, improving body tone or weight management.

Hypotonic drinks are ideal for exercising or playing sport for less than 60 minutes at a low to moderate in intensity.

Isotonic sports drinks (osmolality in balance with the body) drinks are effective at transporting fluid and carbohydrate into the blood stream. This tackles fatigue caused by dehydration and reduced carbohydrate stores. Isotonic sports drinks are known to enhance performance when competing up to 60 minutes in duration at high intensity in nature or 90 minutes if moderate intensity in nature. This is achieved by delaying the onset of fatigue. They are also great at aiding recovery from demanding exercise. Isotonic drinks are ideal those competing in team sports, racket sports and endurance events where both dehydration and the depletion of carbohydrate stores may limit performance.

Hypertonic sports drinks (higher osmolality than blood) rarely contain electrolytes. They are known in some situations as 'energy' drinks as their primary focus is to provide a large amount of carbohydrate during periods immediately following exercise where a high intake of carbohydrate is vital but hydration is not. Hypertonic sports drinks should not be used to maintain hydration as it takes too long for the body to absorb it into the blood stream. They are therefore classed as 'functional' sports drinks aimed at providing a high amount of carbohydrate in a liquid format when bulky foods are either not available or not preferred.

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