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Energy drinks for sports

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Abstract

Sports nutrition has many of products & things designed as energy drinks and used by athletes, exercisers and sports people to improve their nutritional intake especially fluids. The fluid intake takes most significant role in one's health, wellbeing, performance, muscle growth or recovery from exercise & sport competition also. Sports nutrition products are formulated with natural ingredients, ranging from milk, fibres, sugars or vegetable starches to vitamins, minerals and more unique ingredients such as non-essential nutrients and herbs. The products are referred to as sports "supplements". However, since far greater than half of the aggregate sales of the sports nutrition industry is accounted for by carbohydrates, proteins and fats, the moniker "sports nutrition" is probably more appropriate because it reflects the fact that these products are primarily composed of the very same major constituents found in common foods.

Keyword: Probably, nutrition, constituents

Introduction

Beverages can be defined as "any fluid which is consumed by drinking". It consists of diverse group of food products, usually liquids that include the most essential drink "water" to wide range of commercially available fluids like fruit beverage, synthetic drinks, alcoholic beverage, milk, dairy beverages, tea, coffee, chocolate drinks etc.

Beverages are an integral part of human diet,

Beverage starting from new born. The cycle starts with the infant formulas highly complex drink, rich in many key nutrients. However there are important pre-requisite for beverages:

- All are made from food ingredients
- All are subject to pure food law
- Consumed in enormous quantities – sometimes safer than potable supply

Beverages are essential for growth, development as well for carrying out various physiological processes that are critical for living a healthy life.

- In adult individuals 70 percent of body weight, 73 percent of lean muscle, 25 percent of adipose tissues, 22 percent of bone and 80 percent of blood consists of water.
- Consumption of beverages help in maintaining the water content in body and prevent dehydration
- The water assists in digestion, assimilation and excretion of foods.
- It also helps in removing the toxic substances produced in body as a result of metabolisms such as urea, uric acid, ammonia etc. through kidney.
- Water in beverages help in regulating the temperature of body through the process of sweating.

Health Importance of Beverages

- Beverages specially the fruit and vegetable-based ones are source of micronutrients (vitamins and minerals) and anti-oxidants (carotenoids, flavonoids).
- Certain beverages like tea and coffee contain alkaloids which stimulate the central nervous system.
- Consumption of alcoholic beverages specially wine is recommended for its heart healthy image due to the presence of flavonoids.
- Fermented dairy beverages are consumed because of the beneficial micro-flora present in them which assist in restoration and improvement of gastro-intestinal health.

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Classification of Beverages

- Beverages may be classified on various ways. The classification criteria may depend on various factors as mentioned below:
- Natural and Synthetic (Ingredients used in manufacture)
- Carbonated and Non-carbonated (Degree of mechanical carbonation)
- Alcoholic and Non-alcoholic (presence or absence of alcohol)
- Hot and Cold (Temperature of serving)
- Stimulating and Non-stimulating (Based on physiological effect)
- Other beverages

Sports and energy drinks

Sports drinks

- Sports beverages are also called as “electrolyte drinks” are basically designed to replenish the loss of fluid & electrolytes and provide quick energy during the exercise and sports activity.
- The monosaccharides such as dextrose, glucose syrup are added so that they can be transported easily into the muscle cells and produce energy apart from sucrose and maltodextrin.
- The carbohydrate content of sports beverage varied in the range of 4-8 percent.
- Electrolytes are many essential minerals such as chloride, calcium, phosphate, magnesium, sodium and potassium.
- Electrolytes control osmosis of water between body compartments and help maintain the acid base balance required for normal cellular activities.

Classification of sports drinks

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

1. Isotonic sport drinks contain similar concentrations of salt and sugar as in the human body and 6-8% carbohydrate. Isotonic drinks quickly replace fluids lost by sweating and supply a boost of carbohydrate. This kind of drink is the choice for most athletes especially middle and long distance running or team sports.
2. Hypotonic sport drinks contain a lower concentration of salt and sugar than the human body. Hypotonic drinks quickly replace fluids lost by sweating. This kind of drink is suitable for athletes who need fluid without the boost of carbohydrates such as gymnasts.
3. Hypertonic sport drinks contain a higher concentration of salt and sugar than the human body and have high levels of carbohydrates. Hypertonic drinks can be used to supplement daily carbohydrate intake normally after exercise to top up muscle glycogen stores. In long 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.

Energy Drinks

Energy drinks are those beverages which boost energy and mainly contain sugar and caffeine. In recent past there has been rapid growth in the demand of energy drinks. These drinks may also contain variety of stimulants and vitamins.

FSSAI Standards for Energy Drinks/Caffeinated Beverages

- FSSAI has taken steps to regulate caffeinated beverages after learning that many leading energy drinks in the Indian market have caffeine as the ingredients more in amount than the suggested consumption level on a regular basis.
- According to the FSSAI standards, non-alcoholic beverages having caffeine more than 145 mg per liter would get labeled as caffeinated beverages.
- The maximum permissible caffeine level must not cross 300 mg per liter. Besides this, sucralose must not pass 300 ppm, and saccharin sodium must not go beyond 100 ppm. The permissible limit for Neotame is 33 ppm. Methyl ester must not exceed 770 ppm.
- The manufacturers of the beverage need to appoint a Food Supervisor to check whether the safety levels of the beverages are appropriate or not.
- Another mandatory thing is that conducting an Audit and a Hazard Analysis needs to happen after a periodic interval to analyze whether the beverages are in accordance with the FSSAI standards ^[1] and guidelines or not.
- If the ingredients of the energy drinks include any fruit, then it becomes mandatory to have a declaration about the fruit content on the beverage labels.

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