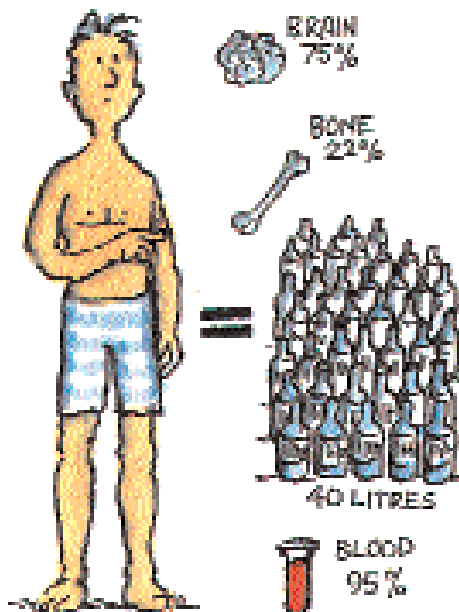


# Liquids Mean Life

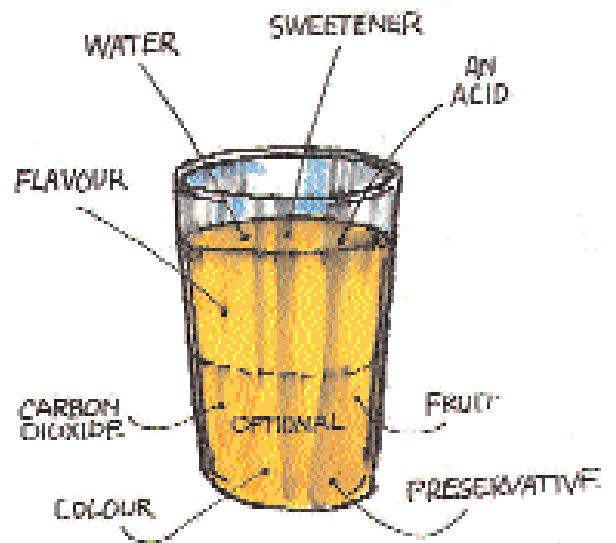
## 1. FLUIDS AND LIQUIDS

- Water is essential for the functioning of almost all the body's living cells.
- Each person loses about 2.5 litres of fluid per day, through urine, breathing and sweating.
- Some of this fluid is obtained from food, but about 1.5 litres should come from drinks. More should be drunk on a hot day or after exercise.
- Dehydration, caused by consuming too little fluid, can cause symptoms such as headaches, tiredness and loss of concentration. Severe dehydration, e.g. after vigorous sport or on a hot day, can be dangerous.
- We need to drink regularly not just when we are thirsty as the body only produces a thirst response when we are already water deficient.



## 2. SOFT DRINKS – THE EIGHT MAIN INGREDIENTS

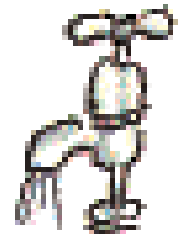
- Some ingredients are present in virtually every soft drink. These ingredients can be grouped into two groups: basic and optional.



### Basic ingredients

#### 2.1 Water

- Water is the major ingredient in all soft drinks representing 86% of a carbonated soft drink, 90% of a fruit juice and 100% of bottled waters.
- Water can be obtained from a number of suppliers including mains water companies, Spring and Natural Mineral Water producers.



## 2.2 Sweetening agents

- All soft drinks are sweetened, including fruit juices (which are naturally sweetened by the sugar in the growing fruit). Bottled waters and some clear soft drinks (flavoured waters) are the only exceptions.
- Sweetness is achieved through the use of bulk or intense sweeteners. Bulk sweeteners are usually sugar or syrup made from sugar. Intense sweeteners are ingredients that are many times sweeter than sugar, so less of them needs to be used.



## 2.3 Acids

- Acidity is one of the basic properties of a soft drink.
- Soft drinks are usually acidified by the addition of fruit juice or the inclusion of an acid.
- Acid performs two main functions – it helps to prohibit the growth of micro-organisms, such as yeasts, moulds and bacteria, and it improves the taste profile of the drink.



## 2.4 Flavours

- Flavourings may be obtained from natural or synthetic sources.
- Natural flavourings are derived from natural extracts such as fruits, vegetables, nuts, bark, herbs, spices and oils.
- Synthetic flavourings can be chemically identical to those found naturally. A few are truly man-made.



## Optional ingredients

### 2.5 Fruit and/or juices

- These are sourced from the fruit and juices sold for consumption as fruit and juice.
- Stabilisers may need to be added if fruit or juice are used.



### 2.6 Carbon dioxide

- All 'fizzy' drinks contain carbon dioxide.
- The amount of carbonation depends upon the type of soft drink.
- Carbon dioxide can affect the acidity of a drink and help to prevent mould growth.



### 2.7 Preservatives

- Preservatives enable products to have a longer shelf-life by preventing spoilage by micro-organisms.
- The need for a preservative is dependent upon the type of product and the processing used.



### 2.8 Colours

- Colours restore the colour lost from food during processing and also make the food look brighter.
- Several colours (13 of the permitted 31 allowed in soft drinks) occur in nature or are copied from plants, such as beta carotene which is orange in colour.



## 2.9 The exceptions

- Bottled waters contain no ingredients other than water and sometimes some added minerals and are therefore governed by different regulations.
- Pure fruit juices are taken direct from the fruit and again do not contain any added ingredients.

## 3. FOOD SAFETY

- Safety is a priority at every stage of the food chain from farm to fork.
- The ingredients used in food and drinks available to European consumers have been thoroughly tested for their safety, with additives given an E number.
- Despite the stringent efforts of manufacturers, some products may occasionally become contaminated which may spoil the food or drink.
- This contamination could occur at every point in the food chain, from harvest to processing, storage, distribution, retailing, final preparation or serving.

- Contamination can be in the form of:

1. **micro-organisms** bacteria, yeasts and moulds
2. **physical objects** parts of machinery e.g. nuts, bolts
3. **chemicals** e.g. cleaning fluids



## 4. PROTECTION THROUGH PROCESSING

- Whether raw or processed, food is rarely sterile when it reaches the consumer. It usually contains bacteria or other microbes which are harmless such as the friendly bacteria in natural yoghurt and Natural Mineral Water.
- Most food spoilage is due to microbial activity.
- Whilst spoilage does not necessarily make food unsafe to eat or drink, it can make it unpalatable.
- Commercially manufactured foods are designed to be safe.
- In the case of soft drinks and fruit juices a number of common preservation methods are used to destroy microbes or stop them from growing, including: heat treatments, low temperature storage, fermentation and canning.
- Bottled waters, depending on their category, may use various treatments to protect the product. All the treatments used are approved under legislation.



## 5. QUALITY ASSURANCE

- Soft drinks producers operate quality assurance systems to ensure safe food production.
- Generally few outbreaks of foodborne diseases originate in the food chain.

- The greatest risk to the consumer is through mishandling of food in places where food is served, such as restaurants, hotels, schools, hospitals and in the home.
- Measures currently used to help prevent contaminated food from reaching the consumer include:
  - using good quality raw materials from assured suppliers
  - following good manufacturing practices
  - using management systems and control of hazards during production, processing and sale of food
  - providing training programmes for all food industry personnel
  - carrying out research on micro-organisms and how best to control them
  - exchanging information on food safety
  - establishing industry standards and codes of practice

## 6. ENSURING SAFE FOOD IS PRODUCED

- Food safety is the shared responsibility of everyone involved in the food chain. This includes ingredients suppliers, food companies, establishments that serve food, and consumers.
- The Food Safety Act 1990 makes the company and workforce responsible for the products that are produced and sold.
- Environmental Health Officers ensure these standards are upheld and can apply to the court to close premises that do not reach good hygiene standards. They can seize and detain foods/drinks that are not satisfactory.
- The Food Safety (General Food Hygiene) Regulations 1995 apply to anyone working with food, which includes soft drinks and bottled waters. All employees are responsible for their actions.
- Every step in food manufacturing needs to be controlled, but there are some areas which are critical to food safety.

## 7. IDENTIFYING HAZARDS AND PROTECTING THE CONSUMER

- The HACCP (Hazard Analysis Critical Control Points) System is used to identify those points in the process which are critical.
- A Hazard is a potential cause of harm to the product in terms of spoilage and food safety.
- A Critical Control Point is a point or step in a process which, if not controlled, will allow the hazard to go through to the consumer.
- Examples of critical control points in drinks production are:
  - pasteurisation
  - pH levels
  - correct cleaning and disinfection
  - preservative levels in the product

