

## Chapter 24

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# Beverages

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The need for water can be satisfied by drinking plain water but only a few people find this sufficiently interesting, the majority preferring to take flavoured drinks. These may be natural fluids such as the juices of crushed fruits; they may be infusions made by steeping leaves or seeds in hot or cold water; they may be concoctions manufactured by the soft-drinks industry; or they may be the products of the brewers and vintners. Which beverages are used depends on social and cultural habits, often greatly influenced by advertising.

### Tea



Using the leaves of tea bushes to produce a beverage goes back thousands of years. In the early years there were many ways of making an extract but about 1550 AD the current method of making an infusion from whole or broken, withered and fermented leaves became the standard technique. It was at that time that western travellers to China discovered the habit of tea drinking. The Chinese were secretive about the art of preparing tea leaves

and making an infusion but samples of tea were eventually brought to the western world and interest in tea drinking spread rapidly. For a while tea was very expensive and was used sparingly but it became much cheaper with the planting of tea gardens in India, Assam, Sri Lanka (Ceylon) and Indonesia. In Britain, tea for breakfast replaced ale in the eighteenth century. Today there are tea gardens in many parts of the world, growing a wide variety of tea bushes. As there are several different ways of preparing the leaves, the tea drinker has an ample choice of refreshing infusions.

Tea is taken partly because of its taste and partly because it is found to be refreshing. Relief of fatigue is often noted. This latter effect is brought about by caffeine, which is a mild central nervous stimulant. People vary a lot in their sensitivity to caffeine, the amount in one cup of average strength tea (about 60

mg) being enough to prevent sleep in some people, while having little or no effect on others. Under ordinary conditions, up to five cups of tea of average strength can be taken before the effect of the caffeine may become excessive. Too much caffeine may cause sleeplessness, restlessness, a sense of anxiety, an irregular pulse and a muscular tremor. It is rare, however, for caffeine intoxication to do lasting harm.

Tea and coffee drinking are rarely harmful.

Another important ingredient in tea is tannin, some teas containing much more than others. It is tannin which gives tea its astringency, produced by the tannins combining with proteins in the

mouth. In some people, tea may cause abdominal discomfort, which may be due partly to the action of tannins on the surface protein of the stomach and partly to the stimulation of excess secretion of hydrochloric acid. When milk is added to tea the tannins combine with protein in the milk and thereby reduce the tea's astringency. The milk has no effect on the action of the caffeine.

In addition to its action on the central nervous system, caffeine has a weak action on the kidneys causing more urine to be produced (diuresis). This is in addition to the similar effect of the water of the tea so that some people find it necessary to pass urine quite soon after only one cup of tea.

It is rare for the average amount of tea to have a deleterious action on the heart.

The pleasant effect of tea quite often induces a habit of tea drinking but this should not be confused with an addiction because although deprivation of tea in a habitual tea-drinker may cause passing annoyance there are no harmful withdrawal symptoms as occur with true drugs of addiction.

Tea has no appreciable nutritional value apart from any milk or sugar which may be added to it.

Caffeine is secreted in the breast milk so nursing mothers should not drink more than 1–2 cups of tea or coffee a day.

Caffeine is secreted into breast milk, so that nursing mothers should not take more than 50–100 mg of caffeine per day, which is 1–2 cups of tea or coffee. If more tea or coffee is taken, the caffeine in the breast milk may be enough to cause a restless infant.

## Coffee

As with tea, coffee has little nutritional value apart from any milk or sugar taken with it, but it is used because of a liking for its taste and its stimulant effect. Once again caffeine is the main cause of stimulation of the central nervous system, a cup of coffee providing 50–150 mg of caffeine depending on the type and amount of coffee used and the method of preparation of the infusion. Most people can drink about five cups of coffee per day before the effect of the caffeine may become

excessive. Habituation occurs with coffee drinking but like tea habituation it is not a true drug addiction and there are no serious withdrawal symptoms.



In addition to caffeine, coffee contains tannins in amounts similar to those found in tea. Probably because of the tannins some people find that coffee, especially if taken without milk, causes abdominal discomfort. It is sometimes found that only tea or only coffee causes indigestion but not both, although the tannin consumption is similar.

Unlike tea, which does not stale easily, coffee loses its flavour rapidly when the ground beans are exposed to air.

Drinking coffee does not seem to have any link with coronary heart disease, angina or stroke. People who drink six cups of coffee per day (300–400 mg caffeine) have no greater risk than those who take only one cup. Nor does moderate coffee drinking adversely affect the blood pressure. In general, six cups of coffee per day should not be exceeded because the effect of the caffeine on the central nervous system may then become too great.

## Fruit juices and soft drinks

Fruit juices and soft drinks can damage teeth, especially in the young.

These drinks may be very acidic and contain much sugar. If taken several times a day, especially between meals, they may damage the teeth, particularly the first set in children. Drinking through a straw can reduce this damage and

rinsing the mouth with water on finishing the drink is very useful. Fruit juices and soft drinks should never be added to a baby's bottle and pacifiers (dummies) never moistened with them.

Some fruit juices are valuable for their vitamin C and mineral content, though they lack most or all of the dietary fibre present in the original uncrushed fruit.

Soft drinks generally have little nutritional value apart from the energy they supply from sugar. This extra energy intake can be high and needs to be controlled in people prone to overweight. Fortifying a soft drink with glucose or other simple sugar (monosaccharide) rather than with ordinary table sugar (sucrose) gives it no advantage in terms of energy yield.

The vitamin C content of fruit juice depends on the fruit originally used and the method of preparation of the juice and its storage. Orange and grapefruit juices are rich in vitamin C with about 40 mg per 100 ml; pineapple and tomato juices have about 20 mg per 100 ml; while apple juice has only a small amount

of vitamin C. Some juices have vitamin C added during manufacture. The nutritional information box on the package should indicate clearly the actual vitamin C content of the juice.

Some soft drinks contain caffeine and its concentration varies between different brands. Generally, one ordinary can or bottle of a soft drink containing caffeine gives about the same amount of the drug as does a cup of tea or coffee. The actual amount of caffeine should be stated on the container.

A can or bottle of some soft drinks provides a similar amount of caffeine as does a cup of tea or coffee.

### **Decaffeinated tea and coffee**

Most people drink tea and coffee not only because they are thirsty but because they enjoy the effect of the caffeine. If, however, there is undue sensitivity to caffeine, there are many brands of decaffeinated tea and coffee, which may be consumed as refreshing drinks without the stimulus that caffeine provides. There are several methods of removing caffeine from tea and coffee and there is little to choose between them; they all leave a very small amount of caffeine (0.1–0.2 per cent) but not enough to cause a noticeable effect. The process of decaffeination causes little or no change in the taste of the tea or coffee.