

# COFFEE AND CAFFEINE REFERENCE TOOL

As healthcare professionals, we spend an ever-increasing proportion of our time giving advice about health promotion and disease prevention. Sadly, that advice is all too often negative – eat less, drink less alcohol, stop smoking etc.

Wouldn't it make a pleasant change to be able to reassure patients that there are lifestyle choices they don't need to refrain from? Better still, some elements of positive reinforcement might allow our patients to concentrate more on the important messages about lifestyle factors proven to damage health.

Caffeine is probably the most frequently ingested, pharmacologically active substance in the world.<sup>1</sup> Because it is so widely ingested, there has been huge interest in, and significant investment in research relating to, potentially adverse effects.<sup>1</sup> Inevitably, some of the results of such research have been selectively reported in the lay media – and the result has been confusion and often unnecessary anxiety.

Drinking coffee in moderation (4-5 cups a day – see below for caffeine content of different types of drink and foodstuffs) is perfectly safe for the general population and may confer health benefits.

In particular:

- Coffee can be an important source of fluid in the diet
- Moderate coffee consumption is not associated with the development of heart conditions
- Moderate coffee consumption is not associated with the development of cancer
- The well documented mild stimulant effect of caffeine can be advantageous to a variety of patients

## FREQUENTLY ASKED QUESTIONS ABOUT COFFEE

**Q: What is considered to be moderate daily consumption of coffee?**

**A.** For the average person, a daily intake of caffeine of 4-5 cups of coffee per day is considered moderate (see below for caffeine content of different types of drink and foodstuffs).<sup>1</sup>

**Q: What other foods and drinks contain caffeine?**

**A.** As well as coffee, caffeine is found in tea, soft drinks, cocoa and chocolate-containing foodstuffs.

**Q: How much coffee can pregnant women consume?**

**A.** The Food Standards Agency recommend a safe upper limit for pregnancy is 200 mg of caffeine per day, equal to 2 mugs of coffee.<sup>2</sup>

**Q: What is the caffeine content of some different types of food and drinks?**

**A.** See table below.

### CAFFEINE CONTENT

Based on FSA advice 2008<sup>2</sup>



Average mug of instant coffee	100mg caffeine
Average mug of brewed coffee	140mg caffeine
Average cup of tea	75mg caffeine
Regular cola drink	up to 40mg caffeine
Regular energy drink	up to 80mg caffeine
Plain bar of chocolate	up to 50mg caffeine – caffeine in milk chocolate is about half that of plain chocolate

# CAFFEINE – THE FACTS AND FIGURES

## COFFEE AND FLUID BALANCE

The minimum recommended daily fluid intake is 2-2.5 litres, or 6-8 cups.<sup>3</sup> Coffee has often been considered to be a diuretic, raising anxiety that it might adversely affect fluid balance. In fact, moderate caffeine intake (as described overleaf) does not cause significant diuresis, and the fluid it provides can contribute significantly to the daily fluid balance.

Adequate fluid intake is important for homeostasis, temperature regulation, effective kidney function and excretion of waste products. Dehydration can cause weakness, headache, lethargy, nausea and adverse effects on renal function. Ideally, everyone should drink enough to result in pale straw-coloured urine – a useful measure for patients unclear as to their average fluid intake.

## COFFEE AND HABIT

There is a significant difference between habit and addiction, although the two are all too often confused. Symptoms of physical addiction include craving and need for increasing quantities of the substance to satisfy this craving. Any substance, including caffeine, has the capacity to form part of a habit – especially since it is often associated with pleasurable activities such as breaks from work or after-dinner conversation.

In moderate amounts, caffeine does not act on the areas of the brain related to reward, addiction and motivation in the same way as cocaine and amphetamines.<sup>4</sup> Indeed, the World Health Organisation has reached the conclusion that ‘There is no evidence whatsoever that caffeine use has even remotely comparable physical and social consequences which are associated with serious drugs of abuse’.<sup>5</sup>

## COFFEE AND THE HEART

The balance of evidence is that single doses of caffeine below 450 mg do not increase the frequency of cardiac arrhythmias in adult patients, including those with ischaemic heart disease.<sup>1</sup>

Caffeine intake in itself does not appear to increase cholesterol levels, or to have an adverse effect on the ratio of HDL:LDL cholesterol.<sup>6,7,8</sup> Diterpenes, however, which are found in high levels in boiled coffee (a method of coffee preparation popular in Scandinavia but almost unknown in the UK), increase both total and LDL-cholesterol.<sup>9</sup> However, tolerance to these effects develops within 1-3 days.<sup>9</sup> Coffee filtration appears to filter out diterpenes, and levels in filter and instant coffee are low.

Coffee drinking may lead to a small, short-lived increase in blood pressure. This increase is similar to the rise in blood pressure that would be experienced when running up the stairs or during a heated conversation for example.

Taking all these potential factors into account, the British Heart Foundation has concluded that drinking a moderate amount of caffeine does not influence coronary heart disease.<sup>10</sup>

## COFFEE AND CANCER

Research into any putative link between coffee and cancer has been hampered by confounding factors – most notably the increased incidence of smoking among heavy caffeine consumers. When confounding factors are excluded, however, a series of reviews on the effects of moderate coffee intake on cancer at any of the sites investigated, including breast, colorectal, urological, pancreatic or ovarian has revealed no definitive link.<sup>11-13</sup> Indeed, there is some evidence that coffee may offer a dose-related protective effect against colorectal cancer, possibly by reduction of bile acids.<sup>14</sup>

The World Cancer Research Fund has also studied the evidence, and has concluded that ‘Most evidence suggests that regular consumption of coffee and/or tea has no significant relationship with the risk of cancer at any site.’<sup>15</sup>

## COFFEE AND SLEEP

The effects of caffeine on increasing levels of alertness are well documented. These effects appear to be most marked at times of naturally low energy levels, which provides the potential for maximum benefits for shift workers. However, those most susceptible to the mild stimulant effects of caffeine could avoid caffeine in the hours directly preceding bedtime, or switch to decaffeinated coffee.

**For more information visit [www.coffee-break.org](http://www.coffee-break.org) or call the BCA Information Service on 01628 644995.**

### References

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The British  
coffee  
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An educational initiative from the British Coffee Association