prevent weight gain when the wires are removed is necessary.[14]

Probably the main obstacle to successfully treating obesity is the social attitudes of obese patients and their doctors. Severely obese people often have low self esteem and excessively optimistic expectations of each new treatment. This attitude sets traps for the doctor, who may say that the problem is trivial or easily solved or incurable, none of which is true. Virtually all obese patients can be restored to normal body composition by a normal reducing diet, but this takes time, patience, and an intelligent application of the laws of thermodynamics.

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Coffee, cholesterol, and coronary heart disease

The secret is in the brewing

Much has happened in the past decade of "coffee studies," and a new consensus has emerged. It is that drinking coffee brewed by mixing coffee grounds with hot or boiling water raises the serum cholesterol concentration, an effect that is substantially reduced by filtering. On the basis of a review of 24 cross sectional studies Bak has estimated that for every daily cup of filtered coffee consumed the total cholesterol concentration increases by 0·008 mmol/l (hardly of clinical significance). The corresponding figure for boiled, unfiltered coffee is 0·038 mmol/l.[1]

Fewer studies have been made of the cholesterol raising effects of coffee, and only the most recent have taken the method of brewing into account. Once again, drinking filtered coffee hardly raised the serum cholesterol concentration,[2-4] whereas drinking four to six cups of unfiltered coffee a day was associated with an increase of total cholesterol of 0·50 mmol/l (higher than would have been predicted from the cross sectional studies).[4,5]

Extending the idea that coffee contains a lipid raising factor was the work of Zock *et al*.[6] They heated 1350 l of water to boiling point in 150 l aliquots with 15 kg of coarsely ground coffee in each aliquot. (This may be the largest amount of coffee ever brewed on one occasion.) After centrifugation a lipid rich supernatant was collected and given to 10 volunteers, mixed with their meals, for six weeks. They consumed the equivalent lipid content of 6-7 cups of boiled coffee each day. During the study the volunteers' low density lipoprotein cholesterol concentration increased by 0·85 mmol/l, consistent with the findings of studies of people drinking boiled, unfiltered coffee.

Whatever substance is responsible for this lipid raising effect it seems reasonable to conclude that filtering removes it. Regional and national differences in the effects of coffee on cholesterol concentration may therefore be explained by the brewing method. None of the more recent studies has incriminated caffeine.

But this is not the end of the story. A recent Norwegian study showed that coffee consumption strongly predicts coronary death, beyond what could be explained by its cholesterol raising effect.[7] Coffee may therefore have other adverse effects on the cardiovascular system as yet unknown.

Two recent studies from the United States further complicate the matter. In the Kaiser Permanente study an increase in coronary risk was seen after prolonged follow up[8] whereas in the health professional follow up study an increase was seen only for decaffeinated coffee.[9] Different study designs may explain some of this discrepancy. The Kaiser Permanente study was completed before the health professionals follow up study, when more people were probably drinking unfiltered coffee. In the health professionals study consumers of decaffeinated coffee were older and may therefore have consumed more unfiltered coffee than the rest of the cohort. In this study the follow up was only two years. Before we can decide whether decaffeinated coffee increases the risk of heart disease longer studies with multiple assessments of exposure to decaffeinated and caffeinated coffee are needed.

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