SLIMMING

(2) POPULAR SLIMMING DIETS

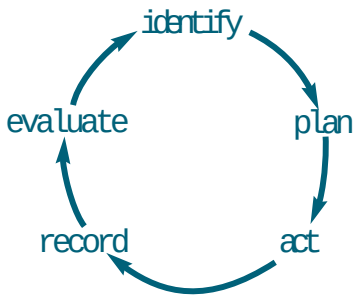
By Pamela Mason, PhD, MRPharmS

This article looks at some of the popular diets that you may be asked about by people wanting to lose weight

identify gaps in your knowledge

1. Name two popular slimming diets.
2. What are the possible dangers of some popular slimming diets?
3. According to current healthy eating recommendations, what percentage of a healthy diet should consist of fat?

This article relates to the Royal Pharmaceutical Society's core competency of "health education" (see "Medicines, ethics and practice — a guide for pharmacists", number 26, July 2002, pp105–6). You should consider how it will be of value to your practice.



Weight loss can be achieved by any means that reduces energy input below energy output. In theory this is simple, but the growing number of overweight and obese people show that it is not so in real life. Not surprisingly, many overweight individuals are willing to try any new diet that promises quick, dramatic results, and the proliferation of diet books is nothing short of phenomenal. A search of books on Amazon.co.uk using the key words "weight loss" found 739 matches with more than three-quarters of the best sellers being published during the past five years.

Pharmacists are often asked about diets such as the Atkins Diet, the Blood Type Diet and food combining diets, and may be uncertain as to their efficacy and safety. Perhaps you have been asked to sell ketone testing strips to people on ketosis inducing diets. Some diets are nutritionally sound and consistent with current healthy eating recommendations for adults, but many are not. Although these may result in weight loss in the short term, both their efficacy and safety in the long term are open to question. Also, it is worth reminding ourselves that weight loss (especially initial weight loss) does not always indicate fat reduction, which is the more important factor in terms of health (*PJ*, 4 May, pp616–8).

Popular diets tend to fall into several main categories (see Table 1, p136, for a comparison of nutrient content):

- High fat, high protein diets (eg, Atkins Diet, Protein Power, Sugar Busters Diet, Zone Diet)
- Very low fat diets (eg, Ornish Diet, Pritikin Diet)
- Glycaemic index diets (eg, Glucose Revolution, G-Index Diet)
- Food combining diets (eg, Hay System, Eat Great Lose Weight)
- Meal replacement diets (eg, Slim Fast Diet)
- Miscellaneous (eg, Beverly Hills Diet, Blood Type Diet, Cabbage Soup Diet, Grapefruit Diet, Rosemary Conley's Hip and Thigh Diet, Scarsdale Diet)

WHAT HAPPENS WHEN ENERGY INTAKE IS LESS THAN OUTPUT?

Carbohydrate is stored in the liver and muscles as glycogen. When the body starves, glycogen stores are depleted. There is an immediate and relatively large weight loss not only because of the 0.5kg or so of glycogen that is lost, but because glycogen is stored with water (approximately three times the weight of the glycogen) and that is lost too. There is also increased excretion of sodium and with it more water. When there is no carbohydrate intake and glycogen stores are depleted, the body has to use both fat and lean tissue to generate energy. After about 10 days of starvation, the body attempts to conserve lean tissue but the breakdown of fat continues. Weight loss will also cause changes to basal metabolic rate.

The aim of dieting is to lose more fat and minimise the amount of lean tissue degradation. The body may respond differently depending on the type of diet adopted, but more research is required in this field.

HIGH FAT, HIGH PROTEIN DIETS

First introduced during the 1960s, high fat, high protein diets have waxed and waned in popularity, but recently, some (eg, the Atkins Diet and the Zone Diet) have been the subjects of wide media coverage. These diets may vary slightly in the foods allowed, but they all restrict carbohydrates and emphasise fat and protein.

The proponents of these diets state that carbohydrate calories alone are responsible for weight gain. They claim that weight loss on a low-carbohydrate diet is due to reduced insulin secretion, which in turn leads to inhibition of lipoprotein lipase in adipose tissue, making it difficult for fat to be stored. However, studies looking at weight loss using diets with different proportions of fat and carbohydrate provide no evidence that weight loss is dependent on diet composition.

There is some evidence that fats and proteins are more satiating than carbohydrates. So although calorie counting tends not to be emphasised, these diets may promote a calorie reduction which leaves the dieter feeling relatively full compared with other diets. However, diets high in complex carbohydrates and fibre are also satiating because of their bulk, and evidence that high fat diets are more satiating than diets high in complex carbohydrates is equivocal.

A reduction in carbohydrate intake results in glycogen depletion and loss of its associated water. This accounts for the relatively large

Dr Mason is a pharmacist with a special interest in nutrition

initial weight loss. Furthermore, because carbohydrate intake is restricted, the Atkins Diet is designed to induce ketosis. Ketone bodies are a by-product of fat breakdown. Blood pH drops and there is loss of electrolytes (with more water loss). Like dietary fat and protein, ketosis can also suppress the appetite, contributing to the lack of hunger. Any diet that induces ketosis can produce nausea, halitosis and an unpleasant taste in the mouth. In extreme cases, ketosis can result in coma and death.

Of these diets, the Atkins and Protein Power diets are very high in fat and saturated fat and can therefore lead to raised serum cholesterol levels and increased risk of cardiovascular disease. However, there are persistent anecdotal reports of improved blood lipid levels on high fat, high protein diets. This is possible if a lot of weight is lost in some individuals, because large amounts of weight loss will improve the lipid profile, overriding the effects of a high saturated fat intake on blood lipid levels. Long-term use of these diets for weight maintenance, however, is likely to raise serum cholesterol levels and the risk of cardiovascular disease.

The Sugar Busters and Zone diets are lower in fat than the Atkins and Protein Power diets and could reduce cholesterol levels and cardiovascular risk. However, diets even lower in fat and higher in fibre and carbohydrate would be even better at reducing cholesterol and cardiovascular risk.

Other potential hazards arise from the high intake of animal protein, which may increase the risk of osteoporosis and renal disease, although this is controversial. On the Atkins and Protein Power diets, the recommended intake of grains, fruit and vegetables is low, potentially leading to a low intake of fibre, vitamins and minerals (eg, vitamin E, thiamine, folate, B_6, magnesium and potassium). The Sugar Busters and Zone diets are healthier in this respect because they include adequate amounts of fruit and vegetables.

In conclusion, although these types of diet may induce weight loss in the short term, their long-term safety must remain an open question until more research is conducted. The Atkins Diet is not recommended for people with kidney problems or gout.

VERY LOW FAT DIETS

Most health authorities world-wide agree that diets low in fat are the healthiest way of losing and maintaining weight in the long term. However, attention should still be paid to the energy content of the diet because no diet, not even a low-fat one, will induce weight loss unless the energy input is lower than the energy output. Weight loss on a low fat diet will be slow and steady, but will help to achieve the long-term changes in dietary habits needed to maintain weight loss.

Most low fat diets allow 20–30 per cent of energy from fat, but some, such as the Ornish and Pritikin diets, allow only 10 per cent of energy or less from fat. The Ornish Diet is basically vegetarian, advocating unlimited quantities of low-fat, high-fibre, and complex carbohydrate foods such as fruit, vegetables and pulses. It suggests using low-fat dairy produce in moderation and avoiding all meats, oils, nuts and seeds, alcohol and high-fat fruits and vegetables (eg, avocados, olives).

The Pritikin Diet endorses the intake of two or more servings of whole grains, two or more servings of raw vegetables, three or four portions of fruit and suggests eating beans and peas one to three times a week, limiting the intake of protein from animal sources (because of the likelihood of unavoidably ingesting some fat and cholesterol) and avoiding sugar and honey.

Consumption of a very low fat diet means making sweeping changes to a typical Western diet. In addition, the diet may not be palatable at first. Very low fat diets are likely to pose less of a risk to cardiovascular health than high fat diets. Very low fat diets may reduce high density lipoprotein levels and raise triglycerides but in comparison to the low-fat, high-carbohydrate diet currently recommended as part of healthy eating guidelines, such changes in blood lipids are likely to be minimal. Theoretically, there could be a risk of essential fatty acid deficiency with very low fat diets if adopted for long periods.

GLYCAEMIC INDEX DIETS

The glycaemic index (GI) is a measure of the rate at which blood glucose levels rise when a particular food is eaten. Glucose has a GI of 100. Foods such as beans and peas, some fruits and vegetables and some cereals (eg, rye and oats) have much lower GIs. The typical glycaemic index diet is low in fat and high in complex carbohydrates, but the carbohydrates must have a low GI.

The basis of the diet is that choosing carbohydrates with a low GI will help to keep blood sugar levels stable and reduce hunger. Evidence that low GI diets help to reduce weight is equivocal, but the diet fits in well with current nutritional thinking. Provided energy intake is reduced (and following these diets means that it usually will be), weight loss should be slow and steady in the long term, although initially the increase in carbohydrate intake may induce water retention and fat loss may not show up on weighing scales.

FOOD COMBINING DIETS

There are now several food combining diets, but the first was devised by Dr William Hay during the early 20th century. Hay believed that disease is caused by toxins and acid waste which can be avoided by not mixing carbohydrate and protein in the same meal. However, there is no scientific rationale for this and the body can deal perfectly well with digesting protein and carbohydrates simultaneously. Indeed, many foods (eg, bread, potatoes, and pulses) contain both. This type of diet was not designed as a weight loss diet, but many people find they lose weight because there are so many rules and restrictions that an energy deficit is inevitable.

The diet consists mainly of fruit and vegetables with bread, grains, pasta, potatoes and rice. Refined foods should be avoided, but small amounts of animal protein are allowed. Fruit must be eaten alone, vegetables can be eaten alone or with other allowed foods, and carbohydrates cannot be eaten with protein and must be limited to one portion per meal. Protein foods can be eaten with vegetables but not with other permitted foods containing carbohydrate. Protein foods should be limited to one portion per meal. Provided that the diet allows a wide range of foods, it can be quite healthy, although it may be low in calcium and iron. It does, however, encourage faddy eating.

MEAL REPLACEMENT DIETS

Meal replacement diets involve buying specially devised products and using one product to replace a meal that you normally would have eaten. For example, the Slim Fast plan instructs the dieter to replace two to three meals a day with a Slim Fast product (eg, a milkshake or soup) which provides just over 200kcal. The remaining meal should be low in fat and provide 600kcal. There are also snackbars available. The daily recommended calorie intake on this plan is 1,200kcal.

These products are nutritionally designed to provide vitamins and

TABLE 1: NUTRIENT CONTENT OF SOME POPULAR DIETS (AT 1,600KCAL/DAY)

Diet	%fat	%saturated fat	%carbohydrate	%protein	%fibre	%sugar
Atkins	59	26	5	35	4	8
Ornish	7	2	74	18	49	101
Pritikin	9	3	73	18	41	113
Protein Power	53	19	8	35	11	13
Scarsdale	22.5		34.5	43		
Sugar Busters	32	9	40	28	24	68
Zone	32	7	40	28	18	67
Current healthy eating guidelines	33	10	47	20	30	40

action : practice points

1. Write a protocol for advising patients on dieting.
2. Consider which diet books you might keep in your pharmacy.
3. Keep up to date with dieting by watching out for new diet books in bookshops and reviews in newspapers and magazines. Assess any new diets according to healthy eating principles.

evaluate

How could your learning have been more effective?
What will you do now and how will this be achieved?

minerals as well as energy from protein, fat and carbohydrate. Psychologically, they have the advantage of providing a "meal" in a discrete entity so the likelihood of cooking or eating a bit more is reduced. Many of these products are milk-based so may not be suitable for people who cannot tolerate lactose. The makers of Slim Fast have a lactose-free product available.

MISCELLANEOUS

Beverly Hills Diet The Beverly Hills Diet is a type of food combining diet that contains a great deal of fruit and is very low in calories. It is a rigid plan with fruit only days, vegetable only days and days when starchy carbohydrates and proteins may be added. Fruit can be eaten alone but carbohydrate and protein can never be eaten together. The theory is that we grow fat because of undigested food being converted to body fat. Enzymes present in fruit can help digest fruit but other forms of carbohydrate, fat and protein cannot be digested at the same time. There is no scientific basis for this, but people who try it are likely to lose weight because the diet is so restricted and low in calories. However, restrictions may lead to vitamin and mineral deficiencies.

Blood Type Diet The idea with diets such as "Eat Right 4 Your Type" is that people of different blood types respond differently to different foods and that eating according to blood type will help weight loss. There is no substantial scientific evidence of a relation between blood type and the ability to digest food. Blood type diets are complicated, recommending avoidance of certain foods for no nutritionally sound reason (eg, people with blood group A are not allowed to eat bananas). This encourages a faddy approach to food and may lead to an unbalanced diet with the potential for nutrient deficiency.

Cabbage Soup Diet The Cabbage Soup Diet is a very low fat, low calorie diet based on a range of vegetables added to an onion soup that can be drunk in unlimited amounts. Other allowed foods include fruit juice, fruit, vegetables and, on some days, potatoes, beef and skimmed milk. This diet induces weight loss because it provides only 800–1,000kcal per day, but some of the weight lost will be water. Because this diet recommends avoidance of so many foods, it encourages faddy eating and is essentially a crash diet. In addition, the soup is high in salt.

Grapefruit Diet The Grapefruit Diet is a very low calorie diet (providing about 800kcal a day) which stipulates eating half a grapefruit before every meal, based on the theory that grapefruits contain enzymes which help to break down fat. However, this concept is false. Again, the diet only works because it is so low in calories. It is also extremely restrictive and if followed for long periods could lead to nutrient deficiency. Many dietitians recommend that very low calorie diets (diets providing less than 800kcal per day) should only be used under medical supervision.

Rosemary Conley's Hip and Thigh Diet Rosemary Conley's diet is a low fat diet which encourages the consumption of three balanced meals each day and exercises for hip and thigh areas. Potatoes, rice and pasta are encouraged and this diet is in line with current healthy eating guidelines.

Scarsdale Diet This is a high protein diet, which unlike the other high protein diets (eg, Atkins) is relatively low in fat. Providing around 1,000kcal per day, the diet is strict and uses a two weeks on, two weeks off approach. Weight loss can be rapid (eg, 9kg in two weeks), but much of the weight lost is water and it is likely that weight will be regained once the diet is stopped.

CONCLUSION

Few of the popular diets fit in with healthy eating principles. Despite the variety of theories used to promote these diets, if they work, they do so on the basis of low calorie intake. Some people find them easier to follow than an ordinary healthy eating plan because they can depend on rules and lists, but the restrictions recommended in some cases may lead to nutrient deficiencies. Such diets may well lead to weight loss in the short term, and might be useful to kick start weight reduction, but they do not encourage the change in eating habits required for long-term maintenance of a lower weight.

Ultimately, people wishing to lose weight should be advised to eat a healthy diet based on grains, fruit and vegetables with moderate amounts of low fat dairy produce, lean meat, fish and pulses. Within this regimen, however, they will need to reduce energy intake.

So, can we endorse any of these popular diets when asked for our advice? This article has pointed out that some diets are healthier and therefore more advisable than others according to current healthy eating guidelines. But with the population growing obese and considering the substantial evidence of the serious risks of obesity, you might have to weigh risks against benefits in some cases.