HIGH PROTEIN DIETS

This information is brought to you by many of the Australian nutrition professionals who regularly contribute to the Nutritionists Network ('Nut-Net'), a nutrition email discussion group.

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The most popular high protein diets are 'Atkins Diet', the 'Zone Diet', and 'Sugar Busters!'. Another eating plan that has been given some exposure on Australian TV is the 'Slim Forever' diet. The inventors of these diets make different claims about their effects on health, ranging from weight loss to massive reduction in disease risk and vastly increased life expectancy. The concept that it may be healthier to eat more high-protein foods such as meat, fish and eggs—at the expense of fruits, vegetables, potatoes, pasta and rice—has a high level of appeal to many people. But just how strong is the nutritional and medical evidence that these diets are safe and healthy in the long term?

A common feature of these diets is that they are likely to lead to some weight loss in the very short term (the first week or so). This is because, on a low-carbohydrate diet (and all the diets considered here are low in carbohydrate), the body is forced to use some of its glycogen (the form in which carbohydrate is stored in the liver and muscles) to maintain a normal blood sugar level. Some water that was stored with the glycogen is also released and excreted, adding to short-term 'weight' loss (but note that this is not 'fat' loss).

Slim Forever (Dr Robert Harris)

Dr Harris believes that we should be eating an amount of protein equal to about 0.75% of our body weight each day. This is approximately six to eight times the amount of protein that we currently consume. The major problem with this idea is that increasing protein intake leads to greater production of nitrogen waste (particularly urea), increasing the load on the kidneys.

Additionally, high protein intake leads to her levels of uric acid in the blood which can increase the risk of gout. High protein intake also has the potential to exacerbate 'osteoporosis' (chalkiness of the bones) through interference with calcium metabolism. The quantity of protein that Dr Harris recommends is a potentially dangerous level, and the Slim Forever diet can therefore not be considered appropriate or health promoting.

The Atkins Diet (Dr Robert Atkins)

Available as a series of books the diet advocated by the late Dr Robert Atkins is high in protein and fat, and low in carbohydrate foods such as potatoes, fruit, bread, rice, pasta and other cereal products. The explanation given for any weight loss resulting
from adoption of this diet plan is rather complicated. Dr Atkins believed that because low carbohydrate intake leads to 'ketosis' (the production of ketone bodies that replace glucose in the blood when carbohydrate intake is low), restricting carbohydrate intake will cause appetite to decrease, leading to lower food intake and loss of body fat. Because ketones are derived from the body's fat stores, ketone production is claimed to contribute even further to body fat loss. Finally, Dr Atkins believed that eating fat causes the body to metabolise it for energy rather than store it, and that eating carbohydrate causes that carbohydrate to be converted to body fat.

The recommended fat intake in the Atkins diet is very high—more than half the total kilojoule intake. This contrasts with the typical Australian intake of about one-third of total kilojoules as fat, and is inconsistent with the Australian Dietary Guideline to "Limit saturated fat and moderate total fat intake".

Dr Atkins' unorthodox approach to fat intake is revealed in his claim that you can "eat all of the meat, cheese, eggs, fats (like butter and oils)". Most of these foods are high in saturated fat. It is true that the fatty foods recommended for greatest consumption are those regarded by orthodox nutritionists as being health-promoting, such as salmon, tuna, sardines, nuts, seeds and olive oil. However, the main concern regarding the Atkins Diet is a reduction in the intake of carbohydrate foods—for example, on the Atkins website it is stated that eating "high fat foods such as eggs, cheese and a couple of pieces of bacon is fine only in the absence of refined carbs in your diet." In addition to its inconsistency with the dietary guideline on fat intake, this advice is also inconsistent with the guideline to "Eat plenty of cereals (including breads, rice, pasta and noodles), preferably wholegrain".

Protein intake on the Dr Atkins Diet plan is also very high—about twice the current Australian average—and the recommendation for carbohydrate intake is much lower than typical current intakes and current recommendations. However, the strict limits placed by Dr Atkins on high carbohydrate foods apply largely during the period of weight loss. There is a concession that "once your weight loss slows and you are no longer primarily burning fat for energy, you will naturally start to replace some of the fat in your diet with nutrient-dense carbohydrates."

Undoubtedly, strictly following the Dr Atkins Diet plan would result in ketosis, which would reduce food intake. In fact, several recent studies have indicated that, at least in the short term, and in the small number of subjects studied, the Atkins Diet appears to be fairly effective at reducing weight. From these same studies it also appears to be reasonably safe in the short term, at least in terms of effects on risk factors for heart disease.

The Zone Diet (Dr Barry Sears)

The Zone Diet is probably relatively harmless in the short term, but it doesn't have much to commend it, either. It may be effective in encouraging weight loss, at least partly because it is low in kilojoules. Its safety has not been demonstrated in the long term, so it is not recommended as the lifelong diet. Although it is also not inherently dangerous in the short term, the Zone diet places excessive emphasis on reducing carbohydrate intake, and is not recommended for long-term use.

Sugar Busters! (Dr Samuel Andrews, Dr Morrison Bethea, Dr Luis Balart and Leighton Steward)
As applies with all low carbohydrate diets, the Sugar Busters! program may assist in weight loss (partly through the effects of ketosis on appetite) but it is deficient in carbohydrate foods and dietary fibre. It is not recommended as a long term eating plan.

**The Total Wellbeing Diet (CSIRO)**

This higher-protein, low-fat diet does show promise as a possible alternative means for some people to safely and effectively lose weight. The Total Wellbeing Diet has been shown in a small study to be as effective as the current orthodox high-carbohydrate, low-fat diet at reducing weight in the short term. It also led to greater reduction of abdominal fat (above the stomach) in women (but not in men) and to greater reductions in both men and women in blood ‘triglycerides’, compounds associated with increased risk of heart disease.

Because it promotes the intake of nutritious carbohydrate foods and is low in fat, the Total Wellbeing Diet may be a suitable alternative for some people to the more usual high-carbohydrate, low-fat approach to safely and effectively losing weight.

The Total Wellbeing Diet also recommends: “eat a 100 g serve of any lean-protein source (fish, chicken, pork, ham, beef, lamb or turkey) for lunch daily”. Two eggs can be substituted twice a week for the lean-protein serve. In addition, “you must eat the red meat quota and lunch meat/chicken/fish quota each day.”

However, both the Cancer Council Australia and the National Health and Medical Research Council through the Dietary Guidelines for Australians state that this amounts to too much red meat. According to The Cancer Council New South Wales website, only moderate amounts of red meat, corresponding to 65-100 g of cooked red meat, 3-4 times a week should be consumed (this is also the recommendation made in the new Dietary Guidelines for Australians from the National Health and Medical Research Council). The Cancer Council also recommends people limit consumption of processed meats, which are high in fat, salt and nitrates. Processed meats include sausages, frankfurts, salami, bacon and ham.

High-protein diets may not be suitable for people with chronic kidney disease, some of which may be undetected. Overweight and obese people, who are likely candidates for the diet, may be more likely to suffer from undetected kidney disease.

Nutrition Australia recommends following the Dietary Guidelines for Australians and the advice of the Cancer Council. To achieve this, while still largely adhering to the Total Wellbeing Diet, it would be necessary to replace some of the recommended red and processed meat with chicken, fish and vegetable protein such as beans, soy and nuts.

Although the CSIRO diet claims to be the "Total" Wellbeing Diet, it does not address all the nutritional problems faced by many Australians. It is also important to adhere to those aspects of the Dietary Guidelines for Australians not mentioned in the Total Wellbeing Diet.

These include:
- "Drink plenty of water";
• "Choose foods low in salt"; and
• "Limit your alcohol intake if you choose to drink".

In summary, although the Total Wellbeing Diet is new, and hasn’t yet been subjected to long-term testing for efficacy and safety, it appears to be considerably superior to the high-protein diets reviewed above. Specifically, it promotes the intake of nutritious carbohydrate foods, is low in fat, and the results of a short-term study conducted by the CSIRO suggest that for some people it may be a suitable alternative to the more usual high-carbohydrate, low-fat approach to safely and effectively losing weight.

Weight gain

Some people—such as body builders and weight lifters—adopt high protein diets based on the theory that muscle consists of protein, and that high protein intake will lead to greater muscularity. This argument is analogous to the belief that if a little vitamin A is good for you, a lot of vitamin A is even better. In fact, high doses of vitamin A are toxic (for example, excessive vitamin A intake has led to deaths in stranded Antarctic explorers who ate the livers of their husky dogs).

Similarly, protein intake above about 1.5-1.7 grams per kilogram of body weight is not only pointless, but potentially harmful.

Additional comments

None of the high-protein diets considered here should be regarded as appropriate substitutes for the diet that Australians will obtain if they base their lifetime food intake on cereal foods (preferably whole grain), fruits and vegetables (including legumes), lean meat and fish and dairy products (preferably low- or reduced-fat), and avoid high intakes of foods rich in saturated fat, salt or added sugar.

However, the higher-protein, low-fat diet (the Total Wellbeing Diet) does show promise as a possible alternative means for some people to safely and effectively lose weight. The Slim Forever diet in particular is potentially dangerous and cannot be recommended even for short-term use. Although unlikely to be harmful to health (at least in the short term), the Atkins Diet, and Sugar Busters! recommend low intakes of carbohydrate foods. They are therefore lacking in foods of plant origin and are unlikely to supply sufficient quantities of dietary fibre and some vitamins and minerals. Although not inherently dangerous in the short term, the Zone diet places excessive emphasis on reducing carbohydrate intake, and is not recommended for long-term use. In the short term, the Zone diet is likely to lead to weight loss, partly because it is low in kilojoules.

The Total Wellbeing Diet has been shown in a small study to be as effective as the current orthodox high-carbohydrate, low-fat diet at reducing weight in the short term. It also led to greater reduction of abdominal fat (above the stomach) in women (but not in men) and to greater reductions in both men and women in blood ‘triglycerides’, compounds associated with increased risk of heart disease. Because it promotes the intake of nutritious carbohydrate foods and is low in fat, the Total Wellbeing Diet may be a suitable alternative for some people to the more usual high-carbohydrate, low-fat approach to safely and effectively losing weight.
In general, a diet that is based on the types and quantities of food recommended in
the Australian Guide To Healthy Eating—the ‘food plate’—is still believed to be the
most appropriate diet for health and fitness.

Conclusion

Carbohydrate is the most direct and preferred source of the glucose that not only
powers our muscles, but provides fuel for the brain. This means that high-protein/low
carbohydrate diets have the potential to interfere with efficiency of both mental and
physical work.

Carbohydrate foods such as grain foods, fruits and vegetables are the major sources
of glucose, fibre, and many vitamins and minerals in the diet. They also contain a
myriad of other chemicals (known as ‘phytochemicals’) whose value to health is not
yet fully understood, but may be of great importance. Nutritional science has
established that increased consumption of a wide range of plant-based foods is
associated with improved health and greater life expectancy.

The advice given by the proponents of high-protein diets is not compatible with these
scientific findings. The inescapable conclusion from this brief review is that none of
the high-protein diets considered here should be regarded as appropriate substitutes
for the diet that Australians will obtain if they base their lifetime food intake on cereal
foods (preferably whole grain), fruits and vegetables, lean meat and fish, and dairy
products (preferably low- or reduced-fat), while avoiding high intakes of foods rich in
saturated fat, salt or added sugar.

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dietitian.