

High-protein, low-carbohydrate diets are bad for health, nutritionists say

PHARMACISTS should recommend people have a high-carbohydrate, low-fat diet with plenty of fruit and vegetables, according to Dr Toni Steer, a nutritionist at the Medical Research Council.

"This is based on the best evidence we have. The evidence base for fad diets is poor," she said. She explained that fad diets have particular restrictions or suggest that people predominantly eat one type of food to the exclusion of others. Dr Steer's com-

ments come in a week when the benefits of fad diets, which appear to be increasing in popularity, are being debated in the pages of the national press. However, such diets have been criticised by both the MRC and the British Dietetic Association.

Dr Steer told *The Journal* that she would not recommend fad diets. Apart from such a diet being tedious, she said that the lack of variety could result in people not getting enough vitamins and minerals, and

the right balance of fat, carbohydrate and protein. The British Dietetic Association singled out the Atkins diet in particular for criticism (see Panel).

Meanwhile, a new study has shown that a high-fat, low-carbohydrate diet can be detrimental to the health of children with epilepsy (*JAMA* 2003;290 912).

Children with epilepsy were given the diet to reduce or eliminate difficult-to-control seizures, rather than for weight reduction. The diet mimics the effects of starvation so that the body initially uses glucose and glycogen, followed by stored body fat. This leads to the production of ketones, which can inhibit seizures. After being seizure-free for two years, children can eat nor-

People on high-fat, low carbohydrate diets may not be getting a balance of nutrients

mally again. A total of 141 children and young adults aged between four months and 20 years took part in the study. After six months on the diet, only one in six of them had a cholesterol level considered to be acceptable for this age group. Average total cholesterol, low density lipoprotein cholesterol and triglyceride levels were all above recommended levels.

Some of the participants were followed up at 12 and 24 months. Their total cholesterol levels had fallen, but not to below the recommended level.

The Atkins diet

The Atkins diet involves eating low-carbohydrate, high-protein foods. Initial weight loss results from a loss of glycogen and fluids. According to the British Dietetic Association, problems with the Atkins diet include:

- Ketosis, which has symptoms such as nausea, dehydration, weakness and bad breath (because of low carbohydrate intake)
- A low intake of vitamins and minerals
- Increases in blood cholesterol levels (through increased fat intake)
- Constipation (because of a lack of fibre)
- Calcium loss and kidney damage (through excess protein intake)

A study published earlier this year in *The New England Journal of Medicine* showed that although a low-carbohydrate diet produced greater weight loss than a low-fat diet during the first six months, there was no difference in effect after a year (2003;348:2082).

Indian herb fails to show effect on lipid levels in new controlled trial

A HERB extract used to reduce high cholesterol levels has failed to show efficacy in a randomised controlled trial.

Guggulipid — an extract of *Commiphora mukul*, which comes from the resin of the mukul myrrh tree — is used widely in India as a lipid-lowering drug. It is also available in the United States and via the internet as a dietary supplement. Dr Philippe Szapary and colleagues from the University of Pennsylvania school of medicine tested a standardised extract of guggulipid (containing 2.5 per cent guggulsterone) in 103 adults with hypercholesterolaemia.

They found that neither a commonly used nor a high dose of guggulipid (1,000mg and 2,000mg) improved serum levels of lipoproteins. In fact, low-density lipoprotein (LDL) cholesterol levels were raised in subjects given the extract, whereas levels fell in subjects given placebo.

The findings contrast with those from trials conducted in India. However, the researchers point out that subjects involved

in the current study had moderate hypercholesterolaemia and were eating a Western diet. "Guggulsterones may have different lipid effects in different populations," they say.

To see if any subgroup of patients had a favourable response, the researchers reanalysed the data. LDL-cholesterol levels were reduced by 5 per cent or more in 10 of the 55 participants. However, these responders did not differ from the group in terms of sex, race, age, adherence or any other baseline characteristic.

One concern raised by the researchers was that of the safety of guggulipid extracts. "This study reminds us that supplements cannot be assumed to be safe and that they require clinical trial evidence before being widely used or recommended." Their concern stems from the observation that guggulipid was associated with a hypersensitivity reaction in six trial participants, five of whom were given high dose extract. In other participants, guggulipid was generally well tolerated (*JAMA* 2003;290:765).

Vitamins boost heart function in children with high cholesterol

ADDING antioxidant vitamin supplements to the diets of children and young adults with familial hypercholesterolaemia can improve their cardiovascular health, say American researchers.

A team from the University of California at San Francisco studied 15 subjects aged between nine and 20 years with inherited lipid disorders. Endothelial function, as measured by flow-mediated dilation, did not change as a result of dietary changes alone. However, addition of 500mg vitamin C and 400IU vitamin E as supplements increased flow-mediated dilation significantly.

"Whether the vitamin intake is achieved by improved dietary strategies or by vitamin supplementation, our study suggests a novel and simple strategy to improve the long-term cardiovascular health of hyperlipidaemic children," the researchers conclude.

A link to the study, published on the *Circulation* website, is available via *Pfj Online* (www.pfonline.com/links/pj).