Vegetarian Nutrition

The number of people in the UK who claim to be vegetarian has increased dramatically during the last half century; statistics from the Second World War suggest that 0.2% of the population were vegetarian in the 1940s and it is estimated that, in 2000, between 3 and 7% of the population were vegetarian.

There is much interest in the potential effects of plant-based diets on a range of health outcomes and nutrition. A range of dietary practices followed by vegetarians has been identified, from the strict guidelines of the most restrictive macrobiotic diets, through vegan and lacto-ovo-vegetarian diets, to those that occasionally include fish or even chicken. The type of vegetarian diet followed by an individual may reflect the motive to be vegetarian; motives for being vegetarian include, amongst others, ethical and ecological issues, health concerns, sensory and taste preferences and philosophical teachings.

In addition to dietary choice patterns, vegetarians may differ from meat-eaters in a range of lifestyle behaviours: smoking habits, alcohol consumption, activity and leisure patterns and use of alternative therapies are all cited as examples. Furthermore, the body mass indices of vegetarians and vegans are typically 1-2 kg/m2 lower than matched omnivores. It is, therefore, important to remember this complex web of dietary and non-dietary differences when interpreting the results of studies comparing vegetarians with meat eaters, as such comparisons are not straightforward.

In terms of nutrient intakes, the key nutritional issue for vegetarians and vegans is whether the nutrients supplied by meat and fish, in an omnivorous diet, can be provided in adequate amounts in foods that are acceptable to vegetarians and vegans. In the UK, for example, meat and meat products provide a major contribution to intakes of protein, iron, zinc, vitamin B12 and vitamin D. Conversely, compared with omnivorous diets, plant-based diets are reported to contain more folate, fibre, antioxidants, phytochemicals and carotenoids. Vegans, however, may have low intakes of vitamin B12, vitamin D, calcium and iodine. UK studies comparing lacto-ovo-vegetarians, vegans, fish-eaters and meat-eaters have shown that lacto-ovo-vegetarians and vegans obtained a considerably lower proportion of dietary energy from total fat and saturated fatty acids (saturates), vegetarians and meat-eaters alike are advised to limit their intake of atherogenic saturates.

A well-planned, balanced vegetarian or vegan diet can be nutritionally adequate, although more extreme diets, such as strict macrobiotic and raw food diets, are often low in energy and a range of micronutrients, making them wholly inadequate and inappropriate for children. Weaning onto a vegetarian diet follows the same principles as weaning onto an omnivorous diet, although care must be taken to ensure that a vegan diet is sufficiently energy and nutrient-dense for children. Studies of UK vegetarian and vegan children have revealed that their growth and development are within the normal range.

A number of studies have attempted to determine whether being vegetarian confers any protective effect, in terms of mortality and morbidity, from a range of chronic diseases. Evidence from a few large cohort studies suggests that vegetarians have lower overall mortality ratios than the general population, but this is not the case when vegetarians are compared with similar non-vegetarian groups who follow a health-conscious lifestyle. Vegetarianism has been associated with a reduction in several of the established risk factors for coronary heart disease (CHD), including more favourable blood lipid profile, lower body mass index and lower blood pressure. However, some studies suggest that vegetarians and vegans may be at greater risk of having raised plasma homocysteine levels, an emerging risk factor for cardiovascular disease.

Although a high intake of plant-derived foods has been linked with a reduced risk of certain cancers, there are no clear and consistent patterns of cancer incidence and mortality between vegetarians and meat-eaters. However, several studies have reported increased risk of

colorectal cancer among those with the highest intakes of meat and the lowest intakes of dietary fibre, but there is no evidence that being vegetarian per se confers a protective effect.

More research is needed to establish whether vegetarianism has a role to play in protection against a range of other diseases that are less prevalent amongst vegetarian populations; lifestyle as well as nutritional differences will need to be taken into consideration. Following a vegetarian diet does not automatically equate to being healthier; vegetarians and meat-eaters alike need to be mindful of making appropriate dietary and lifestyle choices.