



January 2002

Volume 2, No. 1

Overview of Two Popular Diets: Vegetarianism and Macrobiotics

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Vegetarian/Vegan diet

Background

Vegetarian diets eschew foods that entail the killing of animals. While anthropological studies have not discovered any fully vegetarian natural societies (DeVries 1952; Farb and Armelagos 1980), adherents of various religions and spiritual practices have adopted vegetarian eating styles for many centuries, going as far back as Pythagoras in Europe (Barkas 1975), and even further in other cultures such as India (Swoboda 1992).

The following concerns are among the major reasons why people choose a vegetarian eating style (Barkas 1975):

- a) spiritual or philosophical,
- b) moral or ethical,
- c) ecological
- d) health or nutritional

The first two ignore individual health concerns; ecological eating pays some attention to it, as well as to the health of the planet as a whole. A 1999 review of two surveys, conducted in the Boston area 25 years apart, found that while health is an important motivation for adopting a vegetarian diet, there are also ethical, spiritual, and philosophical reasons for doing so (Kim et al 1999).

It has been postulated that people choose their diets to harmonize with their self-perception and their view of the world. One study found striking differences between vegetarians and omnivores (Allen et al, 2000). The omnivores valued logic, authority, responsibility, and social power, whereas the vegetarians valued intellectualism, happiness, peace, equality, social justice, and love.

Variations on the theme of vegetarian diets

This author has found that vegetarian diets may include the following:

- i. *Lacto-ovo*: including milk and eggs
- ii. *Lacto*: including only milk products, no eggs
- iii. *Vegan*: including no animal products whatsoever, not even honey (from bees)
- iv. *Raw food/living food*: plant foods only, no cooking, but warming under the sun, sprouting, and fermenting are allowed
- v. *Fruitarian*: Fruits and nuts only.
- vi. *Ayurveda*: Lacto-vegetarian with attention to psychological factors, following a classification model based on Hindu philosophy (Swoboda 1992).
- vii. *Junk food vegetarian or vegan* (evolved from III, above): a contemporary variation, in which any plant-based food, including commercial, refined, processed, or artificial food, is allowed, as long as it contains no animal products, with the possible exception of some dairy foods.

Lacto-ovo or lacto vegetarianism is recognized as nutritionally adequate for the most part (Lowik et al 1990; Sanders and Reddy 1994). Vegan diets (with no dairy or eggs) are chosen most often for religious or spiritual reasons.

Benefits

These popular diets may deliver excellent health benefits, at least initially, including weight loss, more comfortable sleep, feeling lighter, the body becoming more flexible so exercise is easier, and a renewed zest for life. The risks of many illnesses are reduced with vegetarian and vegan diets, including metabolic diseases, cardiovascular disease, hypertension, colon cancer, diverticular diseases of the colon, kidney and gallstones (Deby 1991). Long-time vegetarians also appear to age better, in one study showing less varicosities and lesions under the tongue than are generally found in elderly people (Eddy and Taylor 1977). John McDougall, MD, author of several books on diet and health, recommends a low fat vegetarian diet for the prevention and treatment of cancer, osteoporosis, atherosclerosis, heart disease, diabetes, arthritis, and urinary disease (McDougall MD 1985).

Drawbacks

A lacto-vegetarian diet may cause problems for those who are allergic or sensitive to milk products, as well as for women with reproductive health problems (Northrup 1998). A vegan (no dairy or eggs) diet can, over time, eventually cause protein deficiency unless care is taken to consume beans and/or nuts daily. Even then, some people have trouble absorbing plant protein, and can't seem to get satisfied no matter how much of it they eat. Fruitarian and raw food diets are also low in protein and vitamin B₁₂ (Rauma et al 1995). To compensate, many vegetarians find themselves very attracted to sweets, and end up consuming large amounts of carbohydrates (Colbin 1996). If the vegan diet (low protein) is combined with a low-fat approach that avoids even unrefined

vegetable oils, this means that two out of three macronutrients are missing or deficient. With the lack of fat, fat soluble vitamins are not absorbed as efficiently. Over several years, this eating style in certain cases could cause considerable nutritional deficiencies, such as shortages in vitamins A, D, B₁₂, iron, and zinc (1997). This is particularly true of the junk food vegan eating style, where a person could theoretically be living on such commercial foods as candy, cupcakes, canned peas and lettuce sandwiches. A study of elderly Chinese vegetarians found deficiencies in many B vitamins and a high frequency of nutritional anemias (Woo et al 1998).

Vitamin B₁₂ deficiencies in adults, infants and children on vegetarian diets have been reported frequently in the scientific literature, and generally respond well to supplementation with B₁₂ alone or with added animal products (Ashkenazi et al 1987; Gilois et al 1992; Sklar 1986; Tungtrongchitr et al 1993).

Social and practical drawbacks of following a vegetarian diet include conflicts with family and friends, difficulty finding balanced meals in restaurants, and the awkwardness of refusing food when invited to dinner in someone's home.

Conclusion

A well-balanced vegetarian or vegan diet, with emphasis on consuming whole grains and beans daily, together with fresh vegetables and the avoidance of refined sugar, may be recommended successfully to omnivores who need to reduce cholesterol, weight, high blood pressure, and cancer risk. On the other hand, people who have long been vegetarians and show overt signs of nutrient deficiencies (cravings for sweets, lack of energy, problems with hair or nails, continued hunger, "overeating" while their bodies remain slim or even gaunt) should be clinically evaluated for their protein, B₁₂, and other nutrient status. In case of demonstrated nutrient deficiency, an increase in the consumption of protein and fat is required to avoid increasing malnutrition, especially from animal products such as eggs, fish, or poultry. Those who resist because they wish to remain vegetarian, for seek health improvement can try eating beans twice daily at least, whole grains three times daily, and between one and two tablespoons of unprocessed traditional fats (extra virgin olive oil, unrefined sesame oil, flaxseed oil, unsalted organic butter) with each meal. Supplementation with B₁₂, iron and zinc may be appropriate for some people. For those who gain weight on a vegetarian diet, a focus on increasing protein sources may be indicated (Eades and Eades 1996) If the dangers of rickets, iron deficiency anemia, and B₁₂ deficiencies are addressed, the growth and development of children on both vegan and vegetarian diets appears normal (Sanders 1995).

Macrobiotic diet

Description

Macrobiotics, which became popular in the early sixties, is a philosophy of life based on a variation of the Chinese yin/yang theory. It was formulated and popularized by Japanese scholar Sakurazawa Nyoiti, also known as Yukikaza Sakurazawa, and in English, as George Ohsawa (Ohsawa 1995). He called his approach "the art of

longevity" (from the Greek "macro," large or long, and "bios", relating to life). The macrobiotic diet, which is one aspect of this philosophy, has become popular to the extent that it is often thought to be its main focus (Alternative Medicine 1994).

Originally, Ohsawa delineated ten different healthful diets with varying proportions of grains, vegetables, and animal foods (See Table 1).

Table 1. Ten Macrobiotic Diets

Diet Number.	Grains	Vegetables	Soup	Animal	Salad, Fruit	Dessert
7	100%					
6	90%	10%				
5	80%	20%				
4	70%	20%	10%			
3	60%	30%	10%			
2	50%	30%	10%	10%		
1	40%	30%	10%	20%		
- 1	30%	30%	10%	20%	10%	
- 2	20%	30%	10%	25%	10%	5%
- 3	10%	30%	10%	30%	15%	5%

Michio Kushi, an early student of Ohsawa, has been the best known proponent of macrobiotics since the early 1970's. Kushi amplified Ohsawa's #2 and #3 diets into the "standard macrobiotic diet," which has become the best known. Kushi's diet consists, *by volume*, of the following: 50-60% whole grains, 5-10% beans and seaweed, 20-30% cooked and raw vegetables (locally and organically grown, if possible), 5-10% soups, 5% condiments and supplementary foods, including some white meat fish (Kushi and Blauer 1993). Soy products such as miso, tofu, natto, and tempeh are used regularly, as are sea vegetables in small amounts, giving the diet a very Japanese flavor. Fish is recommended once or twice per week, organic poultry very seldom, and red meats never. Forbidden foods include refined white sugar, milk products, canned, frozen, and commercially processed foods, commercial salt, most herbs and spices, nightshade vegetables (potato, tomato, eggplant, peppers including hot and spicy), asparagus, zucchini, margarine, wine vinegar, and tropical fruits and juices. Fruits are downplayed considerably, recommended only sparingly and in season. Sea salt and salty soy-based condiments are used liberally to season foods, although commercial or iodized

salt is to be avoided (Kushi and Blauer 1993). Ohsawa's original recommendations included the admonition to drink less liquids; this admonition has become a recommendation to drink only when thirsty or when needed (Ohsawa 1995).

For the past fifteen years or so, fats have been almost eliminated from Kushi's macrobiotic diet, although for the first twenty years of the diet in the US (1960-80), sesame and corn oil were used freely (See recipes for piroshki, tempura, gyoza, and others fried or deep fried in oil in Ohsawa 1995). In fact, in the author's recollection, a common saying among macrobiotic adherents in the '60's regarding leftover foods was, "If you don't know what to do with it, you can always deep fry it."

Benefits

Most of the benefits of vegetarian diets are also found in macrobiotics, such as lower cholesterol (Sacks et al 1975) and blood pressure (Sacks, Rosner, and Kass 1974). Although the macrobiotic diet has a fairly high use of sea salt and salty condiments such as soy sauce and miso, its hypotensive effect remains (Armstrong et al 1979; Beilin and Burke 1995). In addition, in the personal and clinical experience of the author, it has also been of help in alleviating respiratory problems, digestive problems, poor skin, and female complaints (. There are a number of anecdotal cases of cancer cures on a macrobiotic diet (Fawcett and Smith 1991; Nussbaum 1992; Sattilaro and Monte 1982). Women on macrobiotic diets appear to have a lower risk of breast and other hormone-dependent cancers(1992a). Some studies have reported higher-than-average intelligence quotients among older macrobiotic children (Sanders 1995). Macrobiotics stresses self-reliance and being responsible for one's own health.

Drawbacks

Strict macrobiotic diets (i.e., restricted in raw fruit, fat and protein, high in fiber, soy products, and salt), have been associated with deficiencies in B₁₂ (Miller et al 1991; Schneede et al 1994), linear growth retardation in infants and children (Dagnelie et al 1994), and rickets (Dagnelie et al 1990). Vegetarian diets high in soybean products may bring risk of iron deficiency, even in the presence of enough dietary iron (Shaw, Chin, and Pan 1995). Strict macrobiotic diets, with their emphasis on salty condiments and a lack of fresh fruits may cause Vitamin C deficiencies. They can also give rise to cravings for sweets and ice cream; these cravings generally indicate that the diet needs to be relaxed. The foreign ingredients, cooking styles, and flavors can make this diet hard to follow for many Westerners. If adherents of the diet do not drink enough water, they could become dehydrated and develop symptoms such as heartburn, back and leg pains, and headaches (Batmanghelidj 1995). For people who have yeast problems or candidiasis, the emphasis on fermented foods in the macrobiotic diet is contraindicated. In addition, while most people will lose weight on this regime, the author has found that there is a sub-group of people (mostly women) that put weight on with high-grain diets.

Social and practical drawbacks of following a macrobiotic diet include the requirement of extensive home cooking, its decidedly foreign flavor if followed to the letter, and the same drawbacks as mentioned in the vegetarian section above.

Conclusion

The three best aspects of the macrobiotic diet are a) its emphasis on high-fiber foods

such as fresh vegetables, beans, and whole grains; b) its emphasis on balance and the use of whole grains as the base of the diet, a notion that has permeated into the mainstream dietary recommendations (see food pyramid chart from the US Department of Agriculture, although the pyramid makes no distinctions between refined and unrefined grains and breads (Human Nutrition Information Service 1992) its ban on sugar and milk products. In the author's experience, a surprising number of vague and annoying health complaints seem to vanish when those two elements are removed from a person's daily regime; the benefits are then ascribed to the whole diet.

The macrobiotic diet is most accessible to Westerners as a daily regime in its "modified" form, that is, with a lower proportion of grains, salt, and soyfoods, more common beans and animal products such as fish, organic eggs, and fowl, a broader approach to vegetables, some extra virgin olive oil or unrefined sesame oil, and more zestful seasoning in the cooking.

Adherents to macrobiotics tend to accept large parts of its doctrine rigidly without hearing the basic macrobiotic premise: that everything changes, and that each person ultimately must be responsible for his or her own health. That means that a time may come when a "macrobiotic" diet is no longer appropriate for a person (even if originally it had great health benefits), and more varied foods are required. Essentially, the idea is that people must be attentive to their own needs and make changes in their diet when warranted, keeping a healthful balance with whatever foods will support their wellbeing.

Table 2. Food Guide Pyramid*

Food Groups	Number of Servings
Fats, oils, and sweets	Use sparingly
Milk, yogurt, and cheese	2-3 servings
Meat, poultry fish, dry beans, eggs, nuts	2-3 servings
Vegetables	3-6 servings
Fruit	2-4 servings
Bread, cereals, grains, rice, pasta	6-11 servings

* USDA, August 1992

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