

A

WHAT DOCTORS DON'T TELL YOU  
PUBLICATION

*The*  
**Better**  
**Diet**  
*BOOK*



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**A**s most of the latest research shows, your best medicine chest may be your kitchen larder. Increasingly, nutritional deficiencies and food allergies have been implicated in virtually all the major chronic degenerative diseases: arthritis, asthma, diabetes, eczema, high blood pressure and heart disease, hyperactivity, irritable bowel syndrome, kidney stones, menstrual problems and psoriasis, to name a few. But research is also uncovering links between diet and with the big mystery diseases of the century like cancer, learning disabilities, infertility, epilepsy, Parkinson's disease and eye problems like cataracts.

This is wonderful news, because it means that the prevention and even treatment of conditions that have thus far eluded mainstream medicine are potentially within the grasp of each one of us.

With so much contradictory advice floating around, as always, we have attempted to tread a cautious path, not straying from what has been published in the medical literature or has worked over time in the clinical practice of the nutritional specialists on our panel of advisors.

As you'll see in these pages, this cautious line makes for an easy regime to follow. Most of medicine's views about fat and cholesterol and even dieting crumble under close scrutiny. Our advice turns out to be highly conservative: eat a large variety of good quality, organic whole foods, and the likelihood is that you will be well (and your normal weight).

We are indebted to the research and practice of Anne Marie Colbin, Dr Stephen Davies, Dr Melvyn Werbach and Dr Leo Galland, which formed the basis of our dietary advice. We offer theirs and number of other books in the resources section on page 40.

As always, we encourage you not to embark on any radically new regime such as a supplement programme without consulting an experienced, qualified nutritionist.

*A votre santé!*

**Lynne McTaggart**

## The Trouble with Today's 'Food'

**I**f you're like most people, you're completely confused these days about what to eat. One day, the experts tell you to avoid fat and eat low-fat foods like margarine; the next day, margarine is the problem. Every day, it seems, medicine produces a new theory about what causes heart disease. Despite hundreds of thousands of prescriptions of cholesterol drugs and the hundreds of thousands of eggs avoided on low-cholesterol diets, heart attack rates in the West basically remain unchanged. In the Fifties, protein was thought to be the staple of the average British and American diet; today, doctors now tell us that we are supposed to be eating complex carbohydrates.

The main reason that medicine is so befuddled about this entire business is its insistence upon searching for an isolated area where, dietetically speaking, we've gone wrong. There is also greater interest in a piecemeal approach to nutrition: the particular micronutrients which combat this or that disease. In doing so, medicine blinds itself to a couple of obvious differences between Westerners and all the more primitive populations with a low incidence of degenerative diseases, including all those cultures like the Eskimos thriving on a high fat diet.

Numerous studies show that when more primitive populations begin to consume a Western diet, they start dying of heart attacks and cancer. But the main difference between what they're eating and what we're eating is not meat or fats, but whole foods. The culprit appears to be the large-scale adulterating or "dismembering" of everything we put in our mouths. This includes the massive addition of refined sugar, which increases blood fats and lowers the immune system.

In examining current twentieth century Western diets, British nutritional medicine pioneer Dr Stephen Davies points out that people haven't changed much over 40,000 years, but, at least here in the West, our diet has. He quotes Eaton and Konner writing about paleolithic nutrition in the *New England Journal of Medicine*: "Even the development of agriculture 10,000 years ago has apparently had a minimal effect on our genes. Certain hemaglobinopathies and retention of intestinal lactase into adulthood are 'recent' genetic evolutionary trends, but few other examples are known." In other words, the business of food might be modern and industrial, but our stomachs are still

in the hunting and gathering stage. At that time, we consumed 21 per cent of our total dietary energy from fats, 34 per cent from protein and 45.7 g of fibre (with cholesterol intake a whopping 591 mg, compared with the usual recommendations these days of 300 mg). Today, the average UK male takes in 14.1 per cent of his dietary energy from protein, and 37.6 per cent from fats, with only 390 mg of cholesterol and 24.9 g of fibre. By modern day standards, cave men should have been dropping like flies.

#### Essential Fatty Acids

But clearly fat is a very small part of the story. One of the results of modern agribusiness with its domestication of animals, birds and fish, says Davies, is a substantial lowering of the consumption of essential fatty acids, which we now know are vital to a healthy immune system. "Intensive livestock farming of pigs and chickens in particular, where the animals are kept indoors in overcrowded conditions, is associated with nutrient deficiencies of these animals," he says. "Food processing and refining techniques further compromise nutrient content, as do intensive farming techniques which result in soil demineralization. Agrichemicals and other environmental pollutants find their way in to the food chain, and further disrupt the nutrient value of the foods and stress our detoxification . . . mechanisms."

Today's meat business makes liberal use of steroids, antibiotics, tranquillizers and beta-blockers. Agrichemicals currently employ pesticides, herbicides, rodenticides, fungicides and nitrate fertilizers. Current food processing refines wheat and sugar, which reduces trace mineral and vitamin content, as do current storage methods, food irradiation, and the addition of some 3,794 food additives, colourings, sweeteners, texture modifiers and preservatives.

In a new book, *Native Nutrition: Eating According to Ancestral Wisdom* (1994, Healing Arts Press, Rochester, Vermont), Ronald F Schmid, a naturopath, extensively examined studies of native populations in the work of Dr Weston Price and Dr Francis M Pottenger: Eskimos of Alaska, the Swiss of the Loetschental Valley, North American Native Americans, Africans and South Sea Islanders. All these populations lived on fresh fruits and vegetables, wild game and fish or healthy, free roaming animals, grains, and in some cases, fresh, unprocessed dairy products, and all were impressive for their strong, healthy bodies, their straight, perfect teeth and their freedom from the degenerative diseases plaguing us in the West.

What Davies is really saying is that much degenerative illness like coronary heart disease could be, in large part, failure of our bodies to catch up with this virtual revolution in what now constitutes “food”. In other words, the culprit isn’t necessarily cholesterol or any one food, but every means we now employ to grow, collect, sell and prepare what appears on the table. Think of the extraordinary demands placed on each of us by the wholesale stripping of vital nutrients from our food and the inclusion of thousands of strange new elements into our diet.

In fact, this wholesale adulteration of food may be one reason why American middle-class white women, with their consumption of large amounts of protein and fats, give birth to less healthy babies than do poor immigrant women (JAMA, December 21, 1994).

The other problem, of course, is that food isn’t what it once was. Doctors usually tell their patients that as long as they eat a “well-balanced” (whatever that’s supposed to mean) diet, you’ll get all the vitamins and minerals you need. But most of today’s fruits, vegetables and grains are grown on depleted soil and picked many days before you eat it. According to the Institute of Optimum Nutrition (ION), the vitamin C content of an orange can range from 180 mg to virtually zero; the vitamin A content of a carrot, from 18,500 ius to 70 ius. And that doesn’t include the loss of nutrients from cooking or refining the food.

If you lived on an organic farm, picked the vegetables and fruits right before you plan to eat them, cook them lightly or ate them raw, you’re in with a fighting chance of getting everything you need from your food. But for all the rest of us, planning to get what you need from your food is a decidedly hit-and-miss affair.

#### Fallacies of the RDA

To give you some idea of how deficient we all are, three large-scale American surveys have found that at least a fifth of the population was getting less than three-quarters of the Recommended Daily Allowance of vitamin A, according to WDDTY panellist Dr Melvyn Werbach. Dr Werbach says that intakes of vitamin E, zinc, calcium, magnesium—indeed, most of the major nutrients—were substantially deficient (Townsend Letter for Doctors, February/March 1995). As for Britain, the 1993 National Food Survey demonstrates that the average person consumes less than the RDA for eight of the 13 nutrients for which RDAs exist (Patrick Holford, *Mental Illness: Not All in the*

*Mind*, ION Press, 1995). Dr Damien Downing says that in the early 1990s, at least half of the British and American population failed to meet the official dietary guidelines.

And, of course, how reliable are the RDAs themselves? As Downing points out (WDDTY vol 2 no 2), the RDAs were derived from two yardsticks: the quantity of the nutrient required to prevent the development of the specific deficiency and the quantity required to maintain metabolic balance over the long term.

The problem with these measurements is that they fail to consider the body's adaptive ability. "Some studies of B6 levels have shown that while a saturation can be achieved normally after about three weeks of taking a supplement, there appears to be increased enzyme synthesis the more B6 is available," writes Downing. The reverse process enables starving people in third-world countries to subsist on tiny amounts of nutrients. As for simply preventing deficiency diseases, say, like scurvy, this does not take into account the possibility that vitamins and minerals may be needed for functions other than preventing disease—for intelligence, or to prevent infections, or to lessen the chances of our developing degenerative diseases. And of course there is no universal standard for RDAs, which can vary five-fold between countries. Even those who set the RDAs admit that they are not optimal levels of intake. This doesn't include the fact that RDAs have been set for only 13 of the 45 known essential nutrients.

But no RDA can take into account your individual smoking habits, exercise and food intake, stress levels, ability to absorb nutrients, birth control methods (the Pill alters your body chemistry considerably), to name just a few. Even guinea pigs have been found to vary twentyfold in their vitamin C.

What this means, says Downing, is that the RDAs are not only too low but don't take into account that we are biochemical individuals. Whatever the good intentions of the brave new world post-war experts who first set RDAs in Britain and America, they fail to serve you as an individual, and mostly do harm.

## The Fats Fallacy

**A**lthough we've all grown up with the idea that a high intake of cholesterol will automatically lead to heart problems, it's wise to remember that this is only a theory developed in the Sixties. Cholesterol was one of a number of risk factors identified by epidemiologists back then as increasing your chances of developing heart disease, although we have never been able to *prove* a cause-effect relationship, only that heart attack victims are *assumed* to have high blood cholesterol levels, which in turn are assumed to be the cause of hardened arteries. It's also been *assumed* that a high dietary cholesterol intake would cause a high blood cholesterol level, and set off a chain of events leading to a heart attack.

This led to the belief that if we lowered cholesterol—either by drugs or by limiting fat intake—we could prevent heart attacks and, in turn, has led to an entire food and medical industry, devoted to screening for high blood cholesterol and lowering it through processed, low-fat foods. Even young patients in America and England have been bullied onto long-term medication if screening tests showed a high cholesterol level. In the UK, between 1986 and 1992, the number of prescriptions for cholesterol-lowering drugs increased sixfold (British Medical Journal, May 22, 1993).

But after 30 years or more of this “preventive” medicine, evidence is emerging to demonstrate that cholesterol-lowering drugs and many of the recommended low-fat or cholesterol diets not only don't do anything to prevent heart disease but in fact can *increase* your chances of dying. Many of the regimes recommended by medicine may be among the main culprits in causing heart disease. No cholesterol-lowering drug has been proved over time as capable of lowering overall mortality; in many cases, cardiac deaths may be lower, but other deaths are higher.

Recently, scientific proof has arrived to show that cholesterol may not even be the main cause of heart disease. The study, which involved 19,698 men and women from Copenhagen, demonstrated that only those with cholesterol blood levels in the top 5 per cent are at risk from heart disease (British Medical Journal, July 2, 1994). This particular study is one of the first to scientifically study the

effects of cholesterol and triglycerides, another fatty acid found in animal and vegetable fats, on heart disease. Of those taking part in the study, 693 suffered heart attacks. Cholesterol was found to be directly linked to the attacks only when levels were so high that they were in the top 5 per cent. Another study concurred with the evidence that most heart patients generally have normal cholesterol levels (The Lancet, 1994; 344: 1182-6).

Many high-risk populations don't show any correlation between high fat in the tissues and heart disease. For instance, a group of Dutch researchers traveled to Minsk (Belarus), an area unusually high in coronary heart disease, and took fatty tissue samples from a group of men and women who'd been hospitalized for minor problems. After analyzing the fat cells, they discovered no evidence that the Minsk sample had unusually high levels of saturated fats or unusually low levels of essential fatty acids, both considered risk factors for coronary heart disease. "Dietary fat may *not* be a major determinant of high mortality for CHD in Belarus," they concluded (The Lancet, October 1, 1994).

The Alice-in-Wonderland logic generally applied to cholesterol and heart disease was perfectly illustrated by noted heart researcher Dr Meir Stampfer, of the Harvard School of Public Health, who wrote, with an apparent straight face: "High serum cholesterol levels are an important risk factor for coronary disease, *but most patients with myocardial infarction (heart disease) have normal cholesterol levels*" (New England Journal of Medicine, February 2, 1995).

#### New Culprits

Other research suggests that, in any case, we're fingering the wrong culprit. A study carried out in Wales in 1990 discovered that the cause of heart disease was more likely to be the blood-clotting factor fibrinogen than cholesterol. Men with fibrinogen levels in the top fifth were four times more likely to suffer from heart disease than those with levels in the bottom fifth. Smokers, apparently, have high levels of fibrinogen, which would explain the long-held concerns about smoking and heart attacks.

Lately, new research has thrown up yet another potential culprit: homocysteine, an amino acid that is found in higher levels among patients who have suffered strokes or other heart diseases. It was first identified in research back in 1969 (M J Pathol, 1969; 56: 111-

28), when extraordinarily high levels of homocysteine were discovered in postmortem findings of patients suffering from sclerosis, or hardening of the arteries. Any link was dismissed because the levels were due to rare metabolic rates among the study's subjects.

But later research, in particular a study carried out in 1992 (Marcel Dekker; 1992: 183-236), discovered that homocysteine could have an effect at far lower levels. Consistent findings among 2,000 case studies suggest that levels of homocysteine only slightly above normal ranges could have a bearing.

Two more recent studies have produced similar results, suggesting that high levels of homocysteine came first, rather than being raised by heart problems. One of these, carried out in Oslo, Norway in 1993, found that men whose homocysteine levels were in the highest 5 per cent were three times as likely to suffer a heart attack. This discovery was endorsed by the influential Physician's Health Study (JAMA, 1992; 268: 877-81).

Homocysteine levels tend to rise when there is a deficiency of folic acid. This, coupled with B6 and B12, seems to control its metabolic rate of growth. However, the level of folic acid needed to control homocysteine is about twice the level presently recommended in the US. (Ironically, the amount needed was the daily intake level that used to be recommended before publicity about the dangers of too high levels). Supplements of folic acid of between 1 and 2 mg a day are sufficient to reduce high homocysteine levels.

Elderly not at Risk

Cholesterol, on the other hand, hasn't been proved a risk factor for *anything* in older people, who would logically appear most at risk. After following 1000 elderly patients for four years, researchers at the Yale University School of Medicine concluded that in people older than 70, a high cholesterol level (over 240 milligrams per deciliter) didn't put them at a greater risk of dying from any cause, including death from coronary heart disease, hospitalization from a heart attack or unstable angina (Journal of the American Medical Association, 1994; 272 (17): 1335-40).

This news has serious implications, since many people in this age group with elevated cholesterol levels are targeted for aggressive drug treatment and tend to react more to drugs.

Women may also be inappropriately targeted for a low-fat diet, which may actually *increase* their risk of heart disease. Professor

**Christopher Isles, consultant physician at Dumfries and Galloway Royal Infirmary, examined 15,000 Scottish women and found that although they have higher levels of cholesterol than men, they are less likely to die from heart disease than men with the highest levels. Lowering cholesterol levels lowers women's levels of high-density lipoprotein, a form of cholesterol which actually protects against heart disease (Daily Telegraph, April 16, 1993).**

#### **New Faith in Cholesterol**

**Growing scepticism about cholesterol was utterly swept aside by the conclusion of a single trial, the Scandinavian Simvastatin Survival Study, which appeared to vindicate cholesterol-lowering drugs, at least among those with a heart condition and high cholesterol levels. Dubbed the 4S study, it followed 4,444 (“four” obviously was the *leit-motif* here) patients with a heart condition and high cholesterol levels. After five and a half years, the group given cholesterol drugs had a 42 per cent lower rate of fatal heart attacks and a 34 per cent reduction in heart disease than those given a placebo. (Women in the group did not enjoy the same improved survival statistics; although only a fifth of the study population were women, in the placebo group, mortality rate was half of what it was for men.)**

**Within a week, medical magazines like Monitor Weekly (November 30, 1994) were back on the cholesterol bandwagon, proclaiming, “Simvastatin saves lives and cuts morbidity”.**

**However, as William E Stehbens, of Wellington School of Medicine in Wellington, New Zealand, pointed out (The Lancet, January 28, 1995), anyone with coronary heart disease, whether or not it was caused by hardened arteries, was allowed into the study. In the treated group, there were 38 extra people who'd already been given bypass surgery or angioplasty and therefore were less likely to die. And 54 extra smokers happened to creep into the control group, which just might have had something to do with their greater mortality rate.**

**Stehbens also points out (and as a pathologist, he should know) that diagnosing CHD or gauging the severity of atherosclerosis is a highly inexact science—until people die. In the 4S study, the actual difference in mortality between the two groups from all causes was only 3.3 per cent.**

**The biggest problem with cholesterol lowering is the blind meddling going on. Only a very few scientists are stopping to ask why patients**

following a low-cholesterol diet and taking cholesterol-lowering drugs are *more* likely to die from other causes. One study reported that patients taking cholesterol-lowering drugs or on a low-cholesterol diet are at increased risk of dying from accidents and violent deaths (British Medical Journal, February 15, 1992). Another one in Finland, conducted over 15 years, showed that patients on cholesterol-lowering diets were twice as likely to die as those eating what they wanted.

These and other initial reports of a bizarre relationship between cholesterol lowering and violent death, including a University of Pittsburgh study of nearly 25,000 people over five years (British Medical Journal, August 11, 1990), were dismissed as a quirk until a number of subsequent international studies confirmed the results. A meta-analysis of 524,000 men and 124,000 women showed that cholesterol levels below 4 mmol/l were associated with an increase of death from cancer, respiratory disease, trauma and digestive disease (Circulation, 1992: 86: 1046-60).

#### Blind Meddling

Even fewer researchers have made the connection between this reporting of an increase in suicide or violent deaths on cholesterol-lowering drugs and the lowering of the hormone which keeps harmful impulses in check (The Lancet, March 21, 1992). Cholesterol drugs or even a very low fat diet contributes to a decrease in brain serotonin, with poor suppression of aggressive behaviour. Dr Hyman Engelberg of the Department of Medicine at Cedars-Sinai Medical Centre in Los Angeles says that one of the functions of serotonin in the central nervous system is to suppress our harmful behavioral impulses. In animal studies, mice with lowered cholesterol also had a decrease in the number of serotonin receptors (The Lancet, January 9, 1993). One effect of the new class of anti-depressants such as fluoxetine (Prozac) is to inhibit the availability of serotonin in certain nervous-system cells. Numerous instances of violent or suicidal tendencies among patients allegedly caused by these drugs have been reported.

Researchers from the University of California at San Diego have their own theory about the link between low cholesterol and violent death. In examining the link between cholesterol and depression in 1000 Californian men over 70, they found that depression was three

times more common in the group with low blood plasma cholesterol (below 4.14 mmol/L) than in the control group with higher levels. What's more, they also found that the extent of depression correlated with the level of cholesterol: the lower the cholesterol, the more depressed the patient.

At least four women have been reported to have developed depressive illness after taking simvastatin (The Lancet, January 9, 1993). "A very low total cholesterol may be related to suicide and violent death," said the report. This association may be age-dependent, since there has been no positive relationship between violence and cholesterol drugs among younger people.

Whatever the association, it's obvious that medicine doesn't yet understand the interrelation of hormonal messages that the brain receives and the dietary requirements necessary to maintain them, and by some well-intended tweaking here and there, it could be creating a good deal more havoc than the very worst Western diet.

Although the renewed faith in cholesterol drugs has taken the focus away from diet as a preventive exercise, the old blanket diet recommended by WHO and the low-cholesterol, high-polysaturated diet recommended American Heart Association has now been discredited. Diets with high percentages of polyunsaturated fat have been demonstrated to lower cholesterol, but with no reduction in heart disease or mortality. In fact, some theoretical studies question whether they actually *increase* arterial plaque formation (The Lancet, October 29, 1994).

According to Petr Skrabanek and James McCormick, writing in their book, *Follies and Fallacies in Medicine* (1990, Tarragon Press, Glasgow), among the major multiple-risk factor intervention trials with middle-aged men, some have examined the effects of the standard WHO recommendation of limiting fat intake to 30 per cent of total dietary intake, with no more than 10 per cent each of saturated, polyunsaturated and monounsaturated fats).

"After 828,000 man-years of study the results were as follows," wrote Skrabanek and McCormick, "1015 coronary heart disease deaths in the intervention groups, 1049 in the control groups; 2909 total deaths in the intervention groups, 2947 deaths in the control groups, a difference of 36: that is, four fewer deaths in 10,000 men per year. Such a small difference is well within the limits of chance."

# Dieting Makes You Fat

**S**cientific evidence has proven what nutritional writers like Geoffrey Cannon and Anne Marie Colbin have been maintaining for years: dieting makes you fat.

Dieting and slimming aids are not going to make a fat person thinner, at least not in the long-run. Although slimming may have an immediate effect, the body will return to its “resting” or usual weight eventually, researchers have discovered.

They found that as weight is reduced, so proportionately is energy expenditure; conversely, energy expenditure goes up with weight gain.

This means that whatever you do, your body will eventually return to its “resting” weight because of the complex relationship that seems to exist between body fat stores and metabolism. Even after four years of constant slimming, the body will still be trying to stabilize at the old weight level, other studies have shown.

Researchers from the Rockefeller University in New York studied 18 obese volunteers, who lost between 10 and 20 per cent of their body weight, and 23 “average” volunteers, who gained 10 per cent of their usual body weight. But as the two groups did so, so their metabolisms or energy expenditure rates altered to compensate (NEJM, March 9, 1995).

But most such diets only measure the effect of what Anne Marie Colbin refers to as “savings-book nutrition”, or the counting-calories approach. They don’t examine food quality. And most low-cal diets employ a load of processed foods. As Anne Marie notes: “If food quality goes up, metabolism goes up; if food quality goes down, metabolism goes down. We all know that eating more biscuits, ice cream, cakes, white flour, pasta and breads and fatty and fried foods will put weight on. On the other hand, eating more whole grains and breads (which contain fibre), fresh vegetables of all kinds, both cooked and raw, tubers and roots, legumes and beans, will more often than not help weight reduction,” she says. “In fact, if food is satisfying and nourishing, it can help reduce the reserves kept in the form of weight.

“What is the solution for the dieting doldrums?” she says. “Very simple: forget dieting. Just eat good food, fresh, natural, whole and hearty, and chew it well. What is needed is a change in systems, a change in the quality of the food consumed. Then it is possible to ignore calories.” (see p 25)

## Margarine and Other Plastic 'Food'

**L**ately, everybody is getting in on the butter vs margarine debate without shedding much light on the subject. After decades of government exhortation to consume more margarine to prevent heart attacks, most consumers are understandably left shaken by the recent revelations about the dangers of margarine. Recent newspaper reports have disclosed that margarine is more likely to give you a heart attack than butter. As a result of this publicity, the makers of Flora—Britain's best-selling margarine—have quietly changed the formula to lower the level of trans fatty acids, thought to be the main culprit and cause of heart problems.

But what no newspaper has told you is that margarine manufacturers have been aware for 23 years that the polyunsaturated fats in their products can increase the risk of cancer.

Since 1971, 20 studies have come out indicating a link between polyunsaturated fats in margarine and cooking oils, and cancer. (The first appeared in *The Lancet*, 1971; I: 464.) Professor Raymond Kearney of Sydney University stated in 1987 that vegetable oils, rich in linoleic acid, were "potent promoters" of tumour growth.

Two studies in 1991 from the US and Canada also confirmed that linoleic acid increases the likelihood of developing breast cancer (*The American J of Clinical Nutrition*, 1991; 53: 1064S; *New Scientist*, December 7, 1991). Linoleic acid constitutes nearly 40 per cent of margarines high in polyunsaturates.

The problem is not so much polyunsaturated oils per se; soy and safflower oils, after all, are rich in omega-6 fatty acids, which are essential to human health. The problem begins when they are heated, processed or otherwise tampered with.

According to American nutritional doctor, Leo Galland, these oils present problems when they are overly refined. "Most commercial oils are extracted with extra heat added to enhance the extraction process," he writes. "This can create high temperatures, which damage the EFAs." Most refined oils are then further refined with solvents, using hexane—petrol—to produce a lighter colour, taste and

clarity, and even bleached, which removes many of the EFAs, trace minerals and vitamins, including antioxidants. Although all extraction processes generate heat to some degree, damaging some EFAs, those with the most nutrients left in are unrefined and cold-pressed.

The second problem with polyunsaturates occurs when they are heated, particularly in a frying pan. These fatty acids can be easily damaged by heat. When oxygen is utilized in the body, it burns food for energy but also burns germs, toxic substances and invaders like pesticides. These little fires give off “sparks”, or free radicals, which can cause damage to cell membranes, chromosomes and enzymes if left unchecked, and dramatically increase your need for vitamins and minerals. Research suggests that free radicals in the body are a major contributor towards heart disease. This process has been implicated in cancer, hardening of the arteries and other degenerative diseases.

#### Artificially Prolonged Food

But the biggest threat to human health appears to be the manufacturing process of hydrogenation (or partial hydrogenation), done to prolong the shelf life of products. This is performed by heating up the oil to a high temperature and sending hydrogen through it. Dr George V Mann, in a recent review article hypothesizing about the likely role of partially hydrogenated foods and disease, explained that hydrogenation began after 1912, so that polyunsaturated fats could compete with butter and lard (*The Lancet*, May 21, 1994). During hydrogenation, trans fatty acids are produced; these artificial unsaturated fatty acids have a different molecular structure to those found in the tissues of humans and other mammals. The production process used to make margarine—hydrogenation—creates “trans isomers” of fatty acids, which resemble the configuration of saturated fat.

“The amounts of TFA in commercial products vary from 5 per cent to as much as 75 per cent in the total fat,” writes Dr Mann, particularly as neither America nor Britain requires that manufacturers state the amount of hydrogenated fat, only its presence. These substances can have a “disastrous” effect on your body’s ability to use EFAs, says Dr Galland. They are even worse when heated, turning into something akin to the polymers in plastic.

Hydrogenated fats are also found in fast foods such as chips and doughnuts and in the vegetable oils contained in shortenings and biscuits. They account for up to 10 per cent of the content of margarine,

although the new formula from Van den Berghs, the manufacturer of Flora, is thought to reduce that to just 1.5 per cent.

Dr Mann argues that lipoprotein receptors in cells are impaired by TFAs. Since the body cannot process cholesterol-bearing low-density lipoproteins, the cells crank up their rate of synthesizing cholesterol, eventually leading to high levels in the blood. The amount of TFAs deposited in the body fat tissues reflects dietary intake. One study in Wales showed a strong association between TFA content in body fat and death from cardiovascular disease (*Br J Preven Soc Med*, 1975; 29: 82-90). In other studies, says Mann, blood cholesterol quickly increased in people fed TFAs (*J Lipid Res*, 1992; 33: 399-410). Yet another study, this one by Harvard Medical School, of 85,095 women followed over eight years found that those eating margarine had an increased risk of coronary heart disease.

“Our findings must add to concern that the practice of partially hydrogenating vegetable oils to produce solid fats may have reduced the anticipated benefits of substituting these oils for highly saturated fats, and instead contributed to the occurrence of coronary heart disease,” the researchers concluded (*The Lancet*, March 6, 1993). Mann notes that coronary heart disease is high in northern European countries, where consumption of TFA is high, and low in the Mediterranean countries where the main dietary fat is olive oil and TFA intake is low.

An American Staple

Dr Mary Enig, formerly of the department of chemistry and biochemistry at the University of Maryland, who analyzed the trans fatty acid content of some 600 foods, reckons that Americans eat between 11 to 28 g of trans fatty acids a day—or one-fifth of their total intake of fat. To give you some idea of where this comes from, one large order of chips cooked in partially hydrogenated oils contains 8 g of tran fatty acids, as do two ounces of imitation cheese (*John Finnegan, Townsend Letter for Doctors*, February/ March 1995). A recent study at Harvard reckons that the fat could account for 6 per cent of all deaths from heart disease, or 30,000 deaths a year in America alone.

An epidemic of heart disease can be directly linked to the introduction of partially hydrogenated fats in food, with the first major outbreak recorded in 1920. Before the first World War, when cheese and butter were a staple of the diet, death from coronary thrombosis was rare. Nonetheless, researchers consistently linked heart disease to

animal fats, found in butter, thus giving margarine manufacturers the licence to claim their products were better for your heart.

The new Harvard findings are not conclusive, however. The National Heart, Lung and Blood Institute in the US said the link between trans fatty acids and heart disease has not been proven, and goes against the findings last year of the National Cholesterol Education Program, again in the US, which reviewed the same data and concluded that “trans fatty acids do not raise blood cholesterol to the rate that saturated fat does” (The Lancet, May 21, 1994; the Times, May 24, 1994 and June 1, 1994; International Herald Tribune, May 19, 1994).

#### Contradictory Studies

And now, just when the evidence seemed weighty that trans fatty acids found in margarine can cause a heart attack, new research covering nine countries seems to put it in the clear.

The influential EURAMIC study, which covers eight European countries and Israel, suggests there is no conclusive evidence to show that margarine is linked to heart problems. But it does warn that there could be some connection in countries where there is a very high intake.

The EURAMIC study based its findings on two groups of men—671 with a serious heart condition, and 717 without any history of heart problems. They discovered that both groups had similar levels of trans fatty acids in their tissues.

There may also be another issue here. In Mann’s studies of the African Maasai, young men consistently had low cholesterol concentrations, even though their diets were high in saturated fats, mainly from milk and beef. Dr Mann concluded that the Maasai, who got about 4-7 g TFAs from cow milk, were below the threshold of where impairment of fat metabolism occurs. In America, the average daily intake of TFA is 12-20 g daily.

Or, it may well be that the story is more complicated. Maasai could be protected because they are eating whole foods—albeit containing saturated fats—and not the adulterated ones consumed by most people in the West.

In an article on oil and fats, American writer and nutritional consultant John Finnegan warns that the public has been sold a bill of goods when buying most “cold-pressed” sesame, safflower and other oils from health food stores. “Most companies do not make their own

oils. They buy them from the same giant corporations that produce the commercial oils (made by nearly the same methods), bottle them and put on health-food labels which read “cold-processed”, and then sell them at an inflated price,” writes Finnegan. “While they advertise these oils as being cold-processed from an expeller press (which means pressed at temperatures of 240-160 degrees F and higher), these oils are actually refined (at temperatures up to 500 degrees F). This creates poisonous fats and free radicals, and seriously damages the vital nutrients in the oils.”

Finnegan knows of three companies in North America which have begun researching and developing the technology to produce and bottle quality vegetable oils with no trans fatty acids. The method entails making sure that the oils and seeds are not exposed to either light or oxygen during processing or bottling. The oil is also sealed with an inert gas so it will not go rancid. It is packaged in black glass or a special black plastic container to keep all light out. Currently, the three companies in Canada and the US which meet these standards include Seymour Organic Foods, Omega Nutrition and Flora, Inc. In addition, Omega Nutrition, distributed by Arrowhead Mills, have oils with both Farm Verified Organic and Organic Crop Improvement Association certification. Several of these brands are becoming available in the UK (through the NutriCentre in London and larger health food shops) and other companies are beginning to follow their lead.

However, in general most European oils are less refined than those of the US. In fact, your safest bet is to use Mediterranean-produced extra virgin olive oil, which is still made by traditional methods.

## Diet Against Disease

**T**he most impressive work to date on diet and disease concerns the protective value of the antioxidants (and the greater risk of people who are low in these vitamins). Antioxidants protect the body from damage caused by harmful molecules called free radicals. Besides respiration, the body's cells use oxygen to metabolize (and literally "burn" ) food for its energy, and also for immune activity, to burn away germs and toxins.

As American nutritional specialist Leo Galland puts it, "This process of combustion creates tiny bonfires in the cells, and these fires give off 'sparks' that can start fires in undesirable places, damaging cell membranes and destroying essential fatty acids." These sparks, called free radicals, also are created from many other sources (ultraviolet radiation, smoke pollution, heavy metals, rancid fatty acids or overheating of oils, such as in fast-food restaurants). These free radicals wreak havoc by destroying cell membranes, causing genetic damage, depressing immune function, hardening the arteries, disrupting hormone regulation, contributing to diabetes and other systemic disorders and, of course, causing the growth and spread of cancer.

But we're now learning that damage from free radicals can be prevented and even reversed if there are sufficient concentrations in the body of free radical scavengers, called antioxidants—and that Galland calls the body's own "fire brigade" which "snuff these sparks before they start too many fires." These include the antioxidant vitamins: vitamin A and beta-carotene, B2 (riboflavin), B3 (nicotinic acid), vitamin C, E and selenium.

The largest and most recent study of cancer prevention, a 30,000-person Chinese study, proved that the antioxidants could protect people from many types of cancer by as much as one-fifth (J Nat Cancer Inst, Septemer 15, 1993). The same study found a 38 per cent reduction in mortality from stroke in people following the diet.

Some of the newer studies show that the antioxidants can prevent eye disease such as macular degeneration, the leading cause of irreversible blindness in adults (JAMA, November 9, 1994) and heart disease (JAMA, 9 November 1994).

People with angina have been shown to have significantly lower levels of vitamins C, E and carotene than healthy individuals and could benefit from higher levels of these nutrients (The Lancet, January 5, 1991).

Besides the antioxidant vitamins themselves, vegetables may have other protective effects. One study from Dartmouth Medical School in New Hampshire showed that vegetables are better than supplements in lowering the risks of developing cancer of the colon. Research-team leaders suggest that other, as yet unidentified factors may be at play in a diet high in vegetables and fruits (NE J Med, July 21, 1994).

While a high-fat diet may increase the risks of several types of cancer, olive oil is apparently not one of the offenders. Researchers have found no evidence linking a diet high in olive oil with cancer. They point to the very low rate of breast cancer in Greece, where the average consumption of olive oil is 80 g a day (ECP News, 1995; 27: 8-9). It may be that olive oil offers another protective effect.

#### The Mediterranean Diet

All these elements—meat as a “condiment”, large helpings of fruits and vegetables, olive oil and fish—are present in the Mediterranean diet. Researchers have discovered that two populations with some of the lowest incidence of heart attacks are those on Crete and on Kohama Island in Japan. Both have high intakes of essential fatty acids, a more fish oriented diet and a high intake of the natural antioxidants. In the Lyon Diet Heart Study, researchers found that a Mediterranean diet could protect patients who’d suffered a heart attack from suffering a second attack. Only eight in a study group of 302 patients on the Mediterranean regime died from a second attack, against 20 in a group of 303 patients on a traditional, prudent (ie, low-fat) diet.

In the Lyons study, vitamins E and C were found to be higher in the group on the Mediterranean diet (The Lancet, June 11, 1994).

Besides fruit and vegetables, the other area of interest has been red wine, which contains flavonoids, thought to protect from heart disease. In one of the longest studies to date among seven countries, nearly 13,000 men recruited in 1958 and followed ever since found that a high intake of flavonoids gave some protection against death from heart disease, but not cancer (Arch Int Med, 1995; 155: 381-6).

However, this protective effect disappears with volume. More than two glasses of wine a day transforms the drink from a preventative of

**heart disease to a killer, researchers have concluded. Scientists from the San Diego School of Medicine say that the use of alcohol as a preventative of heart disease should not be encouraged, as many people would exceed the maximum amount. They had been investigating the “French paradox”, where people living on a rich and fatty diet still had the world’s lowest incidence of heart disease after Japan and Crete (The Lancet, December 24, 1994).**

**Researchers still haven’t isolated the reason for the French track record, but it’s wise to keep in mind that the answer may not lay in a single factor. Garlic (used copiously in French cooking), fresh fruits and vegetables, fish, wine and whole foods may all contribute to lower heart disease, as may a lack of junk and other processed foods.**

# The Better Diet Guidelines

## *General dietary principles for healthy living*

**B**ecause most dietary recommendations are faddish, your safest bet is to follow some of the basic dietary principles shared by many healthy native populations. Although their diets vary enormously (the African Masai mainly eat meat, milk and blood, while the traditional Maori of New Zealand eat fish, kelp and roots), they do have certain basic similarities. According to WDDTY panel member Anne Marie Colbin in her excellent book *Food and Healing* (1986, Ballantine, New York), all these native diets have in common food that is

- fresh or preserved naturally (smoked, dried, pickled)
- locally grown, seasonal
- grown organically (without chemical fertilizers or pesticides)
- cooked by traditional methods
- agreeable to the native tastes.

Many of our nutritionists, including Leo Galland and others, advise that you follow these basic principles in your own food consumption.

1. **Eat fresh whole foods.** Whenever possible, eschew packaged and processed foods, anything that has been added to, refined, enriched or in some way interfered with. This would include most processed baked goods, canned sauces, commercial peanut butter, candy, “cheese” foods, crisps and corn chips. Especially steer clear of anything such as margarine listing non-foods like partially hydrogenated vegetable oils. There is no health reason to cut out or limit eggs (so long as they are free-range), which are an excellent source of protein.

Also avoid:

- anything canned or frozen
- fried foods
- food cured and preserved with nitrates and nitrites.
- additives whenever possible. This includes preservatives, colouring agents, texturizers, emulsifiers and various flavourings.
- smoking and excessive alcohol intake. One or two drinks per day is the maximum for healthy living. One recent study showed that the healthful benefits of wine diminished after two drinks a day. Furthermore, this doesn't take into account the effects of wine and other alcohol as a diuretic, which can wash away min-

erals like magnesium that are difficult these days to obtain adequate levels of. This also doesn't apply to couples trying to get pregnant (or pregnant or nursing women), who shouldn't drink at all.

- caffeinated beverages like coffee and tea as much as possible, or limit your consumption to several cups a day. Caffeine has been implicated as possibly increasing your chances of miscarrying.
- commercial eggs and pasteurized, homogenized fortified vitamin-added milk. Most of the problems with dairy products have to do with the abysmal conditions in which cows are kept and fed on dry foods with little nutritive value, rather than fresh, nutritious grass. Dairy produce is not the healthy food it used to be.

In both the UK and the US, the governments now allow dairy farmers to give cows a genetically engineered dairy cow hormone BST. BST not only has been associated with a variety of diseases in cows but also in humans. Researchers at the prestigious The Institut Nationale de la Recherche Agronomic in France claim BST use may stimulate dormant retroviruses in cows, causing increased amount of infectious viruses to appear in their milk. The increased levels of insulin-like growth factor in BST cows could trigger adverse reaction in babies and vulnerable consumers, it says. In the UK, the following supermarkets and dairies have declared that they will refuse to handle milk from ST cows: The Co-op, Marks & Spencer, Northern Foods, Safeway, Sainsburys, Unigate and Waitrose.

Besides BST, cow's milk contains pesticides that have been sprayed on the grains fed to cattle and female hormones to increase milk production and body fat.

Milk products are mainly consumed by the West as a source of calcium. However, dairy products are also high protein foods, says author Kitty Champion. If we have too much protein in the diet from milk or any other source, the body gets rid of the excess by losing calcium through the kidneys (J Nutri, 1981; III: 553; Am J Clin Nutr, 1974; 27; 916m). Furthermore, says Kitty, consuming loads of dairy products (as well as huge amounts of calcium supplements) does not appear to prevent osteoporosis. Those nations with the highest milk consumption are also those with the highest levels of osteoporosis (Am J Clin Nutr, 1982; 36: 986). According to Kitty, in a study sponsored by the UK Dairy Council itself, women drinking three cups of cow's milk a day—a total of 1500 mg of calcium a day—still lost calcium from their bodies and remained deficient (Am J of Clin Nutr,

1985; 41: 254). (See WDDTY vol 5 no 1 for the full story on milk.)

Recent research demonstrates that magnesium, rather than calcium, is the nutrient most necessary in preventing osteoporosis.

2. **Eat a wide variety of foods.** This way, you have less likelihood of reacting to foods to which you are slightly intolerant.

3. **Sort out any food allergies with professional help.** Investigate the big five as potential allergens: wheat, corn, soy, dairy and orange. Also have yourself checked out with the nightshades—potatoes, tomatoes, aubergines, peppers—if you have arthritis or joint problems.

4. **Cook with a little butter or unrefined cold-pressed extra virgin olive oil.** Most oils that you see in the grocery store (and even in your health food) have been partially hydrogenated or, in the process of pressing, exposed to heat, which can destroy essential fatty acids (EFAs).

5. **Consume a diet high in essential fatty acids,** particularly the omega-3 EFAs, which are found in fatty deep-water fish such as salmon, tuna and also in fish-oil extract capsules and oils like linseed and walnut. For salad dressings, you can also use coldpressed, unsaturated safflower, soy or sunflower oil, if you can find some that isn't exposed to light and is truly coldpressed. Just don't heat it.

Many nutritionists now believe that the lack of EFAs in our diet is one main cause of many of our modern-day problems. This magical substance seems to do the opposite of what saturated animal fats do—which is to enlarge blood vessels and make the blood less sticky. Galland also says that vitamin B6 is an important co-factor in helping the body to metabolize EFAs into prostaglandins. Look to getting your EFAs from oils that are not used in heating. This includes beans (soy, kidney and haricot beans, freshly soaked and cooked), salad oils like safflower and sunflower oil, fatty fish, walnuts and linseed. Or take supplements like linseed oil (not heated), fish oils for omega-3 fatty acids and either evening primrose oil or blackcurrent seed oil for omega-6 EFAs.

6. **Make sure you are getting enough fat-soluble vitamins and nutrients in your diet.** These include vitamin E, A, EFAs and D. In *Native Nutrition*, Ronald Schmid demonstrates that the full complex of vitamin D (only one portion of it is made by sunlight on your skin) may only be supplied by seafoods, especially fatty fish such as herring and salmon; animal organs like liver, and dairy products, particularly cheese and butter, from animals feeding on fresh green pastures.

**7. Cut down (or out) on sugar and refined carbohydrates.** This includes all refined sugars—white and brown, honey, glucose and fake sugars like aspartame and sorbitol, plus all commercially prepared biscuits, cakes, sweets, ice cream, soft drinks and other sweet-tasting processed foods. Sugar should be cut to only about 10 per cent of your total energy intake. Large amounts of sugar not only rot your teeth but also disturb metabolism of essential fatty acids. It also causes loss of minerals like magnesium and worsens copper deficiencies, says our panel member US nutritional doctor Leo Galland.

Refined carbohydrates include anything made with white flour or white rice.

**8. Cut down on salt and increase your intake of magnesium and magnesium-rich foods.** In *Superimmunity for Kids* (Dutton) (*Allergy Prevention for Kids* by Bloomsbury in the UK), Dr Leo Galland says that because of our large intake of processed foods, we in the West take in 10-20 times the salt needed to maintain our body's sodium balance. This excess not only causes high blood pressure but also increases the amount of magnesium and potassium that are lost in the urine. This is one reason why children and adults have difficulty maintaining adequate stores of either nutrient. Dr Galland goes so far as to say that a "diet low in sodium chloride and high in magnesium and potassium will prevent hypertension and vascular diseases, especially if it is also rich in EFAs and low in non-essential fats". Low levels of magnesium have also been linked to heart disease. A study of 655 men aged 45-59 found that those suffering ischemic heart disease had a daily magnesium intake 12 per cent lower than those with no heart symptoms (The Lancet, August 22, 1992).

**9. Cut down on animal fats as the centerpiece of your food.** In her research, Anne Marie Colbin has found that virtually no traditional tribe or society is totally vegetarian, other than those, like the Hindus, who did so for religious beliefs; even primates will eat small animals if given half the chance. (This is not to say that you can't be perfectly healthy with a vegetarian diet; but as with meat-eating, you need to be scrupulous about what you eat. See p 32.) Nevertheless, most native populations, and presently those in the Mediterranean with a low incidence of heart disease, eat more vegetables (and grains) than animal foods; meat is more a dressing than an everyday affair. In fact, Dr Benjamin Spock and Henry Heimlich, two of America's most eminent physicians, are leading a campaign, endorsed by 20 other leading physicians,

drafted by the Physician's Committee for Responsible Medicine, calling for a major overhaul of the US's dietary guidelines, relegating meats and dairy products to an "optional" category. In their view, the staple diet should be built around grains, vegetables and fruits, and meat should be a "condiment", as it is in Mediterranean or Oriental diets.

**10. Increase your intake of wholegrain cereals and breads, and fruits and vegetables.** This should account for 55 to 60 per cent of your total calories. If you are allergic to many grains, look to brown rice and millet, two low-allergy foods, for your carbohydrate quotient.

**11. Whenever possible, eat organic fruits and vegetables grown on pesticide and fertilizer-free soils.** For meat and eggs, try to get free-range meat and eggs and if possible fish that is not polluted. Dr Galland says that some herbicides interfere with the body's ability to metabolize vitamin B6. Pesticides have been implicated in infertility. A number of farms will deliver free-range meat in the UK and the US; increasingly, supermarkets like Marks and Spencers and Sainsburys have a free-range and organic selection of foods.

If you can't get or afford organic produce (as it is more expensive), wash all fruits and vegetables thoroughly with a weak vinegar solution. But avoiding organic foods may be a false saving. In many cases, processed foods cost more. A bag of brown rice or beans will last through many meals, compared with a single serving of a ready-prepared meal or processed breakfast cereal. Just cutting down on meat and adding more vegetarian meals (with good quality protein) to your diet will cut your food bill down drastically.

**12. If digestion permits, eat a certain portion of your fruits and vegetables raw.** Otherwise, lightly cook them (steaming is best) in minimal amounts of water until they are tender but still crisp. In this way, you minimize vitamin loss. For meats and fish, grilling or baking is preferable to frying, which causes the formation of free radicals. Deep frying is worst of all.

**13. Drink spring, filtered or purified water.** Avoid chlorinated or fluorinated water.

**14. Enjoy your food!** Avoid worthy, joyless "health" foods that stick in your throat.

**15. Put together an interesting, varied plate.** Vary colours in your plate and stick to seasonal foods—yams and sweet potatoes and warming foods in the autumn, berries and cooling foods like salads in the spring and summer, etc.

**16. Eat out (and even occasionally splurge on taboo foods) with enjoyment and no guilt.**

## **The Better Diet Guide Food Groups**

*Every day, try to have the following:*

**1. At least five portions of fresh fruits and vegetables.** The US government has launched a campaign with the American National Cancer Institute entitled 5-A-Day for Better Health, which advises that you eat at least five daily portions of fresh fruits and vegetables.

Ideally, says Anne Marie Colbin, this should be composed as the following:

- One or two servings of green, leafy vegetables, including spinach, swiss chard, lettuce, parsley, escarole, watercress, kale, collards, and spring and other greens.
- One or two servings of other general vegetables, such as broccoli, green beans, leeks, cabbage, cauliflower.
- One or two servings of root vegetables such as carrots, turnips, squash, radishes, parsnips and the like (ideally, each dinner will have at least one green vegetable and one yellow or orange vegetable).
- Try to incorporate a few portions (up to five) of sea vegetables into your weekly diet. These superfoods contain copious amounts of all the hard-to-obtain minerals like magnesium.
- Two to three servings per day of cooked or raw fruits.

### **2. Complex Carbohydrates.**

Three to four servings a day of brown rice, oats, barley, millet, buckwheat, rye, corn, wholewheat, popcorn or bulgar, and potatoes, sweet potatoes or yams, or whole-grain pasta. Also rediscovered grains like quinoa, kamut, spelt or amaranth. Avoid the squashy air-filled “cushiony” brown bread that attempts to pass for healthy wholewheat in the supermarket. The denser the loaf, generally, the better for you. Many people are allergic to wheat. If you find you react to it or feel doopy after eating bread, you can substitute rye breads or pumpnickel.

### **3. Protein.**

Anne Marie Colbin and others offer general suggestions that are elastic enough to accommodate everyone from a strict vegan to an avid meat eater.

- One or two servings daily of dry pulses, such as lentils, chickpeas or kidney beans or peas, seeds or nuts, and one to five servings a week of animal-protein foods, including eggs. Other writers such

as Leo Galland advise two four-ounce portions per day of fish, poultry, lean meat or a vegetarian equivalent per day.

In any case, if you do eat red meat, try to eat no more than one portion of it per week, and limit individual portions to four ounces. Avoid processed meats like luncheon meats, hot dogs and even commercially sold, processed sausages, which can contain any portion of the animal, including intestines. For fish, have at least two-three servings per week of fatty, oily fish like mackerel, herring, salmon or fresh tuna, which contain generous amounts of the omega-3 essential fatty acids.

#### 4. Good Bacteria.

If you don't eat fermented dairy produce like yogurt, which has natural acidophilus, the good-guy bacteria essential for a healthy gut, consider eating miso and fermented soy products like tempeh which contain *Aspergillus oryzae*, another form of friendly bacteria.

#### 5. Dairy.

Consider making dairy products which are hard for adults to digest, an optional or "fun" food. If you do eat dairy products, choose organic raw or pasteurized milk and don't eat more than a few servings per day. Organic cheeses and yogurts won't contain BST.

Remember: there are plenty of excellent non-dairy sources of calcium. Chief among them are green, leafy vegetables; 1/2 ounce of free kale or spring greens will give the same amount of calcium as a cup of milk, as will four ounces of canned fish with bones, according to Dr Galland. Your ability to absorb calcium depends on the amount of phosphorus in your diet. Fruit and vegetables contain higher calcium/phosphorus ratios than dairy products do.

Other possibilities are 12 ounces of dried beans or chickpeas, says Galland, three ounces of nuts like almonds (not peanuts), or three ounces of seeds, particularly pumpkin.

## Vegetarian Diets

**I**t is perfectly possible to be a healthy vegetarian, so long as you know what you're doing. However, many nutritional doctors like Leo Galland tell us that some of their worse-nourished patients are casual vegetarians, who opt for lots of white pasta without including enough minerals or protein, in the mistaken notion that simply avoiding meat will ensure good health.

A recent issue of the *Journal of Nutritional Medicine* (Vol 4 no 4: 419) showed that vegan B12 levels decreased noticeably within two months on a total vegetarian diet, and nearly two-thirds of those in the vegan diet for one year or more had blood B12 levels below normal. In the experience of the investigators, the usual vegan patient had no overt clinical signs of deficiency; however, often times problems like general indigestion after meals disappears soon after supplementation with B12. (Other early signs of deficiency include extreme fatigue, faulty digestion (such as nausea, or lack of desire for food), interrupted menstrual cycles, nervousness, numbness or tingling of hands and feet, depression or even paranoia. However, at present, our diagnostic tools are too crude to discover early evidence of B12 deficiency.

Other studies have shown that vegetarians can have abnormal copper levels (*J Nutr Med*, 1994, vol 4 no 4: 403). Their diets may also alter their ability to heal normally; one recent report of lacto-ovo vegetarians experienced delayed healing or scarring after undergoing chemical peeling (one after a treatment which had never previously recorded scarring). This occurs because with an inadequate diet, the body doesn't produce enough hydroxyproline, an essential component of wound healing (*JAMA*, March 22/29, 1995).

Recently, a study by British and New Zealand researchers demonstrating that the vegetarians were less likely to develop cancer and heart disease was seized on by the media and vegetarian groups as vindication for a non-meat eating diet.

The results were impressive. More than 6,000 vegetarians were compared against 5,000 meat eaters; only 28 reported a heart disease against 51 among the meat eaters, and 50 developed a cancer compared to 80 in the meat-eaters (*BMJ*, June 25, 1994).

However, the truth may be more complicated, and may have

nothing to do with the fact that they don't eat meat.

In their conclusions, the researchers stated that “this data do not justify advice to exclude meat from the diet since there are several attributes of a vegetarian diet apart from not eating meat which might reduce the risk.”

Vegetarians in the study had a diet high in vegetables, fruit, cereals, pulses and nuts—and low in saturated fat and high in unsaturates, carbohydrate and non-starch polysaccharides, or fibre. The intake of antioxidants—known to prevent heart disease and cancer—was also higher, although meat eaters take higher levels of iron, zinc and vitamin B12.

We also know that a balanced vegan diet can cure or prevent such problems as diabetic neuropathy (J Nutr Med, 1994, vol 4 no 4: 431-9).

Dr Stephen Davies and others offer a number of suggestions for avoiding the problems of casual vegetarianism:

**1. Make sure you are getting enough complete proteins.** No plant product contains complete proteins, which means that you must combine several types of vegetable proteins to make a whole one. Suitable combinations include: rice with pulses, sesame or cheese; sesame seeds with beans or peanuts and soy beans; corn with beans or wheat with beans or milk. If you are not a vegan, Dr Davies recommends that you consume eat least one egg a day for superior protein, which will enhance the quality of your vegetable foods.

**2. Steer clear of refined carbohydrates like white rice or flour.** This means you have to be more discerning about frequent platefuls of white pasta, which are low in nutrients.

**3. Eat five or more servings of fruits and vegetables per day.** Be partial to green, leafy salads and fruits and vegetables high in vitamin C, which will increase your absorption of iron.

**4. Be careful of foods which inhibit the absorption of certain minerals.** These include many “high fibre” foods like bran, whole-grain unleavened wheat, tea and coffee. These tend to block the absorption of zinc, magnesium and calcium and possibly iron.

**5. Be especially mindful of getting enough iron and B12.** Good sources are dairy products and eggs for vegetarians; and for vegans, yeast extract, and fortified foods such as soya milk. In the *Realeat Encyclopedia of Vegetarian Living*, Peter Cox points out that although it was thought that fermented foods such as tempeh and sea vegetables contained high quantities of B12, more recent studies show that these

are in fact analogues to B12, which may even block its absorption.

**6. Consider supplementing your diet, particularly with B12 if you are a vegan.** In the J of Nutritional Medicine study, B12 levels were raised in the study patients only if the vitamin supplement could be readily dissolved. Best was a 100-300 ug tablet of B12 that was chewed or dissolved slowly in the mouth.

**7. Make sure that you are suited to be a vegetarian or a vegan.** Anne Marie Colbin, who generally advocates a near or total vegetarian diet, knows of some people who follow a healthy diet to the letter but don't thrive; something in their individual constitutions appears to require at least a small amount of meat for optimum health.

**8. Be particularly careful if you are breastfeeding or have small children.** Most of our nutritional doctors do not advocate a strict vegan diet for babies or toddlers. If you have inadequate stores of B12 and are nursing, your child can be at risk of developing vitamin-B12 deficiency syndrome.

**9. Check out food allergies.** Many foods in the typical vegetarian diet—wheat, yeast and dairy products—are among the most common allergens. If you do have such allergens, work with a qualified nutritionist to ensure that you can have an adequate vegetarian diet without these foods.

## Supplements

**M**ost of WDDTY's panel of nutritional doctors find that it is very difficult, if not impossible, for people even on the healthiest diets to get all the nutrients you need from your food. Even the best food suffers a loss of nutrients if it is stored for days before being consumed. These days, increasing numbers of people suffer from allergies or inadequate stomach enzyme production, which interferes with absorption of the nutrients from food.

Finally, our exposure to environmental pollutants also increases our nutritional needs over those of our forebears.

Unless you live on a farm or grow your own vegetables and have access to free-range meats and all organic, freshly picked crops, the likelihood is that you could be deficient in one or more nutrients.

With so many claims being made about the wonders of vitamins, increasingly, people tend to go in for self-dosing. Because everyone is individual biochemically, this is a scattergun—and possibly even dangerous—approach. If possible, it is best to have a nutritional assessment from an experienced, qualified practitioner, who will run a few of the tests available these days to determine whether you are deficient in one or more nutrients and then adjust your vitamin programme accordingly. (See p 38 for more information about nutritional assessments.)

However, if it is not possible to have a nutritional work-up, here is what some of our panel members suggest as a general guideline for vitamin/mineral levels in adults. Please note that these are only a very general guidelines. Your individual requirements could be different from these. We urge you to work in partnership with a qualified nutritional therapist before following the advice below. This guide should also not be used for pregnant women and children.

<b>Nutrient</b>	<b>Maximum daily dosage</b>
<b>Vitamin A</b> (from beta carotene)	<b>10-25,000IUS</b>
( <i>or</i> ; as retinol)	<b>10,000 IUs</b>
<i>(do not exceed this dosage if pregnant or planning pregnancy. Excess vitamin A causes brain damage in offspring. Also limit liver, a rich source of vitamin A, to once a week if pregnant. Do not take both supplements or exceed dose without supervision.)</i>	
<b>B vitamins</b> ( <i>only take higher doses under medical supervision</i> )	
<b>B1</b> (thiamine)	<b>50 mg</b>
<b>B2</b> (riboflavin)	<b>50 mg</b>
<b>B3</b> (as niacin)	<b>50 mg</b>
( <i>or</i> ; as niacinamide)	<b>100 mg</b>
<b>B5</b> (pantothenate)	<b>500 mg</b>
<b>B6</b> (pyridoxine/pyridoxal)	<b>50 mg</b>
<i>(Some women take higher doses for premenstrual tension; however, since excess of B6 can cause problems of the nervous system, do not exceed this dosage without medical supervision.)</i>	
<b>Folic acid</b>	<b>400-800 mcg</b>
<b>B12</b>	<b>100 mcg</b>
<b>Biotin</b>	<b>200-1000 mcg</b>
<b>Choline</b>	<b>500-700 mg</b>
<b>Inositol</b>	<b>600 mg</b>
<b>PABA</b> (para amino benzoic acid)	<b>500 mg</b>
<b>Vitamin C</b>	<b>50mg-10 grams if tolerated</b>
<i>(but take as calcium or magnesium ascorbate powder since high doses of other forms of vitamin C can cause loose stools and diarrhea).</i>	
<b>Bioflavonoids</b>	<b>100-1000 mg</b>
<b>Vitamin D</b>	<b>400 iu</b>
<i>(do not exceed this dose unless under medical supervision).</i>	
<b>Vitamin E</b>	<b>Up to 600 iu</b>
<b>Calcium</b>	<b>500 mg</b>
<i>(amounts over this aren't well absorbed. Best taken as calcium citrate, lactate or gluconate).</i>	

# S U P P L E M E N T S

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<b>Magnesium</b>	<b>200-400 mg</b>
<i>(Best forms: magnesium citrate, gluconate or chelates).</i>	
<b>Iron</b>	<b>10 mg</b>
<i>(avoid sulphates, which irritate intestines)</i>	
<b>Zinc</b>	<b>15-30 mg</b>
<i>(as citrate, gluconate or chelate—medical supervision for higher doses)</i>	
<b>Chromium</b>	<b>100 mcg</b>
<b>Selenium</b>	<b>Up to 200 mcg</b>
<i>(Do not exceed this dose. Any daily doses above this amount require medical supervision).</i>	
<b>Iodine</b>	<b>500 mcg</b>
<i>(take kelp if possible, an excellent source of iodine)</i>	
<b>Copper</b>	<b>2-3 mg</b>
<b>Potassium</b>	<b>300-600 mg</b>
<i>(although you generally get adequate amounts from food)</i>	
<b>Boron</b>	<b>3 mg</b>
<b>Manganese</b>	<b>5-25 mg</b>
<i>(Do not exceed dose except under medical supervision.)</i>	
<b>Essential fatty acids</b>	
<b>Combined omega-3 and omega-6</b>	
<b>EFA preparations</b>	<b>2000-4000 mg</b>
<b>Individual preparations</b>	
<b>Omega-6 EFAS</b>	
(evening primrose oil)	<b>2000-4000 mg</b>
<i>(if you have epilepsy, do not take except under medical supervision)</i>	
(or, as blackcurrant seed oil)	<b>1000-2000 mg</b>
(or, as safflower oil)	<b>15-30 ml (1 to 2 tablespoons)</b>
<b>Omega-3 EFAS</b>	
food-grade linseed oil	<b>15-30 ml (1 to 2 tablespoons)</b>
(or, as fish-oil capsules)	<b>200-500 mg of EPA</b>
<i>(the active ingredient)</i>	
<i>(Take fish oil under professional advice if you are on anti-clotting medication)</i>	

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## Nutritional Assessments

**T**he usual advice you get from women's magazines or many books is to "assess" your nutritional status. But few tell you how to achieve this. And most doctors engage in a good deal of guess work to figure out whether you are in a state of optimum nutrition.

Practitioners with a nutritional bent use one of two approaches (or a combination of the two) to determine your nutritional health: a detailed questionnaire or barrage of tests. The best combine both approaches.

Any doctor worth his prescription pad will have you fill out a detailed questionnaire (often prior to your arrival in his office) asking questions about not only your own health history but that of your family members, even your grandparents. These questions would include information about allergies, illnesses and reasons for the deaths of any deceased relatives.

He or she will also need to do an in-depth report on your lifestyle. One British doctor we know of asks his patients to note down, in great detail, what they tend to eat in a typical week. Increasingly, many doctors, generally referred to as "clinical ecologists", also will ask for information about your home, your type of work and work environment and your hobbies, as many building materials or chemicals involved in certain offices or work sites have been shown to adversely affect health.

This doctor will probably ask questions about the kind of work you do and under what kinds of conditions (happy or unhappy, say), as stress of any sort tends to be a chief source of nutritional deficiency and illness. He may also devise a questionnaire to determine if you have any allergies, which can affect your ability to absorb certain minerals. And, of course, he'll want to know about whether (and how often) you indulge in social poisons like alcohol or tobacco or even so-called recreational drugs. If you are of childbearing age, he'll probably need to know what sort of contraception you are using.

If any allergies are suspected, he may perform a "prick" test on you or, more conclusively, place you on a rotation or elimination diet (sometimes called the "Stone Age Diet") which will help to pinpoint which, if any foods, you may be allergic to.

Finally, he may ask a number of questions designed to determine if

you have any deficiencies. For instance, recurrent mouth ulcers could indicate a deficiency in iron, vitamin B12 or folic acid; brittle or split nails, a deficiency in zinc, iron or essential fatty acids. (Of course, these symptoms could be caused by other medical conditions, which is why it's important to discuss them with a skilled practitioner.) For a rough guide to nutritional deficiencies, see either *Nutritional Medicine* by Dr Stephen Davies (1987, Pan, London) or *Food Allergy and Intolerance* by Jonathan Brostoff and Linda Gamlin (1994, Bloomsbury, London).

Because certain clinical signs can signal one of a number of problems, several practitioners in the UK and American have begun to use a variety of laboratory tests, which they believe provide them with an accurate nutritional profile. These include sweat tests, which tests for mineral levels, particularly magnesium and zinc, which are often deficient in many people these days. Blood tests can determine whether you have deficiencies of a number of vitamins and can test for your zinc, copper and essential fatty acid levels. Other tests such as a gastogram, can check whether your digestive enzymes are working properly.

And finally there is the controversial hair analysis test, which proponents say is an accurate snapshot of your nutritional mineral status a few months before (when the hair sample grew out of the scalp).

Two such laboratories that conduct such tests are Biolab in London (9 Weymouth Street, London W1, tel: 0171-636 5959) and Jonathan Wright in Seattle, Washington (Meridian Valley Laboratory, 24030 132nd Avenue, SE Kent, Washington 98042, tel: 212-861 9000). If your own doctor is sympathetic, he can ring either Biolab or Jonathan Wright's office for instructions. If he isn't, the British Society for Allergy and Environmental Medicine (PO Box 28, Totton, Southampton SO40 2ZA, tel: 01703-812124) which will supply him (and you) with a list of sympathetic practitioners close to you. Otherwise, ring or write The Institute of Optimum Nutrition (Blades Court, Deodar Road, London SW15 2NU, tel: 0181-877 9993) for a list of non-medical practitioners.

# Suggested Reading

*Food and Healing* by Anne Marie Colbin  
(1986, Ballantine Books, New York).

*Nutritional Medicine:*

*The Drug-free Guide to Better Family Health,*  
by Drs Stephen Davies and Alan Stewart (1987, Pan, London).

*Healing Through Nutrition:*

*The Natural Approach to Treating Illness with Diet and Nutrients,*  
by Dr Melvyn R Werbach (1995, Thorsons, London; HarperCollins, New York)

*Superimmunity for Kids*

by Leo Galland, (1989, EP Dutton, NY)  
(Published in the UK as *Allergy Prevention for Kids,*  
Bloomsbury Publishing, London)

*Optimum Nutrition Workbook,*

by Patrick Holford (1992, ION Press, London)

*Encyclopedia of Natural Medicine,*

by Michael Murray N D and Joseph Pizzorno, ND.  
(1990, Little Brown, London).

*Better Health Through Natural Healing,*

Ross Trattler, (1987, Thorsons, London; McGraw Hill, New York)

*The Nutrition Desk Reference*

by Robert H Garrison, Jr and Elizabeth Somer (1990, Keats Publishing,  
27 Pine Street, Box 876, New Canaan, Connecticut 06840).

*Prescription for Cooking and Dietary Wellness*

by Phyllis A Balch and James F Balch (1993, PAB Publishing,  
610 Green Street, Greenfield, Indiana 46140)

*The Realeat Encyclopedia of Vegetarian Living,*

By Peter Cox (1994, Bloomsbury Publishing, London)

*Diet for a Poisoned Planet:*

*How to Choose Safe Foods for You and Your Family*  
by David Steinman (1992, Ballantine Books, NY)

*The Safe Food Handbook,*

Joan and Derek Taylor, eds. (1990, Ebury Press, London)

*Native Nutrition: Eating According to Ancestral Wisdom,*

Ronald F Schmid (1994, Healing Arts Press, Rochester, Vermont)