

Nutrition & Health Letter

YOUR SOURCE FOR RELIABLE INFORMATION ON PLANT-BASED EATING

Seeking the Secrets of Weight Loss

IF YOU ARE LOOKING FOR HELP with weight loss, you can choose from dozens of books and programs that promise to make it fast and easy. Current approaches to weight loss shy away from any discussion of calories. Rather the focus is on macronutrients — protein, fat and carbohydrates. At one end of the spectrum are the advocates of very low fat intakes. These diets tend to be moderate in protein and as high as 70 to 80% carbohydrate. At the other extreme are diets that promise weight loss with all of the food you can eat, as long as you avoid almost all carbohydrate-rich fare.

What really works?

In this issue of *NHL*, we'll look at

the strengths and weaknesses of different approaches and put together the best current recommendations for permanent weight control.

Low-Fat Diets

Low-fat diets, such as the Ornish Program, first became popular as a way to decrease heart disease. The Ornish diet is a vegetarian plan with all protein coming from plant foods and low-fat dairy products. Protein intake on this diet is moderate. The bulk of calories comes from complex carbohydrates — whole grains, legumes, fruits and vegetables.

Over the years, Dr. Ornish has modernized his diet to provide better

sources of essential omega-3 fats, and he has also incorporated full-fat soyfoods into the diet. The diet is part of a more comprehensive plan that includes exercise and stress reduction.

Reducing fat intake and focusing on whole plant foods tends to decrease calorie intake and, therefore, can help people shed pounds. Because these diets are based on healthful plant foods, they are high in fiber, antioxidants, and in beneficial phytochemicals, making this a healthful approach to weight loss. If the fat is replaced with refined carbohydrates, however, the diet is not a healthful one and is not necessarily associated with weight loss.

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Tips for Weight Loss

There are no secrets to weight loss and no fast and easy tricks, but our suggestions can maximize your chances of successful and permanent weight control.

- **Exercise:** You may be able to lose weight without exercising, but exercise will speed up your weight loss and enable you to shed pounds without starving yourself. Do the type of activity that burns lots of calories — aerobic exercise. Try brisk walking, jogging or cycling. Exercise that builds muscle, like weight lifting, is also good for you, does burn calories (but fewer than aerobic exercise) and will help tone your muscles. Exercise is not just for weight loss. A lifetime of physical activity



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High-Protein Diets

The Atkins Diet

Dr. Atkins' Diet Revolution is among the most popular diet books of all time. It's not really much of a revolution, however. An undertaker introduced a similar plan in 1863 to help people lose weight, and other low-carbohydrate regimens have surfaced over the past century under various names. They all promise weight loss without hunger, while eating all of the meat and high-fat dairy foods you want.

Atkins claims that carbohydrate intake is the cause of obesity. He suggests that a high-carbohydrate diet leads to hyperinsulinemia — too much insulin in the blood — which causes hunger and encourages weight gain. His approach: Eat minimal carbohydrates to induce a physiological state called ketosis. This metabolic condition, which occurs during starvation or very low carbohydrate intake, involves production of compounds called ketones, which are excreted in the urine. Atkins devotees test their urine daily with chemical strips purchased at the drug store. In order to reach ketosis, Atkins recommends no more than 20 grams of carbohydrates per day — a diet essentially free of breads, cereals and other grains; fruits, most vegetables, nuts, and seeds.

So what do you eat on the Atkins plan? Well, you are allowed all the meat, fish, poultry, and eggs you want, as well as limited amounts of cheese and salads. All oils and butter are allowed. Dr. Atkins suggests adding variety with small amounts of olives, sour cream, heavy cream, and avocado.

There is some evidence that people do lose weight on the Atkins plan. Why this is so isn't quite clear. Much of the initial weight loss is water, due to the diuretic effects of a low-carbohydrate diet. Some people may also experience somewhat better appetite control with the higher protein intake or the hunger-suppressing effects of ketosis. More likely, since so many foods are taboo on the Atkins plan, people end up eating less through sheer boredom and lack of variety.

But can people stick with the Atkins diet over the long term? We can only hope that they don't. The Atkins diet is dangerously high in saturated fat and cholesterol and low in many compounds that are important for good health. Although weight loss is generally associated with a reduction in blood cholesterol levels, regardless of how the loss is achieved, it isn't clear that plans like the Atkins diet will reduce the harmful LDL-cholesterol levels. One study of 24 obese men who followed the diet for three months found that LDL-cholesterol levels actually rose as the men lost weight.¹ But regardless of the effects of high-fat, high-protein diets on cholesterol levels, readers of *NHL* know that there is much more to protecting heart health than reducing blood cholesterol. A diet high in antioxidants — found in plant foods — is important for protecting health of the arteries.² So is fiber, also found only in plant foods. Diets high in animal foods may make the arteries less elastic, which raises risk for heart disease. Foods like red meat have been linked to increased cancer risk, while phytochemicals in

plant foods and fiber may help to reduce cancer risk. The Atkins diet and other high-protein plans that are similar to it make it impossible to eat the foods that reduce risk for chronic disease.

The Zone

It's not quite fair to call the *Zone Diet* a modified version of Atkins. On the plus side, it allows a much higher intake of carbohydrates, focusing on those with a low glycemic index. There is more attention to the types of fat that are healthful, and the diet is more moderate in fat. However, it is based on the same principle: meals high in carbohydrate are the cause of weight gain because they boost insulin levels.

Allegedly, people lose weight on this diet by adjusting the ratio of protein to fat to carbohydrate in meals. In fact, you will very likely lose weight on the *Zone* regimen, but probably for a completely different reason. The complex set of calculations that help you determine how much protein, carbohydrate and fat to eat results in a diet that is quite low in calories.

Moderate-Fat Diets

The Mediterranean Diet

Unlike the above plans, which were devised as new approaches to weight loss, the Mediterranean diet is based on observations of the good health of people living in countries along the Mediterranean Sea. Historically, these cultures emphasized diets based on grains, with plenty of fresh fruits and vegetables, nuts and seeds,

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A Healthy Plan for Weight Loss

ACCORDING TO THE LATEST RESEARCH, boosting your protein intake a bit could make weight loss easier. But that doesn't mean giving up healthful, carbohydrate-rich plant foods. After all, with the exception of fruits and oils, all plant foods provide protein. A cup of cooked broccoli has about the same amount of protein as an egg, but delivers one-third fewer calories. Since beans and vegetables and grains also provide fiber and phytochemicals, it makes sense that choosing protein-rich plant foods is the most healthful way to lose weight. By concentrating on whole plant foods, and emphasizing foods like legumes, oats and vegetables, you'll also keep the glycemic index of your eating pattern low.

Our sample menu plan delivers about 1600 calories and slightly fewer than 90 grams of protein. Although this is somewhat more protein than vegetarians usually

consume, it is still a moderate, healthful intake that allows you to eat a diet that is balanced, satisfying and rich in health-protecting compounds. Our plan is rich in fiber and very low in saturated fat.

For those who wish to decrease calories further, decrease servings of added fat. But we don't recommend going too low with calorie intake. A better idea is to create a bigger "calorie deficit" by increasing exercise. Most men who are watching their weight will need more energy than this sample plan provides. They can get it by boosting intake of protein-rich plant foods. Our plan includes two servings of low-fat dairy foods with alternative suggestions for vegans. Depending on other food choices, those who follow this menu plan may need to supplement their diet with calcium.

Sample Diet

We created a 1600-calorie diet that gives a modest boost in protein with healthful plant foods using these vegetarian foods.

	PROTEIN	CALORIES
1/2 cup 1% fat cottage cheese	13	90
1 cup skim milk	7	80
1 cup nonfat plain yogurt	13	120
1 soy burger or other soy product* (Morningstar Farms Griller)	15	140
1/2 cup baked tofu	10	150
1 cup plain soymilk	6	80
1 T peanut butter (or any nut or seed butter)	3	100
1 T walnuts	3	85
1/2 cup cooked beans	6	80
1 sweet potato or 1/2 cup cooked whole grain	2	117
1 slice whole grain bread	3	100
3/4 cup cooked oatmeal	3	75
1 cup cooked vegetables	4	50
1 cup salad greens		50
1 serving fresh fruit		70
1 tsp olive oil		45

*Look for soy products that provide about 15 grams of protein per serving. Other good choices are Garden Burger Hamburger style, Yves brand Deli Slices, or 1/2 cup prepared TVP. Check the label on your favorite soy products.

Sample menu plan

Breakfast: 3/4 cup oatmeal
1/2 cup skim milk or soymilk
1 T walnuts
1/2 cup fruit
1/2 cup cottage cheese or
1/2 cup baked tofu

Snack: 1/2 whole grain bagel
1 T peanut butter or other
nut butter

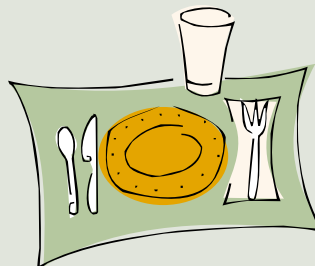
Lunch: 1 1/2 cups lentil soup
1 slice whole grain bread
Salad with 1 T dressing

Snack: 1 cup nonfat vanilla yogurt
or 1/2 cup baked tofu
1/2 cup fruit

Dinner: 1 burger or other soy product
1/2 cup cooked beans
1 sweet potato or 1/2 cup
cooked whole grain
1 cup cooked greens
1 cup other cooked vegetables
2 tsp oil in preparation

will help you maintain a more healthful weight and aid in preventing chronic disease.

- **Pay attention to satiety:** It's hard to lose weight if you're hungry all the time. Although there have been many studies on the effects of different dietary components on hunger and satiety, there is still no solid answer. But we do have some advice that should help.
 - ✓ Include a good source of protein with each meal. Some evidence suggests that protein helps keep hunger at bay, but diets high in animal protein, even when these foods are low in fat, are unhealthy. Choose plant foods that are rich in protein, since these foods are low in saturated fat and they provide antioxidants and other compounds that are important for health.
 - ✓ Choose foods with a lower glycemic index. The easiest way to do this is to concentrate on eating whole, unrefined plant foods. It doesn't mean avoiding foods that contain carbohydrate. Most people in the National *Weight Loss Registry* eat plenty of high-carbohydrate foods. Very few of them are carbohydrate-avoiders.
 - ✓ Don't let your diet get too low in fat. Some subjects have reported that they are more satisfied when they include some high-fat foods like nuts, peanut butter, olives, or avocado in meals.
 - ✓ Don't go too long without eating. If you find yourself getting hungry often, switch to five or six small meals or large snacks rather than two or three bigger meals. It's harder to eat reasonably when you are famished.
 - ✓ Eat plenty of fiber. Foods with bulk and weight seem to be the most satisfying, according to satiety experts.
- **Pay attention to portion sizes,** especially if you eat out often. Americans have lost their perspective on how much food makes a meal, largely because many restaurants and fast food establishments serve "super-size" portions. Make it a habit to order a salad and share an entrée — or bring half of the entrée home. Or make a meal of an appetizer and a salad and share a dessert. In some restaurants, an appetizer may not be an especially low-calorie option, but it helps to train your eye and stomach to expect more reasonable amounts of food. Be aware that meals that offer too many options — like buffets — can encourage you to overeat.
- **Eat a vegetarian diet:** An analysis of eating habits, calorie intake and weight showed that vegetarians had the lowest energy intakes of all the groups studied.



legumes, and moderate amounts of animal foods. Foods were cooked mostly in olive oil, which is high in monounsaturated fat. What was evident was that their diet was not particularly low in fat, but their rates of heart disease and cancer were. This helped to shape health recommendations that focused more on *type* of fat in the diet rather than amount of fat.

There are still questions about how much fat people should eat for weight loss. Studies show that reduction in fatty foods usually translates directly to a reduction in calories. According to the *National Weight Loss Registry*, a database of people who have lost and kept weight off for over a year, most do eat less fat than the average American. However, Harvard researchers found that a slightly higher fat intake was more satisfying for people trying to lose weight.³ Those who ate a little more fat in a calorie-restricted diet had less difficulty sticking to their more healthful eating pattern. Other research has shown that foods with a higher fat content satisfy hunger longer than low-fat, high-carbohydrate foods.⁴

What Causes People to Gain Weight?

Experts agree that the core problem is a fairly straightforward and obvious one. People consume too many calories relative to their energy expenditure. Very simply, people gain weight because they eat too much and exercise too little. Surveys of eating habits show something that is



not the least bit surprising: Americans are consuming more calories than they were a decade ago. No matter how you adjust your intake of fat, carbohydrate and protein, no diet will work if it doesn't lower your calorie intake.

However, although there are no solid answers about the best proportion of macronutrients in the diet, the evidence suggests that how much fat, protein and carbohydrate you eat — and perhaps even the source of these nutrients — can impact efforts to lose weight.

Do Carbohydrates Make You Fat?

Low-carbohydrate diets have become popular largely because carbohydrates are blamed for boosts in blood insulin that are said to lead to weight gain. A popular theory is that the low-fat, high-carbohydrate diet that Americans have been urged to eat has led to the national epidemic of obesity, and that increased body size correlates directly with a drop in the amount of fat that Americans are eating.

The truth is that Americans have not decreased their fat intake. On average, Americans do eat a diet with a smaller *percentage* of calories from fat — but that is simply because they are eating more calories. Total calories and total fat intake have both gone up in the past decade. And it is very likely that this — along with a sedentary lifestyle — explains the obesity epidemic in America.

In addition, advocates of low-carbohydrate regimens ignore the fact that protein also raises insulin levels.⁵ It's difficult to compare the effects of carbohydrate and protein, since insulin levels are affected

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Heart Disease Prevention Starts in Childhood

The American Heart Association released new guidelines this spring, aimed at helping children develop a lifestyle that reduces heart disease risk. They recommended limiting fat, salt and sugar intake after the age of two, and also limiting sedentary activities. Experts suggest that children should have no more than two hours of television or computer time a day. They also recommend that children should have their blood pressure and weight measured at every doctor visit and that physicians should also discuss diet and exercise with younger patients. For those who are obese, weight management programs that target the whole family's eating habits must be considered. Diet changes may be necessary for those with high cholesterol and, for some, drug therapy to reduce cholesterol levels could be warranted.

The recommendations were developed by the AHA's *Council on Cardiovascular Disease in the Young*. They recognize that good eating habits begin in childhood, and the habits that can lead to heart disease can begin at very young ages as well.

Source: *Circulation* March 25

A New Reason to Go Organic?

Many people choose organic produce because they wish to avoid exposure to pesticides and herbicides, and because they want to purchase food grown in more earth-friendly ways. Now, there may be an added advantage to eating organically-grown food. A study at the University of California at Davis found that food grown organically might be higher in antioxidant compounds called flavonoids, which are believed to reduce risk for both cancer and heart disease. The researchers tested levels of these compounds in three types of produce — marionberries (a type of blackberry), strawberries and corn. Samples of each were grown (a) without pesticides, herbicides, or fertilizer; (b) with fertilizer only; or (c) with all three, as is common for conventionally grown produce. They found that flavonoid levels were 59% higher in corn grown with fertilizer only, compared to conventionally grown corn. Marionberries and strawberries, grown with or without fertilizer, were 50 percent and 19 percent higher in flavonoids, respectively, than those that were conventionally grown. The researchers said that since flavonoids are produced by plants to fight outside stresses, such as insect infestation, those grown with pesticides are likely to produce fewer flavonoids.

Source: *Journal of Agriculture and Food Chemistry* 2003;51:1237.



differently by individual amino acids and also by different carbohydrates. Replacing some carbohydrate with protein may be advantageous for weight control, as we'll see below. However, simply choosing more carbohydrates that have a low glycemic index — that is foods that cause more gradual rises in blood glucose — may be helpful as well. Choosing foods with a lower glycemic index has been shown to help people feel

less hungry.⁶ But this does not mean avoiding carbohydrate-rich foods. A study of eating habits of more than 10,000 adults, reported in the *Journal of the American Dietetic Association*, found that people who ate high-carbohydrate diets had lower calorie intakes and lower body mass indexes.⁷

Does Fat Make You Fat?

Ounce for ounce, fat has twice the calories of protein or carbohydrate.

Eating too many fatty foods will drive up your calorie intake, and you will gain weight. That doesn't mean that you need to count every gram of fat in your diet or avoid all fatty foods. You don't even need to avoid added oils. Some evidence suggests that including small amounts of fattier foods helps people feel more satisfied and therefore more able to stick to a lower-calorie menu. Research from the University of California found that adding either fat or fiber to a low-fat, low-fiber meal raised levels of the hormone cholecystokinin, which is associated with satiety.⁸ Although people lose weight on very-low-fat diets, the evidence suggests that they don't stick to this way of eating.⁹

Does Protein Make You Thin?

There is some evidence that protein has greater satiety value than either carbohydrate or fat, and that it may help people to feel satisfied with fewer calories.¹⁰ In a study from Denmark in which people ate diets that were either 12% or 25% protein, those with the higher protein intake lost more weight — 19.5 pounds versus 11.2 pounds — after six months.¹¹ Boosting protein intake during weight loss may also help to retain muscle tissue so that more of the loss comes from fat.¹² In a study that compared the effects of diets containing an equal number of calories but different levels of protein (68 grams versus 125 grams), weight losses were not greatly different, but the people eating more protein had a

Q *ASK THE EXPERTS...*

I try to eat a diet that is low in harmful fats, like saturated fat and trans fats, but I can't tell from labels how much trans fat is in a food. Is there a way to find this information?

There will be very shortly. The FDA is expected to make it mandatory for food labels to contain not just the total amount of saturated fat in a food, but also the amount of trans fats. Right now, the best way to tell if the foods you

are eating are high in trans fats is to watch the ingredient list for the words "hydrogenated or partially-hydrogenated fat." But because some foods may contain hydrogenated fat in only very small amounts, this doesn't actually tell you whether a food is high in trans fats. Until the information is on food labels, avoiding fried foods and pastries and anything made with solid vegetable shortening or margarine is the best way to keep intake of these fats low.

If you have a question about vegetarian nutrition that you would like to see answered in Loma Linda University Nutrition & Health Letter, write to us at 1706 Nichol Hall, School of Public Health, Loma Linda University, Loma Linda, CA 92350. We regret that we are unable to publish answers to all questions or respond to letters personally.

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Grow Herbs Indoors for Year-Round Flavor

GROWING HERBS IS A REWARDING gardening experience. These plants are easily grown, look and smell wonderful, and are generally available for use all summer long. In fact, you can have herbs year-round no matter where you live, since many can be grown indoors on a sunny windowsill. You can easily grow your herbs from seed or from cuttings. Just “plant” a cutting in water for a week or so until little roots appear, then transfer to a pot of soil. Or wait until the end of the summer and pot up herbs from the outdoor garden.

If you like to keep your herbs in pots all year, move the pots out to a sunny patio during the hotter months, then back inside again in the fall. Some people prefer to have potted herbs on hand in the kitchen every day of the year. It makes them

easy to use and adds a delightful smell, especially when the kitchen heats up in the summer.

Herbs love the sun. To grow them successfully, you’ll need a window that gets at least four hours of direct sun a day. A northern exposure won’t work well, unless you supplement the sun with grow lights. Herbs also don’t like to get their feet wet, so make sure that the pots you use have good drainage and that you use a light loamy soil that drains well. Purchase a commercial soil that has perlite added to it. Wait until soil feels dry before watering and then water thoroughly, until water runs out of the bottom of the pot. If you keep your herbs potted year-round, they will also need a monthly dose of plant food. If herbs attract pests, like spider mites, hold your hand over the soil in the pot

and turn the pot upside down. Give the leaves a swish in a sink filled with an organic insecticidal soap.

Here are some easy herbs to grow indoors:

Mint. If you have mint growing in the garden, you can easily propagate this from cuttings left for several weeks in a jar of water.

Oregano: True oregano used in Mediterranean cooking has white flowers, not pink. You can grow this herb from seeds; they will germinate in 7 to 21 days and the plants will eventually reach about 10 inches tall.

Thyme: Grow this from cuttings or leaves.

Dwarf sage: Many garden varieties of sage are too big for indoor growth. Look for dwarf varieties that stay neat at about 10 inches tall and take cuttings to start indoor plants.

Parsley: This plant can be started in a pot from seed, but the best plants are started outdoors and then potted up for indoor use.



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slightly greater weight loss and they lost more fat tissue relative to muscle.¹³



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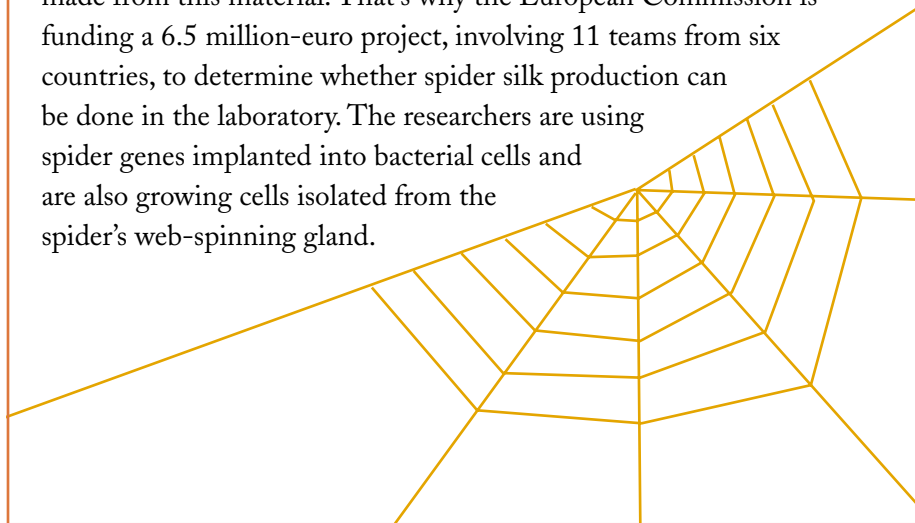
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PARTING WORDS:

Medical Uses for Spider Web Silk

According to one expert, the strength and flexibility of spider web silk can be explained this way: If you could make a big enough net out of it, you could catch a passenger plane. Strength and flexibility are two characteristics of tendons and ligaments as well, and some researchers believe it will be possible to manufacture these body parts from spider silk.

One important advantage of spider silk is that the human immune system does not recognize it as foreign and will accept implanted parts made from this material. That's why the European Commission is funding a 6.5 million-euro project, involving 11 teams from six countries, to determine whether spider silk production can be done in the laboratory. The researchers are using spider genes implanted into bacterial cells and are also growing cells isolated from the spider's web-spinning gland.



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