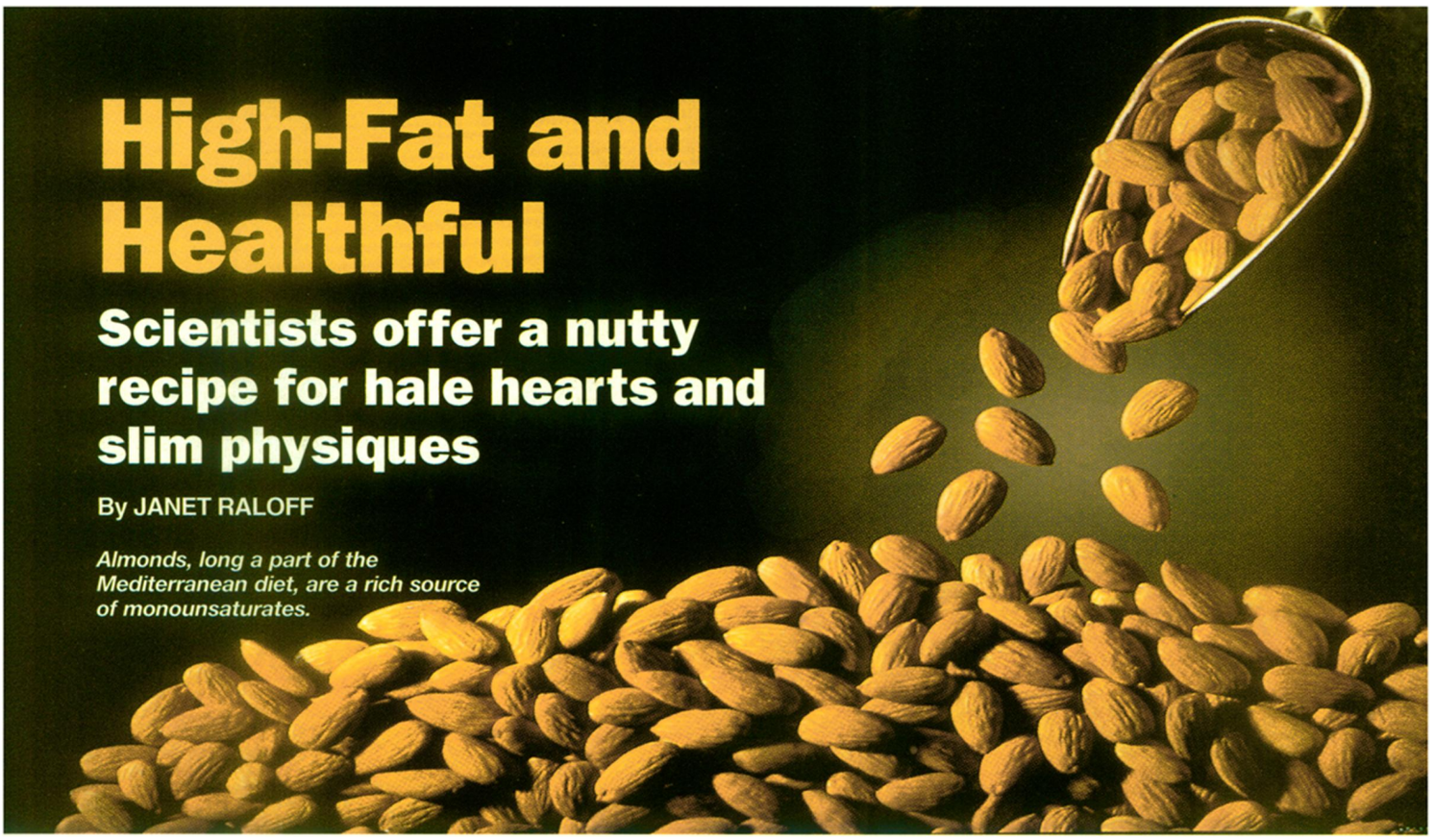
High-Fat and Healthful

Scientists offer a nutty recipe for hale hearts and slim physiques

By JANET RALOFF



Almonds, long a part of the Mediterranean diet, are a rich source of monounsaturates.

Almond Board of California

Thanksgiving ushers in 5 weeks of feasts and partying for most people in the United States. The gustatory temptations of the holiday season seem unavoidable. Store displays and magazine covers bombard the senses with a smorgasbord of treats, usually mouth-watering caloric confections that derive much of their palatability—and calories—from fat. As families reunite to celebrate, they break bread and, too often, all dietary resolve. Well-meaning neighbors and coworkers can aggravate the situation with offerings of nuts and chocolates.

The good news is that not all of this high-fat fare is necessarily bad for one's health. In fact, some of the treats could serve as a springboard to a healthier diet, a variety of researchers believe. The trick—and, of course, there is a trick—is not only to sample these foods in moderation but also to steer toward those that derive a large proportion of their calories from monounsaturated fats.

While the best-known source is olive oil, monounsaturated fats also predominate in the rapeseed-derived canola oil. Neither of these, however, sends out the same siren call as a third blockbuster source of these fats: nuts. Unlike liquid oils, nuts—which can derive up to 80 percent of their calories from fat—appeal as snacks, glorify as garnishes, and add texture to stir-fries and pasta.

Hazelnuts, macadamias, almonds, pecans, and pistachios all furnish 57 to 83 percent of their fats as monounsaturates. Although technically a legume rather than a nut, peanuts also pack a hefty dose; monounsaturates comprise roughly 50 percent of their fat. Brazil nuts, walnuts, and cashews deliver at least one-quarter of their fats as monounsaturates.

For years, the conventional wisdom has held that all high-fat foods promote artery-clogging plaque. Though the warning still holds for recipes that depend on butter, cream, or other rich sources of saturated fats, a different rule now appears to apply to foods rich in monounsaturates. Indeed, a host of new dietary trials indicates that high-mono-fat diets lower the risk of cardiovascular disease—in some cases, even more effectively than do the standard low-fat diets that the American Heart Association (AHA) advocates.

Such findings could transform the image of crowd-pleasing nuts from a sinful indulgence to a healthful staple.

In 1980, a now-famous, seven-country comparison of diet and heart risk concluded that Mediterranean cuisines—noted for their reliance on olive oil—are especially healthful. Because many Mediterranean recipes include almonds, Gene A. Spiller, a clinical nutritionist and the director of the Health Research and Studies Center in Los Altos, Calif., began investigating almonds' potential contribution to the phenomenon.

Along with colleagues at the Universities of Toronto and Verona, Italy, Spiller showed 6 years ago that substituting almonds and almond oil for other fats in a persons's diet over a 9-week period could lower both total and low-density-lipoprotein (LDL) cholesterol, the so-called bad cholesterol.

This same team has now directly compared the effects of almonds and olive oil in a 5-week study. At the start, the 45 participants had moderately high cholesterol concentrations—typically 250 milligrams per deciliter (mg/dl) of blood.

During the first week, Spiller's group counseled the men and women on how to select high-fiber, low-saturated-fat meals. At the beginning of the second week, each volunteer was randomly assigned to a diet rich in olive oil, almonds, or the dairy-based saturates found in butter and cheese. The researchers supplied about 630 calories of the food that each volunteer ate daily. This allotment included about 450 calories from one of the fat sources; the rest came from a mix of healthful offerings that didn't differ between the groups—usually pasta, whole-grain breads, lentils, couscous, dry beans, or nonfat yogurt. The men and women completed their diets with other foods meeting the study's guidelines.

Compared with what the volunteers had been eating in the first week, the new diets increased by 2 to 8 percent the share of each person's calories coming from fat. This amounted to 35 percent of calories in the olive oil and dairy groups and to 39 percent of calories in the nut group.

Such diets are considered moderate- to high-fat. Most dietary recommenda-

tions in recent years, including those from the National Research Council's diet and health committee, advocate limiting total dietary fat to 30 percent of calories or less.

Yet blood-cholesterol concentrations dropped in people on both the monorich diets—by about 11 percent in the almond group and 4 percent in the olive-oil group. Over the same 4 weeks, cholesterol concentrations climbed 5 percent among people eating dairy-rich foods.

The three diets elicited comparable changes in the volunteers' LDL cholesterol concentrations, Spiller's group reported in the June JOURNAL OF THE AMERICAN COLLEGE OF NUTRITION. While LDL cholesterol fell 17 percent in people eating the almond-rich diet, and some 8 percent in the olive-oil group, it crept up 2 percent in folks downing dairy-rich fare.

If the share of monounsaturates was comparable in the almond and olive-oil groups, why did nut eaters enjoy bigger blood-lipid benefits? Work by Paul A. Davis at the University of California, Davis suggests it might have had something to do with how the fat was packaged.

Some people move the fat that they eat into their blood a little faster than normal and out of the blood much more slowly than is typical. As a result, their fats circulate longer in the blood. Such people "are at a much higher risk of heart disease than those who handle fat faster," Davis notes. Curious as to whether the source of a fat might also affect fat circulation patterns—and, presumably, heart risk—he compared how the body handled equal amounts of fat delivered as whole almonds or almond oil.

The timing of almond oil's absorption and processing proved no different from that of any other oil, Davis says. But when consumed as a nut—in a meal adjusted so that fiber and all other nutrients were kept equal to those in meals containing liquid oils—the nut's oil entered an individual's bloodstream more slowly, peaked about 1 hour later, and was flushed out more rapidly.

"So, what we're showing is that if you eat whole nuts, you deliver fat in a different manner than if you have oils by themselves or as part of [prepared] foods in normal American-diet goods," such as salad dressings or muffins. Indeed, he told SCIENCE NEWS, "it's as if these nuts were time-release pills," slowly parceling out their fat in a more healthful fashion.

Though it's too early to tell whether this difference in timing is big enough to affect health, Davis predicts that it "will turn out to be a good thing." And he says that because all nuts have similar oil-encapsulating structures, "there shouldn't be much difference between a pecan, an almond, or a walnut in terms of its delivery of fat."

If true, this might explain why diets rich in walnuts, which are rather low on the monounsaturates totem pole, have also been linked to substantial heart benefits, such as a reduced risk of heart attack (SN: 7/25/92, p. 52).

Nutritionist Penny Kris-Etherton of Pennsylvania State University in State College sees no lipid advantage in consuming monounsaturates in nuts rather than as oil.

SPILLER

Nut	Total Fat*	Saturated*	Monounsaturated*	Polyunsaturated*
Almond	14.5	1	10	3
Brazil	19	5	7	7
Cashew	13	2	3	8
Hazelnut	18	1	15	2
Macademia	20	2.5	15	2.5
Pecan	19	2	12	5
Pistachio	14	2	8	4
Walnut	18	2	5	11

* Grams of fat per ounce of nuts

How the fat in nuts shakes out. One ounce (28 grams) of nuts can derive up to 88 percent of its calories from fat. To calculate fat calories, multiply grams in table by 9.

At the Experimental Biology meeting in San Francisco last April, she described data from a 6-month cholesterol trial of five different diets. Twenty-two men and women, ages 21 to 54, spent 4 weeks on each diet.

Three diets derived 17.5 percent of their energy, or half of their fat calories, from a monounsaturated-rich source: olive oil, peanut oil, or a combination of peanuts and peanut butter. A fourth diet, described as the "average American diet," contained the same amount of fat overall—34 percent—though twice as much of it was saturated as in the mono-rich diets and only half as much was monounsaturated fat. A fifth diet, adhering to AHA's low-fat menu guidelines, contained just 25 percent fat overall—most of it monounsaturated and polyunsaturated fat (as in corn oil).

A 1-week break separated each experimental diet from the next. To ensure compliance, all meals during the experimental phases were provided at the university in portions tailored to maintain an individual's weight.

All three mono-rich diets performed comparably, Kris-Etherton found. Blood concentrations of total cholesterol and triglycerides—another set of lipids whose buildup is a risk factor for heart disease—fell about 10 percent and LDL cholesterol dropped some 13 percent compared with measurements taken when the diners were eating the all-American diet.

And on the low-fat cuisine? While total-cholesterol and LDL changes roughly mirrored those in the high-mono diets, triglycerides climbed 13 mg/dl.

David Curb of the University of Hawaii at Manoa in Honolulu observed a similar trend in his trial comparing diets rich in macadamia nuts to the typical American diet or one developed to meet low-fat guidelines. Each of the 15 men and 15 women who participated in this study spent 30 days on each cuisine.

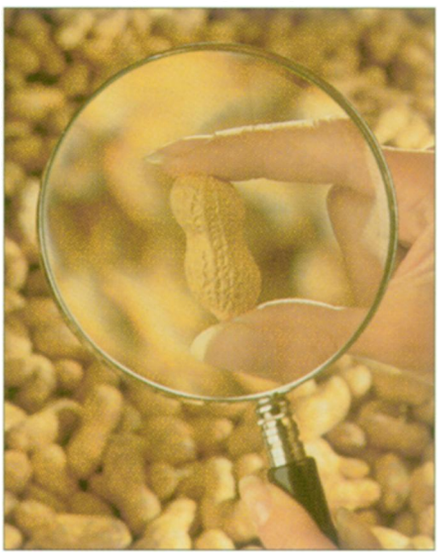
"We got equal total-cholesterol benefits from the low-fat and macadamia-nut diets," Curb says—about a 5 percent drop. Compared with the high-saturated-fat, all-American diet, triglyceride concentrations in the blood fell 10 percent on the macadamia-enriched cuisine. When the diners switched to the low-fat regimen, triglycerides climbed some 10 to 20 percent above those on the typical-American diet.

What this shows, Kris-Etherton says, is that the type of nut is probably not as important as a diet's overall ratio of monounsaturated to saturated fats.

Won't all these nuts make you fat? Quite the contrary, says Frank Sacks of the Harvard School of Public Health in Boston, judging from early findings from an 18-month-long study he's conducting in 101 overweight people. Mostly women, these are "hard-core" dieters—individuals "who have failed on diets time and again" and entered the study weighing about 200 pounds—explains co-investigator Kathy McManus, manager of clinical nutrition at Brigham and Women's Hospital.

Half of the volunteers were assigned to eat a high-mono diet deriving 35 percent of its calories from fat. The rest ate a balanced diet containing only 20 percent fat. Participants prepared their own meals, using guidelines offered by the team.

Both groups of dieters lost from 5 to 30 pounds within 3 months, then stabilized. Weight loss might have been greater, McManus says, if the participants had eaten the mere 1,200 to 1,500 calories that had been recommended. Instead, most ate some 1,900 calories per day and largely ignored the advice to exercise more.



American Peanut Council

Though they are legumes rather than true nuts, peanuts possess a nutty taste and pack a heavy dose of monounsaturates.

After 6 months, 62 percent of dieters eating a high-mono diet—enriched with nuts, peanuts, olives, or select oils—were still on their diets and in the trial versus just 45 percent in the low-fat group.

Indeed, Sacks observes, one reason for initiating the trial was to see whether having a variety of fat sources might encourage a dieter to better adherence. The study's guidelines urged the diners to analyze their daily fat intake and exchange each unit with a comparable amount of mono-rich fats, such as 1 teaspoon of canola oil, 2 teaspoons of peanut butter, eight olives, or a 1-ounce bag of peanuts.

New studies by Richard Mattes at Purdue University in West Lafayette, Ind., support the idea that nuts needn't spoil dietary control. In one trial now under way, 16 individuals are consuming a quantity of peanuts each day equal to 17 percent of their normal calorie allowance. In one 8-week phase, the men and women receive the nuts with no instructions other than to eat them. During a second 8-week period, the diners substitute the peanuts for other fats in the diet. During a third 3-week phase, each person is asked to add the nuts to his or her normal diet.

Although the trial isn't over, Mattes says, "it appears that these people are calorically compensating for the nuts beautifully." In all three phases of the study, "their body weights are staying remarkably stable."

Though trends associated with high-mono diets, particularly the heart-risk indicators, are all in the direction of reduced risk, "concluding that these changes are actually going to be associated with a benefit may be premature," says Robert Eckel, an endocrinologist at the University of Colorado Health Sciences Center in Denver and chair of AHA's Committee on Nutrition.

He notes that the magnitude of changes may be small and achieved solely through the heroic efforts of researchers who invest large quantities of time in motivating their volunteers or training their menu coordinators. His experience suggests that nuts "don't work as well in practice as they do in well-controlled clinical trials." He notes that when he prescribes the substitution of olive oil or nuts in his heart patients' diet, "usually, I see no resulting change [in their blood lipids]."

However, there is some support that nuts' heart benefits are more than theoretical. In a major study published last week, women who regularly ate nuts experienced significantly less heart disease than those who largely avoided these fatty foods.

Frank B. Hu of the Harvard School of Public Health in Boston and his coworkers analyzed links between diet and heart disease that showed up between 1980 to 1990 among 86,000 women participating in the ongoing Nurses' Health Study. Women who on average downed at least 5 ounces of nuts a week proved only 65 percent as likely to have suffered coronary heart disease—including fatal heart attacks—than those who ate nuts rarely, the team reports in the Nov. 14 British Medical Journal. Among nonsmoking teetotalers, the benefits were even more striking. These women experienced just half the heart disease of women rarely eating nuts.

Acknowledging that nuts may be healthier than the AHA dietary recommendations would lead most people to believe, Eckel notes that his committee "is going to revisit the issue of [AHA's] dietary guidelines in the next year."

That's none too soon, says Curb. With nutrition advocates preaching the low-fat mantra, nuts have become a nutritional no-no. Acknowledging that it's certainly possible to overindulge in these tasty treats, he says, "I think we can now say that nuts are good to eat." □