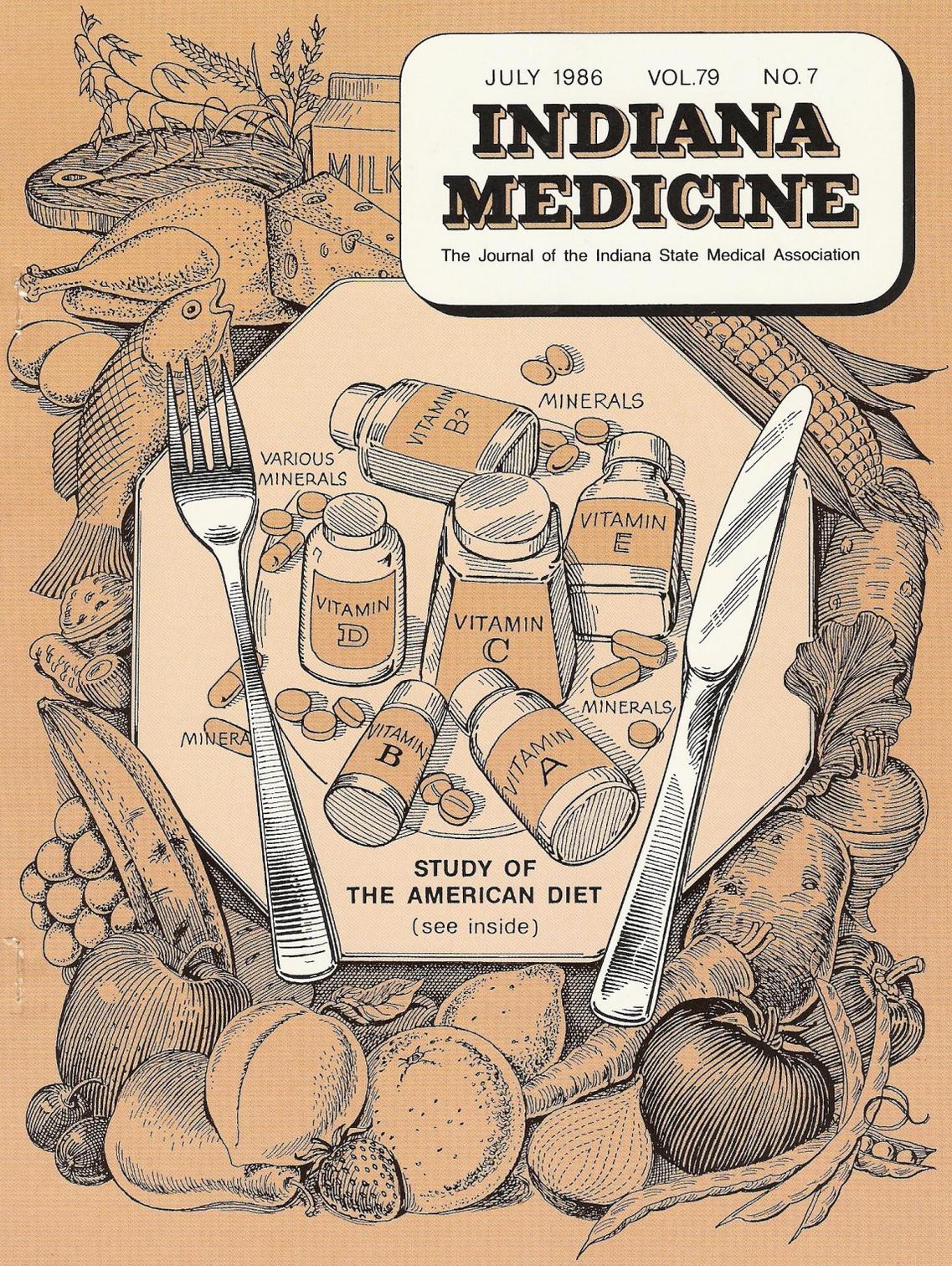


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VARIOUS
MINERALS

MINERALS

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MINERALS

STUDY OF
THE AMERICAN DIET
(see inside)

Study of the American Diet

An Editorial

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IN THEIR "Study of the American Diet," which appears elsewhere in this issue, Johnson and Vaughan examine a well known maxim: "One has no need of a vitamin-mineral supplement if he eats a good balanced diet." The precept applies, of course, only to relatively healthy, well nourished people. The authors examine the adage from several standpoints. Questioning some 86 physicians, they found that 44 of the 52 responding agreed with the maxim. Satisfied that the precept is indeed widespread, the authors decided to look into the truth of it.

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Using a computer program with recent nutritional data from the U.S. Department of Agriculture, they asked volunteers to record their daily food and liquid intake. The subjects were middle class and ranged from teenagers to senior citizens; all considered themselves to be in good general health. The authors analyzed 614 daily diets. Of these, only one achieved 100% of the U.S. RDA for all of the 11 vitamins and five minerals. (The paragon who consumed this diet was a weightlifting athlete who took in 3,768 calories that day.) Not only were the diets short in vitamin and mineral content, they were high in fat and low in fiber. On the basis of their results, the authors concluded—quite reasonably—that it is not easy to eat a "good balanced diet."

One of the greatest helps in achieving a balanced diet is the use of the four food group method, which includes: 1) the meat and alternates group (alternates include eggs, nuts, and the like); 2) the fruit and vegetable group; 3) the

grain group; and 4) the milk and cheese group. The idea, of course, is to include at least one member of each group in the daily diet.

The authors outlined a balanced diet based on the four food group method, additionally designed to be low in fat

The report by Drs. Johnson and Vaughan appears on the next page.

and high in fiber. Its protein content was generous. On analysis, their diet—which appears excellent—was still found to be lacking the U.S. RDA for one mineral and four vitamins.

The conclusion of the authors is that the precept may be more of a canard than a guiding truism. Their final advice: "Take a good quality food supplement of vitamins and minerals as a nutritional insurance"—which, on the basis of their findings, appears reasonable.

Study of the American Diet

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**The Authors Acknowledge
That Conventional
Medical Wisdom Says
You Don't Need to Take
Supplements if You
Eat a 'Good, Balanced
Diet.' Their Study,
However, Finds That
Such 'Wisdom' May
Be a Myth . . .**

Dr. Johnson is a Harrison County radiologist. Dr. Vaughan is a retired U.S. Air Force colonel and a former NASA researcher.

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“DOCTOR, SHOULD I take vitamins?” How many times have you heard that question? Conventional medical wisdom, as contained in text books and as we learned in medical school, says you don't need to take supplements if you eat a “good balanced diet.” To confirm this generally accepted opinion, we surveyed all the physicians on the staff of a medium-sized hospital.

Eighty-six physicians received a questionnaire that asked this question: Doctor, if a patient of yours, who is in good general health, asked you, “Should I take vitamins?” how would you reply? There was 60% response, which was a good return, and 85% of those responding checked the answer: No, you don't need to take vitamins if you eat a good balanced diet.

Next, the question arose, What is a good balanced diet and how can you be sure it is adequate? As background, The Recommended Daily Allowance (RDA) of vitamins and minerals was first developed by The Food and Nutrition Board of the National Research Council in 1943. This specifies levels of nutrient intake desired to maintain adequate nutrition in healthy persons. This is revised every three to five years or so. At present, there are listed the RDA for 12 vitamins and seven minerals. More vitamins and minerals than this are known to be essential but, as yet, the RDA for them has not been established. These include the B vitamins PABA and Inositol, and the minerals Selenium, Chromium and Manganese.

Thus, if you just took in the nutrients that have an established RDA, you would still be missing some essential nutrients. That is the reason for the recommendation to eat a “balanced diet.”

The “Food Groups” were introduced

in 1956 to promote the eating of a variety of foods. There are The Four Food Groups method and The Seven Basic Food Groups method and other variations of these. Most promotion and literature for The Food Groups has been done by the National Dairy Council and the agriculture industry.

In order to study the American diet, we had to make some basic assumptions due to lack of available data:

1. The U.S. Department of Agriculture data base for the nutritive value of foods has values for 10 vitamins and five minerals. Two vitamins, Biotin and Vitamin D, have RDA established but are not in U.S.D.A. data base (we added vitamin D values from a private source). Two minerals, copper and iodine, have RDA established but are not in U.S.D.A. data base. So our study, while recognizing there are other essential nutrients not included, is limited to analyzing diets for the 11 vitamins and five minerals for which there is a good data base.

2. We assumed that the nutrient value of the diets analyzed would have the same value as those in the U.S.D.A. data base. Nutritional value of foods depends on many things, such as soil conditions, how and where the food is grown, how long and by what method the food has been stored, and how it was prepared and cooked. We assumed these conditions would be equal for our volunteers.

3. We used the U.S. RDA as the standard to aim for in this study. The Food and Drug Administration established the U.S. RDA for uniformity in labeling processed foods. In general, the U.S. RDA levels are slightly higher than RDA levels for most nutrients. There are proponents on both sides of the question as to whether the U.S. RDA and RDA values

are adequate for proper nutrition. However, we feel these to be well established and accepted so we used the U.S. RDA as our standard.

4. We assumed that by evaluating a large number of diets, we would have a composite of the nutrient value of the average American diet. It has been said that, when evaluating the RDA for an individual's diet, there would be high nutrient days and low nutrient days but that they would average out and provide a balanced diet. We assumed that if we have a sufficiently large number of daily diets recorded, these would include those "high nutrient days and low nutrient days" to balance out and provide an average.

We acquired a computer program using the latest data available from the U.S. Department of Agriculture. Volunteers were asked to record their daily food and drink intake. Six hundred fourteen such diets were recorded and analyzed with computer assistance. The volunteers were a wide variety. Ages ranged from teenagers to older citizens in their 60s. Most of them would be considered "average middle class" and considered themselves to be in "good general health" at the time.

The results were somewhat surprising. The composite or average of the 614 daily diets show nutrient values as demonstrated in *Figure 1*.

The "average" American diet was high in fat and low in fiber. As regards vitamins and minerals, the diet achieved the Recommended Daily Allowance (U.S. RDA) for only four of the 11 vitamins and only one of the five minerals. It appears that the average American diet is nutritionally inadequate. It was interesting to note that only one diet, of the 614 daily diets analyzed, achieved 100% of the U.S. RDA for all 11 of the vitamins and all five of the minerals. This was the daily diet of a weight-lifter and athletic trainer, and his diet that day totaled 3,768 calories.

After analyzing how people actually do eat, we examined some recom-

NUTRIENT	RECOMMENDED	U.S. RDA
K Calories	2,033	
Fat	35% of calories	about 25% of calories
Fiber	7.4 grams	over 15 grams
Cholesterol	342 mgm	less than 300 mgm
Sodium	2672 mgm	2000 to 4000 mgm
Potassium	2726 mgm	1000 to 3000 mgm
Protein	83 grams	149%
Magnesium		72%
Iron		78%
Zinc		73%
Calcium		81%
Phosphorus		133%
Vitamin A		128%
Vitamin D		33%
Vitamin E		48%
Vitamin C		201%
Thiamin		98%
Riboflavin		103%
Niacin		116%
Vitamin B ₆		77%
Folic Acid		58%
Pantothenic Acid		43%
Vitamin B ₁₂		76%
	0 20 40 60 80	100 U.S. RDA

FIGURE 1: Bar chart of the average American diet.

mended diets in various health and weight control magazines. We did not find any recommended diet that completely satisfied the RDA for vitamins and minerals. We then outlined a daily diet that would satisfy the recommendations of a "balanced diet" based on the Food Group method. This diet, as follows, satisfies both the Four Food Group Method and the Seven Basic Foods recommendations. It is also designed to be a low fat and high fiber diet.

Breakfast: 2 oblong shredded wheat biscuits, 1 cup of raisin bran, 1 banana, 1 cup lowfat (1%) milk, 1 cup black coffee

Lunch: 1/2 tomato, 1/2 cup lowfat (2%) cottage cheese, sandwich of tuna (3 oz) on 2 slices whole wheat bread, 1 tablespoon of low-cal mayonnaise, 1 cup of lowfat (1%) chocolate milk

Dinner: 1 1/2 cups chopped lettuce, 2 tablespoons low-cal Italian dressing, 1/2 chicken, broiled, 1 baked potato, 1 tablespoon whipped margarine, 1 cup chopped broccoli, 2 slices whole wheat bread, 1/4 cantaloupe, 1 glass unsweetened tea

Evening: 1 12-oz can of beer

This daily diet will provide a good balance of various food groups and is a more healthful diet than most people eat. It is a low fat, high fiber and high protein diet. The nutritional analysis of this diet is shown in *Figure 2*.

This diet, which is considered a good, healthful and balanced diet, shows, on analysis, to be inadequate in the U.S. RDA for one mineral and four vitamins. This example re-inforces the conclusion of our study.

Our conclusion, contrary to conventional wisdom, is that it is difficult to provide yourself with a "good balanced diet" even when you are trying. Most people don't plan their daily diets in advance so as to get a good nutrient mix. However, most people do perceive some need to take food supplements such as vitamin-mineral combinations. It has been estimated that two of every three Americans take some type of food supplement some of the time. Thus, there is a perceived need by the general public. Physicians should respond to this need in a positive and helpful manner. We believe it would behoove physicians to re-assess their nutritional knowledge and to re-evaluate the "good balanced diet" myth as an answer to nutritional questions.

It appears that good nutritional advice for the average person would be:

1. Attempt to decrease the amount of fat, sugar, and salt in the daily diet. This means less processed foods, less junk foods and less fast food restaurants.
2. Attempt to eat more fresh fruits and vegetables, more complex carbo-

NUTRIENT	RECOMMENDED	U.S. RDA
K Calories	1960 calories	
Fat	19% of calories about 25% of calories	
Fiber	18 grams over 15 grams	
Cholesterol	236 mgm less than 300 mgm	
Sodium	3067 mgm 2000 to 4000 mgm	
Potassium	4272 mgm 1000 to 3000 mgm	
Protein	130 grams*****	230%
Magnesium	*****	151%
Iron	*****	125%
Zinc	*****	94%
Calcium	*****	112%
Phosphorus	*****	218%
Vitamin A	*****	238%
Vitamin D	*****	63%
Vitamin E	*****	30%
Vitamin C	*****	321%
Thiamin	*****	80%
Riboflavin	*****	135%
Niacin	*****	200%
Vitamin B ₆	*****	227%
Folic Acid	*****	143%
Pantothenic Acid*****		74%
Vitamin B ₁₂	*****	127%
	0 20 40 60 80 100%U.S. RDA	

FIGURE 2: Bar chart of sample balanced, low fat, high fiber and high protein diet.

hydrates (baked potato is good), more whole wheat products. This will add fiber to the diet and also provide for more nutrients, some of which may not

have been discovered yet.

3. Take a good quality food supplement of vitamins and minerals as a nutritional insurance.