

Exercise Science 210

HUMAN PERFORMANCE

& NUTRITION

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EXERCISE 210 HUMAN PERFORMANCE & NUTRITION

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Section 1

Food Facts Quiz

Fat or Fiction?

Twenty-Five Ways to Spot Quacks and Vitamin Pushers

Should You Opt for Organic?

Fraud or Find

The Changing American Diet

Food Facts

(Continued from page 1)

1. About how many teaspoons of sugar (or corn syrup) are there in a 12-ounce can of cola?

a. 5 b. 7 c. 10 d. 13

2. A cup of whole milk has eight grams of fat. How many grams of fat does a cup of 2% "lowfat" milk have?

a. 2 b. 3 c. 4 d. 5

3. Which of these cereals has less than 25 percent added sugar?

a. Honey Nut Cheerios
b. Frosted Flakes
c. Bran Buds
d. Life

4. Which of these cereals is low in fiber?

a. Wheatena
b. Cream of Wheat
c. oatmeal
d. oat bran

5. Which of these cereals is *not* low in fiber?

a. shredded wheat
b. Rice Krispies
c. corn flakes
d. granola
e. all of them

6. Which of these fruit juices is a source of vitamin C (assuming none have been fortified)?

a. grape
b. apple
c. prune
d. pineapple

Ready to roll? Give yourself one point for each correct answer—there's only one per question. And don't get discouraged. This is a tough quiz. But look at it this way: You don't know what you don't know until you know that you don't know it.

Here's how to rate your score:

- 0-10 What happened? Give yourself a lifetime subscription to *Nutrition Action*.
11-21 Not too shabby. But forget that appearance on "Jeopardy."
22-32 Pretty darned good. Consider yourself a "source" of nutrition knowledge.
33-42 You're a Nutrition Wiz! Ask your friends to take the quiz so you can gloat.

7. Which of these fruits is low in beta-carotene?

a. nectarines
b. papaya
c. grapes
d. cantaloupe
e. tangerines

8. Which of these fruits is low in potassium, a nutrient that may help prevent high blood pressure?

a. banana
b. grapefruit
c. cantaloupe
d. watermelon
e. honeydew

9. About how many teaspoons of added sugar are there in one cup of fruit yogurt?

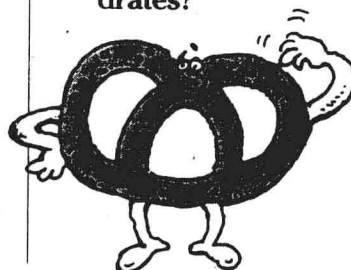
a. 1 b. 2 c. 3 d. 4 e. 5

10. Which of these is *not* a whole grain?

a. bulgur
b. millet
c. popcorn
d. grits
e. oatmeal

11. Which of these is rich in complex carbohydrates?

a. pretzels
b. pasta
c. biscuits
d. rye crackers
e. all of the above



12. Which of these is lowest in beta-carotene?

- a. zucchini
- b. broccoli
- c. kale
- d. brussels sprouts
- e. winter squash

13. Which of these cookies usually has the least fat?

- a. chocolate chip
- b. peanut butter
- c. sandwich
- d. oatmeal

14. If you eat 2,000 calories a day, your daily saturated fat intake should be less than how many grams?

- a. 20 b. 25 c. 30 d. 35

15. How many grams of saturated fat are there in two slices of a Pizza Hut medium hand-tossed cheese pizza?

- a. 8 b. 12 c. 14 d. 18

16. Which of these meats has the least fat?

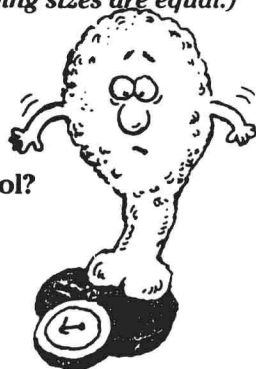
- a. extra lean ground beef
- b. ground turkey
- c. ground turkey breast
- d. ground chicken

17. Which skinless chicken or turkey part has the most fat? (Assume that the serving sizes are equal.)

- a. breast
- b. thigh
- c. wing
- d. drumstick

18. Which has the least cholesterol?

- a. skinless chicken breast
- b. skinless turkey breast
- c. trimmed top round steak
- d. flounder
- e. all have about the same



19. Which has the least saturated fat?

- a. flounder
- b. skinless chicken
- c. trimmed veal loin
- d. trimmed top round steak

20. Which has more than two grams of saturated fat in a four-ounce cooked serving?

- a. skinless chicken breast
- b. skinless turkey wing
- c. trimmed beef top round (select grade)
- d. trimmed beef bottom round (select grade)
- e. pork tenderloin

21. Which has less than 500 mg of sodium per serving?

- a. Campbell's Special Request Vegetable Soup
- b. Dorito Lights
- c. turkey roll sandwich
- d. V-8 juice
- e. Lean Cuisine Zucchini Lasagna

22. Which has more than 150 mg of cholesterol in a four-ounce serving?

- a. shrimp d. lobster
- b. scallops e. crab
- c. clams



23. True or false? Children aged 2-5 should not drink 1% low-fat or skim milk.

24. Which of these vegetables is *not* a source of calcium?

- a. kale
- b. broccoli
- c. green beans
- d. collards
- e. bok choy

25. Which is *low* in folic acid, a B-vitamin that may help prevent birth defects?

- a. leafy greens
- b. orange juice
- c. wheat germ
- d. finfish
- e. beans

26. Which of these foods from McDonald's has the fewest calories?

- a. Large French Fries
- b. Quarter Pounder
- c. Side Salad with Thousand Island dressing
- d. Biscuit with Sausage
- e. all have about the same

27. True or false? Most people need the iodine in iodized salt.

28. True or false? Most Americans get more than enough phosphorus in their diets.

29. Which is *not* a source of vitamin E, an antioxidant?

- a. wheat germ
- b. nuts
- c. leafy green vegetables
- d. vegetable oils

30. Which of these sandwiches has the most saturated fat?

- a. Swiss cheese
- b. tuna salad
- c. chicken salad
- d. sliced turkey
- e. peanut butter & jelly



31. True or false? Vegetarians often get too little protein.

32. Which has less than 300 mg of calcium per serving?

- a. yogurt
- b. cottage cheese
- c. skim milk
- d. cheddar cheese
- e. none of the above

33. Which of these vegetables is a source of vitamins A and C?



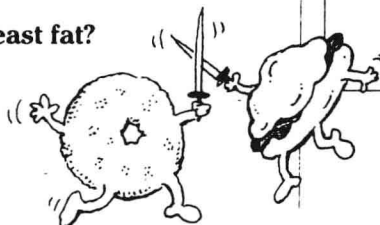
- a. mushrooms
- b. green peas
- c. eggplant
- d. cucumber
- e. celery

34. Which is *not* a source of zinc, a trace element that is essential for proper growth?

- a. wheat germ
- b. sirloin steak
- c. turkey
- d. broccoli
- e. lentils

35. Which breakfast has the least fat?

- a. bagel with cream cheese
- b. danish
- c. English muffin with jam
- d. doughnut
- e. all have about the same



36. True or false? A 12-ounce wine cooler has more alcohol than a 12-ounce beer.

37. Which is *not* a good source of iron?

- a. clams
- b. black beans
- c. round steak
- d. raisins

38. Which bread typically contains the most fiber?

- a. raisin
- b. rye
- c. pumpernickel
- d. oatmeal
- e. all have about the same

39. An ounce of whole-milk mozzarella has six grams of fat. How many grams does an ounce of part-skim mozzarella have?

- a. 2
- b. 3
- c. 4
- d. 5

40. Which of these supplies less than 1,000 mg of sodium per serving?

- a. Stouffer's Turkey Pie
- b. Pizza Hut Supreme Pizza
- c. Campbell's Pork & Beans
- d. Burger King Whopper with Cheese
- e. Taco Bell Bean Burrito with Red Sauce

41. Which of these is *low* in fiber?

- a. artichokes
- b. green pepper
- c. strawberries
- d. sweet potato (no skin)

42. True or False? It would be nice if at least the last question on this quiz were easy.

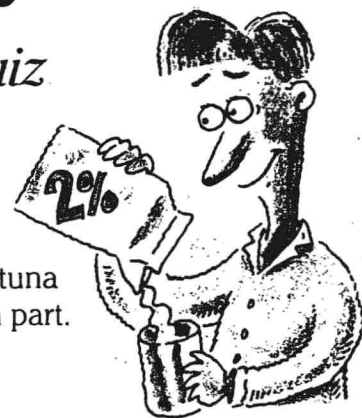
37-d	38-e	39-c	40-c	41-b	42-true
31-false	32-b	33-b	34-d	35-c	36-true
25-d	26-e	27-false	28-true	29-c	30-a
19-a	20-d	21-b	22-a	23-false	24-c
13-d	14-a	15-c	16-c	17-b	18-e
7-c	8-b	9-d	10-d	11-e	12-a
1-c	2-d	3-d	4-b	5-a	6-d

Fat or Fiction?

Take the Nutrition Action Fat Quiz

BY JAYNE HURLEY

Okay. We got the message. We're *trying* to eat less fat. Honest. But does that mean the turkey franks or the "light" beef franks? The tuna salad or the chicken salad? The tortilla chips or the pretzels? That's the tough part. Don't be discouraged if you miss more than you hit. The quiz is tough.



1. Which breakfast has the least fat?
 - a. bagel with cream cheese
 - b. granola with 2% low-fat milk
 - c. McDonald's Egg McMuffin
 - d. Dunkin' Donuts Glazed Yeast Ring
2. Which two chicken parts have the most fat? (Assume that you eat equal servings of each.)
 - a. breast
 - b. thigh
 - c. wing
 - d. drumstick
3. Order the following cookies from least to most fat.
 - a. chocolate chip
 - b. chocolate sandwich (like Oreos)
 - c. oatmeal
 - d. fruit-filled bars (like Fig Newtons)
4. Which of these Italian entrees is lowest in fat?
 - a. fettuccini alfredo
 - b. lasagna
 - c. spaghetti with meatballs
 - d. eggplant parmigiana with a side of spaghetti
5. 2% "low-fat" milk is low in fat.
 - a. True
 - b. False
6. Which of the following Chinese takeout entrees contains almost a day's worth of fat?
 - a. Szechuan shrimp
 - b. chicken chow mein
 - c. General Tso's chicken (orange chicken)
 - d. shrimp with garlic sauce
 - e. all of the above
7. Which lunch-counter sandwich has the least fat?
 - a. ham
 - b. chicken salad
 - c. tuna salad
 - d. chicken roll
8. Which hot dog contains at least seven times more fat than any of the others?
 - a. Hormel Light & Lean 97 Beef Franks
 - b. Healthy Choice Beef Franks
 - c. Mr. Turkey Turkey Bun Size Franks
 - d. Oscar Mayer Healthy Favorites
9. Removing the skin from your roasted chicken breast or drumstick can cut the fat by:
 - a. one-fourth
 - b. one-half
 - c. three-fourths
10. Which one of the following Mexican dinners contains less than a day's worth of fat?
 - a. chicken taco platter
 - b. chicken burrito platter
 - c. taco salad
 - d. cheese enchilada platter
11. "Lite" or "reduced-calorie" salad dressings always have less fat than regular dressings.
 - a. True
 - b. False
12. Which of the following foods has the most fat?
 - a. McDonald's Big Mac
 - b. 1/2 cup of Häagen-Dazs ice cream
 - c. McDonald's Chef Salad with a packet of Ranch Dressing
 - d. McDonald's Large French Fries
13. Which of the following is highest in fat? Four ounces of:
 - a. round steak, untrimmed (select)
 - b. pork tenderloin, untrimmed
 - c. chicken thigh, with skin
 - d. sirloin steak, untrimmed (select)
14. On average, which line of frozen dinners is lowest in fat?
 - a. Healthy Choice
 - b. Weight Watchers
 - c. Lean Cuisine
 - d. Budget Gourmet Light & Healthy
15. Dry-roasted nuts contain about the same amount of fat as regular (oil-roasted) nuts.
 - a. True
 - b. False
16. Four ounces of Healthy Choice Extra Lean Ground Beef contain four grams of fat. How many grams of fat do four ounces of regular ground turkey contain?
 - a. 5
 - b. 10
 - c. 15
 - d. 20





17. Order these salty snacks from least to most fat:

- tortilla or vegetable chips
- corn chips
- "light" potato chips
- pretzels
- "light" microwave popcorn

18. Which one of these canned or dried soups has about three times the fat of the others?

- ramen noodle
- split pea with ham and bacon
- chunky beef
- New England clam chowder

19. Tablespoon for tablespoon, which are the two lowest-fat toppings for baked potatoes?

- "bacon" bits
- butter
- sour cream
- "light" margarine

20. A Burger King BK Broiler Grilled Chicken Sandwich has more than twice as much fat as a McDonald's McGrilled Chicken Sandwich.

- True
- False

ANSWERS

- d.** Its 9 grams of fat aren't really low (or healthy), though. Try a bagel with a tablespoon of light or fat-free cream cheese, or a low-fat cereal like Wheaties with skim or 1% fat milk.
- b & c.** Dark meat (as long as you're talking drumstick) isn't always fatty. The white meat on wings is, though.
- d, c, b, a.** Fat-free cookies by Archway, Entenmann's, and others are your best choice.
- c.** Spaghetti with red or white clam sauce, tomato sauce, or meat sauce is even lower in fat.
- b.** The 5 grams of fat per glass flunks the FDA's limit for "low-fat" (3 grams). Only skim or 1% milk qualify.
- c.** The others have half as much or less.
- d.** The tuna and chicken salads wouldn't be so fatty if you made them with reduced-fat mayo. The leanest meat for your sandwich is turkey breast or chicken breast.
- c.** It's got 11 grams of fat; the others have 1 to 1½ grams. In general, though, regular turkey or chicken franks have about a third less fat than regular beef or pork franks. (Unfortunately, all hot dogs are salty.)
- b.** If you skin the fattier thigh, you'll cut the fat by about a third.
- a.** But that's only because tacos are small and aren't generally served with guacamole and sour cream. Even so, a taco platter uses up two-thirds of your day's fat allowance.
- b.** While they usually have less, that's not always the case: 2 Tbs. of Ken's Steak House Lite Honey Mustard, for example, contains 9 grams of fat. Henri's regular Honey Mustard contains just 6 grams.
- c.** The 30 grams of fat use up almost half your day's quota. If you get it with the Lite Vinaigrette dressing, the fat plummets to 11 grams (and the sat fat drops from 7 to 4 grams).
- c.** Even if you skin the chicken, you'll end up with more than twice the fat of the tenderloin, which is one of the few low-fat cuts of pork.
- a.** Healthy Choice dinners average just 14 percent of calories from fat. The others range from 22 to 25 percent. Healthy Choice is also a tad lower in sodium.
- a.** Nuts are so fatty that they don't absorb much extra oil when roasted.
- c.** Regular ground turkey includes fatty skin. Ground turkey *breast* is as low in fat as the Healthy Choice ground beef.
- d, e, c, a, b.** An ounce of pretzels has just 1 gram of fat. Then come "light" microwave popcorn (2-4 grams), "light" potato chips (6 grams), tortilla or vegetable chips (7-9 grams), and corn chips (8-10 grams).
- a.** Companies like Campbell, Nissin, and Maruchan fry their ramen noodles in fat—often (saturated) palm oil—before their soups are dehydrated.
- a & c.** They've got just a couple of grams of fat. A tablespoon (3 pats) of "light" margarine has 6 grams. Butter has 11 grams.
- a.** It wouldn't have been true last year, but sneaky Burger King went and tripled the fat without telling anybody.

WHAT'S YOUR SCORE?

Give yourself one point for each correct answer on this very tough quiz.
Your Score _____

If you scored:

- | | |
|-----------------|--|
| 17 to 20 | Fatastic! Even we didn't do <i>this</i> well when we proofread the test. |
| 13 to 16 | Hubba Hubba! Congrats. You're the Fat Champ of your block. |
| 9 to 12 | C-o-o-o-l! Most people were in this range. You're on the right track. |
| 5 to 8 | Pretty Lean! <i>Nutrition Action</i> is for reading, not for cleaning your windows. |
| Below 5 | Blubber City! Keep your cardiologist's beeper number in your wallet. |

Several of the questions in this quiz are based on information from *Eating Leaner and Lighter* (Warner Books, 1994), which was written by Nutrition Action associate nutritionist David Schardt. Look for it at your local bookstore.

Twenty-Five Ways to Spot Quacks and Vitamin Pushers

**Stephen Barrett, M.D.
Victor Herbert, M.D., J.D.**

How can food quacks and other vitamin pushers be recognized? Here are 25 signs that should arouse suspicion.

1. When Talking about Nutrients, They Tell Only Part of the Story.

Quacks tell you all the wonderful things that vitamins and minerals do in your body and/or all the horrible things that can happen if you don't get enough. But they conveniently neglect to tell you that a balanced diet provides the nutrients people need and that the USDA food-group system makes balancing your diet simple.

2. They Claim That Most Americans Are Poorly Nourished.

This is an appeal to fear that is not only untrue, but ignores the fact that the main forms of bad nourishment in the United States are overweight in the population at large, particularly the poor, and undernourishment among the poverty-stricken. Poor people can ill afford to waste money on unnecessary vitamin pills. Their food money should be spent on nourishing food.

It is falsely alleged that Americans are so addicted to "junk" foods that an adequate diet is exceptional rather than usual. While it is true that some snack foods are mainly "naked calories" (sugars and/or fats without other nutrients), it is not necessary for every morsel of food we eat to be loaded with nutrients. In fact, no normal person following the USDA food-group guidelines is in any danger of vitamin deficiency.

3. They Recommend "Nutrition Insurance" for Everyone.

Most vitamin pushers suggest that everyone is in danger of vitamin deficiency and should therefore take supplements as "insurance." Some suggest that it is

difficult to get what you need from food, while others claim that it is impossible. Their pitch resembles that of the door-to-door huckster who states that your perfectly good furnace is in danger of blowing up unless you replace it with his product. Vitamin pushers will never tell you who *doesn't* need their products.

4. They Say That Most Diseases Are Due to Faulty Diet and Can Be Treated with "Nutritional" Methods.

This simply isn't so. Consult your doctor or any recognized textbook of medicine. They will tell you that although diet is a factor in some diseases (most notably coronary heart disease), most diseases have little or nothing to do with diet. Common symptoms like malaise (feeling poorly), fatigue, lack of pep, aches (including headaches) or pains, insomnia, and similar complaints are usually the body's reaction to emotional stress. The persistence of such symptoms is a signal to see a doctor to be evaluated for possible physical illness. It is not a reason to take vitamin pills.

5. They Allege That Modern Processing Methods and Storage Remove All Nutritive Value from Our Food.

It is true that food processing can change the nutrient content of foods. But the changes are not so drastic as the quack, who wants you to buy supplements, would like you to believe. While some processing methods destroy some nutrients, others add them. A balanced variety of foods will provide all the nourishment you need.

Quacks distort and oversimplify. When they say that milling removes B-vitamins, they don't bother to tell you that enrichment puts them back. When they

Does it contain any experimental reasoning, concerning matter of fact and existence? No. Commit it then to the flames; for it can contain nothing but sophistry and illusion.

—David Hume, in *An Enquiry Concerning Human Understanding*, 1748

In ancient Rome, Cato the Elder prescribed cabbages to cure “everything that ails you” and continued to do so even though his wife died from the “fevers.” London pharmacists, in 1632, believed that bananas were so important to health that only trained druggists should administer them. Early in the history of this country, Elisha Perkins promoted vinegar as the cure for yellow fever, yet he died of this disease. All were sincere but wrong. Yet, almost any product, device, or regimen that promises the moon and 5 miles more will acquire a following of users and believers.

Quackery is misinformation about health, according to the Food and Drug Administration (FDA). Certain fallacious statements have been made repeatedly by promoters for years, among them: “The American food supply is worthless because it is grown on depleted soil,” “Everybody needs vitamin supplements for insurance,” “Sugar from honey is healthier than table sugar,” and “Natural is better.” Such misinformation may be easier to find than facts. For example, popular talk show hosts provide a good promotional forum for misinformation, since their need to capture a large audience draws sensationalism. Nutritionists often have despaired of counteracting the exaggeration and blatantly false information frequently distributed through the popular information media.

This unit begins with 25 indicators that should cause the consumer to suspect quackery. Typically, those who misrepresent the truth warn that today’s food supply is deficient, that processing techniques are harmful, and that dire consequences will result if one doesn’t use supplements. Of course, these promoters are likely to offer an easy solution through the use of certain products—their products.

The second article “How Quackery Sells” will help us to understand the strategies of promoters who have fine-tuned the art of selling to an exquisitely high level. They know how to influence the emotions of the vulnerable, easily convinced customer so that he or she will buy, even though some small inner voice advises against it.

Since surveys repeatedly have shown the media to be the primary source of nutrition and food-safety information, the accuracy of what is reported is an important issue. Hardly a newspaper or periodical is published without mention of a new study that has produced “important” information about a health issue. Often these reports predict dreadful consequences from something we commonly do or consume. “Yet Another Study—Should You Pay Attention?” suggests a set of guidelines to assist the consumer in deciding what to ignore and when to take a study seriously.

Many of us rely more and more on the Internet for answers to our questions. Here, too we must be watchful—perhaps even more so, for Web sites and e-mail capabilities allow the easy and rapid promotion of virtually anything. Guidelines for recognizing and avoiding unreliable sites are suggested in the article on spotting a “quacky” Web site.

An editorial from *The New England Journal of Medicine* on alternative medicine offers a truly exquisite

dissertation on the risks of untested and unregulated remedies, which often take the form of herbals and other dietary supplements. This is also the subject of an article by Stephen Barrett. Increasingly popular herbals are classified as food supplements under the Dietary Supplement Health and Education Act (DSHEA) of 1994, and currently account for about \$1 billion in annual sales. Given that herbals have medicinal qualities, questions of safety and efficacy must be raised. Some argue that, because herbs are natural, safety is a non-issue, although this can be refuted easily by pointing out that the amanita mushroom and hurricanes are also quite natural but potentially deadly. To be sure, nearly one-third of modern drugs are derived from herbs and other plants, and undoubtedly more will be found to advance the modern medical arsenal against disease. But there is a clear distinction between pharmaceuticals, with carefully controlled active ingredients, and herbals, where the amounts of active ingredients depend more on how they are grown, harvested, and stored. Herbal literature is still grounded in folklore and tradition, not in scientific research. There are no guarantees of safety, and the consumer must decide if the risk is appropriate.

Two brief articles on ginkgo and ephedrine represent what is known about popular herbals. Widely used outside the United States, ginkgo extracts are touted to benefit circulatory and neurological problems. This might explain its advertised benefits for memory and Alzheimer’s disease, but current studies are inconclusive. The botanical ephedrine, or ma huang, another supplement of Chinese origin, is clearly problematic. Possible adverse effects include heart attacks, strokes, seizures, psychosis, and death. Sold under such names as Cloud 9 and Herbal Ecstasy, ephedra is a stimulant that claims to improve strength and health, produce weight loss, and provide a high similar to that of cocaine.

Another promotional pitch pushes colloidal mineral supplements as the alternative cure-all for whatever is wrong with you. Once again, unfounded claims are made that our food lacks minerals and that these extremely small, negatively charged mineral particles are better absorbed. “Hard Facts on Colloidal Minerals” sets the record straight.

What we called “hyperactivity” in years past is “now defined as Attention-Deficit/Hyperactivity Disorder (ADHD). It has been popular to promote the disproved theory that symptoms can be controlled through dietary changes, especially through the elimination of salicylates, artificial flavorings and colorings, or sugar. Numerous highly questionable products and therapies are also available for controlling children’s behaviors.

A discussion of athletes and supplements is included in this unit because athletes typically are searching for a competitive edge and are extremely vulnerable to supplement promotions. The assortment of promoted products ranges from amino acids for building muscle and creatine for a speedier recovery, to products claiming to energize the liver or burn fat. However, athletes should look to a good diet and within themselves, not into a bottle or box.

Finally, if you have wondered why most pharmacies appear to promote supplements and dubious alternative products, while nutritionists and this book take the opposite view, read the article on unethical behavior of pharmacists. When there is a conflict of interest, promoting sales and keeping a healthy bottom line often win.

tell you that cooking destroys vitamins, they omit the fact that only a few vitamins are sensitive to heat. Nor do they tell you that these vitamins are easily obtained by consuming a portion of fresh uncooked fruit, vegetable, or fresh or frozen fruit juice each day. Any claims that minerals are destroyed by processing or cooking are pure lies. Heat does not destroy minerals.

6. They Claim That Diet Is a Major Factor in Behavior.

Food quacks relate diet not only to disease but to behavior. Some claim that adverse reactions to additives and/or common foods cause hyperactivity in children and even criminal behavior in adolescents and adults. These claims are based on a combination of delusions, anecdotal evidence, and poorly designed research.

7. They Claim That Fluoridation Is Dangerous.

Curiously, quacks are not always interested in real deficiencies. Fluoride is necessary to build decay-resistant teeth and strong bones. The best way to obtain adequate amounts of this important nutrient is to augment community water supplies so their fluoride concentration is about one part fluoride for every million parts of water. But quacks are usually opposed to water fluoridation, and some advocate water filters that remove fluoride. It seems that when they cannot profit from something, they may try to make money by opposing it.

8. They Claim That Soil Depletion and the Use of Pesticides and "Chemical" Fertilizers Result in Food That Is Less Safe and Less Nourishing.

These claims are used to promote the sale of so-called "organically grown" foods. If an essential nutrient is missing from the soil, a plant simply doesn't grow. Chemical fertilizers counteract the effects of soil depletion. Quacks also lie when they claim that plants grown with natural fertilizers (such as manure) are nutritionally superior to those grown with synthetic fertilizers. Before they can use them, plants convert natural fertilizers into the same chemicals that synthetic fertilizers supply. The vitamin content of a food is determined by its genetic makeup. Fertilizers can influence the levels of certain minerals in plants, but this is not a significant factor in the American diet. The pesticide residue of our food supply is extremely small and poses no health threat. Foods "certified" as "organic" are not safer or more nutritious than other foods. In fact, except for their high price, they are not significantly different.

9. They Claim You Are in Danger of Being "Poisoned" by Ordinary Food Additives and Preservatives.

This is another scare tactic designed to undermine your confidence in food scientists and government protection agencies as well as our food supply itself. Quacks want you to think they are out to protect you. They hope that if you trust them, you will buy their "natural" food products. The fact is that the tiny amounts of additives used in food pose no threat to human health. Some actually protect our health by preventing spoilage, rancidity, and mold growth.

10. They Charge That the Recommended Dietary Allowances (RDAs) Have Been Set Too Low.

The RDAs have been published by the National Research Council approximately every five years since 1943. They are defined as "the levels of intake of essential nutrients that, on the basis of scientific knowledge, are judged by the Food and Nutrition Board to be adequate to meet the known nutrient needs of practically all healthy persons." Neither the RDAs nor the Daily Values listed on food labels are "minimums" or "requirements." They are deliberately set higher than most people need. The reason quacks charge that the RDAs are too low is obvious: if you believe you need more than can be obtained from food, you are more likely to buy supplements.

11. They Claim That under Stress, and in Certain Diseases, Your Need for Nutrients Is Increased.

Many vitamin manufacturers have advertised that "stress robs the body of vitamins." One company has asserted that, "if you smoke, diet, or happen to be sick, you may be robbing your body of vitamins." Another has warned that "stress can deplete your body of water-soluble vitamins . . . and daily replacement is necessary." Other products are touted to fill the "special needs of athletes."

While it is true that the need for vitamins may rise slightly under physical stress and in certain diseases, this type of advertising is fraudulent. The average American—stressed or not—is not in danger of vitamin deficiency. The increased needs to which the ads refer are not higher than the amounts obtainable by proper eating. Someone who is really in danger of deficiency due to an illness would be very sick and would need medical care, probably in a hospital. But these promotions are aimed at average Americans who certainly don't need vitamin supplements to survive the common cold, a round of golf, or a job

around the neighborhood! Athletes get more than enough vitamins when they eat the food needed to meet their caloric requirements.

Many vitamin pushers suggest that smokers need vitamin C supplements. Although it is true that smokers in North America have somewhat lower blood levels of this vitamin, these levels are still far above deficiency levels. In America, cigarette smoking is the leading cause of death preventable by self-discipline. Rather than seeking false comfort by taking vitamin C, smokers who are concerned about their health should stop smoking. Suggestions that “stress vitamins” are helpful against emotional stress are also fraudulent.

12. They Recommend “Supplements” and “Health Foods” for Everyone.

Food quacks belittle normal foods and ridicule the food-group systems of good nutrition. They may not tell you they earn their living from such pronouncements—via public appearances fees, product endorsements, sale of publications, or financial interests in vitamin companies, health-food stores, or organic farms.

The very term “health food” is a deceptive slogan. Judgments about individual foods should take into account how they contribute to an individual’s overall diet. All food is health food in moderation, any food is junk food in excess. Did you ever stop to think that your corner grocery, fruit market, meat market, and supermarket are also health-food stores? They are—and they generally charge less than stores that use the slogan.

By the way, have you ever wondered why people who eat lots of “health foods” still feel they must load themselves up with vitamin supplements? Or why so many “health food” shoppers complain about ill health?

13. They Claim That “Natural” Vitamins Are Better than “Synthetic” Ones.

This claim is a flat lie. Each vitamin is a chain of atoms strung together as a molecule. Molecules made in the “factories” of nature are identical to those made in the factories of chemical companies. Does it make sense to pay extra for vitamins extracted from foods when you can get all you need from the foods themselves?

14. They Suggest That a Questionnaire Can Be Used to Indicate Whether You Need Dietary Supplements.

No questionnaire can do this. A few entrepreneurs have devised lengthy computer-scored questionnaires with questions about symptoms that could be present if a vitamin deficiency exists. But such symptoms occur much more frequently in conditions unrelated to nutrition. Even when a deficiency actually exists, the tests don’t provide enough information to discover the cause so that suitable treatment can be recommended. That requires a physical examination and appropriate laboratory tests. Many responsible nutritionists use a computer to help evaluate their clients’ diet. But this is done to make dietary recommendations, such as reducing fat content or increasing fiber content. Supplements are seldom useful unless the person is unable (or unwilling) to consume an adequate diet.

Be wary, too, of questionnaires purported to determine whether supplements are needed to correct “nutrient deficiencies” or “dietary inadequacies.” These questionnaires are scored so that everyone who takes the test is judged deficient. Responsible dietary analyses compare the individual’s average daily food consumption with the recommended numbers of servings from each food group. The safest and best way to get nutrients is generally from food, not pills. So even if a diet is deficient, the most prudent action is usually diet modification rather than supplementation with pills.

15. They Say It Is Easy to Lose Weight.

Diet quacks would like you to believe that special pills or food combinations can cause “effortless” weight loss. But the only way to lose weight is to burn off more calories than you eat. This requires self-discipline: eating less, exercising more, or preferably doing both. There are about 3,500 calories in a pound of body weight. To lose one pound a week (a safe amount that is not just water), you must eat about five hundred fewer calories per day than you burn up. The most sensible diet for losing weight is one that is nutritionally balanced in carbohydrates, fats, and proteins. Most fad diets “work” by producing temporary weight loss—as a result of calorie restriction. But they are invariably too monotonous and are often too dangerous for long-term use. Unless a dieter develops and maintains better eating and exercise habits, weight loss on a diet will soon return.

The term “cellulite” is sometimes used to describe the dimpled fat found on the hips and thighs of many women. Although no medical evidence supports the claim, cellulite is represented as a special type of fat