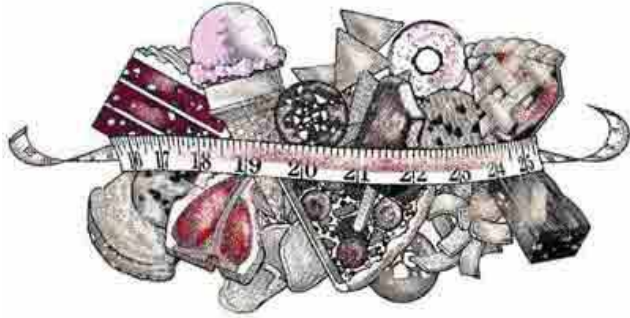


# Just for the Health of Pilots

By Glenn R. Stoutt, Jr., MD  
Senior Aviation Medical Examiner

## The Epidemic of Obesity



**T**HE EPIDEMIC of obesity is now a crisis. It is one of the major public health problems in the country. About 300,000 deaths yearly are a result of complications of obesity; second only to smoking, which causes about 420,000 deaths yearly.

Medical problems associated with obesity include heart attack, stroke, gout, diabetes, gallbladder disease, arthritis of weight-bearing joints, depression, fatigue, breast and uterine cancer, hypertension, and increased risk of falls and accidents. Add to this decreased self-esteem, less success in the workplace, and even public scorn and ridicule for gross obesity. Pilots may not be able to fit into the cockpit. No FAA regulation about obesity...yet.

Many articles use the **Body Mass Index (BMI)** to identify obesity. But, you do not need the BMI to find out if you are fat—just take off your clothes and look in a mirror, see how your clothes fit, or see how much fat you can hold between your fingers. The only accurate way to define obesity is to measure actual body fat content by immersing the entire body in a tank of water and then making some mathematical calculations. This is scientifically correct, but certainly not practical. A BMI over 27 indicates that you are overweight; if it is over 30 you are probably obese; *a BMI of 25 is*

*about right.* Under 18 is abnormal. One problem with the BMI is that muscular people (muscle weighs much more than fat) might have a falsely high BMI. All lean, muscular contestants in a physique contest would have an abnormally high BMI.

*The real value of the BMI is to compare population weights over the years.* Records of our weights and heights from past decades are readily available from insurance companies and hundreds of other sources. In 1960, 10 percent of our population was considered overweight; that figure has now reached over 32 percent. We are the fattest nation in the world.

Forty percent of obesity is genetic (but still responds to diet and exercise). But, we are fat — and getting fatter — not from a sudden appearance of a “fat gene,” but because we eat huge portions, eat calorie-laden fast foods, snack constantly, get junk food from vending machines and just about every store we enter. We drive cars instead of walking or biking. We are couch potatoes.

Bookstores are filled with best-selling books on weight reduction. Some are “junk science” moneymakers, others have a gimmick that is blown up to about 300 pages and \$25.

This diagram—the **food pyramid**—by the U.S. Department of Health and Human Services, may be *the most valuable one source of nutritional information ever devised.* It contains most of the information you will ever need to know about your diet. It emphasizes food from five food groups. Note that—contrary to what we were taught years ago—complex carbohydrates should make up over 50% of our diet.

This is not junk science. Every major health organization endorses the food pyramid. Our basic diet should be about 15 percent protein, 20-30 percent fat (mostly unsaturated),

Body Mass Index — Height (ft., in.)										
WEIGHT	4'10"	5'0"	5'2"	5'4"	5'6"	5'8"	5'10"	6'0"	6'2"	6'4"
125	26	24	23	22	20	19	18	17	16	15
130	27	25	24	22	21	20	19	18	17	16
135	28	26	25	23	22	21	19	18	17	16
140	29	27	26	24	23	21	20	19	18	17
145	30	28	27	25	23	22	21	20	19	18
150	31	29	27	26	24	23	22	20	19	18
155	32	30	28	27	25	24	22	21	20	19
160	34	31	29	28	26	24	23	22	21	20
165	35	32	30	28	27	25	24	22	21	20
170	36	33	31	29	28	26	24	23	22	21
175	37	34	32	30	28	27	25	24	23	22
180	38	35	33	31	29	27	26	25	23	22
185	39	36	34	32	30	28	27	26	24	23
190	40	37	35	33	31	29	27	27	24	23
195	41	38	36	34	32	30	28	27	25	24
200	42	39	37	34	32	30	29	28	26	25
205	43	40	38	35	33	31	29	29	26	25
210	44	41	38	36	34	32	30	29	27	26
215	45	42	39	37	35	33	31	30	28	27
220	46	43	40	38	36	34	32	31	28	27
225	47	44	41	39	36	34	32	31	29	28
230	48	45	42	40	37	35	33	31	30	29

---

and 55–60 percent carbohydrates (mostly complex carbohydrates). The popular diet books merely juggle the food percentages instead of just lowering calories by shrinking the pyramid and keeping the proportions the same. Some of the books recommend dangerously high proportions of fat and high protein. Anyone will lose weight on these diets, or on just about any diet if followed long enough. Even if you eat half a stick of butter and two hamburger patties for each meal you will lose weight. But you will have way too much fat in your diet and go into a state of ketosis—also dangerous for your body. No one argues that refined sugar (the topic of a current best seller) is bad for you. No one ever got into poor health by lack of sugar. The bottom line is to use the *proportions* recommended by the food pyramid and forget all the hype. And exercise, exercise, exercise. Even walking 30 minutes every day will do wonders.

Here are the five food groups, with some choices for World Cup Champion in each category:

1. **Bread, cereal, rice, and pasta** (the mainstay of your diet): Bread (especially whole-grain breads), oats, rice (brown rice is best), macaroni, spaghetti. Try unsweetened whole-grain breakfast cereals and add a little artificial sweetener.
2. **Vegetables:** The winners are Irish potato, sweet potato, broccoli, spinach, carrots, squash, cauliflower, and green peas.
3. **Fruits:** Apples, oranges, grapefruit, bananas, watermelon, apricot, prunes. (Consider vegetables and fruits in the same category nutritionally.)
4. **Milk yogurt, cheese:** Best are skim milk, no-fat yogurt, and low- or no-fat cottage cheese.
5. **Meat, poultry, fish, dry beans, eggs, and nuts:** Lean meat, about the size of a credit card and about as thick as your finger, once a day; turkey is a good choice. Beans: lima, kidney, Navy, black, pinto, and black-eyed peas. Three or four eggs a week. Most nuts if they are unsalted. Salmon, cod, halibut, and tuna are excellent fish selections.
6. **Fats, Oils, and Sweets:** Bad news. Use sparingly. (*Salt, sugar, and fats are the worst things you can eat.*) The best oils are olive oil and peanut oil, followed by corn, safflower, soybean, and sunflower. Skip any saturated oils or fats.

#### BASICS OF NUTRITION AND WEIGHT CONTROL

- You need 15 calories per pound per day to maintain your weight with normal activity; you will lose weight on 10 calories per pound. Most women will safely lose weight on 1200 calories a day, men on 1500. Consult your physician or a nutritionist to find out which diet best suits your needs. For instance, the amounts of salt or fat may have to be altered if you have high blood pressure or high cholesterol.
- Aim to lose fat, not weight. Rapid weight loss is mostly water. In crash diets or prolonged low-calorie diets (500–800 calories per day) fat is lost, but so is muscle and other valuable tissue. Remember that your heart is a muscle. Don't try to lose in one month what you have gained over years.
- Your body must burn 3500 calories to lose one pound of fat. The optimum weight loss is about 1 pound a week. Sounds discouraging at first, but this amounts to 12–24 pounds a year of weight that has an excellent chance of staying off.
- There is no known food that “melts fat.”
- Start thinking about *an eating plan* instead of a diet. There are no loopholes to losing weight. The only way to lose body fat is to create a calorie deficit—either by eating fewer calories or exercising more.
- For each year over 30, your body burns 1% fewer calories, probably because of less muscle mass. So, at age 50 you burn 20% fewer calories than you did 20 years before. No wonder we put on the pounds as we get older. Also, as we get older most of us are less active and need dietary adjustments and a regular exercise program.
- Modern Man has exactly the same genetic makeup as Early Man (about 35,000 years ago). Forget the books and articles that say the reason we are fat is because Early Man did not eat cereals and sugar and so on. Early Man did not have Chevrolets, Burger Kings, or TV, and spent about four hours a day roving about—walking to forage for food and running to keep from being eaten. Our obesity problem has become an epidemic only in the past 50 years.

---

■ Thousands of articles and books have been written about obesity and diets. The truth is that weight control is a simple (?) matter of mathematics. There must be a balance between energy expended (metabolism and exercise) and energy consumed in the diet. Any remaining calories (energy) are stored as fat. The laws of thermodynamics cannot be changed.

*Yours for good health and safe flying,*

***Glenn Stout, MD***

*Dr. Glenn R. Stout, Jr., is a partner in the Springs Pediatrics and Aviation Medicine clinic, Louisville, Ky., and has been an active Aviation Medical Examiner for 45 years. While he has not flown in recent years, he once held a commercial pilot's license with instrument, multiengine, and CFI ratings.*

*Note: The views and recommendations made in this article are those of the author and not necessarily those of the Federal Aviation Administration.*