

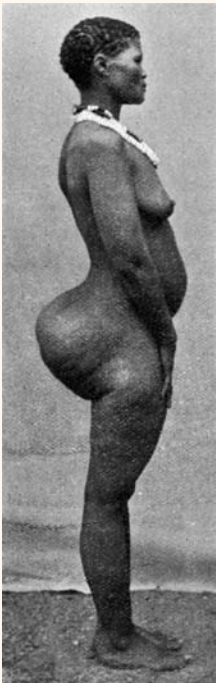
WHY WE GET
FAT

And What to Do About It

GARY TAUBES

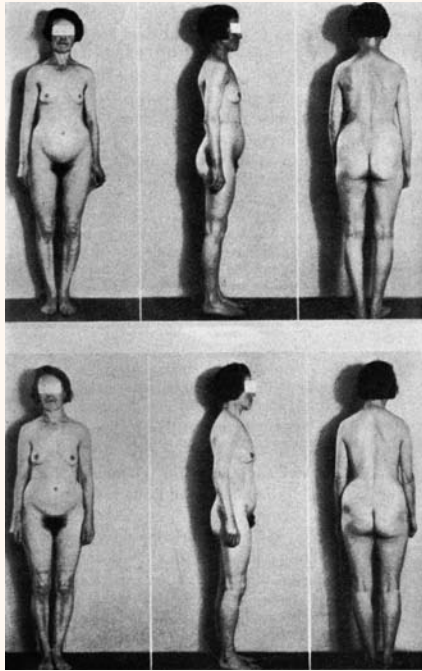


The obese Pima whom Frank Russell called “Fat Louisa” more than one hundred years ago surely didn’t get fat because she ate at fast-food restaurants and watched too much television.

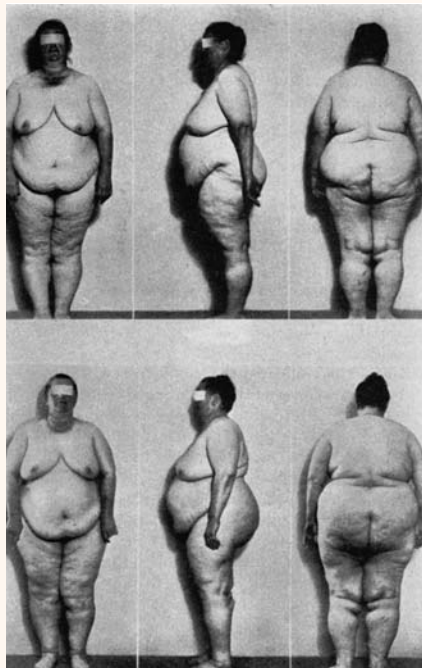


Steatopygia, the prominent fat deposits of the buttocks on this African woman, is a genetic trait, not the product of overeating or sedentary behavior.

Here are photos of two pairs of identical twins.
The first are lean; the second are obese.

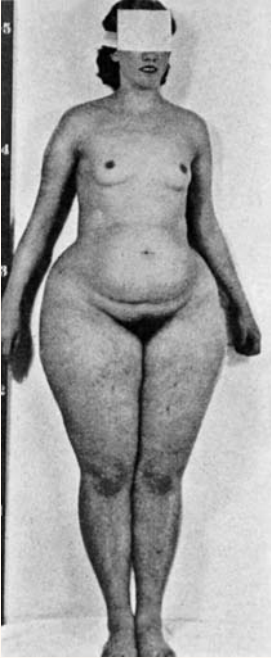


Two pairs of identical twins: one lean, one obese. Did their genes influence how much they ate and exercised or the amount and distribution of their body fat?

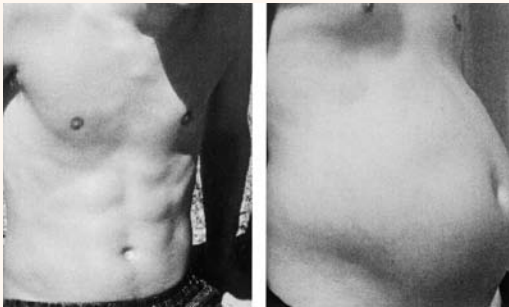




The stocky cow on the top is an Aberdeen Angus; the lean cow on the bottom is a Jersey cow. Their genes probably determine how they partition the calories they consume—into fat, muscle, or milk—not their eating or exercise behavior.



A case of the rare disorder known as “progressive lipodystrophy.” At age twenty-four, this woman would be considered obese by today’s definition, yet virtually all her body fat was located from her waist down.



Before and after photos of a man who developed HIV-related lipodystrophy after beginning anti-retroviral therapy.

Here's where growing children help as a metaphor to understand this cause and effect of getting fat and overeating. I'm going to use two photos of my oldest son to make this point. The photo below, on the left, was taken when he was not quite two years old and weighed thirty-four pounds.

The photo on the right was taken three years later, after he had gained nine inches in height and weighed fifty-one pounds.



August 2007—thirty-four pounds



August 2010—fifty-one pounds

He gained seventeen pounds in three years, so he certainly consumed more calories than he expended. He overate. Those excess calories were used to create all the necessary tissues and structures that a larger body needed, including, yes, even more fat. But he didn't grow because he consumed excess calories. He consumed those excess calories—he overate—because he was growing.

Here's a picture of a Zucker rat looking suitably corpulent.



The effects of insulin on adipose tissue.



Here are the results for weight and for risk factors for heart disease, a year after the subjects embarked on their diets:

<i>Group</i>	<i>Weight</i>	<i>LDL</i>	<i>Trig</i>	<i>HDL</i>	<i>BP*</i>
Atkins	-9.9 lb	+ 0.8	-29.3	+4.9	-4.4
Traditional	-5.5 lb	+ 0.6	-14.6	-2.8	-2.2
Ornish	-5.3 lb	- 3.8	-14.9	0	-0.7
Zone	-3.3 lb	0	- 4.2	+2.2	-2.1

*Diastolic blood pressure.

APPENDIX
Lifestyle Medicine Clinic
Duke University Medical Center

“No Sugar, No Starch” Diet: Getting Started

This diet is focused on providing your body with the nutrition it needs, while eliminating foods that your body does not require, namely, nutritionally empty carbohydrates. For most effective weight loss, you will need to keep the total number of carbohydrate grams to *fewer than 20 grams per day*. Your diet is to be made up exclusively of foods and beverages from this handout. If the food is packaged, check the label and make sure that the carbohydrate count is 1 to 2 grams or less for meat and dairy products, 5 grams or less for vegetables. All food may be cooked in a microwave oven, baked, boiled, stir-fried, sautéed, roasted, fried (with no flour, breading, or cornmeal), or grilled.

**WHEN YOU ARE HUNGRY,
EAT YOUR CHOICE OF THE FOLLOWING FOODS:**

Meat: Beef (including hamburger and steak), pork, ham (unglazed), bacon, lamb, veal, or other meats. For processed meats (sausage, pepperoni, hot dogs), check the label—carbohydrate count should be about 1 gram per serving.

Poultry: Chicken, turkey, duck, or other fowl.

Fish and Shellfish: Any fish, including tuna, salmon, catfish, bass, trout, shrimp, scallops, crab, and lobster.

Eggs: Whole eggs are permitted without restrictions.

You do not have to avoid the fat that comes with the above foods.

You do not have to limit quantities deliberately, but you should stop eating when you feel full.

FOODS THAT MUST BE EATEN EVERY DAY:

Salad Greens: *2 cups a day*. Includes arugula, bok choy, cabbage (all varieties), chard, chives, endive, greens (all varieties, including beet, collards, mustard, and turnip), kale, lettuce (all varieties), parsley, spinach, radicchio, radishes, scallions, and watercress. (If it is a leaf, you may eat it.)

Vegetables: *1 cup (measured uncooked) a day.* Includes artichokes, asparagus, broccoli, Brussels sprouts, cauliflower, celery, cucumber, eggplant, green beans (string beans), jicama, leeks, mushrooms, okra, onions, peppers, pumpkin, shallots, snow peas, sprouts (bean and alfalfa), sugar snap peas, summer squash, tomatoes, rhubarb, wax beans, zucchini.

Bouillon: *2 cups daily—as needed for sodium replenishment.* Clear broth (consommé) is strongly recommended, unless you are on a sodium-restricted diet for hypertension or heart failure.

FOODS ALLOWED IN LIMITED QUANTITIES:

Cheese: *up to 4 ounces a day.* Includes hard, aged cheeses such as Swiss and Cheddar, as well as Brie, Camembert, blue, mozzarella, Gruyère, cream cheese, goat cheeses. Avoid processed cheeses, such as Velveeta. Check the label; carbohydrate count should be less than 1 gram per serving.

Cream: *up to 4 tablespoonfuls a day.* Includes heavy, light, or sour cream (not half and half).

Mayonnaise: *up to 4 tablespoons a day.* Duke's and Hellmann's are low-carb. Check the labels of other brands.

Olives (Black or Green): *up to 6 a day.*

Avocado: *up to 1/2 of a fruit a day.*

Lemon/Lime Juice: *up to 4 teaspoonfuls a day.*

Soy Sauces: *up to 4 tablespoons a day.* Kikkoman is a low-carb brand. Check the labels of other brands.

Pickles, Dill or Sugar-Free: *up to 2 servings a day.* Mt. Olive makes sugar-free pickles. Check the labels for carbohydrates and serving size.

Snacks: Pork rinds/skins; pepperoni slices; ham, beef, turkey, and other meat roll-ups; deviled eggs.

THE PRIMARY RESTRICTION: CARBOHYDRATES

On this diet, no sugars (simple carbohydrates) and no starches (complex carbohydrates) are eaten. The only carbohydrates encouraged are the nutritionally dense, fiber-rich vegetables listed.

Sugars are simple carbohydrates. *Avoid these kinds of foods:* white sugar, brown sugar, honey, maple syrup, molasses, corn syrup, beer (contains barley malt), milk (contains lactose), flavored yogurts, fruit juice, and fruit.

Starches are complex carbohydrates. *Avoid these kinds of foods:* grains (even “whole” grains), rice, cereals, flour, cornstarch, breads, pastas, muffins, bagels, crackers, and “starchy” vegetables such as slow-cooked beans (pinto, lima, black beans), carrots, parsnips, corn, peas, potatoes, French fries, potato chips.

FATS AND OILS

All fats and oils, even butter, are allowed. Olive oil and peanut oil are especially healthy oils and are encouraged in cooking. Avoid margarine and other hydrogenated oils that contain trans fats.

For salad dressings, the ideal dressing is a homemade oil-and-vinegar dressing, with lemon juice and spices as needed. Blue-cheese, ranch, Caesar, and Italian are also acceptable if the label says 1 to 2 grams of carbohydrate per serving or less. Avoid “lite” dressings, because these commonly have more carbohydrates. Chopped eggs, bacon, and/or grated cheese may also be included in salads.

Fats, in general, are important to include, because they taste good and make you feel full. You are therefore permitted the fat or skin that is served with the meat or poultry that you eat, as long as there is no breading on the skin. *Do not attempt to follow a low-fat diet!*

SWEETENERS AND DESSERTS

If you feel the need to eat or drink something sweet, you should select the most sensible alternative sweetener(s) available. Some available alternative sweeteners are: Splenda (sucralose), Nutra-sweet (aspartame), Truvia (stevia/erythritol blend), and Sweet 'N Low (saccharin). Avoid food with sugar alcohols (such as sorbitol and maltitol) for now, because they occasionally cause stomach upset, although they may be permitted in limited quantities in the future.

BEVERAGES

Drink as much as you would like of the allowed beverages, but do not force fluids beyond your capacity. The best beverage is water. Essence-flavored seltzers (zero carbs) and bottled spring and mineral waters are also good choices.

Caffeinated beverages: Some patients find that their caffeine intake interferes with their weight loss and blood sugar control. With this in mind, you may have *up to 3 cups of coffee* (black, or with artificial sweetener and/or cream), tea (unsweetened or artificially sweetened), or caffeinated diet soda per day.

ALCOHOL

At first, avoid alcohol consumption on this diet. At a later point in time, as weight loss and dietary patterns become well established, alcohol in moderate quantities, if low in carbohydrates, may be added back into the diet.

QUANTITIES

Eat when you are hungry; stop when you are full. The diet works best on a “demand feeding” basis—that is, eat whenever you are hungry; try not to eat more than what will satisfy you. Learn to listen to your body. A low-carbohydrate diet has a natural appetite-reduction effect to ease you into the consumption of smaller and smaller quantities comfortably. Therefore, do not eat everything on your plate just because it’s there. On the other hand, don’t go hungry! You are not counting calories. Enjoy losing weight comfortably, without hunger or cravings.

It is recommended that you start your day with a nutritious low-carbohydrate meal. Note that many medications and nutritional supplements need to be taken with food at each meal, or three times per day.

IMPORTANT TIPS AND REMINDERS

The following items are NOT on the diet: sugar, bread, cereal, flour-containing items, fruits, juices, honey, whole or skimmed milk, yogurt, canned soups, dairy substitutes, ketchup, sweet condiments and relishes.

Avoid these common mistakes: Beware of “fat-free” or “lite” diet products, and foods containing “hidden” sugars and starches (such as coleslaw or sugar-free cookies and cakes). Check the labels of liquid medications, cough syrups, cough drops, and other over-the-counter medications that may contain sugar. Avoid products that are labeled “Great for Low-Carb Diets!”

LOW-CARB MENU PLANNING

What does a low-carbohydrate menu look like? You can plan your daily menu by using the following as a guide:

Breakfast

Meat or other protein source (usually eggs)

Fat source—*This may already be in your protein; for example, bacon and eggs have fat in them. But if your protein source is “lean,” add some fat in the form of butter, cream (in coffee), or cheese.*

Low-carbohydrate vegetable (if desired)—*This can be in an omelet or a breakfast quiche.*

Lunch

Meat or other protein source

Fat source—*If your protein is “lean,” add some fat, in the form of butter, salad dressing, cheese, cream, or avocado.*

1 to 1½ cups of salad greens or cooked greens

½ to 1 cup of vegetables

Snack

Low-carbohydrate snack that has protein and/or fat

Dinner

Meat or other protein source

Fat source—*If your protein is “lean,” add some fat in the form of butter, salad dressing, cheese, cream, or avocado.*

1 to 1½ cups of salad greens or cooked greens

½ to 1 cup of vegetables

A sample day may look like this:

Breakfast

Bacon or sausage

Eggs

Lunch

Grilled chicken on top of salad greens and other vegetables, with bacon, chopped eggs, and salad dressing

Snack

Pepperoni slices and a cheese stick

Dinner

Burger patty or steak

Green salad with other acceptable vegetables and salad dressing

Green beans with butter

READING A LOW-CARB LABEL

Start by checking the nutrition facts.

- Look at serving size, total carbohydrate, and fiber.
- Use total carbohydrate content only.
- You may subtract fiber from total carbohydrate to get the “effective or net carb count.” For example, *if there are 7 grams of carbohydrate and 3 grams of fiber, the difference yields 4 grams of effective carbohydrates.* That means the effective carbohydrate count is 4 grams per serving.
- No need to worry — at this point — about calories or fat.
- Effective carbohydrate count of vegetables should be 5 grams or less.
- Effective carbohydrate count of meat or condiments should be 1 gram or less.
- Also check the ingredient list. Avoid foods that have any form of sugar or starch listed in the first 5 ingredients.

Sugar by any other name is still sugar!

All of these are forms of sugar: sucrose, dextrose, fructose, maltose, lactose, glucose, honey, agave syrup, high-fructose corn syrup, maple syrup, brown-rice syrup, molasses, evaporated cane juice, cane juice, fruit-juice concentrate, corn sweetener.