

Stocking Food

Food shortages should be anticipated, but even if there were plenty of groceries on the store shelves, during a pandemic you would want to avoid close contact with others, so going to a grocery store might pose an unacceptable health risk to you. Consider that you could physically distance yourself from others and dress appropriately, wearing an N100 respirator and Nitrile gloves while shopping, yet the possibility exists that you will unknowingly bring the flu virus home from the market. It could be on your groceries. This is because humans handled the items in your grocery bags, and in a severe pandemic at least 33% of those humans will eventually get the flu. Influenza virus can easily survive on the exterior of a package for 48 hours or more, you would be compelled to sanitize or quarantine everything you bought before bringing it into your home.

It would be wise to have on hand ready-to-eat, compact foods for use in a shelter, in addition to those normally kept in the kitchen. It is not necessary to buy expensive "survival foods" or the special dehydrated foods carried by many backpackers. All large food stores sell the following concentrated foods: non-fat milk powder, canned peanuts, compact ready-to-eat dry cereals such as Grape Nuts, canned meat and fish, white sugar, vegetable oil in plastic bottles, iodized salt, and daily multivitamin pills. If shelter occupants have a way to boil water, it is advisable to include rice, noodles, and an "instant" cooked cereal such as oatmeal or wheat along with coffee and tea for those who habitually drink these beverages. Parched grain is a ready-to-eat food that has been used for thousands of years. Whole-kernel wheat, corn, and rice can be parched by the following method: Place the kernels about 1/4-inch deep in a pan, a skillet, or a tin can while shaking it over a flame, hot coals, or a red hot electric burner. The kernels will puff and brown slightly when parched. These parched grains are not difficult to chew and can be pounded to a meal more easily than can the raw kernels. Parched grain-stores well if kept dry and free of insects.

Stock your pandemic pantry with foods that do not require refrigeration, are highly nutritious, taste good, can be prepared under campout conditions, and that are reasonably priced. Since the pandemic is expected to last about 18-months, having a 3 month stockpile implies that you will still need to have access to food sources during this time, a prospect that is very likely. What is also likely though is that food shortages will occur from time to time during the pandemic period. During these time points, it will be difficult to find certain types of food. Your stockpile is intended for use during these times of scarcity. As you stock food, take into account your family's unique needs and tastes.

- ▶ Try to include foods that they will enjoy and that are also high in calories and nutrition.
- ▶ Individuals with special diets and allergies will need particular attention, as will babies, toddlers, and the elderly.
- ▶ Nursing mothers may need liquid formula, in case they are unable to nurse.
- ▶ Ensure you have a manual can opener. Don't forget nonperishable foods for your pets.
- ▶ Maintain a food storage inventory sheet that will focus on products that contribute to your nutritional goals.
- ▶ Be sure that you can provide each person with 25 to 30 grams of fiber and 50 to 70 grams of protein per day.
- ▶ Set a deadline for purchasing your emergency food by buying at least an extra week's worth of groceries every time you shop.
- ▶ Stock up heavily on foods that are part of your normal diet, but which require no refrigeration and are easy to prepare without the aid of modern appliances.
- ▶ Check the expiration date of each item before you put it into your shopping cart, so you do not buy food that will be out of code in less than 7 or 8 months.
- ▶ For canned goods, select sizes that your family will eat in one meal. In the event of a power failure during mild weather, you will not be able to preserve leftovers.
- ▶ For maximum shelf life, store your food in a cool, dark place and rotate your stock. Protect your food from insects and rodents.
- ▶ When you are no longer able to shop normally, consume the perishable items in your refrigerator first, followed by the items in your freezer. Only when these two sources are depleted should you consume your emergency food.

If activity is reduced, healthy people can survive on half their usual food intake for an extended period and without any food for many days. Food, unlike water, may be rationed safely, except for children and pregnant women. If your water supply is limited, don't eat salty foods, since they will make you thirsty. Instead, eat salt-free crackers, whole grain cereals, and canned foods with high liquid content. During and after a disaster, it is vital that you maintain your strength.

Remember the following:

- ▶ Eat at least one well-balanced meal each day.
- ▶ Drink enough liquid to enable your body to function properly (two quarts or a half gallon per day).
- ▶ Take in enough calories to enable you to do any necessary work.
- ▶ Include vitamin, mineral, and protein supplements in your stockpile to ensure adequate nutrition.

During times of food scarcity, access to high quality protein is usually the most important nutrition problem to address. Meat from beef, swine, chicken, and fish are all excellent sources of this key nutriment.

Storage Of Foods

Whole grains and white sugar can be stored successfully for decades; dried beans, non-fat milk powder, and vegetable oil can be stored for several years. Some rules for good storage follow:

Keep food dry. Ideally, your storage area should have a humidity level of 15% or less, but unless you live in the desert it's not likely you'll be able to achieve this. Moisture is not good for your dry stored edibles so you want to minimize it where possible. This can be done by a couple of methods. The first is to keep the area air-conditioned and/or dehumidified during the humid times of the year. The second is to use packaging impervious to moisture and then deal with any moisture trapped inside. If you are able, use both. The most dependable way to assure continuing dryness is to store dry grain in metal containers, such as ordinary 5-gallon metal storage cans or 55-gallon metal drums with gasketed lids. Filled 5-gallon cans are light enough to be easily carried in an automobile when evacuating. Particularly in humid areas, grain which seems to be dry often is not dry enough to store for a long period.

To be sure that grain is dry enough to store for years, use a drying agent. The best drying agent for this purpose is silica gel with color indicator. The gel is blue when it is capable of absorbing water and pink when it needs to be heated to become an effective drying agent again. Silica gel is inexpensive if bought from chemical supply firms located in most cities. By heating it in a hot oven or in a can over a fire until it turns blue again, silica gel can be used repeatedly for years. The best containers for the silica gel used to dry grain (or to determine its dryness) are homemade cloth envelopes large enough for a heaping cupful of the gel. A clear plastic window should be stitched in, through which color changes can be observed. Put an envelope of silica gel on top of the grain in a 5-gallon can filled to within a couple of inches of its top. Then close the can tightly. Even a rather loose-fitting lid can be sealed tightly with tape. If after a few days the silica gel is still blue, the grain is dry enough. If the silica gel has turned pink, repeat the process with fresh envelopes until it can be seen that the grain is dry.

Keep grains and beans free of weevils, other insects, and rodents. Dry ice(carbon dioxide) is the safest means still widely available to the public for ridding grain and beans of insects. Place about 4 inches of dry ice on top of the grain in a 5-gallon metal container. Put the lid on somewhat loosely, so that air in the grain can be driven out of the can. (This will happen as the dry ice vaporizes and the heavy carbon dioxide gas sinks into the grain and displaces the air around the kernels.) After an hour or two, tighten the lid and seal it with tape. After one month, all insects in this carbon-dioxide atmosphere will have died from lack of oxygen.

Store foods in the coolest available place, out of the light. Within reason, the key to prolonging the shelf life of your food lies in lowering the temperature of the area in which it's stored. The storage lives of most foods are cut in half by every increase of 18° F (10° C). For example, if you've stored your food in a garage that has a temperature of 90° F (32° C) you should expect a shelf life of about half what could be obtained at a lower temperature, perhaps in your pantry at 70° F (21° C), which in turn is half the storage life that you could get if you kept it in your basement or refrigerator at 50° F (10° C). Your storage area should be located where the temperature can be kept above freezing and, if possible, below 72° F (22° C). Avoid major temperature fluctuations in this area if you can.

Do not place stored metal containers directly on the floor. All containers should be kept off the floor and out of direct contact with exterior walls to reduce the chances of condensation brought on by temperature differences between the container and the surface on which it is resting. Place containers on spaced boards. For long term storage in damp permanent shelters or damp basements, use solid-plastic containers with thick walls.

Rotate stored foods. Eat the oldest food of each type and replace it with fresh food. Although cooking oil and non-fat milk powder remain edible after several years of storage at room temperature, these and most other dry foods are more nourishing and taste better if stored for no more than 2 years. Most canned foods taste better if kept no more than one year. Exceptions are whole grains and white sugar, which stay good for decades if stored properly. Providing they were properly processed, canned, dried, frozen, or freeze dried foods do not become unsafe to eat when stored longer than their recommended times, but their nutrient quality fades and their flavor, color and texture go downhill.

Store plenty of salt. In our modern world salt is so abundant and cheap that most Americans do not realize that in many areas soon after a major nuclear attack salt would become a hard-to-get essential nutrient. Persons working hard without salt would suffer cramps and feel exhausted within a few days. Most famine relief shipments of grain probably would not include salt. So store enough salt both to salt your family's food for months and to trade for other necessities.

- ▶ **Use within six months:** Powdered milk (boxed), dried fruit, dry crackers, potatoes
- ▶ **Use within one year, or before the date indicated on the label:** Canned condensed meat and vegetable soups, canned fruits, fruit juices, and vegetables, ready-to-eat cereals and uncooked instant cereals, peanut butter, jelly, hard candy, canned nuts
- ▶ **May be stored indefinitely in proper containers and conditions:** Vegetable oils, dried corn, wheat, baking powder, soybeans, instant coffee, tea, cocoa, salt, noncarbonated soft drinks, white rice, bouillon products, dry pasta, powdered milk (in packed cans)

How Much Food To Store?

The experts at the FDA have said that the average adult will consume the following amounts of fresh food per year.

- ▶ Meat - 150 to 200 pounds
- ▶ Flour - 200 to 300
- ▶ Sugar or honey - 60 pounds
- ▶ Fats or Oils - 60 pounds
- ▶ Salt - 5 pounds
- ▶ Powdered Milk - 75 pounds
- ▶ Vegetables and Fruits - 600 to 700 pounds

Grain And Bean Diet

A diet consisting solely of wheat, corn, or rice, and salt has most of the essential nutrients. The critical deficiencies would be vitamins A, C, and D. Such a grain-based diet can serve adults and older children as their "staff of life" for months. Other common whole grains would serve about as well as wheat and yellow corn. At least 1/6 oz of salt per day (about 5 grams) is essential for any ration that is to be eaten for more than a few days, but 1/3 oz. (about 10 g or 3/4 tablespoon) should be available to allow for increased salt needs and to make grain and beans more palatable. This additional salt would be consumed as needed. Few Americans at first would be able to eat the 3 or 4 quarts of thick mush that would be necessary with a ration consisting solely of whole-kernel wheat or corn. Only healthy Americans determined to survive would be likely to fare well for months on such unaccustomed and monotonous food as an all-grain diet. Eating two or more different kinds of grain and cooking in different ways would make an all-grain diet both more acceptable and more nourishing. Not many people would be able to eat 27 oz (dry weight before cooking) of beans in a day, and fewer yet could eat a daily ration of almost 23 oz of soybeans. Beans as single-food diets are not recommended because their large protein content requires the drinking of more fluids. Roasted peanuts would provide a better single-food ration.

People who live on essentially vegetarian diets eat a little of their higher-quality protein food *at every meal*, along with the grain that is their main source of nutrition. Thus Mexicans eat some beans along with their corn tortillas, and Chinese eat a little fermented soybean food or a bit of meat or fish with a bowl of rice. White corn supplies no Vitamin A, whereas yellow corn supplies 49 RE (retinol equivalent, a measure of Vitamin A value) per 100 g dry weight. Most corn in the United States is yellow corn. The niacin in corn is not fully available unless the corn is treated with an alkali, such as the lime or ashes Mexicans (and many Americans) add to the water in which corn kernels are soaked or boiled.

If a diet contains some animal protein such as meat, eggs, or milk, the recommended protein would be less than 55 g per day. If most of the protein is from milk or eggs, only 41 g per day is recommended. Infants, children, and pregnant and lactating women should receive 10 g (10 micrograms, or 400 IU) of vitamin D. For others, the current recommended daily allowance (RDA) for vitamin D is 200 IU (5 g). Nutritionists have found that grains are low in some of the essential amino acids that the human body needs to build its proteins. For long-term good health, the essential amino acids must be supplied in the right proportions *with each meal* by eating some foods with more complete proteins than grains have. Therefore, in a prolonged food crisis one should strive to eat *at every meal* at least a little of any higher-quality protein foods that are available. These include ordinary beans, soybeans, milk powder, meat, and eggs. By adding 7.0 oz (200 g) of red beans (or other common dried beans) to 21.1 oz (600 g) of either whole wheat or yellow corn, with salt added, you can produce rations that contain adequate amounts of all the important nutrients except vitamin C, vitamin A, vitamin D, and fat. If 5.3 oz (150 g) of soybeans are substituted for the red beans, the fat requirement is satisfied. 600 g of yellow corn contains enough carotene to enable the body to produce more than half the emergency recommendation of vitamin A. The small deficiencies in riboflavin would not cause sickness.

Other abundant grains, such as grain sorghums or barley, may be used instead of the wheat or corn to produce fairly well-balanced rations. Other legumes would serve to supplement grain about as well as red beans. (Peanuts are the exception: although higher in energy (fat) than any other unprocessed food, the quality of their protein is not as high as that of other legumes.)

Food Baseline Requirements

For 1 Adult For 1 Year	
Wheat	321 lbs
Enriched white flour	29 lbs
Corn meal	71 lbs
Oats, Rolled	71 lbs
Rice	143 lbs
Pearled barley	7 lbs
Spaghetti & macaroni	71 lbs
TOTAL FOR GRAINS	714 lbs
Beans (dry)	50 lbs
Beans, Lima (dry)	2 lbs
Beans, Soy (dry)	2 lbs
Peas, Split (dry)	2 lbs
Lentils (dry)	2 lbs
Dry Soup Mix	10 lbs
TOTAL FOR LEGUMES	68 lbs
Vegetable Oil	4 gal
Shortening	10 lbs
Mayonnaise	2 quarts
Salad Dressing	2 quarts
Peanut Butter	8 lbs
TOTAL FOR FATS & OILS	51 lbs
Milk, Nonfat dry	28 lbs
Evaporated milk	24 cans (12 oz net wt)
TOTAL FOR MILK	32 lbs
Sugar, Granulated	80 lbs
Sugar, Brown	6 lbs
Molasses	2 lbs
Corn syrup	6 lbs
Honey	6 lbs
Jams and preserves	6 lbs
Fruit drink, Powdered	12 lbs
Flavored gelatin	2 lbs
TOTAL FOR SUGARS	120 lbs
Dry yeast	1 lbs (You will want more yeast)
Baking Soda	2 lbs
Baking Powder	2 lbs
Vinegar	2 lbs
Salt (iodized)	16 lbs (8 lb/person/year)

Suggested Food Items To Stock

Vegetables	Meats & Fish	Fruits
Dried onions	Ham (canned)	Raisins
Instant Potatoes	Summer sausage	Pie filling
Sweet potatoes	Vienna sausage	Fruit wraps
Corn	Spam or Treet	Apricots
Green beans	Jerky	Prunes
Peas	Chicken (canned)	Figs
Olives	Chinese food	Bananas
Tomato products	Tuna fish	Apples
Pumpkin	Salmon	Pineapple
Onions, french	Beef (canned)	Dates
Spinach	Corn beef hash	Apple sauce
Asparagus	Turkey (can)	Oranges (canned)
Potatoes (fresh)	Beef (dried)	Fruit cocktail
Dried mushrooms	Freeze-dried meats	Coconut
Pastas	Beans	Soups
Instant noodles	Pinto	Dried soups
Dry cheese	Garbanzo	Chicken bullion
Spaghetti sauce	White navy	Beef bullion
Spaghetti	Lima	Chicken stew
Macaroni	Black eyed peas	Beef stew
Lasagna	Red soup	Condensed soup
Canned pastas	Butter	Cheese soups
One pan meals	Lentils	Chili
Cup of Noodles	Black	Broth
Baking	Drinks	Cereals
Vegetable oil	Evaporated milk	Barley
Olive oil	Powdered milk	Rice
Pancake mixes	Coffee (ground)	Corn meal
Sugar	Coffee (instant)	Oatmeal
Biscuit mixes	Sports drinks	Cream of Wheat
Baking powder	Bottled water	Grits
Baking soda	Chocolate syrup	Tortilla mix
Corn starch	Strawberry syrup	Whole grain wheat
Shortening, Lard	Tea	Dry cereal
Flour	Coffee filters	Farina
Dried eggs	Dry coffee creamer	Flax grain
Yeast	Hot chocolate mix	Rye grain
Powdered sugar	Kool Aid	Popcorn
Cookie mixes,	Condensed milk	
Muffin mixes	Fruit juice	
Cocoa	Vegetable juice	
Pie shells		
Condiments	Spices	Snacks
Pickles	Bay leaves	Pudding
Jarred peppers	Italian spices	Jell-O
Stovetop Dressing	Onion powder	Nuts
Bread crumbs	Garlic powder	Granola bars
Jellies and Jams	Dry mustard	Candy
Cheese dips in jars	Salt	Marshmallows
Peanut butter	Black pepper	Trail mix
Ketchup and Mustard	Mexican spices	Cookies (bag)
Vinegar	Vanilla extract	Chips
Honey	Hot sauces	Saltine crackers
Mayo packets	Seasoning salt	