

Guidelines for Planning Meals for Backpacking

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Preface

I have drawn together this information on the basis of what I have read and personal experience. I am not an expert on diet or nutrition. You may check out the references below. I encourage you to conduct your own reading, research, and study to improve your own understanding and help guide others. There is nothing special about the references that I have listed other than that I have found them helpful. Titles come and go. You will be able to find current titles in any good book store or outdoors store. Still, I would recommend The Complete Walker as a classic in information on backpacking. It is full of references, including many internet addresses for all sorts of information.

There seem to be a lot of topics that come to at least my mind when I consider planning meals for backpacking. Immediately below I have listed the topics in the order that I have treated them in these guidelines:

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Introduction

A backpacking experience, whether an over-nighter or a week-long High Adventure, needs food in order to work. With a little thought and planning, the food that you take will enhance the experience. There are several variables that you will want to take into

consideration. What is the time of year? How strenuous is the route? How much food should you take? What do calories have to do with energy? What difference is there among fats, proteins, and carbohydrates as far as energy and fulfilling your energy needs on the trail? Does it make any difference what you eat when during the day? How much water should you drink during the day? Is water available along the way, or just at the campsite? How do you know? How many of you are there? Does anyone have an allergy? What utensils do you need to cook the meals that you have selected? Are you carrying more utensils, pots, and pans than you need? Who is carrying what? Have you pre-packed meals and distributed the weight equally among the participants? How much weight in food should you aim to carry per person per day? Is the possibility of spoilage an issue? How long should it take to cook a meal? Does altitude play a role? What about bears or other creatures and protecting your food? Do bears prefer certain foods? Do you have them? Why? What do you do with a bear bag in bear country without any trees? What plans do you have for storage of the food? What do your tent site, your cooking site, your food storage site have in common? Will the meal plan that you have chosen require a simple or involved clean-up? Do you have what you need to clean up? Will you have trash? How will you pack it out?

Tackling these questions for the first time the night before you embark on a two-night backpacking warm-up hike is not my idea of a good time. These are the primary considerations I go over in preparing food:

- * How physically demanding is the outing?
- * How many calories should I consume per day?
- * How much weight in food do I want to carry per day?
- * What utensils do I need to prepare and serve the food?
- * How will I pack, distribute, and carry the food?
- * Have I kept clean-up as simple as possible?
- * Am I experimenting with any new foods?
- * How am I protecting the food against bear and other creatures?
- * What lessons did I learn from the last outing and am I applying them to this outing?

The Role of the Grub Master and the Commitment of the Patrol Members

Worth mentioning is that if you are the grub master, you will need to get consensus among your Patrol members regarding the complete menu and the food budget. This is the time to figure out if anyone has any allergies or special dietary requirements that must be met. Food can be expensive. You would not want to purchase freeze-dried meals unless everyone were on board. Why? Because, freeze-dried is probably going to be expensive. You will want to keep track of total costs and divide them among participants. Because these menus can be expensive, you will want to reach consensus among Patrol members that a commitment to participate is a commitment by everyone to cover costs, even if someone has to drop out for whatever reason *after the grub master has purchased the food!*

It's Not Just About the Grub Master

I'll make this short: the grub master is one member of a team - - in this case, a team undertaking a backpacking outing. The successful team will discuss, define, and alternate responsibility for the recurring tasks associated with food. In addition to determining a nutritious meal plan, which is what the rest of these guidelines are all about, these tasks include:

- * Matching cooking gear (e.g. stove, wind shield, fuel, etc.) and utensils (pot(s), pot holder, etc) with the chosen meal plan.
- * Assigning responsibility for who is bringing what gear and utensils to the trail head AND who is carrying what.
- * Agreeing to a rotating schedule for accomplishing the "cooking" tasks, i.e., cooking, cleaning up, purifying water.
- * Agreeing how the team is hauling out any trash.

Often patrols on backpacking outings are teams that are in the forming stage of development, which means that all the above tasks and responsibilities should be discussed and agreed upon in advance to maximize the chance of success.

Fats

Fats release energy slowly. They are not a quick source of energy. Eat fats at night so that they can begin to release energy during the night. Some sources of fat are dairy products, margarine, eggs, nuts, and meat. Fats are an important part of a backpacker's diet, especially in cold weather. Current wisdom recommends reducing foods high in saturated fats (butter, animal-fat margarine, cheese, whole milk, and chocolate) in favor of foods high in polyunsaturated fats (vegetable margarines, low-fat spreads, vegetable oil) and monosaturated fats (olive oil).

Proteins

Proteins renew muscles and body tissues. Sources are meats, eggs, dairy products, and legumes, e.g. beans, peas.

Carbohydrates

Carbohydrates turn quickly into energy. Complex carbohydrates are a good source of fiber and a precaution against constipation. There are simple and complex carbohydrates. Simple carbohydrates are sugars, e.g. sucrose, dextrose, fructose, glucose, and honey. Complex carbohydrates are starches, e.g. grains, vegetables, and legumes. You should rely more on complex carbohydrates, because they provide more energy spread over a longer period of time. Also, they provide fiber, vitamins, and minerals.

Combining Fats, Proteins, and Carbohydrates

A rule of thumb for backpacking is to eat more carbohydrates and fewer fats and proteins. I have found the guideline for balancing fats, proteins, and carbohydrates expressed as a percentage, e.g. consume 60 – 70 % of your daily food as carbohydrates and split the rest of the food equally between fat and proteins.

Water

All of this focus on diet and nutrition is based on an assumption of an ample supply of water. It is sometimes a chore to determine whether or not water will be available. If the topographical map shows a spring, will it be running or dry? How can you find out? What happens if it is dry? How much water is enough? As usual, the answers depend on you and the circumstances. Folks you might ask include the National Park Service, the Appalachian Trail Club, and other Boy Scout troops.

Regarding consumption needs, I might drink just a quart on a cold day of hiking, but race through a quart every one or two hours on a hot summer day. I will need at least two quarts for cooking and drinking at night. And that does not include water for washing utensils or myself. Four quarts would be more like it. And, you should consider that a quart weighs about two pounds. So, if I am hiking in an area with an ample supply of water, I will carry a maximum of two quarts at a time and purify water replenishments by filter or tablet as needs be.

Vitamins and Minerals

Your intake of vitamins and minerals is more of a concern if you are on a longer trip, i.e., greater than one month. They are not so much of an issue on trips of shorter duration. For longer trips, consider taking a daily multi-vitamin.

Calories – Energy - Weight

You can calculate the calories and protein-fat-carbohydrate contribution of a food by examining the nutritional food labeling on its package. I sometimes take a notebook to the grocery store and the outdoor store to copy the nutritional information from the food packages in order to do my homework on nutrition. Both the references that I have listed below for the books by Fletcher and Townsend provide informative tables and descriptions of their use to help you gain further expertise in this area. There are also so-called “counter” paperbacks that deal with counting proteins, fats, carbohydrates - - you name it. I have also listed a “counter” book in the references.

The goal is to find an optimal solution to a multivariable equation couched against several considerations that you will want to prioritize to meet your needs. At the top of my list of priorities is the weight of the food; total calories per day; distribution of calories among proteins, fats, and carbohydrates; ease of cooking/cleaning; and cost. Other issues are weather conditions, duration (days) of activity, and how much the backpack is starting to weigh.

The calorie measurement used in reference to food is the kilocalorie (kcal), i.e., the calorie. A kilocalorie, or calorie, is the amount of heat needed to raise 1 kilogram of water 1 degree Celsius. How many calories you need is a factor of your metabolism, weight, age, gender, and the level of activity that you are planning. The key is to carry enough weight in food in order to have enough energy. If you have plenty of leftovers at the end of the outing, remember that the next time you provision for an outing. If you felt deprived of energy on the hike, consider increasing carbohydrates and spreading out eating throughout the day, not just at set trail stops for lunch and dinner.

Weight is not such a big deal on a two- to three-day warm-weather hike. But, if you are not careful, you can end up with way too much food and unnecessary weight. An outing that involves more than two nights or that is scheduled during cold weather conditions can become problematic. You are going to need to carry more food. Weight can really get out of hand if you are careless. Fletcher in his backpacking book says that a person weighing about 154 pounds should carry about 35 ounces per person per day. You should aim to carry less. If you weigh less, you can certainly get by with carrying fewer ounces per day. Experiment with less, see how it goes, and adjust as appropriate on your next outing. Also, try to go for the high-calorie foods rather than the low-calorie foods, since you will end up with less total weight by focusing on the high-calorie foods.

A person of 154 pounds will need about 360 calories per hour of hiking. Hiking about seven hours per day and considering the rest of the hours of the day, the goal for the 154-pound person is to consume about 4,000 calories per day. A woman of 128 pounds would require about 2960 calories, or 74%. So, if you weigh less than 154 pounds, you probably do not need 4,000 calories. My guess is that 3,500 calories per day would be a good goal to experiment with. Check out how you feel and then either increase or decrease the calories the next time you go out on the trail.

And, in case you are interested, the 35 ounces would be divided roughly into 5 ounces for breakfast, 14 ounces for dinner, and 14 ounces spread across the day to include lunch and snacks on the trail while walking. A daily carrying weight of 35 ounces translates into 15 pounds for one week and 30 pounds for two weeks. Two weeks is probably the limit of what you would/could ever carry. Beyond that, you are into caching and provisioning food, which is a topic covered amply in the various books dealing with long distance hiking, e.g. the Appalachian Trail. If you are interested, Fletcher has written a book about going the length of the Colorado River that is still in print and that deals with planned provisioning along the way that is, I believe, well worth the read.

Cold weather conditions require even greater caloric intake. You might consider reducing the mixture of carbohydrates in favor of increasing the fat, by means of cheese and margarine. You could try to increase your consumption of carbohydrates in order to reach your targeted higher caloric intake, but that would drive up your daily carrying weight. Not a good thing. Especially given that your overall weight would already be on the high side given the gear and clothing requirements of cold weather.

Your nutritional needs are a function of the activity that you are performing. A day involving 7 hours climbing 3,000 feet will require more fuel than a day of rest. Plan accordingly and load up for the rigorous day, go light for the restful day.

Not all the books that I have included as references refer to calories, at all. The ones by Fletcher and Townsend do, the BSA Fieldbook and Kestenbaum's do not.

Here is a final note regarding calories, you, and the trail. As with most things, no one size fits all. The same goes with calories and you. If you want to learn more about this

topic, the references listed below are a starting point. Your approach can range from a scientific method to a trial and error method. I would recommend that you pay attention to the advice from the experts and then try it out and see how it works for you. Adjust accordingly. You can and ought to practice trial and error regarding caloric intake and diet - - call it nutrition - - on any backpacking trip.

Time

When you are ready to eat, you do not want to have to wait. A rough rule of thumb is that it should take 5 to 10 minutes of simmering to prepare a good warm meal. The higher your altitude, the longer it will take. That is why you can find “mile-high” cook books in Denver. At 5,000 ft it will take about twice as long to boil water as at sea level. At 10,000 ft it will take nearly four times as long. Most backpacking foods are cooked in boiled water. If you are using a freeze dried meal developed for backpacking, you will add hot water directly to the bag that the food comes in, seal it, and in a few minutes start eating. Nothing could be simpler. You can simplify other meals by using oven bags. Frying requires carrying cooking oil and cleaning up messy, greasy pans. So, it is best to avoid frying.

Buying Provisions

Where to buy? You can find all you need in a local supermarket. Be sure to check cooking instructions carefully for times and special instructions. Assume nothing. Check to make sure you have all ingredients, especially staples. Outdoor stores will have specialty backpacking foods, which are light-weight, low-bulk, and freeze-dried, but expensive. There are a variety of brands - - some pretty tasty. Each label probably has some that you will love, others that you will hate. Outings of a few nights are a wonderful time to experiment. Some labels are: AlpineAire (www.aa-foods.com), Uncle John’s Foods of Colorado, Backpacker’s Pantry (www.backpackerspantry.com), Mountain House, Richmoor (www.richmoor.com), and Harvest Foodworks. You can also take a look at the April 2006 issue of Backpacker magazine for a review of 2006’s top trail meals.

Breakfast – one example

You might try oatmeal, a dried omelet, or pancake mixes. Add a mug or two of coffee or cocoa with sugar and dried milk.

Lunch – one example

Try consuming trail mix also known as (aka) gorp (good old raisins and peanuts) throughout the day. At its most basic it consists of peanuts and raisins. Be adventurous and add dried fruit, e.g. papaya, dates, pineapple. Backpacker magazine is a tremendous resource for backpacking meal recipes, including trail mix. I tried a quick and easy gorp recipe from the May 2006 issue of Backpacker magazine at Dolly Sods during the 2006 high-adventure warm-up hike that still has me tingling. Go all out and add coconut, chocolate, M&Ms, sunflower seeds, sesame seeds, granola, etc. Count on consuming about 2 ½ to 3 ½ ounces per day. In addition, throw in three or four cereal/granola/power bars per day. There is tremendous variety in these bars. Consider having crispbread,

crackers, tortillas, or pita bread with cheese, vegetable spreads, or hard salami. Cheese or vegetable pate spreads come in convenient tubes.

Dinner – one example

I recommend that your goal be the simplicity of a one-pot dehydrated or freeze-dried meal. Lipton offers soups, pasta, and sauce meals. Oriental noodles aka ramen cook in about four minutes and are cheap. You can easily reach your planned caloric intake by strengthening a package of ramen noodles with one of the soup mixes, say one of the Knorr brand. You can enhance the taste of a meal by adding herbs and spices, soup mix, or cheese. Experiment with garlic powder, curry, chili powder, black pepper, and mixed herbs.

If you are in fish country, be sure to take along some aluminum foil to bake! And whatever country you are in, oven bags can simplify cooking and clean up.

Staples

Staples include but are not limited to margarine (in squeeze tube), dried milk, and cheese. On long trips, your strategy might be to eat the cheese the first few days. Instant non-fat dry milk adds taste and calories to any dish or cereal, tea or coffee. Milkman Instant Milk is a tasty brand. Do not forget cocoa and hot chocolate, which provide plenty of kilocalories. Consider condiments - - pepper, Tabasco sauce, oregano, etc. - - to spice things up.

Still Another Example – Sample Calculations

See the attached spreadsheet for an example of how I go about gathering some of the numerical information on weight, calories, protein, fats, and carbohydrates. In the example, the total carrying weight for one day comes to 37.9 ounces. That is higher than I wanted, so I will try to cut that back to at least 35 ounces. The balance among proteins, fats, and carbohydrates is 20% - 23% - 57%. This might be acceptable, depending on how strenuous the activity is that I have planned. I will want to increase the carbohydrate percentage if I am planning on walking ten or so miles, and/or if there is much climbing involved. The total calories are only 3,425, even though the total weight is on the high side. That means I am going to have to be careful if I make adjustments to increase calories so that I do not increase weight. The holy grail has become to find ever lighter foods with ever greater caloric content.

What the spreadsheet does is to give me a method to balance the numbers and bring them to where I want them to be.

Emergency Rations

There is something called Turblokkenthat that I have read about that comes in a compressed block of foil-wrapped emergency rations. Just in case. Or, throw in a few power bars as emergency reserve. Most literature recommends this. Given the questionable dependability of mechanical water purifiers, you ought to include several water purifying tablets in that emergency kit.

Bagging

Separate the foods into meals, e.g. breakfast #1, breakfast #2, etc. Then bag each meal. You might need to use several bags for one meal. Mark the bags by meal. Your end goal is to be able to distribute the bags among the Patrol members so that everyone receives the same weight in food. Plastic bags, zip lock variety, are essential for packaging all food. Ziploc brand is reliable. Remove any cardboard or other packing material that you do not need. But do not forget to take any instructions if you need them. The plastic food containers for sale in the outdoor stores are probably best avoided - - they take up lots of space and add extra weight. Also, they do not compress well like plastic bags. Pack several plastic bags in one or several large, heavy-duty transparent plastic bags and close them with a rubber band. The transparent bags will make it easier for you to find what you are looking for. Each individual hiker should think in terms of carrying one bag for day food, that is trail mix and whatever else will be consumed during that day's hiking, and another bag for camp food, that is, the evening meal. Two bags are easier to pack and find than one larger one. Nylon stuff sacks provide even more durability.

Clean Up

Probably the easiest way to clean up is to start heating clean up water immediately after you finish cooking and without missing a beat. Here is one recommended step-by-step process that will be sure to keep you and Montezuma's Revenge strangers:

1. Scrape the plate/bowl clean of any food
2. Clean with a paper towel,
3. Wash in warm, soapy water
4. Rinse in hot clear water
5. Dip in sanitizing solution, e.g. one (1) tablespoon liquid chlorine bleach per gallon of tepid water - - change water after washing eight (8) sets of dishes
6. Place plates/bowls/utensils in a drip bag, and
7. Hang on drip line to dry.

Trash must be carried out, which means that you need to have a couple good Ziploc bags to accomplish this in order to avoid having messy ingredients ooze out into your backpack. Carry out all trash - - You should not bury anything, since animals will just dig it up.

Bears and Other Critters

Guidelines call for hanging bear bags at least 12 feet above the ground, 10 feet away from the trunk of a tree, and 6 feet below any branch. This usually requires at least 50 feet of sturdy nylon cord and a tough stuff sack. You should figure out how many bags and cord you will need before you hit the trail. This all sounds much easier than it is. It is not unusual to spend an hour hanging a bear bag. I have had the best luck using the two-cord method to hang the bag. Once again, this has not been as easy as it sounds, at least for me.

In bear country, cooking should be done 100 yards removed from your tent site and in a high visibility area - - so that you can see the bear if there is a bear to be seen. If there are no trees, such as is not uncommon in Alaska or if you find yourself above timberline out

West, food must be stored in bear-resistant food containers and left on the ground. Keep the containers nearby while cooking so that you can stash away the food quickly if bear appear. You should store food at least 100 yards away from cooking site and tent site. Consider that smoked and spiced foods attract bear. Tinned sardines are rumored to be considered a delicacy among bear. So, convenient as a tin of sardines may be, if you do take it on an outing, you may be getting more than you bargained for.

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