

Nutrition Overview: Part II

Some basic nutrition guidelines

Whether you are discussing food and drinks with patients or thinking about your own dietary practices, the following 10 general guidelines can serve as a good starting point.

- 1. Tailor nutrition recommendations to individual need**, in the spirit of personalized, proactive, and patient-driven care. Collaborate with your patients to create an individualized nutrition plan that takes into account their economic resources, access to food, cooking ability, and religious and cultural factors. Explore these resources:
 - [Ethnic cooking guidance from Nutrition.gov.](#)
 - [Old Ways Cultural Food Pyramids](#)
 - [Old Ways Food Pyramids for Different Groups](#)
- 2. Small changes** in eating habits are typically easier to make than complete diet overhauls.¹ Clinicians should not feel like they are doing all the work; each individual should set goals, working with their clinician. These goals should feel realistic, and achieving one goal can often lead to the beginning of a cycle of setting and achieving other goals as well. If you are wondering what to change, review the components of the Standard American Diet, as listed above. Offer examples of possibilities, and encourage patients. For example, if they recognize that their soda consumption may be causing harm to their body, you might encourage them to decrease soda intake by a specified number of ounces per day. Similarly, if they do not want to completely remove burgers from their diet but are open to eating them less frequently, suggest that they only eat red meat once weekly.

Meet each patient where they are at and help them set SMART goals (Specific, Measurable, Action Oriented, Realistic, and Timed).² See Figure 4 from the *USDA 2015 Dietary Guidelines for Americans*, which shows what percentage of Americans meet various dietary recommendations.

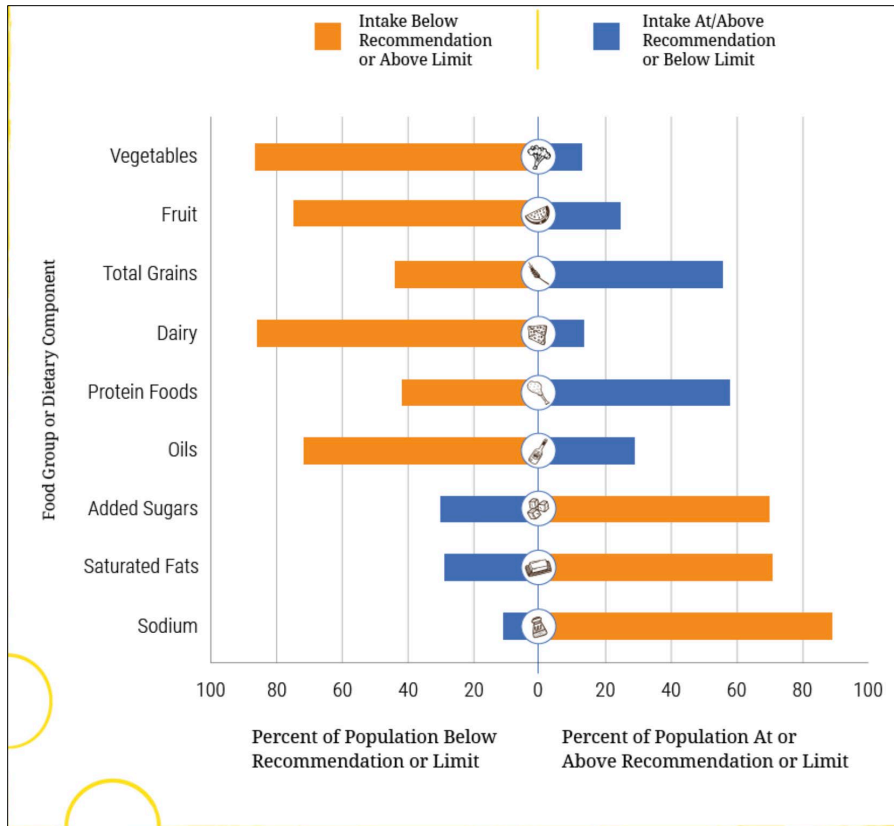


Figure 8. The Standard American Diet Versus the USDA Dietary Guidelines for Americans, 2015.³

NOTE: The center (0) line is the goal or limit. For most, those represented by the orange sections of the bars shifting toward the center line will improve their eating patterns.

- 3. Which diet?** You probably have been asked many times about which diet is the best one to follow. In general, research tells us that **the diet that works best is whatever one a person is willing and able to stick with long-term.**⁴ Be familiar with the eating patterns recommended in popular diets (some of these are described below and in the [“Choosing a Diet”](#) tool).
- 4. Meet nutritional needs through foods versus multivitamins** or other dietary supplements.⁵ Invest in healthy, nutrient-dense food. These foods have a high ratio of nutrient content relative to how many calories they contain. This is in contrast to energy-dense foods, in which the calories in the foods are way out of proportion to how nutritious they are. Certainly, it can be helpful to focus on a Mediterranean Diet,⁶ or a whole foods, plant-based diet.⁷ The 100 foods on the list of the World’s Healthiest Foods,⁸ were chosen based on being not only nutrient-dense but also because they are familiar, tasty, and affordable. Many are also part of a Mediterranean diet. They are also whole foods; that is, they have not been extensively processed or modified from their natural state. Examples in different categories include (and most of these probably will not surprise you) the following:

- **Vegetables:** asparagus, avocados, beets, bell peppers, broccoli, Brussels sprouts, cabbage, carrots, cauliflower, celery, corn, cucumbers, eggplant, fennel, garlic, green beans, green peas, greens (mustard and collard), kale, leeks, mushrooms (e.g., cremini and shiitake), olives, onions, potatoes, lettuce, sea vegetables, spinach, squash (summer and winter), sweet potatoes, Swiss chard, tomatoes, and turnip greens
- **Fruits:** apples, apricots, bananas, blueberries, cantaloupe, cranberries, figs, grapefruit, grapes, kiwi, lemons, limes, oranges, papaya, pears, pineapple, plums, prunes, raspberries, strawberries, watermelon
- **Seafood:** anchovies, cod, herring, mackerel, salmon, sardines, scallops, shrimp, tuna
- **Nuts and seeds:** almonds, cashews, flaxseeds, peanuts, pumpkin seeds, sesame seeds, sunflower seeds, walnuts
- **Beans and legumes:** black beans, dried peas, garbanzos, kidney beans, lentils, lima beans, navy beans, peanuts, pinto beans, soy sauce, soybeans, tempeh, tofu
- **Poultry and meats:** grass-fed beef and lamb, pasture-raised chicken and turkey
- **Eggs:** pasture raised
- **Dairy:** grass-fed cheese, cow's milk, and yogurt
- **Grains:** barley, brown rice, buckwheat, millet, oats, quinoa, rye, whole wheat
- **Herbs and spices:** basil, black pepper, chili pepper (dried), cilantro, coriander, cinnamon (ground), cloves, cumin, dill, ginger, mustard seeds, oregano, parsley, peppermint, rosemary, sage, thyme, and turmeric

The list is by no means all-inclusive, and these choices are always subjective to some extent, but it gives you some ideas. A simple food and drink suggestion for an Integrative Health plan when you are pressed for time could easily be: “How about eating more of [*insert one of the top 100 foods here*]?” It is also entirely appropriate to use the elements of the Mediterranean diet, or other whole foods, plant-based diets to guide this sort of advice.

5. **Dietitians, nutritionists, and health coaches are powerful allies** in helping patients with their nutritional needs. Refer your patients to dietitians for a more in-depth discussion of dietary changes. Health coaches can help with goal setting and accountability, supporting people as they institute the goals they set for themselves with the help of clinicians.
6. **Avoid oversimplifying.** A common weight loss myth is that there are roughly 3,500 calories in a pound of body fat, and if you decrease caloric intake by 500 calories per day, you can lose one pound weekly. However, this figure is not accurate, and the weight loss equation is much more complicated than this.⁹ Interestingly, the story of how we obtained “3,500” dates back to the work of a scientist named Bozenrad in 1911. He once measured 1 lb of human adipose tissue and found that it contained 87% lipid and 13% water. Another scientist named Wishnofsky expanded on his work in 1958 by using bomb calorimetry to measure 9.5 kcal in each gram of fat. Since there are 454 gm in 1 lb, and human adipose tissue in Bozenrad’s measurement was 87% lipid content, Wishnofsky determined that there are 395 gm of fat in 1 lb of fat tissue. He then rounded his original value of 9.5 kcal/gm to 9 kcal/gm and multiplied this by 395 gm to obtain 3,555 calories in a pound of fat.

Not surprisingly, the methodology behind this experiment is flawed. Ignoring rounding errors, Wishnofsky and Bozenrad analyzed only one sample, and subsequent studies have

shown that the lipid content in a pound of fat varies significantly between people based on demographics and even within the same person at different phases of weight loss.

Two studies, entitled CALERIE 1 and CALERIE 2, found that we typically undergo two phases of metabolism during weight loss, and this affects how many calories we burn.^{10,11} The first phase of weight loss lasts days to weeks and involves exhaustion of glycogen stores, small fat content, and water content. During this phase, lower calorie deficits are needed to achieve weight loss; participants 4 weeks into the study only needed to lose, on average, 2,208 calories per pound. Over time, as our glycogen pool is exhausted, our body begins breaking down protein and more fat content, and this leads to a slower second phase of metabolism. At this time, the body reduces thermogenesis. Study participants at 24 weeks, for example, needed to burn an average of 2,986 kcal/lb.

While it may not be beneficial to explain the details of the CALERIE studies to patients, it is important to avoid oversimplifying weight loss as a basic equation. Weight gain and loss are affected by many other factors, such as hormones, the microbiome, toxins, food sensitivities, stress, sleep, and many other factors. Moreover, it can be helpful to know that early gains from diet and exercise do slow down over time based on shifts in our metabolism, but patients should not be discouraged by this.

- 7. Choose beverages wisely.** Around 21% of our daily caloric intake comes in liquid form.¹² Moreover, 47% of our dietary sugar intake comes from beverages (see Figure 5 below).

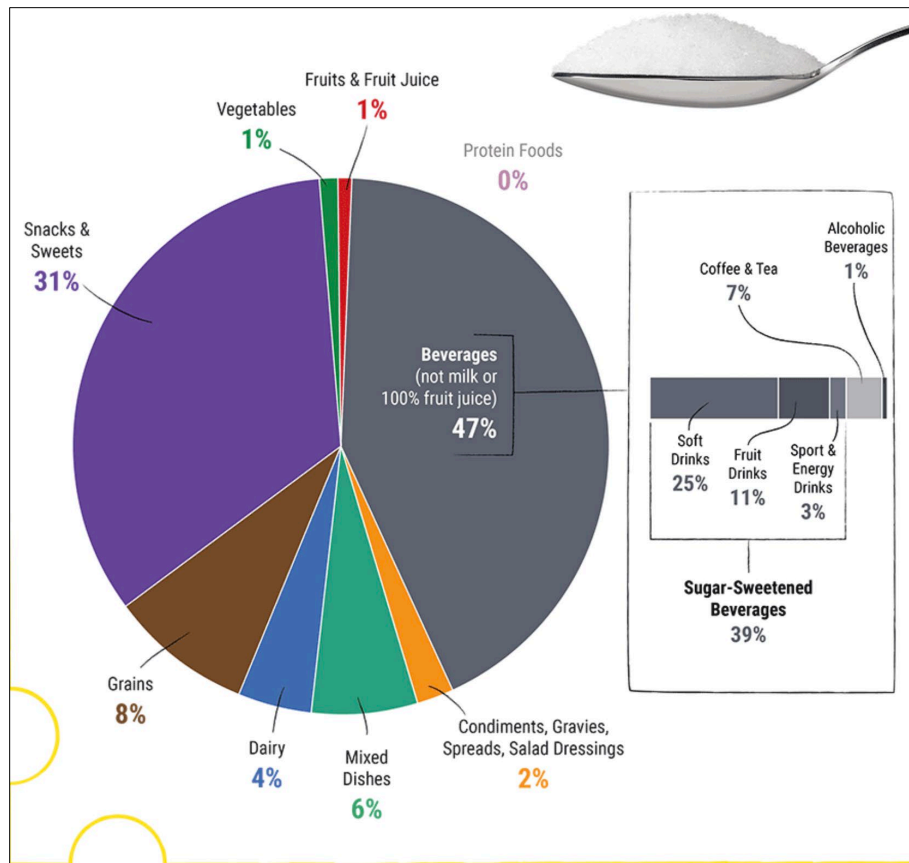


Figure 9: Dietary Intake of Sugar

If you are looking for one piece of advice to give patients who want to improve their nutrition, this may be it: changing what you drink has a powerful effect. Cut out or minimize intake of soda, sweetened tea or coffee, juice, alcohol, energy drinks, smoothies, soda or milk, and replace them with water. If patients miss the carbonated aspect of soda, consider carbonated water or kombucha. If patients miss the flavor of sweetened beverages, recommend naturally flavoring water with herbs and fruits (e.g., pineapple and mint-infused water). Total calorie intake (and proportion of healthy calories) are likely to decrease substantially, and overall health will likely improve.

Alternatively, if patients are unwilling or unable to eliminate beverages other than water, consider creating a beverage plan for them with specific guidelines. See the sample beverage plan created by the Harvard School of Public Health, below.

Putting It All Together: A Sample Beverage Plan

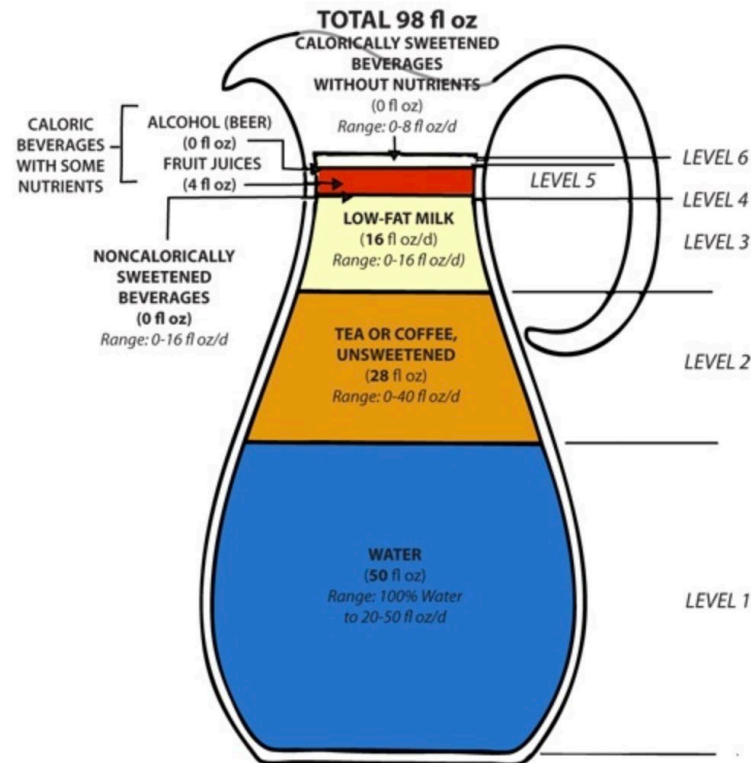


Figure 10: Putting it All Together: A Sample Beverage Plan. Copyright pending.
Source: <https://www.hsph.harvard.edu/nutritionsource/healthy-drinks-full-story/>¹³

For more information on beverages, please refer to the [“What We Drink”](#) Whole Health tool.

- 8. Pay attention to portion sizes.** How much of a food people actually eat may be much more than the serving size listed on the package. Many nutrition experts recommend getting 7-9 servings of fruits and vegetables daily. A serving is not as big as many people assume. For green leafy vegetables, such as spinach, kale, or lettuce, it is generally 1 cup. For other vegetables, a typical serving is ½ cup. A serving of fruit is ½ cup, which would equal a small banana, a slice of melon, or ¼ cup of dried fruit. Fresh fruits and vegetables are best, but if these are not available or affordable, frozen is generally a better option than canned. Look for frozen or canned fruits without added sugars, and those packed in water or their own juice, instead of in syrup.

Keep in mind that it may be easier for people to meet recommendations than they might think. They can search online for photos of various serving sizes, go to [ChooseMyPlate](#) for a visual, and to [Dietary Guidelines for Americans](#) and more information.

9. Share advice from people who have successfully made healthy behavior changes related to nutrition. For example, the national weight control registry recorded the habits of over 10,000 individuals who lost an average of 66 lbs and kept it off for 5.5 years. Here are four common themes from their experiences:

- 78% eat breakfast daily
- 75% weigh themselves at least once a week
- 62% watch less than 10 hours of TV per week
- 90% exercise, on average, about 1 hour per day

Visit the [National Weight Control Registry](#) for updates on research findings. While weight loss is just one aspect of a healthy approach to nutrition (and quality of food is a focus, not just quantity), this does speak to some overall recommendations for a healthy lifestyle.

10. Encourage mindful eating. It is easy to eat without even noticing what we are eating. Most of us have had an experience where the entire bag of chips or bowl of popcorn seems to vanish, and we have no recollection of having eaten it. And, we may not eat because of physical hunger; it helps to notice how much of our eating is influenced by habit, emotion, social surroundings, and so on. We know that stress exposure alters the brain's response to food in ways that predispose us to poor eating habits.¹⁴

Mindful eating involves recognizing when we are stressed and finding ways to counter these effects. As with all mindful awareness activities, it is not about judging so much as simply paying attention. Some suggestions that are widely used by instructors in mindful eating include the following:¹⁵⁻¹⁷

- Focus on what sort of hunger you are experiencing. There is the actual physical state of hunger, but we may also eat because something has visual appeal, or because we like how it smells. We may eat for emotional reasons, because of a craving of some kind, out of habit, or for many other reasons.
- Do not get too caught up in the “right” or “wrong” way you should eat, but simply note your level of awareness around experiencing food.
- Recognize that each of us has unique experiences when it comes to eating. Get to know yours through paying attention, and then you will be more empowered to make choices about what and how you eat.
- When you eat, do not do anything else. Do not watch TV or try to work. Focus on your meal (and perhaps the people with whom you are eating).
- Periodically take time to note how hungry you are. Note how hungry you are before eating and then check in on your hunger as you eat. The goal is to stop eating if you are not experiencing hunger. Ideally, you can stop just before you are full, since it takes at least 20 minutes for your stomach to signal your brain that it is full.
- Set your utensils down between bites.
- Taste every bite. It can help to have a set number of times to chew for each bite you take. Start with 10-15 chews per bite.
- Never eat while standing. Sit. Relax.
- Note if there are other reasons why you are eating. Are you eating to satisfy hunger, or to fulfill an emotional need?

- Consider taking a moment for gratitude or a pause after a meal (for satiation). Take time to focus on all the resources and people who made it possible for you to have what you are eating and drinking.
- Use all your senses to guide your food choices.

For more information on mindful eating, refer to the "[Mindful Eating](#)" Whole Health tool and the "[Mindful Awareness](#)" Whole Health overview. Another excellent resource is the VHA National Center for Health Promotion & Disease Prevention's "[Mindful Eating Handout](#)."



Mindful Awareness Moment: Hunger

Take a moment, right now, to pause and check in with your body.

- On a scale of 1 to 10, with 1 being "starving" and 10 being "overstuffed," how hungry are you right now?
- Where do you feel that hunger (or satiety) in your body? Is it in your stomach area, or somewhere else? What happens to your body when you become really hungry? Does it affect your mood, and if so, how?
- As you make your way through this module, periodically check in and ask, "How hungry am I right now?"

Author(s)

"Nutrition Overview: Part II" was adapted for the University of Wisconsin Integrative Health Program from the original written by Samantha Sharp, MD and updated by Sagar Shaw, MD with additional updates Shari Pollack, MD. (2014, updated 2020). Modified for the UW Integrative Health website in 2020 by Adam Rindfleisch, MD.

This overview was made possible through a collaborative effort between the University of Wisconsin Integrative Health Program, VA Office of Patient Centered Care and Cultural Transformation, and Pacific Institute for Research and Evaluation.

References

1. Kaipainen K, Payne CR, Wansink B. Mindless eating challenge: retention, weight outcomes, and barriers for changes in a public web-based healthy eating and weight loss program. *J Med Internet Res.* 2012;14(6):e168.
2. MacLeod L. Making SMART goals smarter. *Physician executive.* 2012;38(2):68-70, 72.
3. U.S. Department of Agriculture, U.S. Department of Health and Human Services. Dietary guidelines for Americans 2015-2020. U.S. Department of Health and Human Services website. Available at: https://health.gov/dietaryguidelines/2015/resources/2015-2020_Dietary_Guidelines.pdf. Published December 2015. Accessed May 21, 2018.
4. Jensen MD, Ryan DH, Apovian CM, et al. 2013 AHA/ACC/TOS Guideline for the management of overweight and obesity in adults: A report of the American College of Cardiology/American Heart

- Association Task Force on Practice Guidelines and The Obesity Society. *J Am Coll Cardiol*. 2014;63(25 Pt B):2985-3023.
5. Drewnowski A. Defining nutrient density: development and validation of the nutrient rich foods index. *J Am Coll Nutr*. 2009;28(4):421s-426s.
 6. D'Alessandro A, De Pergola G. The mediterranean diet: its definition and evaluation of a priori dietary indexes in primary cardiovascular prevention. *Int J Food Sci Nutr*. 2018;69(6):647-659.
 7. Wright N, Wilson L, Smith M, Duncan B, McHugh P. The BROAD study: A randomised controlled trial using a whole food plant-based diet in the community for obesity, ischaemic heart disease or diabetes. *Nutr Diabetes*. 2017;7(3):e256.
 8. Irwin ML, Smith AW, McTiernan A, et al. Influence of pre-and postdiagnosis physical activity on mortality in breast cancer survivors: the health, eating, activity, and lifestyle study. *J Clin Oncol*. 2008;26(24):3958-3964.
 9. Thomas DM, Gonzalez MC, Pereira AZ, Redman LM, Heymsfield SB. Time to correctly predict the amount of weight loss with dieting. *J Acad Nutr Diet*. 2014;114(6):857-861.
 10. Heymsfield SB, Thomas D, Martin CK, et al. Energy content of weight loss: kinetic features during voluntary caloric restriction. *Metabolism*. 2012;61(7):937-943.
 11. Redman LM, Heilbronn LK, Martin CK, et al. Metabolic and behavioral compensations in response to caloric restriction: implications for the maintenance of weight loss. *PLoS One*. 2009;4(2):e4377.
 12. Nielsen SJ, Popkin BM. Changes in beverage intake between 1977 and 2001. *Am J Prev Med*. 2004;27(3):205-210.
 13. Healthy Beverage Guidelines. 2018; Harvard T.H. Chan School of Public Health website. Available at: <https://www.hsph.harvard.edu/nutritionsource/healthy-drinks-full-story/>. Accessed February 28, 2018.
 14. Tryon MS, Carter CS, Decant R, Laugero KD. Chronic stress exposure may affect the brain's response to high calorie food cues and predispose to obesogenic eating habits. *Physiol Behav*. 2013;120:233-242.
 15. US Department of Veterans affairs. Mindful eating. *Move! Weight Management Program 2020*; Behavior Handouts. B11 version
5.0:https://www.move.va.gov/download/NewHandouts/BehavioralHealth/B11_MindfulEating.pdf. Accessed September 4, 2020.
 16. Altman D, Ahmala D, Baerten C, et al. The principles of mindful eating. The Center for Mindful Eating website. Available at: <http://thecenterformindfuleating.org/Principles-Mindful-Eating>. Accessed August 2, 2016.
 17. Bays JC. *Mindful eating: A guide to rediscovering a healthy and joyful relationship with food*. Boston, MA: Shambhala Publications; 2017.