Cancer Prevention and Survivorship: Ten evidence-based nutrition and lifestyle choices to help prevent cancer or improve outcomes

by Miles Hassell MD

This handout is adapted from Good Food, Great Medicine, 4th edition, a Mediterranean diet and lifestyle guide and a practical, easy-to-read resource for anyone wanting to eat well for cancer prevention or survivorship. Good Food, Great Medicine also offers both the evidence and the tools to help prevent or reverse heart disease and type 2 diabetes, improve cholesterol levels, control high blood pressure, reduce risk of stroke and dementia, and lose weight where appropriate. For more extensive information on the topics we cover here as well as issues like insulin resistance, you’ll find the book a helpful resource. For more details, see last page. We’ve also included recipes on pages 3 and 9–13, and a lifestyle prescription checklist on page 8.

Cancer is a worrisome diagnosis for any of us to face, but there are many things we can do to reduce our risk – and if we do have cancer, we can improve our outcome and reduce side effects of therapy.¹ A healthy diet and physical activity may even lower the risk of cancers with strong genetic associations such as BRCA-associated breast cancer.² As a pleasant side effect, good choices in the areas of food, exercise, sleep, and weight management have benefits far beyond reducing cancer risk: less depression, heart disease and stroke, diabetes, dementia; and better overall well-being. The subject is large and research keeps moving, but evidence continues to favor the deliciously primitive fundamentals of the Mediterranean diet combined with weight management and daily physical activity. In some studies, adopting a comprehensive lifestyle plan is associated with reduced recurrence and a 40–50% reduction in risk of dying for cancer survivors.³ Here are ten Mediterranean-flavored evidence-based cancer-fighting approaches to consider.

Ten steps against cancer

1. Eat Mediterranean
2. Eat good fat, not low-fat
3. Eat your pound of vegetables every day
4. Keep your grains whole
5. Eat beans and legumes most days
6. Have unprocessed fish, poultry, and meat; typically include red meat 2-4 times a week
7. Favor cultured dairy
8. Avoid sweets and sweet drinks
9. Avoid excess weight at the waistline
10. Exercise once or twice daily

1. Eat Mediterranean⁴
- The Mediterranean diet is associated with 40-60% less cancer incidence – as well as marked reductions in type 2 diabetes, heart disease, stroke, depression, and dementia. In breast cancer survivors, the Mediterranean diet was associated with multiple benefits including improvements in body composition, glucose metabolism, and antioxidant status.⁵ For cancer survivors in general, a “prudent diet” that emphasizes vegetables and fish is associated with about a 20% reduction in dying of any cause.⁶
- Eat raw or cooked vegetables and fresh whole fruit with every meal and snack, and include raw nuts and seeds, beans, and whole grains.
- Use extra-virgin olive oil as your kitchen oil.
- Include aged cheese and probiotic-rich plain yogurt and kefir as main sources of dairy.
- Eat more oil-rich fish like salmon and tuna.
- Eat unprocessed meat – beef, lamb, pork, chicken, turkey, wild game, and organ meats like liver – keep it to no more than ⅓ of your plate.

³ Van Blarigan, E. et al. JAMA Oncol 2018;4:783-90
2. 
   Eat good fat, not low-fat
   - The Mediterranean diet is not a low-fat diet! It is characterized by a pattern of good fat, like phenol-rich extra-virgin olive oil (which in several studies has been more beneficial against cancer than other forms of fat), avocados, olives, raw nuts and seeds (like sesame, sunflower, flax, and pumpkin), dairy (like whole-milk yogurt, kefir, and aged cheese), and real eggs.
   - Raw nuts and oilseeds are great sources of healthy fat which are associated with better health outcomes. Walnuts, in particular, have been associated with breast cancer risk reduction. Keep raw nut intake to 1–2 handfuls per day: these are high-calorie foods. Avoid roasted nuts – they don’t have the same degree of benefit and are more likely to be eaten to excess.
   - Up to 4 tablespoons of flaxseed meal daily and 1-2 handfuls of raw green pumpkin seeds daily have some evidence for benefit for breast and prostate cancer.
   - Oil-rich fish like salmon, tuna, and sardines are other sources of good fat.

3. 
   Eat your pound of vegetables
   - Evidence supports at least one pound each day. Aim for a goal of nine servings of vegetables and fruit in meals and snacks daily, with greater emphasis on vegetables than fruit. Whole, not juiced! Fruit juices lead to more diabetes and obesity, and juicing eliminates most phenolics, vitamins, minerals, and micronutrients.
   - Eat as wide a variety as you can. Fresh and raw is good, but cooked is fine and even preferable in some cases. (A well-known example of the benefits of cooking is the tomato, which should be cooked for the optimal absorption of the antioxidant lycopene.)
   - If you have a rocky relationship with vegetables, start with ones you like, raw or cooked. Need more ideas? See recipes on pages 152–153 in Good Food, Great Medicine 4th edition, especially roasted vegetables starting on page 176.
   - Some vegetables and fruits may be more beneficial than others. Aim for dark greens and anything in the cabbage family (like broccoli, Brussels sprouts, cauliflower, cabbage, and bok choy), as well as onions, garlic, berries, and citrus fruit. Mushrooms – particularly shitake and oyster – are especially valuable for their high beta-glucan content (see box next page).

4. 
   Keep your grains whole
   - An unprocessed whole grain is an exquisitely practical coalition of parts – the fibrous bran, rich germ, and starchy endosperm – each with a specific function and benefit. The bran fiber slows the absorption of starch, and both bran and germ supply most of the fiber, vitamins, minerals, healthy oils, and part of the protein. To get the most benefit from this magnificently-designed food, eat it in as intact a form as you can, or at least with as few processing steps between the whole grain product and the original grain. The bigger the particles of grain you eat, the more slowly and steadily they will raise your blood sugar as they are digested.
   - To give yourself the absolute maximum benefit, stick to grains that are either intact (like Dr. Hassell’s Crackpot Cereal on the following page and Barley Salad on page 218) or minimally processed (like Steel-cut Oatmeal on page 215). Replace white bread and pasta with 100% whole grain options, and replace white rice with brown rice or quinoa. An ideal bread would be Breadzilla (page 261), or a heavy sprouted grain bread or European sourdough rye. (For more on grain processing see pages 39–40.)
   - READ INGREDIENT LISTS! Look for the words 100% whole grain, but remember that even whole grain flour is rapidly metabolized because

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7 American Institute for Cancer Research 2016

Adapted from Miles Hassell, DC, The Mediterranean Diet: Good Food, Great Medicine (2019).
of the small particle size of commercially-ground flour. Also, the excessive processing of most commercially produced bread destroys micronutrients, alters fiber characteristics, and makes starches act more like simple sugars. For these reasons we suggest that you keep even 100% whole wheat bread to a minimum.

The importance of grains: beta-glucans
Beta-glucans are a group of polysaccharides that improve immunity and have profound anti-cancer effects, and demonstrate the value of using whole foods to improve health outcomes in general, and cancer in particular; they are present in foods like barley, oats, mushrooms, brewer’s yeast, and seaweed. We include these foods in our anti-cancer plan: oats and barley in Crackpot Cereal (recipe follows), mushrooms in Creamy Mushroom Soup (page 11 of this handout), and brewer’s yeast in the Turbocharged Smoothie (page 12 of this handout). Experiment with ways to use seaweed, like sprinkling flaked seaweed over salads or cooked greens. I do NOT recommend beta-glucan supplements.

Dr. Hassell’s Crackpot Cereal
(easy stovetop overnight method)
1 cup intact whole grains (¼ cup each of oat groats, rye berries, and whole hull-less barley)
2 cups water
½ teaspoon salt
(Makes about 3 cups)
1. Combine grains, water, and salt in a 1½-quart sauce pan. Bring to a boil, then reduce heat and simmer 10 minutes.
2. Remove from heat and cover. Leave on stove top about 8 hours or overnight.
3. Remove the lid and bring back to a boil. Turn off heat. The grains may seem to have too much unabsorbed liquid but this will slowly continue to be absorbed as it sits.
4. Store remaining cereal in the refrigerator. You can even freeze serving-sized portions.

Note:
- If you would like a softer, less chewy texture, use the crockpot method (recipe page 214 of Good Food, Great Medicine, 4th edition).
- Look for the grains in the bulk section of grocery stores, Bob’s Red Mill, or online: if you have trouble finding them, contact our office.
- Serving suggestions: honey or brown sugar, berries, chopped banana, raw nuts such as slivered almonds or walnut pieces, whole milk or half-and-half, and so on.

5. Eat beans and legumes most days
- This includes split peas, lentils, black-eyed peas, chickpeas, beans (like black, pinto, white, red), and fresh beans (like baby lima and green soybeans or edamame, found in many supermarket freezers). Beans are a complete protein when eaten with whole grains.
- As for soy beans, traditional soy foods like edamame, tofu, miso, and tempeh are reasonable to include in a healthy diet, but avoid processed commercial soy products, including soy milks (most of which contain sweetening and other enhancements) and soy protein powders.

Soy is not magic, and it’s not a villain, either.
It’s just another bean, and the weight of evidence suggests it is associated with less lifetime risk of breast cancer. Also, women with breast cancer who eat soy may have better outcomes; the evidence is not conclusive. We have not found a connection between traditional whole soy foods (soybeans, miso, tofu, tempeh) and increased cancer or breast cancer. Although there’s concern about potential harm from phytoestrogens, it’s important to know that in humans these plant “estrogens” can act as anti-estrogens, blocking the estrogen receptors. As mentioned above, we recommend avoiding highly processed commercial soy products like protein powder, meat substitutes, and soy milk.

6. Have unprocessed fish, poultry, and meat; typically include red meat 2–4 times a week
- Available research suggests that up to 24 ounces (uncooked weight) of unprocessed red meat (such as beef, lamb, or pork) per week10,11 is part of a healthy diet.
- Processed meat – ham, lunch meats, bacon, cured sausages, and so on – should be avoided.
- Eat unprocessed meat, which includes beef, lamb, pork, chicken, turkey, wild game, and organ meats such as liver – but remember to

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8 Vetvicka, V. et al. Molecules 2019;24:1251
10 American Institute for Cancer Research 2016
11 Van Blarigan, E. et al. JAMA Oncol 2018;4:783-90
keep it to about ⅓ of your plate. This leaves plenty of room for cancer-fighting vegetables!
- Grass-fed meat is probably superior; wild game like venison and elk may be even better.
- Remember to include oil-rich fish like salmon, tuna, and sardines at least a few times a week.

7. **Favor cultured dairy**
- Dairy foods in their generally unprocessed form can be part of a healthy diet. The greatest historical evidence for benefit is for cultured dairy foods such as aged cheese, plain yogurt and plain kefir (a yogurt-like cultured milk drink) rather than milk itself.
- Two or three servings per day is probably a reasonable maximum, and should be enough to supply your calcium needs without a calcium supplement.
- I can’t make a strong case for either low fat or whole fat dairy. However, a strong case can be made against sugar delivery systems disguised as dairy foods: for example, eight ounces of non-fat yogurt can include 6-8 teaspoons of added sugar! (This is because even more sweeteners have been added to make up for the missing fat.) As usual, always read ingredient labels.
- Probiotic-rich **plain unsweetened** yogurt and kefir contain live microorganisms that provide a health benefit. (Sweeten them yourself with fresh fruit and/or honey.) We like the locally produced Nancy’s brand the best. Multiple mechanisms are involved that may be useful for cancer risk reduction, immunity, insulin resistance, diarrhea, lower cholesterol, inflammatory bowel disease, heart disease, and peptic ulcers.

8. **Avoid sweets and sweet drinks; but drink coffee, tea, and green tea**
- Higher intake of concentrated sugars and starches appear to be associated with more cancer, worse cancer outcomes, diabetes, obesity, heart disease, and dementia. Some of the risk is likely due to higher insulin levels with increased sugar and starch load in the diet.12
- **Reduce your sweet tooth.** All sweeteners, natural and artificial, maintain our sweet tooth. Switching one sugar for another won’t improve our health, but reducing total sugar intake will.
- **Sweet drinks include fruit juices** (even natural unsweetened) and **diet sodas.** Calorie-free, artificially sweetened foods and drinks appear to contribute as much to obesity as the stuff with real sugar. Switch to chilled sparkling water, tea, or coffee. If you need a sweetener, use raw honey and use as little as you can.
- **Read the ingredient label!** Most meal replacement drinks and “protein bars” are very high in sugars/carbohydrates. If a food is designed for convenience, it is unlikely to be healthy. Grab an apple and a handful of raw almonds instead. **Now that’s convenience!** (See page 12 of this handout for our suggestion for a whole food meal replacement alternative.)
- **Agave nectar** is not a natural sweetener! In its typical form it is just another highly refined sugar chemically similar to high fructose corn syrup.

**Natural sweeteners are better**
- **Fresh fruit** is the best sweetener but is generally not sweet enough to be an efficient sweetening agent. Canned and dried fruit are higher-intensity sweeteners but both need to be carefully frisked for added sugar and chemicals. Check ingredients: even simple dried fruit often has added sugar. Remember that dried fruit is a concentrated source of sugar that should be eaten on a very limited basis, especially for anyone who is struggling with excess weight.
- **Honey** in its raw form is a truly unrefined sweetener. In fact, if you don’t mind herding bees, you can harvest your own honey and spin it straight from the comb. Also, even the mildest clover honey is flavorful enough to reduce chances of it being eaten in the same quantities as sugar.
- **Molasses** and **pure maple syrup** both have nutritional value, but should be used only as replacements for the more refined sweeteners. Like honey, they have significant flavors that tend to keep us from using too much at a time.

**Meal replacement drinks**
For patients with cancer who are struggling to get enough calories because of reduced appetite or nausea, or post-surgical patients, or elderly patients who have difficulty eating for various reasons, meal replacement drinks can be a valuable addition to the diet. However, good nutrition in liquid form is hard to find in a commercial product, and the evidence argues that a heavily processed formula high in simple sugars and excessive pro-inflammatory omega-6 fatty acids is more likely to suppress a good immune response.

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The best nutrition is from whole food sources, with their huge spectrum of micronutrients including phenols and other anti-oxidants, nucleic acids, vitamins, minerals, fibers, healthy fats, proteins – and perhaps, just as importantly, those unknown nutrients that are present only in whole foods, and not in their semi-synthetic or highly refined counterparts.

So, rather than buying meal replacement drinks, consider switching to simple home-made smoothies instead. By making your own yogurt and whole fruit smoothies you will get far less sugar, healthier fat, more whole food nutrients, and valuable probiotics for your immune system. Plus, you’ll save money.

There is an added bonus with smoothies in that anything you want to emphasize in the diet can be slipped in, including high-quality calories like extra-virgin olive oil or added protein like an egg or soft tofu. Smoothies can be made in large batches, put in single-serving jars, and stored in the freezer. (More ideas and a recipe are on page 12 of this handout.)

9. Avoid excess weight at the waistline

- Excess weight increases your risk of cancer, cancer reoccurrence, dementia, diabetes, heart disease, and stroke. Aim for a waist less than 35 inches for women and less than 40 inches for men. (These guidelines may be too generous for slightly-built people.)

- The weight you carry around your middle is more hazardous for heart disease, diabetes, and some cancers than weight elsewhere on your body. If you are overweight, general weight loss is not as important as being fit and losing inches around your waist.

- If weight is not coming off, minimize or eliminate potatoes, corn, rice, dried fruit, grain products made with flour and processed cereals, even if whole grain. (Even true whole grain bread may be a problem if you are not losing a pound a week.) A better source of whole grains, especially when weight management is an issue, is to use unprocessed grains such as the “Crackpot Cereal” combination on page 3 of this handout.

- If you are overweight, eating less may be the single most important piece of dietary advice. Eat smaller portions, and eat slowly, savoring your food. Try to stop eating before you’re full. Smaller plates are often helpful. Constantly rethink your ideas of portions. Too much food, even very good food, is still too much. If you are still hungry – eat some more vegetables. Eat whole fruit for dessert.

Most people who eat a low-fat diet also eat more refined carbohydrates. When studied head-to-head against Mediterranean-style diets higher in fat, low-fat diets usually have worse outcomes for weight loss, blood sugar and cholesterol levels. Also, low-fat diets have not been associated with lower cancer rates in prospective trials.

10. Exercise once or twice daily

For someone going through cancer therapy, exercise can be challenging, yet moderate activity can lessen fatigue and improve energy levels. But what do you do when the last thing you can imagine doing is exercise? Start with tiny doses like a 5-minute walk, or a few leg lifts, or using an exercise band – or simply being mindful to keep as active as your energy level allows. Some people are even able to maintain their regular exercise routines – everyone is different. (For more exercise ideas see pages 70–74 in Good Food, Great Medicine.)

- Daily exercise is associated with less risk of getting cancer, even approaching 50% less – as well as much better survival in those with cancer, about 30% lower risk of cancer-specific death.

- Exercise during chemotherapy reduces fatigue and other symptoms associated with treatment.

- Brisk walking is one of the best-studied exercises – aim for 30–60 minutes daily. If you are doing higher intensity exercise, such as skipping rope, then the duration of exercise can be much shorter. Anything is better than nothing: If you can only manage 1 minute twice a day, that is a great starting point. We suspect that multiple shorter “doses” of exercise daily is better than one longer work-out, and that doing both upper body and lower body exercise is preferable.

- If you tend to be sedentary, try to make a point of standing up and moving around frequently. Take the stairs whenever you can! Also, avoid TV and any other unnecessary screen time.

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Other thoughts

Drink small amounts of alcohol: Drinking alcohol is a balance between risk (particularly breast cancer) and benefit (reduced heart disease): keep to 1 drink or less per day. Drinking small amounts of alcohol appears to be beneficial; it probably lowers total mortality and does not increase risk of breast cancer recurrence. (A drink is 5 ounces of wine, 12 ounces of beer, or 1½ ounces of spirits.)

Minimize nutritional supplements: These should be used rarely, with a specific purpose in mind and reasonable evidence for benefit. For example, in some carefully done studies beta carotene, vitamin E, and calcium were associated with worse health outcomes. ConsumerLab.com is a fairly inexpensive subscription website written for the consumer, with a focus on evaluating supplement data.

Fish oil in the ViTAL study was associated with lower rates of cancer; eating oil-rich fish 2-3 times per week has stronger evidence for benefit.

Vitamin D: The jury is still out, but it’s worth talking about. Our goal is typically 1,000-2,000 IU of supplemental vitamin D3 (cholecalciferol) daily to achieve adequate blood levels of 30-60 ng/ml. Sardines and salmon are good sources of vitamin D. So is sunlight: exposing arms and legs (and whatever else you feel like baring) without sunscreen 10-20 minutes 3 times per week in sunny months may be enough for many people. Don’t sunburn!

Eating well during cancer treatment

When dealing with reduced appetite, nausea, chemo brain, and overwhelming fatigue, it’s easy to turn to comforting and convenient refined carbohydrates. Even if you can only eat very little, however, make sure what you do eat is high-quality whole food: empty calories such as sugar and refined grains should be avoided. Include plenty of protein and good fat to help support your immune system and maintain muscle mass. A hot dish that combines high-quality protein, good fat, vegetables, whole grains, and minimal effort is Green Eggs and Quinoa (see page 10 of this handout), which can be stored in serving-size portions for when you are ready to eat. Our patients who eat whole foods and stay active throughout treatment report fewer side effects (and bounce back sooner) than others who don’t use lifestyle medicine to the same degree.

Avoid processed food to lower cancer risk: Why making your food at home is one of your most important choices

Increased consumption of commercially-processed food appears to increase cancer risk. The NutriNet-Sante study followed the dietary habits of 104,980 adults, average age 42. After 8 years, the study found that a 10% increase in the consumption of ultra-processed foods was associated with a 12% increase in risk of cancers overall, and breast cancer in particular. “Ultra-processed food” included mass produced bread, sweet or savory packaged snacks, commercial candy and desserts, sodas and sweetened drinks, commercial meat balls, chicken and fish nuggets, instant noodles and soups, frozen or shelf-stable ready-to-eat meals, protein powders, and other food products described in the study as made “mostly or entirely from sugar, oils and fats, and other substances not commonly used in culinary preparations such as hydrogenated oils, modified starches, and protein isolates.”

Read ingredient lists, not Nutrition Facts

It is safe to say that most of the preceding advice is wasted if you don’t read ingredient lists, which are far more important than the so-called “nutrition facts.” The ingredient list tells us exactly what is in the product, whereas the Nutrition Facts panel can distract us with “facts” that don’t actually offer useful information about the food. One example is the calorie count; to figure out how many calories we need and what our diet is actually supplying is not a simple calculation. Serving size and calorie counts tend to be inaccurate, and even if the calories are known, they are not necessarily fully absorbed. For instance, whole nuts typically have 15–20% of their calories unabsorbed due to particle size, but refined carbohydrates – like bagels, sweet drinks, and alcohol – are very efficiently absorbed. Thus the caloric content of whole foods may be off by as much as 15%, making direct comparisons unreliable. To add to the confusion, Nutrition Facts speculate on “daily value” percentages. What do we do with information like “8% total carbohydrate”? Our bodies care far more about the kind of carbohydrate – is it refined or is it naturally occurring in a whole food? The ingredient list will tell us by identifying the source.

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13 Van Blarigan, E. et al. JAMA Oncol 2018;4:783-90
17 Fiolet, T. et al. BMJ 2018;360:k322

Miles Hassell MD © 2019
Six foods to avoid

1. **Avoid refined grains.** This includes white rice and white flour and anything made with them, most breads, baked goods, cookies, crackers, pasta, ready-to-eat breakfast cereal, commercial granola, and items like energy bars.

2. **Avoid refined sugar and sweet drinks.** The problem of sugar can hardly be overemphasized. Concentrated sugars (including agave nectar, corn syrup, rice syrup, and so on) and sweet drinks are nutritionally bankrupt calories and major contributors to weight gain.

3. **Avoid artificial sweeteners.** These appear to carry similar risk as other sweeteners for obesity and insulin resistance, which in turn increase cancer risk. They also maintain your sweet tooth, making it harder to reduce sweets.

4. **Avoid highly-processed fats and oils.** This includes hydrogenated and partially-hydrogenated oils found in most margarine, vegetable shortening, commercially-fried foods, and many packaged foods. Also included are highly-processed vegetable oils like safflower, corn, peanut, soy, and canola. Most vegetable oils, unlike olive oil, are inedible when first extracted, so they are highly refined and deodorized. This even applies to “cold pressed” and “expeller pressed” oils. These oils also tend to be high in omega-6 fatty acids, which are associated with increased risk of breast cancer.

5. **Avoid preserved (processed) meats** such as deli meats, bacon, sausages, hot dogs, and ham, which seem to be associated with higher rates of cancer, as well as heart disease and diabetes.

6. **Avoid fake foods.** This includes products like commercial meat and egg substitutes; commercial non-dairy milk, creamer, and cheeses; protein isolates, hydrolyzed plant protein, textured vegetable protein (TVP), most protein powder; and all artificial sweeteners.

**Note to the non-cook:** The importance of cooking from scratch using unprocessed ingredients appears to be critical for optimal health and is easier than it seems. Start with some simple recipes like the ones included in this handout. You’ll find more than 200 easy-to-follow recipes in *Good Food, Great Medicine* to help you get started, or call our office for more ideas. Your kitchen is a powerful part of your care plan. Please – never, never, never give up!

Need alternatives to refined carbs?

Try these suggestions from *Good Food, Great Medicine* – 4th edition.

**Ready-to-eat breakfast cereals?**
- We talk about these on page 2 of this handout. Try replacing with the *Crackpot Cereal* recipe on page 3 of this handout, or homemade muesli on page 11 of this handout. Check out other breakfast options on pages 134–138.

**White rice?**
- Try substituting brown rice. See pages 113 and 222–226 for tips and recipes. Better yet, substitute protein-rich quinoa (see page 10 of this handout).

**Pre-sweetened yogurt?**
- Buy plain yogurt and sweeten with honey and fresh fruit. (See pages 49 and 118.) All yogurts were not created equal – look for yogurt in which the only ingredients are milk, acidophilus, and other live cultures. Read ingredient lists to avoid added flavors and sweetening (even if just vanilla and honey). Also avoid additives like refined starches (generally modified cornstarch) and gelatin to keep the yogurt from naturally separating.

**Bread?**
- The coarser the grain, the better! (See pages 39–40 and 99 for more details.) However, if you need to watch your weight, avoid bread and pasta as much as possible – even whole grain versions. Or make your own bread: *Breadzilla* (page 261) is a heavy European-style loaf that is metabolized so slowly that blood sugar is barely affected. See pages 256–269 for tips and other bread recipes.

**The bottom line**

A whole food Mediterranean diet and daily exercise are associated with 40–60% less cancer and improved cancer outcomes – and marked reductions in type 2 diabetes, heart disease, stroke, and dementia. In my practice, patients who take these steps appear to have reduced side effects from conventional cancer therapies. Good diet and lifestyle choices do not substitute for conventional cancer therapies, but they are wise additions to any treatment your oncologist recommends.
For more food and lifestyle suggestions as well as topics such as ketogenic diets, see pages 18-21 of Good Food, Great Medicine, 4th edition. The following checklist is excerpted from these pages.

Your anti-cancer prescription checklist

- **Eat a whole food Mediterranean diet** (page 9), which is associated with fewer side effects, less fatigue, and improved survival. We recommend avoiding vegan or vegetarian diets (pages 33-34).
- **Prepare your own meals and snacks** as much as possible from whole foods. The association of processed food with cancer and other diseases is sobering (pages 19 and 59–61).
- **Eat protein and good fat during treatment to help boost immunity and maintain muscle mass.** For example, a homemade Turbocharged Smoothie (page 12 of this handout) or easy egg and vegetable-based dishes like Green Eggs and Quinoa or Spinach Timbale (pages 9–10 of this handout), all of which can be made ahead and frozen in single portions.
- **Eat good fat, not low fat** (pages 41–43). Extra-virgin olive oil, oil-rich fish, and oil seeds like pumpkin, sunflower, and flaxseeds may have significant benefit.
- **Eat a pound of vegetables daily** (pages 36–37). Certain vegetables may be more beneficial, such as anything from the cabbage family (broccoli, kale, Brussels sprouts, etc.). Berries, citrus fruit, and mushrooms may also have special benefit.
- **Reduce added sugars and other rapidly-metabolized carbohydrates**, like sweet drinks, white rice, white flour and anything made with them (pages 62–66). This step targets cancer-relevant pathways including insulin resistance, insulin levels, and waistline.
- **Eat beans and intact or minimally processed whole grains daily.** (See pages 2–3 of this handout.)
- **Eat raw nuts daily** (page 42): One handful is enough. Nuts are associated with reduced all-cause mortality, including significantly lower mortality in colon cancer patients. Raw walnuts may have particular value for breast and prostate cancer, although the evidence is soft.
- **Eat probiotic foods daily** (page 49). Unsweetened whole milk yogurt or kefir as well as other traditionally fermented foods like sauerkraut and kimchi are important to include for gut health.
- **Include caffeine daily**, like coffee, tea, and dark chocolate (theobromine). They, especially coffee, are associated with less cancer (page 56) and enhanced liver function. They improve mood, too!
- **Schedule daily physical activity** (pages 70–74). Vigorous exercise appears to be more beneficial; get a bit breathless and sweaty and try to include both upper and lower body exercise every day. This is a potent survival agent associated with a 29% reduction in cancer related deaths, and a 39% reduction in all-cause deaths.¹⁹
- **Maintain a healthy waistline** (pages 78–79): excess weight around the middle is one of the most powerful contributors to cancer risk and reduced survival. In young women with breast cancer, obesity almost doubles the risk of dying from the cancer.
- **Schedule adequate sleep** (pages 75–76). Getting enough sleep (while minimizing sleep aids) may improve cancer survival based on what is known about how sleep impacts immunity and inflammation.
- **Drink a glass of wine, up to 5 ounces daily, with a meal** (see page 58 for more details). Moderate alcohol (up to 7 drinks per week for men, 5 for women) is associated with better overall survival and breast cancer-specific survival.²⁰
- **For breast and prostate cancer**, include 1–2 tablespoons of ground flaxseeds daily for prevention and 4 tablespoons daily for survivorship. It can be mixed with wholegrain cereal (pages 3 and 11 of this handout), added to muffins (page 271), blended with the Turbocharged Smoothie (page 12 of this handout), and so on.
- **Use caution with nutritional supplements**, which have a real but very limited role. Real food is your best supplement! (An example of therapeutic food is brewer’s yeast – see page 12 of this handout.) For tips on evaluating claims and applying vigorous critical thinking, see Nutritional Supplements on page 69.


A whole food Mediterranean diet

Here is a brief review of what we call a whole food Mediterranean diet. This whole food version combines conventional Mediterranean diet concepts with minimally processed foods that have their nutrients largely intact.

- **Eat vegetables with every meal or snack.**
  Also include whole fruit, whole grains, beans and legumes, raw nuts, and seeds. The greatest benefit appears to be associated with vegetable intake. Try to make vegetables, raw and/or cooked, part of every meal, and fresh fruit for dessert.

- **Eat whole grains and beans daily.**
  Although the contemporary Mediterranean diet includes white rice, white bread, or white pasta, the whole food version replaces them with their 100% whole grain counterparts. Beans and legumes can be home-cooked or canned -- but if canned, read ingredient lists!

- **Use extra-virgin olive oil as main fat.**
  We suggest replacing most other oils and fats with extra-virgin olive oil, including for all cooking purposes. (See page 41 of Good Food, Great Medicine.) Extra-virgin olive oil is also associated with less cancer. Second best is virgin coconut oil and modest amounts of butter.

- **Eat plenty of fish.**
  Oil-rich fish are especially high in omega-3 fatty acids and other valuable nutrients -- salmon, sardines, and light tuna, for example. Keep portions of other animal proteins smallish, taking up no more than ⅓ of your total plate area. Think of meat as a condiment rather than the main part of the meal. Save your appetite for the most important food -- vegetables and beans!

- **Eat cultured dairy.**
  This includes plain yogurt and kefir (a yogurt-like drink) and cheese. Yogurt and kefir are also a good source of probiotics (microorganisms that benefit the gut), but remember to buy them unsweetened and sweeten them yourself with fruit or raw honey. Most authorities recommend low-fat dairy foods, but we are not aware of good data showing that low-fat dairy is preferable to full-fat dairy.

- **Drink a small amount of wine, generally with meals.** (See page 8 of this handout.)

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Spinach Timbale (Custard)

This recipe can be found on page 197 of Good Food, Great Medicine, 4th edition. This timbale (pronounced TIM-bal) is so simply constructed and seasoned that anyone can make it, even if they think they can’t cook. It’s a good breakfast, lunch, dinner, or snack, and especially good served with fresh tomato chunks tossed in olive oil, salt, pepper, and balsamic vinegar. Even one who normally refuses spinach would probably enjoy this.

*(Serves about 4 – 6)*

5 eggs
1 cup half-and-half or whole milk
1 teaspoon salt
½ teaspoon freshly ground pepper
16 ounces frozen chopped spinach (see note)
-or- fresh spinach (see note)

**Preheat oven to 300 degrees. Melt or spread a tablespoon of butter in a ½ quart baking dish**

1. Whisk eggs in a 2-quart mixing bowl. Add half-and-half, seasoning, and thawed spinach (you will have about 2½ cups: no draining needed). Mix very well.

2. Scrape into buttered dish and bake 45 minutes, or until no longer wet in center.

**Note:**

- **Thawing frozen chopped spinach:** thaw 16 ounces of frozen spinach in the microwave in an uncovered bowl for about 3 minutes. For the freshest flavor you only want it thawed, not hot. The easiest way is to place in the refrigerator for 24 hours (in a dish to catch any liquid). **Stovetop method:** Empty frozen spinach into a skillet with a lid over low heat, covered, for about 20 minutes or just until thawed.

- **Microwaving fresh spinach:** Fresh spinach is my preference for this recipe; the following microwave method cooks it just enough. A 16-ounce box of fresh baby spinach is about 16 packed cups: cram half the spinach into an 8-cup Pyrex measuring jug and microwave (uncovered) for 2½ minutes or until limp and reduced by about half. Tip the spinach out onto a chopping board and chop it at roughly ½-inch intervals in both directions. Repeat with the remaining spinach. You’ll have about 3 cups of chopped wilted-but-not-cooked spinach.

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Green Eggs and Quinoa
(or brown rice)

This recipe can be found on page 253 of Good Food, Great Medicine, 4th edition. This is an easy one-dish meal rich in protein, good fat, fiber, and vegetables. It allows lots of flexibility in terms of ingredients: chopped cooked broccoli instead of (or as well as) spinach, for example, or sliced green onions instead of regular onions, or other kinds of cheese. You can use any kind of leftover brown rice, cooked millet (page 220), or whole grain pasta. Leftovers are delicious heated for lunch the next day. Using this recipe as a basic model, and given that you probably have eggs, milk, and cheese on hand, you may want to put this on the Ten Most Useful Recipes list.

(Serves 4 as a main dish, more as a side dish)
1 bag (16 ounces) frozen chopped spinach—or 16 ounces fresh spinach, roughly chopped
2–4 tablespoons extra-virgin olive oil
1 medium-large onion in ¼-inch dice (3 cups)
Optional: ½ pound of fresh sausage (see note)
6 eggs
1½ cups whole milk
1 teaspoon salt
1 teaspoon freshly ground black pepper
6 ounces sharp cheddar cheese, grated (2 cups)
½ cup freshly grated Parmesan or crumbled feta cheese
1½ cups cooked quinoa (recipe this page) or millet (page 220) or brown rice (page 222)

Preheat oven to 300 degrees. Oil a 9x13-inch (3 quart) Pyrex baking dish or similar.

1. To thaw frozen spinach or prepare fresh spinach, see previous page. No need to drain the spinach – it’s ready to add to the egg mixture in step 4.
2. Heat oil in a 10-inch skillet over medium high heat and sauté onion about 10 minutes or until very tender. Remove from heat and set aside.
3. Whisk eggs in a mixing bowl (like an 8-cup Pyrex jug). Add milk, seasoning, cheeses, cooked quinoa, spinach, and sautéed onion, and mix very well.
4. Scrape into oiled baking dish and bake uncovered for about 60 minutes or until it is no longer wet in the center.

Note:
- You can combine the uncooked mixture hours or even a day ahead: bring to room temperature and stir well before transferring to cooking dish.

- Adding ½ pound of fresh chicken or pork sausage (page 68) to the sautéed onions in Step 2 will kick up the flavor, the protein, and the crowd-pleasing qualities. Just push the onions to the side and sauté sausage until browned and well crumbled.
- Suggestions for preparing other kinds of greens are on page 128.
- Although confident enough to perform solo as a main act, this pairs nicely with Marinated Carrot Matchsticks (page 202), or a substantial salad like Warm Lentil Salad (page 213). Once you put Green Eggs and Quinoa in the oven you’re free to work on a side dish.

Quinoa
Quinoa (KEEN-wah) is a South American grain that looks like ivory-colored millet. Actually, it is not technically a grain, but is generally used like one. It is particularly high in protein and is a good alternative to brown rice, especially since it cooks in about half the time. Quinoa has a natural coating that can supposedly give it a bitter taste, so recipes often suggest rinsing it before cooking – although most quinoa is apparently pre-washed. However, I never rinse quinoa and have never noticed any bitterness. If you choose to rinse, make sure the sieve is fine enough; quinoa can sneak through some pretty small holes. Also, measure quinoa before you rinse it – it swells quickly.

(Makes about 4 cups)
1½ cup quinoa
2¼ cups water
½ teaspoon salt

1. Bring water and salt to a boil in a 2-quart pot (one that has a lid) and add quinoa. Bring back to a boil, then reduce to a simmer, cover, and cook for 20 minutes. The water should be absorbed and quinoa should be tender.
2. Remove quinoa from the heat. Fluff grains by tossing with a fork, reaching down to the bottom of the pot. Cover again and set aside for 5–10 minutes.

Note:
- Other favorite quinoa recipes are Quinoa Salad (page 219) and Southwest Chicken Salad (page 232.) Freeze leftover quinoa if not using within a week.
**Vegetable soups**
This is an easy way to bump up vegetable intake. Not a meal-in-a-pot type soup, but a simple-themed soup that features one or two vegetables and is finished off with cream or milk. This kind of soup has at least three advantages: it’s simple, it’s quick, and creaminess can cover a multitude of sins. These soups alone are worth the price of an immersion blender to purée the hot soup directly in the pot.

**Creamy Mushroom Soup**
This recipe can be found on page 189 of *Good Food, Great Medicine, 4th* edition. This is a personal favorite, and a good way to use mushrooms that aren’t young enough to slice into a salad.

*(Makes about 3–4 cups)*
4 tablespoons (½ stick) butter  
1 medium-large onion, chopped (3–4 cups)  
1 teaspoon freshly crushed garlic  
1 teaspoon salt  
½ teaspoon freshly ground pepper  
½–1 pound mushrooms, (3–6 cups chopped)  
2 cups water  
1 cup half-and-half or ½ cup cream

1. Heat butter in a 3-quart soup pot over medium high heat and add diced onion, garlic, salt, and pepper. Sauté for about 5 minutes.
2. Add chopped mushrooms (you can pulse them in the food processor) and water. Bring to a boil, then reduce heat to medium low and simmer 30 minutes or until onions are very soft.
3. Add half-and-half or cream and purée using an immersion blender or food processor. If using an immersion blender, purée directly in pot for about one minute, or until smooth. If using a blender or food processor, let soup cool slightly, and then purée in two batches. (If you use an immersion blender, you’ll find that the mushrooms love to play tag with the blade.)
4. Bring back to a simmer and serve. If you don’t eat it all up, it will keep in the refrigerator for up to a week.

**Muesli**
This recipe can be found on page 217 of *Good Food, Great Medicine, 4th* edition. Muesli is a rolled-oat-based cereal that doesn’t need cooking and is usually served with milk and fresh or dried fruit. (Fresh grated apple is a traditional Swiss addition.) Muesli works well as a cooked cereal, too, and is especially delicious soaked overnight in the juice from an orange. (Eat the pulp!)

For this recipe you will only need about 5 minutes, a large bowl, and a measuring cup. It takes longer to choose a cereal from the cereal aisle in the supermarket! But if you really are not able to make your own muesli using this simple recipe, buy it ready-made from a reputable local source (like Bob’s Red Mill in Milwaukie, Oregon). The list of ingredients that follows is more suggestion than recipe. The point is to emphasize variety, fiber, and good fat while still enjoying breakfast.

*(Makes about 8–10 cups)*
5 cups old-fashioned rolled oats  
⅓ cup toasted buckwheat (kasha)  
½ cup raw sesame seeds  
1 cup raw slivered or flaked almonds  
1 cup shredded unsweetened coconut  
1 cup raw sunflower seeds  
1 cup raw pumpkin seeds  
½ cup flaxseeds, freshly ground or whole  
1 cup raisins/currants/chopped dried fruit

1. Combine everything in a big mixing bowl. Store muesli in a sealed container in a cool place. Serve it as you would any cold breakfast cereal, or cook it like oatmeal.

**Note:**
› The addition of the toasted buckwheat (page 221) gives a surprisingly benign crunch and flavor that we love.
Turbocharged Smoothie
(a whole food meal replacement)

This recipe can be found on page 167 of Good Food, Great Medicine, 4th edition. If you need a meal replacement drink, your own yogurt-based whole food smoothie will give you less sugar, a better fat, far more nutrients, plus probiotics to encourage a vigorous immune system. The advantage of a smoothie is that just about anything you want to emphasize in the diet can be slipped in, including high-quality calories like extra-virgin olive oil or high-quality protein like an egg. A turbo smoothie can be custom-built for the particular need—see suggestions in box.

(Makes about 2¾ cups)

½–1 apple, cored and chopped, not peeled
1 ripe banana
½ cup frozen blueberries
1 cup plain whole milk yogurt/kefir
1 egg, raw (see box)
1 cup fresh spinach, lightly packed
1–3 teaspoons brewer’s yeast (see box)
(If necessary, 1–3 teaspoons honey: see note)

Regular blender method:
1. Combine ingredients in any order in the blender and blend about 20 seconds at medium speed and about 20 seconds at high speed, or until smooth.

Immersion blender method:
2. Combine all ingredients (in the order listed) in a 4-cup container. Blend at medium–high speed, but cautiously at first, keeping the blender head under the surface of the yogurt while poking the fruit gently with the blender until the mixture is broken down. Keep a firm hold on the container: the action of the blender is powerful. Within about 60 seconds the smoothie will be ready.

Note:
▶ The bits of apple skin are inoffensive and a valuable part of the fruit, so think before you peel.
▶ Only add honey if you need to in order to enjoy the smoothie. Few of us can afford extra calories, and you may be surprised at how easy it is to adjust your sweet-meter. A ripe banana is a very effective sweetener. Some find that adding vanilla extract helps reduce the need for sweetening.

Nutritional fortification ideas
Remember, smoothies are not milkshakes! Think of them as liquid meals instead, with all the benefits of whole foods and probiotics.

Protein: Yogurt and kefir already supply a lot of protein but a raw or soft-boiled egg (page 171) can be added for more protein, vitamins, and good fat. Under home conditions, especially, the risk of salmonella from a raw egg is very small. (Pasteurized eggs are available for the extra cautious.) Some like to add soft tofu or whey powder.

Brewer’s yeast: This is a great source of cancer-fighting beta-glucans (see page 3 of this handout) as well as protein, nucleic acids, B vitamins, selenium and chromium. Start with a teaspoon and see what you think of the flavor. We like the flavor, but it may take some getting used to. (It’s not live yeast, and can’t multiply in your body or cause yeast infections.) Choose brewer’s yeast (we like Lewis Labs or Solgar) rather than the milder flavored “nutritional yeast,” which is often fortified with synthetic nutrients.

Good fats: A tablespoon of extra-virgin olive oil or a chunk of avocado can be added to any smoothie without being detected, and a tablespoon of ground flaxseed will add more fiber, lignans, and omega-3 fatty acids. You can even add a teaspoon of cod liver oil for a hit of vitamin D—Carlson’s lemon flavored is almost tasteless except for a hint of lemon.

Whole grain: To add cooked grains like brown rice (page 222) or oatmeal (page 216) to a smoothie, combine only the yogurt and ½ cup of grain first, and blend at a high speed for 20 seconds. (The grain breaks down more thoroughly this way, and is less obvious in the finished smoothie.)

Vegetables: Either raw or cooked vegetables can be added to increase the fiber and overall vitamin and mineral content. Start with something mild, like ¼ – ½ cup of cooked greens, or a small handful of fresh spinach, or some chopped fresh tomato. (Raw vegetables like carrots need a heavy-duty blender such as a VitaMix or Breville for a smooth texture.)
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Dr. Hassell established the Integrative Medicine Program at Providence Cancer Center in Portland and he is a clinical instructor in the training of Internal Medicine residents, twice named Outstanding Teacher of the Year, and is Associate Medical Director and Professor at Pacific University School of Physician Assistant Studies. He also lectures widely to physician groups about the appropriate integration of lifestyle and conventional medicine, and is often interviewed on health issues by local television and radio. He is the co-author of Good Food, Great Medicine, an evidence-based guide to using a whole food Mediterranean diet in the pursuit of optimal health.

In his private practice Dr. Hassell encourages the vigorous use of evidence-based food and lifestyle choices and has been chosen as one of Portland’s Top Doctors. Dr. Hassell is available for individual consultations for diagnosis, second opinion, or to develop patient-centered solutions using evidence-based conventional and lifestyle interventions.

Visit goodfoodgreatmedicine.com to:
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Good Food
Great Medicine
Fourth Edition
Miles Hassell MD
Mea Hassell

a Mediterranean diet and lifestyle guide to eating well

The 300 easy-to-read pages present powerful medical evidence to support adopting a whole food Mediterranean diet-and-exercise based lifestyle, with over 200 simple-to-follow recipes using everyday ingredients. The 14-step Risk Reduction Action Plan helps:

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