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In *Switch,* an influential book on behavior change, brothers Chip and Dan Heath conjured an image of a person riding an elephant to describe the challenge of the change-making progress. In short, the Heath brothers' metaphor translates like this:

- The **rider** is the voice of reason. He is the "logical" brain that "knows" what to do and tries to control the powerful elephant, something he's successful at doing… for a very short period of time.
- The **elephant** represents raw, powerful emotions. It is physically strong and overpowering, and it is both figuratively and literally significantly larger than the rider. At some point or another, the elephant—our impulses and deep emotional needs—overcomes the rider.[1]

With that in mind, both the rider—or, the "thinky" brain—and the elephant—the primal, emotional brain—both need to be "addressed" appropriately along the path to behavior change.

Speaking of **"path,"** the Heath brothers also discuss its significance in the change-making process. Specifically, whether the elephant realizes it or not, it is constrained to a certain path, or environment. In fact, the elephant's path has an even greater effect on its actions than the "smart" rider.

In tangible terms, this means that in order to build better nutrition habits, you need to consider your environment and shape your path. While your environment can be influenced by social (e.g., people), cultural (e.g., expectations), and intellectual (e.g., beliefs) factors, we're going to focus our attention on your physical environment—notably, your home, and more specifically, your kitchen.

According to nutrition coach extraordinaire Dr. John Berardi, the “first law” of good nutrition is as follows:

> *If a food is in your house or possession, either you, someone you love, or someone you marginally tolerate, will eventually eat it.*

This is particularly discerning for a number of reasons, and it gives powerful insight into how strongly your environment can affect your eating habits and health goals. This law can be taken at surface level (e.g., if a **trigger food** is around, it could lead to trouble), or it can take it a step further (e.g., if your living mates aren’t “on board” with your goals, then you could be set up for failure).

What’s also neat about this law is that it has a corollary:

> *If a healthy food is in your house or possession, either you, someone you love, or someone you marginally tolerate will eventually eat it.*

With all of that being said, **you** can see that you have the power to **shape your path** toward healthy eating habits and good nutrition behaviors by taking a look at your environment (e.g., kitchen) to identify (and trash) non-nutritious “junk” and “trigger” foods that promote overeating and poor eating habits and derail you from the path to optimal health, body composition, and performance.

Likewise, this same process involves making sure that you have the nutrient-dense, health-promoting foods you need to support your goals, as well as the right tools to prepare them in a nutritious manner.

With that in mind, you are now the star of your own reality show: *Extreme Makeover: Kitchen Edition!*

Extreme Makeover: Kitchen Edition

This process can vary from person to person based on a number of factors (e.g., nutrition knowledge, socioeconomic background, roommates and family members). That said, it’s a good idea to start to get an idea of what foods will stay (and why) and what

foods must go (and why). One very effective way to do this is to create a “trigger” list of red, yellow, and green light foods. You’ll start by identifying the red and yellow light foods because these are the items you’ll want to get out of the house. Then, we’ll move on to the green light foods, which will be the locus of your kitchen restocking efforts.

Red light foods are the obvious “junk foods” as well as foods that tend to prompt overeating. While the latter may be a bit more unique to you—for me, it’s nut butters—the former may include:

- Baked goods
- Cakes
- Candy
- Cheese spreads
- Chips
- Chocolate
- Condiments
- Cookies
- Crackers
- Diet soda
- Dips
- Ice cream
- Instant foods
- Frozen dinners
- Fruit snacks
- Margarine
- Processed meats
- Salad dressings
- Sauces
- Soda
- Sweetened drinks
- Take-out leftovers
- Vegetable oils
- Alcohol is negotiable

Yellow light foods are a bit less obvious junk foods, and we like to call these “trick foods.” These foods are generally masqueraded as healthy, but they are far cry from whole, minimally processed foods. Some examples include:

- Bagels
- Breads
- Breakfast cereals
- Dried Fruit
- Energy bars
- Frozen yogurt
- Fruit-flavored yogurt
- Fruit juice
- Granola bars
- Light/fat-free yogurt
- Organic “junk” food
- Pretzels
- Regular peanut butter
- Trail mix

As we’ll talk about below, you don’t have to throw out everything. The makeover—just like achieving optimal wellness—is a journey. If you’re not ready to toss something,

that's okay. This is a dynamic process, and you'll just want to continue to be aware (i.e., notice and name) of your relationship with any red or yellow light foods that you keep.

Some people find that getting rid of a couple of things each week—and displacing them with green light foods—works really well. They hold onto their lists of red and yellow light foods, and they cross them off as they go (and they don't buy more of them).

Green light foods are those that are nutritious and health-promoting, and these are the foods with which you'll want to stock your kitchen. Along these lines, the corollary to the "first law" of good nutrition says that having healthy foods available to prepare and eat is just as important as getting rid of the "junk" food.

As far as green light foods, you can't go wrong with whole, minimally processed foods. Our newsletters and other reports help identify some of the best foods in these categories:

- **Colorful vegetables & fruits**
  - Greens: Various lettuces, spinach, kale, arugula, Brussels sprouts, broccoli, asparagus, zucchini
  - Reds: Tomatoes, red bell peppers, red cabbage
  - Oranges: Carrots, orange bell peppers, various squashes, pumpkin
  - Whites: Onions, garlic, parsnips, cauliflower, yellow squash
  - Purples: Eggplant, purple cabbage, beets
- **Lean proteins**
  - Lean meats, poultry, fish/seafood, and/or wild game (preferably grass-fed, pasture-raised, organic, etc., when appropriate)
  - Eggs (preferably pasture-raised, which is distinct from free-range and cage-free)
  - Lean dairy, especially Greek yogurt (with live cultures) and cottage cheese (preferably grass-fed, pasture-raised)
  - High-quality protein supplements (e.g., whey)
- **Healthy fats**
  - Raw nuts (e.g., walnuts, almonds, cashews, etc.) and nut butters (e.g., almond butter)
  - Raw seeds (e.g., pumpkin seeds, chia seeds, hemp seeds)

    - Olives and extra-virgin olive oil
    - Avocado
    - Butter (preferably from grass-fed cows, e.g., Kerrygold)
    - Fresh coconut, coconut milk, and extra-virgin coconut oil
    - Cold-pressed, extra-virgin oils (e.g., walnut, macadamia nut, avocado, hemp, pumpkin, flax)
    - Fatty fish (e.g., wild salmon, mackerel)
- **Minimally processed starches and grains**
    - Colorful, starchy vegetables (e.g., sweet potatoes, purple potatoes, winter squashes)
    - Other sweet/starchy fruits and vegetables (e.g., bananas, plantains, potatoes)
    - Legumes (e.g., lentils and beans)
    - Whole, intact grains (rather than foods made from processed flours), including whole or steel-cut oats; wild, brown, or red rice; quinoa, amaranth, or buckwheat groats; sprouted grains; kamut or spelt grains; maize; millet; and barley
    - Other whole grain products (e.g., sprouted grains)

In addition to those categories of foods, we're also going to share several "staple" household items (e.g., condiments, spices) that can help you with your weight management goals in the paragraphs that follow.

If at any point during this kitchen makeover process you're feeling a little ambivalent or doubtful, that's okay. It's completely normal to want to hang onto that bag of potato chips like a life-saving flotation device or be a bit indecisive about throwing out and "wasting" food.

In the case of the former, this doesn't have to be an "all or nothing" situation, and you can revert back to your red, yellow, and green light lists to establish a makeover continuum. Remember, this is your journey, and you have control over shaping the path.

If you choose not to remove something now, simply notice how you respond by keeping it around. You might find that the bag of chips is more like an anchor and less like a flotation device. Shaping the path is a dynamic process, and you may find that you add and subtract foods and tools over time, as well as maneuver your kitchen for optimal food prep.

In terms of “wasting” food, you might ask yourself a couple of questions:

- Is this really “food” in the first place? It’s likely that most of the things that you’ll be tossing out are mere resemblances of food-related items with little to no health-redeeming qualities. With that in mind, you’re not technically wasting any “food.”
- Also, you might ask yourself, what would be more of a waste: getting rid of the cheap “food” or ingesting it and allowing it to work against your health and body composition goals by increasing body fat and inflammation?

Remember, this is a process, but it’s an important one. Going back to the metaphor at the beginning, the elephant is stubborn and powerful, and yet it is constrained to its path, which has a much greater effect on the direction it travels (i.e., behavior) than the rider.

By modifying the path (e.g., the kitchen makeover), the job of the rider is considerably easier. Although you may experience some feelings of ambivalence and contradiction initially, changes in your surrounding environment relieve the rider and help to motivate the elephant. Ultimately, shaping your path makes it easier to adopt healthy nutrition behaviors and eating habits, and therefore, optimize your health, body composition, and performance.

1. Apple Cider Vinegar

According to a recent paper published in the Journal of the *Academy of Nutrition and Dietetics,* vinegar has been purported to be a weight-loss aid since the early 1800s. Research has shown that vinegar may promote weight loss by suppressing appetite, delaying gastric emptying, or exerting a “carb blocking” effect by inhibiting certain carbohydrate-digesting enzymes.[2]

Perhaps the most noteworthy benefits of apple cider vinegar relate to its effects on carbohydrate management. Recent research even suggests that an individual’s glycemic response may be a key variable in determining the best diet for that person.[3] Even more, emerging evidence suggests that the better one’s carb tolerance, the more

carbs that s/he can eat while still losing fat.[4–6] Research has also shown that poor insulin sensitivity, carbohydrate intolerance, and poor glycemic control can lead to weight gain, reduce energy levels, increase appetite, increase cravings, and more.[7–9]

Vinegar has been shown to possess numerous benefits for insulin function and glycemic control. In one study, researchers from Arizona State University found that participants' insulin sensitivity improved by as much as 34% when they consumed apple cider vinegar (about four teaspoons) before a carbohydrate-containing meal compared to when they ate the same meal without apple cider vinegar.[10]

In a randomized crossover trial published in the *European Journal of Clinical Nutrition,* researchers found that consuming apple cider vinegar before eating white bread (providing 50 grams of carbohydrate) reduced participants' glycemic response by 31% compared to when the white bread was eaten without vinegar.[11]

Numerous additional studies have fortified the ability of apple cider vinegar (as little as two teaspoons) to significantly improve insulin sensitivity and reduce the glycemic response when taken before a carbohydrate-containing meal.[12–14]

In addition to its effects on carbohydrate management, apple cider vinegar has also been shown to reduce hunger, increase satiety, and ultimately, lead to reduced calorie intake at subsequent meals. In a randomized, crossover trial, researchers found that consuming apple cider vinegar before a carbohydrate-containing meal led to not only a substantial improvement in acute glycemic control, it also led to participants eating 250 fewer calories over the rest of the day.[15]

In a separate study published in the *European Journal of Clinical Nutrition,* Swedish researchers found that consuming vinegar prior to a carbohydrate-containing meal led to significant increases in satiety (or feelings of fullness and satisfaction). The level of satiety was proportionate to the amount of vinegar consumed.[16]

Naturally, with beneficial acute effects on carbohydrate management and satiety, apple cider vinegar has the potential to be a useful tool to promote weight management. In one randomized, double-blind, placebo-controlled trial, Japanese researchers found that participants who ingested apple cider vinegar daily for 12 weeks lost significantly more

body weight, belly fat, and inches from their waistlines compared to the placebo group. Interestingly, folks who consumed two tablespoons of apple cider vinegar today showed greater improvements in these areas than those who took one tablespoon.[17]

2. Baking Soda

Also known as sodium bicarbonate, perhaps the most well-known "non-household" use for baking soda is for athletic and exercise performance. In fact, it's been used as an "ergogenic aid" (i.e., performance-enhancing) for over 80 years.

Baking soda is considered to be "alkaline," which means that it has a pH above 7.0 (i.e., neutral). Along these lines, any pH below 7.0 is considered to be acidic. The human body functions best when its acid-alkaline (or, acid-base) balance is at or near neutral. Generally speaking, the pH of the blood is around 7.4 while it's around 7.0 in muscles.

During exercise—particularly anaerobic exercise at higher intensities—one of the by-products of energy metabolism is a compound called lactic acid, which is then split into lactate and a hydrogen ion. This build-up of hydrogen ions (not lactic acid itself) results in a decrease in pH (i.e., muscular acidosis), which is speculated to contribute to muscle fatigue.[18]

An elevation of bicarbonate may have a performance-enhancing effect by "buffering" hydrogen ions associated with intense activity.[19] Specifically, sodium bicarbonate appears to increase the rate at which hydrogen ions are removed from the working muscles, which contributes to the maintenance of intramuscular pH.

In a systemic review with meta-analysis (a high-level statistical analysis of all studies on a given topic) published in the journal *Sports Medicine,* Australian researchers confirmed that consumption of sodium bicarbonate (0.3 g/kg body mass) prior to exercise significantly improved performance in a one-minute all-out bout of exercise.[20]

In general, studies show that the beneficial effects of baking soda on performance are

relegated to activities and exercise lasting 1 – 7 minutes, and it may also be useful for sports and activities involving intermittent or sustained periods of high-intensity work.[21]

In addition, sodium bicarbonate may also improve resistance training performance. In a randomized, double-blind, crossover study published in the *Journal of Strength and Conditioning Research,* researchers from Coventry University found that ingestion of sodium bicarbonate before a strength training session led to a significantly greater number of reps performed and repetitions to failure in the squat and bench press in resistance-trained men.[22]

How does all of this relate to fat loss? Simple. On one hand, increased exercise performance (e.g., exercising at a higher intensity, doing more exercise in a given time, performing more work at a given intensity) all lead to an increase in calorie expenditure. Along those lines, in order to lose weight, one must burn more calories than s/he eats (i.e., negative energy balance) on a regular, consistent basis—a fundamental principle of metabolism and thermodynamics.[23]

With regard to improving strength training, it is the most powerful tool for building and maintaining muscle mass, and adding exercise to a weight loss program tends to help spare muscle mass.[24–26] This is key because muscle mass comprises the most metabolically active tissues of the body, and losses in calorie-burning muscle mass when dieting may predispose one to weight regain.[27,28]

This is why a key objective during weight loss is to reduce body fat while minimizing loss of FFM to promote optimal overall health, metabolic function, cardiovascular health, and physical functioning. This is why an emphasis should be placed on fat loss as opposed to *weight loss.*

In general, high-intensity interval training (HIT, i.e., brief repeated “bursts” of vigorous exercise interspersed with low-intensity recovery intervals), high-intensity resistance training (HIRT), and resistance training significantly increase metabolic rate, calorie burn (i.e., excess post-exercise oxygen consumption, EPOC), and fat burning in the hours (even days) after exercise.[29,30]

3. Cayenne

Cayenne peppers contain a compound called capsaicin, and observational studies suggest that consumption of foods containing capsaicin is associated with lower body weight.[31] Research has shown that capsaicin can boost metabolic rate, accelerate fat burning, decrease fat storage, increase feelings of fullness, reduce appetite, and decrease calorie intake.[32]

One unique way that capsaicin appears to increase its thermogenic effects (i.e., increased calorie burn) is through activation of "brown fat," which is different from unwanted body fat (also called white adipose tissue).[33] The purpose of brown fat is to burn off calories as heat in order to keep the body warm, and capsaicin's ability to "activate" stubborn brown fat and increase calorie burn is a cutting-edge way to boost metabolism and burn body fat.[34,35]

In a study published in the *International Journal of Obesity,* Canadian researchers described several additional means by which capsaicin augments the impact of caloric restriction on weight loss.[36] They reported that capsaicin has the potential to reduce—or completely prevent—the normal increase in hunger and decrease in fullness that typically accompanies a reduced-calorie diet. Furthermore, they provide evidence that capsaicin can combat the decrease in calorie expenditure and fat burning that typically result from calorie restriction.

In a systemic review and meta-analysis (which is a high-level statistical analysis of all studies published on a specific topic) published in the journal *Appetite,* researchers from the United Kingdom found that consumption of capsaicin prior to a meal led to a significant decrease in calorie intake during the subsequent meal.[37] Thus, capsaicin has the potential to promote fat loss both by boosting the metabolism (i.e., more calories burned) and reducing food intake and suppressing appetite (i.e., fewer calories consumed).

Not only that, capsaicin appears to activate a compound in the body called AMPK, which helps partition carbs to muscle, not fat.[38,39] Activation of AMPK also increases

fat burning and reduces the body's ability to create and store fat.[40] In other words, increasing AMPK activity means shuttling carbs to muscles to be used for fuel, burn more fat, and store less.

With all of that in mind, you might consider spicing up your meals a bit with cayenne. Other peppers, including jalapeños and habaneros also contain capsaicin. Basically, the hotter the pepper, the greater the capsaicin content, and if you're feeling especially spicy, then you might try the bhut jolokia pepper (aka, the "ghost pepper"), which is so hot that it is often used as an elephant repellant in India.

4. Cinnamon

Studies consistently show that whole cinnamon powder (provided in amounts ranging from 1 – 6 grams) is markedly effective at acutely improving carbohydrate tolerance and individual glycemic response.[41–43]

In one randomized, double-blind, placebo-controlled study, participants were either given a standardized cinnamon extract or a placebo twice daily for two months. At the conclusion of the study, the participants taking the cinnamon extract experienced an improvement in carbohydrate management that was nearly five times greater than that of the placebo, and their post-meal glycemic response (after a carbohydrate-containing meal) also decreased an impressive 12%, which was four times greater than the placebo group.[44]

In another randomized, double-blind, placebo-controlled study, participants were either given a standardized cinnamon extract or a placebo twice daily for 12 weeks. The participants taking the cinnamon extract significantly improved carbohydrate tolerance, and even though this wasn't a weight loss study, they significantly improved body composition (i.e., decreased body fat, increased lean body mass).[45]

One way in which cinnamon appears to work is through improved insulin sensitivity. In one study, healthy lean young men took 5 grams of cinnamon powder (about two teaspoons) or a placebo before undergoing an oral glucose tolerance test (OGTT),

which involves drinking 75 grams of high-glycemic carbs. After taking the cinnamon, the participants significantly improved their glycemic response and demonstrated improved insulin sensitivity. What's more, when the participants took the cinnamon 12 hours before the OGTT, they still experienced the same significant benefits in glycemic control, suggesting that the benefits of cinnamon appear to be both immediate and sustained for up to 12 hours.[46]

Another one of the ways that cinnamon exerts its effects is by inhibiting the activity of certain carbohydrate-digesting enzymes (e.g., alpha-amylase, alpha-glucosidase).[47–49] By inhibiting these enzymes, cinnamon has the potential to reduce or slow down the digestion of dietary carbohydrates (i.e., carb "blocking" effects). In a 2014 randomized, double-blind, placebo-controlled study, French researchers found that participants taking a cinnamon extract decreased post-meal blood sugar by 21% after 60 minutes and 15% after 2 hours (compared to the placebo group).[47] They found that this improvement in carbohydrate metabolism was achieved without additional insulin secretion, supporting the notion that cinnamon "seems to specifically inhibit" carbohydrate-digesting enzymes (e.g., alpha-amylase).

In addition to its impact on glycemic control and carbohydrate management, cinnamon may also exert additional anti-obesity effects. In a study published in the journal *Scientific Reports,* researchers from Switzerland found that certain compounds in cinnamon may increase fat burning and reduce production of the ghrelin.[50]

Ghrelin is often referred to as the "hunger hormone." It is produced in the GI tract and functions as a signaling compound in the nervous system stimulating hunger.[51] Ghrelin is released when the stomach is empty, and levels go down after eating.[52] In addition to stimulating hunger, ghrelin also "turns on" reward centers in the brain, increasing the pleasure and reward response to eating and reinforcing the consumption of rewarding, tasty food.[53–55]

It's important to note that there are numerous forms available. Although short-term trials have not demonstrated any adverse outcomes with *Cinnamon cassia* use, its high coumarin content is a concern during prolonged use.[56] Coumarins are naturally-occurring plant compounds that are considered to be moderately toxic.[57] Thus, while *Cinnamon cassia* has been used in numerous human trials (and shown to be both safe

and effective), when purchasing cinnamon powder (e.g., from the grocery store), “true” cinnamon (i.e., *Ceylon Cinnamon, Cinnamon verum,* or *Cinnamon Zeylanicum*) is likely a better option, as its coumarin content is negligible.

5. Cumin

Cumin (*Cuminum cyminum*) is a flowering plant in the Apiacae family. Its seeds are used in a number of cuisines worldwide, both in whole and ground form. Cumin is widely used in Ayurvedic medicine to promote healthy digestion and detoxification, and it has been shown to possess antimicrobial, anti-inflammatory, and antioxidant properties.[58] Multiple studies suggest that cumin has the potential to augment weight loss.

In a recent randomized, double-blind, placebo-controlled study published in the journal *Complementary Therapies in Clinical Practice,* researchers from Iran set out to assess the effects of cumin powder on body composition in healthy participants.[59] In the study, 88 overweight and obese women were randomly assigned to one of two groups. Both groups of women consumed yogurt twice daily at meals for 3 months, with the experimental group having 3 grams of cumin (slightly more than one teaspoon) added to their yogurt. Both groups of women received the same nutritional counseling with appropriate guidance for weight loss. In other words, all women followed a supervised calorie-restricted diet.

At the end of the 3-month study, both groups of women lost weight, a result to be expected given the reduced-calorie diets both followed. However, the women who ate the yogurt plus cumin dropped more inches from their waists (49% more) and lost substantially more weight (89% more) and fat mass (70%) compared to the placebo group. While there was no statistically significant change in calorie-burning lean mass (i.e., neither group lost a significant amount, which is impressive in its own right), the cumin group dropped body fat percentage nearly 200% more than the placebo group. In addition, the women consuming cumin also showed significantly greater improvements in blood triglycerides and blood cholesterol compared to the placebo

group, including a 14-fold greater reduction in triglycerides, a 5-fold greater decrease in LDL cholesterol, and a 12-fold greater increase in HDL cholesterol.

In another randomized, double-blind, placebo-controlled trial published in the journal *Annals of Nutrition and Metabolism,* a separate group of Iranian researchers set out to determine the effects of supplementation with cumin on weight loss and metabolic profiles in overweight men and women.[60]

After 8 weeks, the cumin group (who took one 100mg cumin capsule three times daily) lost over 7 TIMES more weight than the placebo group. Perhaps even more interesting is that the cumin group experienced a similar decrease in weight and body mass index as a third group of participants, who took a prescription weight loss drug during the trial. Food journals were recorded throughout the duration of the study, and there were no differences in food intake (e.g., calories, carbs, fats). Even more, only the cumin group experienced significant improvements in insulin sensitivity.

6. Green Tea

According to researchers, *Camellia sinensis,* which is the plant species whose leaves and buds are used in the production of tea, exerts several "anti-obesity effects."[61] Although various types of teas (e.g., oolong, black, green) all come from the *Camellia sinensis* plant, green tea leaves are processed (i.e., fermented) differently, which leaves them with a higher concentration of beneficial polyphenols called catechins. It's these compounds, which also have noteworthy anti-inflammatory and antioxidant properties, that seem to have quite a potent effect on the metabolism and fat burning, and what's more, they may also suppress appetite and decrease the absorption of calories.[62,63]

Studies consistently show that green tea extract (standardized for the catechin epigallocatechin gallate, EGCG) increases the body's use of fat for fuel, and these effects are independent of caffeine/stimulants. It does so by inhibiting enzymes that can shut down important fat-burning hormones (i.e., norepinephrine), thereby stoking the body's fat-burning furnace.[64]

In one study measuring 24-hour calorie expenditure and fat burning, healthy men supplementing with a green tea extract providing 90mg EGCG three times daily experienced a 4% increase in metabolic rate and 3.4% decrease in respiratory exchange ratio (RER), which signifies that they were burning more fat to meet the increased demand in calories.[65] The participants taking the green tea extract were even burning more fat during sleep, and overall, over 41% of their daily calories burned came from fat—31% more fat burned than the placebo group.

In another study, participants taking a green tea extract daily (providing 400mg of EGCG) for 4 weeks showed a 25% increase in fat burning, and what's more, they lost over 1.5% body fat during the one-month trial.[66] In a 12-week study, participants taking a green tea extract (providing 270mg of EGCG daily) experienced a 3.3% increase in metabolic rate, a 4.6% decrease in body weight, and a 4.5% reduction in waist circumference.[67]

In yet another study, participants taking a green tea extract standardized for EGCG combined with a modest reduced-calorie diet lost over twice as much weight as the placebo group after just 8 weeks. The participants taking the green tea extract also experienced a 2-fold greater increase in metabolic rate compared to the placebo group.[68] In other words, green tea can help make a good fat loss program even more effective.

In addition to increasing metabolism, calorie expenditure, and fat burning, researchers also suggest that green tea extract can help control energy balance by suppressing appetite. In rats, researchers from the University of Chicago found that injections of EGCG significantly reduced food intake and body weight.[69] In a human study published in the *International Journal of Obesity,* participants consumed 8% fewer calories at a meal 4 hours after taking a standardized green tea extract when compared to the placebo group.[70] Not only did the folks taking the green tea extract eat less, they also experienced a significant increase in metabolic rate, an effect that was maintained over the course of the 8-week trial and was accompanied by a significant reduction in body fat.

Researchers suggest consumption of 2 – 4 cups (i.e., 500mL – 1L) of green tea per day to reap these fat-burning and health promoting benefits.[71]

7. Extra-Virgin Olive Oil

Over the past several decades, a Mediterranean Diet has been promoted as effective tool to support heart health, as this type of diet has been shown to lower the risk of cardiovascular disease and many of its risk factors, including carbohydrate management, blood pressure, and lipid levels (e.g., cholesterol, triglycerides).[72]

The Mediterranean Diet is characterized by up to 40% of its calories coming from fat, of which nearly half is of the monounsaturated variety. Of course, extra-virgin olive oil is a cornerstone of the Mediterranean Diet, which includes as many as eight servings of olive oil daily.[73] Despite what you've been led to believe, dietary fat does not make you fat.[74]

In fact, the Mediterranean Diet has also been reported to be protective against obesity, and sure enough, numerous studies have shown that it is an effective tool for weight management.[75,76]

Like cinnamon, research has shown that olive oil may promote insulin sensitivity and glycemic control. A recent study that appeared in the journal *Clinical Nutrition* concluded that a higher intake of olive oil led to improved insulin sensitivity.[77] Other studies documenting the health attributes of a Mediterranean Diet have alluded to the beneficial effects of olive oil on carbohydrate management.[78]

Olive oil is rich in a specific monounsaturated fatty acid called oleic acid, which seems to have a potent impact on appetite regulation. Researchers from the University of California Irvine found that oleic acid stimulates the production of a compound called oleoylethanolamide (OEA) by the cells of the small intestine.[79] OEA helps to suppress appetite by activating specific sites in the brain that help to curb hunger. Previously, this group of researchers found that increasing OEA levels reduces appetite, increases weight loss, and improves various metabolic parameters.[80]

In a study published in the journal *Food & Function,* Italian researchers assessed whether the oleic acid content of a meal impacted OEA levels and calorie intake in

healthy human volunteers. Participants consumed either two tablespoons of extra-virgin olive oil (75% oleic acid), high-oleic sunflower oil (79% oleic acid), or sunflower oil (33% oleic acid) on three separate occasions. The researchers then measured calorie intake at a subsequent lunch and over the course of 24 hours.

In the two hours after lunch, only the extra-virgin olive oil condition resulted in reduced hunger and greater fullness and satisfaction. What's more, when the participants consumed the extra-virgin olive oil, they ate over 250 fewer calories than when they consumed the sunflower oil with a lower oleic acid content. The researchers attributed this to the significant increase in OEA levels that were only noted after extra-virgin olive oil and high-oleic sunflower oil consumption.[81]

Olive oil is naturally abundant in a polyphenol called oleocanthal, which has been shown to promote a healthy inflammatory response. Specifically, oleocanthal acts as a "natural anti-inflammatory compound" by inhibiting the activity of cyclooxygenase (COX) enzymes, a property it shares with the highly-recognizable NSAID ibuprofen.[82,83]

In addition to oleocanthal, there are a number of other polyphenols (e.g., oleuropein, hydroxytyrosol) in extra-virgin olive oil that provide antioxidant activity and promote a healthy inflammatory response.[84] In fact, Italian researchers have found that oleuropein, a compound that is similar in structure to oleocanthal, exerts anti-inflammatory effects.[85] While fat tissue itself secretes inflammatory chemicals called cytokines, research has also shown that certain markers of persistent, unhealthy levels of inflammation may predict future weight gain.[86]

Bonus: Garlic

Also known as the "stinking rose," garlic is a member of the Allium family. Garlic contains a sulfide called 1,2-vinyldithiin (1,2-DT), which has long been recognized for its anti-inflammatory properties. Recently, researchers have discovered that 1,2-DT can inhibit adipogenesis (i.e., the formation of new fat cells) and inflammation associated with fat accumulation. In fact, based on their experiment, the researchers concluded that 1,2-DT has "antiadipogenic and anti-inflammatory actions" and may be "a novel, antiobesity nutraceutical."[87]

Raw garlic is also a source of the prebiotic fiber inulin. As important as probiotics are, some scientists would argue that prebiotics are even more important.[88] Prebiotics are essentially "food" for probiotics, as they stimulate the growth of healthy gut bacteria. Just like you and I need nutrients to survive, so do the good bacteria that live in our digestive tracts. In other words, probiotics cannot function effectively or efficiently without prebiotics.

Research has shown that inulin seems to predominantly stimulate the growth of *Bifidobacteria.*[89,90] Bacterial fermentation of prebiotic fibers leads to the production of short chain fatty acids (SFCA), which can stimulate the secretion of key appetite-regulating hormones like GLP-1 and Peptide YY.[91,92]

In a recent randomized controlled trial published in the journal *Nutrition & Metabolism,* overweight participants met with Registered Dietitians, who counseled them on a reduced-calorie diet with the goal of achieving 5% weight loss. The participants combined the weight-loss diet with supplementation with inulin or a non-prebiotic fiber (i.e., cellulose) for 18 weeks. At the end of the study, both groups achieved the 5% weight-loss goal; however, the inulin group lost 55% more weight than the cellulose group, and when presented with an "all-you-can-eat" challenge, the inulin group ate significantly less food.[93]

A Final Word

While these household items can be helpful in obtaining optimal wellness and weight management, it's important to remind you that, in the grand scheme of things, looking, feeling, and performing your best are all contingent on your entire body of "nutrition work"—not an individual food or single meal.

In other words, there's no "magic bullet." Instead of viewing foods in isolation as "good" or "bad," think about weight management and "deep health" as the product of practicing healthy eating habits, creating a positive food environment, and choosing high-quality, nutritious foods in appropriate amounts relative to your goals and activity levels **regularly** and **consistently** over time. Good nutrition takes practice, and just like getting better and mastering anything in life, it's about progress—not perfection.

Start where you are and make small changes that you are ready, willing, and able to take on; focus on mastering those new behaviors one step at a time.

Also, remember that your environment—including with whom and what you surround yourself—can have a tremendous influence on you, your health, your actions, your attitudes, and your behaviors. Just like a kitchen makeover is a critical piece of the wellness puzzle, also take a moment to examine other environmental factors in your life (e.g., work, social support, financial, relationships).

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