

Leaky Gut, Autoimmunity And Chronic Disease

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Hippocrates long ago postulated that all disease begins in the gut. Where autoimmune disease is concerned, modern research certainly supports this hypothesis. The “gut” is an all-encompassing term used to describe the gastrointestinal (GI) tract—the long tube that includes the mouth, esophagus, stomach, small intestine, large intestine and the various organisms inhabiting the GI tract. The gut holds about 80 percent of the body’s immune system.

An intact gut barrier is foundational for human health. The gut barrier between the GI tract and our internal environment protects our bodies by allowing nutrients to pass through, while blocking foreign invaders. When this barrier becomes compromised, it is called intestinal hyperpermeability or “leaky gut,” meaning that undigested food particles, toxins and pathogens can freely pass through. Over time, as these continue to cross the gut barrier, the body enters into a state of chronic inflammation. Meanwhile, the immune system starts producing antibodies against the foreign invaders.

Autoimmunity arises when the body starts attacking its own tissue, no longer able to distinguish between itself and external threats. Which autoimmune condition ultimately manifests itself is determined by which tissues are being attacked. For example, when the body has an immune response against the thyroid tissue, the result could be Hashimoto’s thyroiditis or Grave’s disease. If the gut remains leaky, an individual may develop more autoimmunity as this process perpetuates itself over time.

LEAKY GUT

Leaky gut is caused by a variety of lifestyle factors, such as a nutrient-poor and inflammatory diet, chronic stress, lack of good quality sleep or environmental toxins. Medications such as

nonsteroidal anti-inflammatory drugs (NSAIDs) and birth control pills can also contribute to a leaky gut. Additional factors— pathogens, infections, nutrition and more—can heighten the immune response.

Many of these factors are within our power to change and can enhance the body's ability to heal. One of the first steps in healing is to remove immune triggers from the diet, sometimes for a season and sometimes indefinitely. The aim is to take the burden off of the body so that it can heal.

THE AUTOIMMUNE PROTOCOL

The autoimmune protocol is an elimination diet that removes foods known to drive inflammation and its symptoms, followed by a careful reintroduction period to rule out reactivity. Removing potentially problematic foods can decrease inflammation, rebalance the gut flora, soothe the gut lining, regulate blood sugar, modulate the immune system, resolve nutrient deficiencies and promote overall healing.

The duration of the elimination stage depends on the individual's health status. Typically, I recommend at least a month or two, but some may find it necessary to extend the period of time based on their symptoms and the degree of their health concerns. What is most important is to avoid the restricted foods *completely* during this phase of elimination. However, there is no limit on calories or frequency of meals. After the initial elimination phase, the next step is to reintroduce the foods one at a time to evaluate the body's response. Working with a functional medicine practitioner or holistic doctor during both the elimination and reintroduction stages can be very helpful.

The autoimmune protocol represents a phenomenal step toward pursuing health and healing. The elimination diet allows meats and seafood; animal fats and other healthy fats such as olive oil, coconut oil, avocado oil and palm oil; vegetables; edible fungi and mushrooms; fermented foods and beverages (excluding dairy kefir and yogurt until the reintroduction stage); herbs and most spices (see spices on "Foods to Avoid" list); and pantry staples such as vinegar, gelatin, fish sauce, olives and capers, coconut products and various alternative flours and starches (arrowroot, cassava, coconut, green banana, tapioca, tigernut).

Although the autoimmune protocol allows fruits and sweeteners, these should be kept to a minimum to maintain stable blood sugar levels. Even wholesome sweeteners and baked goods can have an impact on blood glucose levels. Reserve these items for special occasions. Allowable sweeteners include coconut sugar and nectar, maple sugar and syrup, monk fruit sweetener, molasses and raw honey.

It is important to choose high-quality foods that are organic, responsibly produced and locally obtained, if possible. This food is medicine, after all. The effort that goes into planning food shopping and meals, procuring high-quality foods and working to prepare them properly represents an important investment that will reap significant dividends (see recipe sidebars).

FOODS TO AVOID

The “foods to avoid” are to be *strictly* avoided. Eating an immune-triggering food will likely incite an immune response and create symptoms—a response that could last anywhere from days to weeks or even months in some people. It is very important to commit to the elimination diet completely to avoid a recurrence in symptoms. Read on to understand why these food groups need to be avoided.

Gluten, grains and legumes: Gluten is found in wheat, einkorn, spelt, barley, rye, kamut, triticale and sometimes oats. It is also an additive in many processed foods, supplements and medications. Gluten triggers the release of a protein called zonulin in the small intestine. When this happens, it signals the tight junctions between the cells that line the gut to open—and stay open—perpetuating leaky gut.

Unfortunately, many non-gluten grains (including amaranth, corn, millet, oats, sorghum and rice) are “cross-reactive” with gluten, which can cause the body to mount an immune response as though gluten was consumed. This occurs because the immune system tags gluten as a foreign invader. When the body sees similar proteins in other cross-reactive foods, it initiates the same immune response.

Grains and legumes also contain other harmful compounds that protect plants but function as “antinutrients” in humans. These compounds include lectins (difficult-to-digest proteins from plant and animal sources that can damage the gut lining) and phytic acid (a compound that binds to minerals in the body and inhibits nutrient absorption). Because grains and

legumes can be difficult to digest, they can also contribute to imbalances in gut microbes, which is another reason to avoid them.

Dairy products: Proteins found in dairy products can initiate a problematic immune response in some individuals, with casein sensitivity being the most common. Casein has a similar molecular structure to gluten, making it potentially cross-reactive with gluten. An estimated 50 percent of people with gluten sensitivity are also sensitive to dairy. Dairy products must be restricted for at least a time on this protocol, but wholesome dairy products can later be reintroduced.

Weston A. Price Foundation members know that conventional dairy and grass-fed dairy from heritage breeds of cattle are two entirely different products. In addition to the obvious problems of hormones, antibiotics and GMO feed, most conventional dairies use Holstein cows, which predominantly contain a protein (A1 beta-casein) that is not well tolerated by most people and is linked to GI distress, cardiovascular disease, type 1 diabetes, sudden infant death syndrome and neurological disorders such as autism. Milk from heritage breeds such as Jersey and Guernsey cows and goat's milk predominantly contain A2 beta-casein, which is usually better handled.

Poor quality dairy can be a compromising factor in chronic illness and autoimmune disease, but there are wonderful benefits to be gained from full-fat, grass-fed, raw dairy, including beneficial bacteria, enzymes, immunoglobulins, vitamins and minerals—as well as fat-soluble vitamins and health-promoting conjugated linoleic acid. Cultured or fermented dairy products such as yogurt and kefir augment the nutrition by adding beneficial probiotics. Ghee can be an important food to incorporate into the diet after symptoms have calmed down; sensitive individuals often find that they can tolerate cultured ghee.

Eggs: Eggs, and especially egg whites, are a common allergen and sensitivity. Although it is mostly the lysozyme in egg whites that causes reactions to eggs, I recommend avoiding even the yolks for a time. Once symptoms have improved, egg yolks from pastured hens are a valuable source of fat-soluble vitamins, essential fatty acids, choline and biotin.

Nuts and seeds: Like grains, nuts and seeds have high levels of lectins and contain phytic acid. Lectins should be avoided on any healing protocol. Often, however, it is possible to

safely reintroduce nuts and seeds that have been soaked, sprouted or fermented; these processes neutralize the lectins, enzyme inhibitors and phytic acid.

Nightshades: Common nightshades include eggplant, tomatoes, peppers and potatoes. These foods contain potentially problematic substances called glycoalkaloids, and some, including tomatoes, have lectins as well. These compounds can promote inflammation and disrupt the gut mucosal barrier.

Food additives: Gums, food dyes, sulfites and other additives do not promote wellness. Although these ingredients are most often found in processed foods, they can pop up in some packaged foods billed as healthy. Be sure to check product labels!

SUGGESTIONS FOR REINTRODUCING FOODS

The autoimmune protocol is a nutrient-dense elimination diet that gives the body a chance to heal. After a season of healing, foods can be reintroduced in four phases (see sidebar). Take notes as you reintroduce different foods, writing down symptoms and responses. This will help you make appropriate decisions about whether you should be consuming that food. Only introduce one new food at a time. With each food, allow at least five days for reintroduction. If you notice any change (body or brain), consider pulling that food back out. The foods listed in Phase Four are the most difficult for the body to handle, so extra caution is needed. Note, too, that not everyone with a history of chronic illness or an autoimmune condition can successfully reintroduce all of the foods listed. Everyone's healing journey is different.

When reintroducing nuts, seeds and gluten-free grains as well as cultured and raw grass-fed dairy, it is important to look to how our ancestors prepared these foods to make them more nutritious and easier to digest. The work of Dr. Weston A. Price and the Weston A. Price Foundation are important resources. Although I recommend working with a holistic doctor or functional medicine practitioner to achieve the best results and to perform desired testing, no one is more attuned to your body than you. Take note of how your body responds to each new food added. If you have a known sensitivity or history of severe reactions to a certain food, exercise caution and consult with your practitioner before adding it. In addition to dietary changes, I recommend other health-promoting lifestyle strategies, such as reducing one's toxic load, managing stress, using healing therapies, exercising, improving sleep hygiene and cultivat-

ing meaningful relationships. These two strategies—eating a nutrient-dense healing diet and cultivating healthy lifestyle habits—can promote healing and wellness not just in those with autoimmune conditions but in many other individuals.

SIDEBARS

FOODS TO AVOID

GLUTEN AND GRAINS: Amaranth, barley, buckwheat, bulgur, corn, durum, einkorn, kamut, millet, oats, quinoa, rice, rye, sorghum, semolina, spelt, teff, triticale, wheat

DAIRY PRODUCTS: Butter, cheese, cream, ghee, milk, yogurt

LEGUMES: Black beans, chickpeas, fava beans, kidney beans, lentils, lima beans, mung beans, navy beans, peas, peanuts, soybeans

NIGHTSHADES: Eggplant, goji berries, ground cherries (not regular cherries), all peppers (spicy peppers, bell peppers, etc.), potatoes, all red spices, tomatoes, tomatillo

NUTS AND SEEDS: Almonds, Brazil nuts, canola, cashews, chia seeds, coffee, cocoa, flax, hazelnuts, hemp, pecans, pine nuts, pistachios, pumpkin, safflower, sesame, sunflower, walnuts

SPICES: Allspice, anise, black pepper, caraway, celery seed, cumin, fennel seed, mustard, nutmeg, poppy seeds

OTHER: Alcoholic beverages, artificial sweeteners, food colorings, preservatives and other additives, NSAIDs

FOUR PHASES OF REINTRODUCTION

PHASE ONE: Pastured egg yolks; seed and fruit spices; oils from nuts and seeds; grass-fed ghee.

PHASE TWO: Pastured egg whites; sprouted seeds, seed butters, tahini and seed flours; sprouted nuts, nut butters and nut flours; grass-fed butter.

PHASE THREE: Eggplant and sweet peppers; cultured grass-fed dairy (such as yogurt or kefir); raw, grass-fed cream.

PHASE FOUR: Raw, whole milk from grass-fed animals; grass-fed cheese; hot peppers, tomatoes, potatoes and nightshade spices; white rice; soaked, sprouted or fermented legumes; soaked, sprouted or fermented gluten-free grains.

BEEF AND BEET SOUP

When my husband became a certified GAPS (Gut and Psychology Syndrome) practitioner, they served a rendition of this gut-healing soup. He came home and asked me to recreate it. It has been a staple ever since. Serves 6-8.

Ingredients:

1 bone-in beef roast (2-3 pounds)
4 tablespoons coconut oil or animal fat
2 quarts filtered water
4 beets (including greens), peeled and diced
1 onion, diced
3 carrots, diced
3 stalks celery, thinly sliced
8 ounces mushrooms, halved and sliced
2 cups cabbage, shredded
4 cloves garlic, minced
1 tablespoon red wine vinegar
Fresh herbs (such as parsley, thyme or rosemary) and 1 bay leaf
Additional bone broth, if needed
Salt

Instructions:

1. In the bottom of a large Dutch oven, heat 2 tablespoons of cooking fat over medium-high heat. Brown the roast for about 2 minutes on each side, making sure to salt each side before searing.
2. Add water until meat is covered by about 1-2 inches; use more if needed. Bring to a boil and then reduce the heat to low. Cover and simmer until meat is cooked, tender and falling off the bone. This will take an hour or two.
3. Strain the broth and reserve the broth and meat.
4. In the bottom of a large Dutch oven, heat 2 more tablespoons of cooking fat over medium-high heat. Add all vegetables, except for the beet greens, along with a few generous pinches of salt and sauté until soft and starting to caramelize, about 10 minutes.
5. Add garlic and stir until fragrant, about a minute.
6. Add red wine vinegar and scrape up brown bits from the pan.

7. Pour in reserved broth, along with additional broth or water, if needed. Bring to a boil and then reduce the heat to low. Cover and simmer for 10 minutes.
8. Add beet greens and maintain a simmer for about 10-15 minutes, covered.
9. Taste and adjust salt, if necessary.
10. Add reserved beef and cook for about a minute until it is heated through.
11. Ladle into bowls and serve with coconut milk yogurt or coconut cream and fresh herbs.

DINNER ROLLS

Traditional bread is probably the food most craved by people on an elimination diet. Baking without grains or eggs is a difficult task, so these dinner rolls were in the works for a long time. Be sure to use green plantains, as their flavor is milder and the starch content is higher. I sometimes add a few cloves of minced garlic to the dough for additional flavor. Because butter should be avoided on the elimination diet, I serve these with a small dish of quality extra-virgin olive oil, fresh herbs and salt. Our family loves lingering at the table and dipping our warm rolls in the salty olive oil. Makes 20 rolls.

Ingredients:

- 2 green plantains, peeled and roughly chopped (about 2 cups)
- 2 cups cassava flour
- 1/2 cup arrowroot powder
- 1 tablespoon coconut flour
- 1 teaspoon salt
- 1 1/2 teaspoons cream of tartar
- 1/2 teaspoon baking soda
- 2/3 cup coconut oil or animal fat, melted
- 1 1/2 cups coconut milk

Instructions:

1. Preheat oven to 400°F.
2. Add chopped plantains to a food processor and process for 20 seconds, scraping the sides halfway through.
3. Add cassava flour, arrowroot, coconut flour, salt, cream of tartar and baking soda and process for another 15 seconds.
4. Add the coconut oil (or animal fat) and coconut milk and process for another 45 seconds,

scraping the sides as needed.

5. Divide the dough into 20 equal portions. To do this, cut the dough into 4 equal portions, then divide each of those portions of dough into 5 equal pieces.
6. Roll the dough pieces into balls. Arrange on a parchment-lined baking sheet and score the rolls with a knife.
7. Bake for 20-22 minutes.
8. Store in an airtight container in the refrigerator and reheat before serving.

RESTORATIVE KRAUT

Our family had been eating traditional sauerkraut for many years when I decided to brighten up our typical

ferment with flavors our family adores and veggies that happened to be growing in our garden at the time.

Beets contribute valuable nutrients helpful for methylation and gentle liver detoxification. I've also added fresh

garlic, turmeric and ginger for their anti-inflammatory and medicinal properties. This kraut is truly nourishing and

restorative to the body while providing a substantial probiotic boost. The recipe below makes about two quarts,

but you can scale the recipe up or down according to your needs.

Ingredients:

1 medium head green cabbage

1 medium head purple cabbage

1 sweet onion, peeled

1 beet, peeled

2 cloves garlic, minced

1 inch ginger, peeled and finely grated

1 inch turmeric root, peeled and finely grated (optional)

1 tablespoon salt

1/4 cup starter liquid from previous batch (or an additional tablespoon of salt)

Instructions:

1. Rinse the cabbages and set aside a couple of outer leaves.
2. Thinly slice the cabbages, beet and onion by hand or using a food processor. Combine all ingredients in a large mixing bowl.
3. Pound the kraut with a sauerkraut stomper or tamp with the back of a wooden spoon to release the juices. This can also be done by “kneading” the vegetables with your hands. If you are short on time, place a clean tea towel over the bowl and let sit at room temperature for thirty to sixty minutes to allow the salt to pull the juices out of the vegetables.
4. Transfer to quart jars, pressing firmly so that the liquid rises to the top. Leave about an inch of headspace.

Press a cabbage leaf on top of the kraut, tucking it around the mixture and keeping it submerged. If extra liquid is needed, top with brine (1 tablespoon of salt per pint of water). Cover tightly with a lid or airlock.

5. Leave at room temperature for five to seven days with a plate or shallow dish underneath to catch any liquid that escapes. If the lid bulges during the fermentation process, “burp” the jar by loosening the lid slightly and retightening. Store in the refrigerator.

FRUIT TART

This recipe features a soft, cookie-like, press-in crust layered with bright, velvety coconut cream, topped with vibrant low-glycemic berries. Serves 8.

Crust:

- 1 1/2 cups pitted dates
- 5 tablespoons coconut oil, plus more for greasing the dish
- 3/4 cup arrowroot powder
- 3 tablespoons coconut flour
- 1/4 cup cassava flour
- 1/4 teaspoon salt

- 1/2 teaspoon baking soda
- 1 1/2 teaspoons vanilla extract
- 3 tablespoons applesauce

Filling:

- 2 cups coconut cream
- 1/4 cup coconut butter
- 1/4 cup raw honey
- 1 teaspoon lemon juice

Topping:

- 1 1/2 cups fresh fruit (blueberries, blackberries, raspberries or sliced strawberries) and fresh mint or basil for garnish

Instructions:

1. Preheat the oven to 350°F. Lightly grease a tart pan or pie plate with coconut oil and set aside.
2. Add the dates to a food processor and blend until they are broken down, about a minute.
3. Add the coconut oil and process for another 30 seconds.
4. Add the remaining crust ingredients, process until fully incorporated and a dough forms, about 1-2 minutes.
5. Using your fingertips and the palms of your hands, press the dough evenly into the tart pan or pie dish.
6. Bake for 15-20 minutes. Remove from oven and set aside to cool.
7. To prepare the filling, be sure you previously separate the coconut cream from the liquid. (To do this, put a can, carton or homemade full-fat coconut milk into the refrigerator for 8-12 hours. The cream will separate into a thick layer. Remove from the refrigerator, being careful not to disturb the fat separation. Scoop the coconut cream from the coconut water.)
8. In a small saucepan, melt coconut butter over medium heat.
9. Meanwhile, in a medium-sized mixing bowl, whip the coconut cream with a whisk or hand-mixer. Add sweetener and lemon juice. Gently fold in the melted coconut butter.
10. Pour coconut cream mixture into the cooled crust. Transfer to the refrigerator to allow the filling to set up.
11. Top with fruit and garnish with fresh mint or basil.

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Ashley Turner, CNHP, is a doctor of naturopathy student, homesteader and homeschooling mother of three girls. She practices alongside her husband, Dr. Kevin Turner at Restorative Chiropractic & Functional Wellness Center in SE Pennsylvania. In addition to helping clients achieve their health goals, Ashley teaches classes on natural health and traditional food. She writes about health and shares recipes at restorativechiro.com/blog.

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