What are food sensitivities?

I was recently asked to explain what it meant to be allergic or sensitive to foods, and what I experience when I eat a particular food I am sensitive to. Let me start with a basic overview of the mechanics of food intolerances and sensitivities.

Most of us probably know someone with a shellfish or nut allergy, or someone who considers themselves lactose intolerant. We can have a negative physiological reaction to nearly any food: stone fruit, avocados, strawberries, garlic and even red wine and chocolate. Biology has a twisted sense of humor sometimes. That negative reaction — whatever it is — is a food intolerance or sensitivity.

Our immune system: The basics

One of the fundamental components of our immune system is the ability to recognize what is “us” and “not-us” by “reading” the chemical signatures of all substances within our bodies.

Innate immunity

Our innate immune system is an ancient type of immune system that almost all multi-cellular organisms share. It uses a primitive but effective “block, attack, raise the alarm, kill, get rid of the bodies” strategy for non-specific defense against pathogens.

One of the key pieces of our adaptive immune system is simple: a physical barrier between foreign materials and us. One of our most important safety barriers is our intestinal lining, which is helped in its job by:

- peristalsis (contractions that pass food through our GI tract) that ensures things don’t linger too long in there;
- saliva that washes away pathogens that might adhere in the mouth;
- stomach acid that kills many pathogens;
- mucus that traps pathogens and carries them out; and
- “good” bacteria that colonize the GI tract (more on this in next month’s newsletter).

The intestinal lining, or epithelium, is semi-permeable. It is picky about what it lets in (e.g. nutrients) and what it keeps out (e.g. pathogens). Any pathogens that bypass the first line of defense are identified by the innate immune system, targeted, killed, and disposed of. This process also involves inflammation. As part of identifying the invaders, the innate immune system also signals and calls in reinforcements: the adaptive immune system.
Adaptive Immunity

Our later-evolving adaptive immune system is a more sophisticated form of defense. It distinguishes “self” from “not-self” and responds to non-self antigens (literally, antibody-generators) that bypass the innate immune system.

The adaptive immune system depends on two groups of lymphocyte cells: B and T cells, which make up a large proportion of our white blood cell count. When the adaptive immune system detects an antigen, it not only locks on to that antigen, but remembers it for next time.

When immune systems attack

Generally this system works nicely. Our bodies are usually pretty good at distinguishing “me” from “not-me”, killing what needs killing, and not getting too testy about harmless substances such as food.

However, in people with allergies and other sensitivities, the immune system is often hyper-reactive — it sees otherwise harmless things as threats, and responds accordingly.

Food Allergy

In the case of allergy, the immune system produces Immunoglobulin E (IgE) antibodies to particular substances (such as one or more components of a specific food). Next time that allergic person meets the food, the body recognizes it as a pathogen.

The matching IgE attaches to the perceived pathogen, stimulating the release of histamine and other chemicals.

Histamine creates immediate and often dramatic swelling and inflammation in responsive tissues (e.g. in respiratory passages, face/eyes, skin rashes or hives, etc.), along with other symptoms aimed at rejecting the pathogen, such as vomiting or diarrhea. It can also create cardiac events. In other words, it is serious business. Individuals with a severe food allergy (aka anaphylaxis) will know it. They probably have stories of near-death experiences and know what to avoid. Some individuals will also have milder oral allergies that simply result in itchy mouth or lips, but may (over time) worsen.

These common allergens account for 90% of all food allergies:

- dairy
- eggs
- peanuts
- tree nuts (e.g. almonds, cashews, walnuts, etc.)
- fish
- shellfish
- soy
- wheat

Histamine intolerance

Some people do not have allergic reactions, but rather an intolerance to dietary histamines (often because they lack at least one of two critical enzymes — diamine oxidase (DAO) and histamine-N-methyltransferase (HNMT) — that bind to and metabolize histamine.

These folks will have trouble with histamine-containing foods (or foods that release histamine into the body) such as:

- particular types of fish (e.g. tuna, sardines, mackerel, herring);
• particular types of cheese;
• some vegetables, such as spinach, eggplant, and avocados;
• some fruits, such as strawberries, kiwi, tomatoes, papaya, pineapples, and stone fruit (e.g., peaches, plums, cherries, etc.);
• processed meats;
• Fermented foods (including wine and beer); vinegars;
• Chocolate/cocoa, coffee, tea.

Other Food Sensitivities
Non-IgE-mediated responses to food are generally referred to as int tolerances rather than true allergies. Other types of food sensitivities, for example, are immune-based responses but a T-cell response instead of an IgE response. In a future newsletter, I will share information on T-cell mediated responses that occur in response to particular substances in foods such as grains, legumes, and dairy. Some food intolerances can come from inadequate digestive enzymes, such as not having enough lactase to break down lactose, the predominant sugar in milk.

For one thing, food sensitivities can have widespread effects, including:
• local and systemic inflammation (e.g. in joints);
• fatigue and pain;
• headaches or migraines;
• GI symptoms;
• skin symptoms (e.g. acne, rashes, etc.);
• psychological and cognitive symptoms (e.g. mood issues, sleep problems, brain fog, etc.).

For another, many of these effects are delayed. They may appear long after the offending food has been consumed. And while there are clear diagnostic tests for some sensitivities, there is no way of clearly pinpointing others.

My Experience
When I was experiencing inflammation in my joints and gut many years ago, I went on an elimination diet. It was suggested to me to eliminate wheat, yeast, sugar, dairy, and several types of fruit and veggies for at least a month. After a month, I was instructed to introduce one food at a time. I kept a food and feelings journal when I added some of the foods back into my diet. I would record my food intake along with any physical symptoms, even some that seemed unrelated. I discovered I was very sensitive to wheat and some grains, to a variety of fruit, dairy in a variety of forms (ice cream, whip cream and sour cream to name a few) and I felt sluggish after consuming sugar (but that’s no surprise). For the most part, over the past 17 years, I have stayed away from wheat and a variety of dairy products. These things in particular cause me much discomfort which makes it easy to stay away from them. Seventeen years ago, it was a challenge trying to figure out what to eat, especially when I would go out to a restaurant. Nowadays, most places have several gluten-free options on the menu and grocery stores designate one or more isles just for gluten-free products.
Food Journal Example

If you are experiencing symptoms that were discussed in this newsletter, try the food and feelings journal for yourself. This journal gives you some information and ideas to start with. Review a few days’ worth of data before drawing any conclusions. Then perhaps test a few days or more without the potentially offending food.

Food and feelings journal example

<table>
<thead>
<tr>
<th>TIME</th>
<th>WHAT I ATE</th>
<th>WHAT I NOTICED</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 AM</td>
<td>Whole wheat bagel, 1 tbsp</td>
<td>Stuffy nose after about</td>
</tr>
<tr>
<td></td>
<td>peanut butter</td>
<td>an hour. Skin is a bit itchy.</td>
</tr>
<tr>
<td></td>
<td>Medium lettuce</td>
<td></td>
</tr>
<tr>
<td>10:30 AM</td>
<td>1 medium apple</td>
<td>Stuffy nose a bit.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stomach feeling a little</td>
</tr>
<tr>
<td></td>
<td></td>
<td>slightly bulky.</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>Tuna sandwich — tuna with</td>
<td>Nothing. Felt OK.</td>
</tr>
<tr>
<td></td>
<td>mayonnaise, lettuce, tomatoes in whole wheat bread</td>
<td></td>
</tr>
<tr>
<td>4:00 PM</td>
<td>1 small Greek yogurt,</td>
<td>Stuffy nose again.</td>
</tr>
<tr>
<td></td>
<td>1 small pretzel</td>
<td>Stomach a little upset.</td>
</tr>
</tbody>
</table>

Belly Soothing Fall Soup

I love making soup this time of the year because not only does it warm up the house, it also warms the belly. Plus, I get several servings of veggies in one meal.

Creamy Broccoli Soup

Ingredients
3 cups fresh organic broccoli, chopped
3 cups kale, chopped and packed
2 cloves garlic, chopped
1 shallot, diced
1 inch fresh ginger, peeled and chopped
2 tbsp each chopped fresh parsley, cilantro, mint
1 can coconut milk
1 tbsp coconut oil
Sea salt and pepper to taste

2. Add broccoli and kale. Add just enough water to cover the veggies.
3. Bring to a high simmer. Cover pot and reduce heat to a medium simmer. Cook until veggies are tender (approx. 10 – 12 minutes).
4. Add chopped parsley, cilantro, and mint. Season with sea salt and pepper to taste.
5. Remove pot from the heat. Use an immersion blender or Vita-mix to puree the soup.
6. Return pot to stove and add in the coconut milk. Stir and heat through gently.

Provided by paleosecret

Melissa Begay
Director, Physical Recreation
Work Phone (575)835-5120
melissa.begay@nmt.edu

Eating Psychology Coach
RKC Level 1 Instructor
Precision Nutrition Level 1 & 2 Coach
ACE Personal Trainer & Health Coach
HeartMath Mentor/Coach