

Food Intolerance - Lesson Plan

Goal: To educate students on food intolerances, specifically symptoms and reactions to certain types of food.

Objectives

- At the end of the lesson students will be able to:
- Describe the difference between a food allergy and food intolerance.
 - Identify the eight most common food intolerances
 - Describe the body's reactions to food intolerances
 - Explain the treatments for food intolerances

Quiz (located at the end of the lesson)

Lesson Plan

1. Introduction

- Food intolerances and food allergies can look similar, but they are different conditions.
- Food intolerance is when eating a food causes discomfort, usually in the digestive system.
- A food allergy occurs when even a small amount of a food triggers the immune system and causes severe symptoms.

2. What does it mean when someone has a Food Intolerance?

- It's a condition in which the body has an abnormal digestive system response triggered by certain foods.
- A food intolerance can occur when the digestive system incorrectly identifies some of the chemicals in food as harmful.
- A food intolerance can occur when the body isn't able to properly break down the food.
- Up to 20% of the world's population has a food intolerance.
- Symptoms may show up from within a few hours and up to 48 hours after ingesting the food.
- To determine a food intolerance, an elimination diet may be needed to narrow down the food(s) that are causing the intolerance.

3. The eight most common food intolerances

Food Intolerance #1 - Dairy

- Lactose is a sugar found in milk and dairy products. To digest lactose, you need lactase enzymes in your gut.
- People who are lactose intolerant lack a sufficient amount of lactase enzymes.
- An estimated 65% of the world's population has lactose intolerance.

Symptoms

- Abdominal pain
- Bloating
- Diarrhea
- Gas
- Nausea

Treatment

People with lactose intolerance can usually tolerate ½ - 1 cup of milk a day. Alternatives include lactose-free dairy products and plant-based dairy products. Plant based milk products such as oat milk or soy cheese do not always have the same protein, calcium, and vitamin D content as dairy. Read the label to be sure you are getting the nutrition you need!

Food Intolerance #2 - Gluten

- Gluten is a protein found in the wheat family, which includes wheat, barley, rye, triticale, farina, einkorn, emmer (farro), spelt, Kamut, bulgur, and wheat berries.
- Gluten intolerance is estimated to affect 0.5-13% of the population.

Symptoms

- Bloating
- Abdominal pain
- Diarrhea or constipation
- Headaches
- Fatigue
- Joint Pain
- Skin rash
- Depression or anxiety
- Anemia

Treatment

People with this food intolerance should avoid the following foods unless they are labeled gluten free:

Bread	Crackers
Pasta	Sauces—especially soy sauce
Cereals	Salad dressings
Beer	Gravies
Baked goods	

Food Intolerance #3 - Caffeine

- Caffeine is a chemical found in beverages such as coffee, soda, tea and energy drinks
- Some people are sensitive to caffeine and can have reactions to a small amount.
- Those with this food intolerance are not able to metabolize and excrete caffeine.

Symptoms

- Rapid heartbeat
- Anxiety
- Jitters
- Insomnia
- Nervousness
- Restlessness

Treatment

People with this food intolerance need to avoid foods and beverages that contain caffeine.

Food Intolerance #4 - Salicylates

- These are natural chemicals that are produced by plants.
- The chemicals are produced to protect plants from insects and disease.
- Salicylates can have an anti-inflammatory effect on the body.
- This chemical is often used in foods and medicine as a preservative.
- Most people have no problem consuming salicylates found in foods.
- Some people are sensitive to them and can have physical reactions.

Symptoms

- Stuffy nose
- Sinus infection
- Nasal and sinus polyps
- Asthma
- Diarrhea
- Gut inflammation
- Hives

Treatment

It is impossible to remove all foods with salicylates; however, a process of elimination will help to diagnose which foods are responsible for the intolerance. If an intolerance is found, it is recommended that food high in salicylates be avoided. Foods that contain salicylates include the following:

Fruits	Nuts
Vegetables	Honey
Teas	Coffee

Spices

Raisins

Food Intolerance #5 - Amines

- Bacteria produce amines during fermentation and food storage.
- There are many types of amines.
- Histamines are the most common type.
- Histamine is a chemical found in the body. It is found in the immune, digestive and nervous systems.
- Histamines help to protect the body by creating an inflammatory response to allergens.
- Histamines cause a person to sneeze and have itchy, watery eyes. This is the body's response to get rid of the allergen.
- Some people cannot break down the histamine, so it builds up in the body.

Symptoms

- Flushing of the skin
- Headaches
- Hives
- Itching
- Anxiety
- Stomach cramps
- Diarrhea
- Low blood pressure

Treatment

Once a doctor has determined that a histamine intolerance exists, it will be recommended that the person avoid the following foods:

Fermented food	Cured meats
Dried fruits	Citrus fruits
Avocados	Aged cheeses
Smoked fish	Vinegar
Beer	Soured foods (like buttermilk)
Wine	

Food Intolerance #6 - FODMAPs

- The FODMAP abbreviation stands for “fermentable oligo-, di-, mono-saccharides and polyols.”
- FODMAPs are carbohydrates found in foods that cannot be digested, and instead go straight to the large intestine where the gut bacteria is.
- FODMAP intolerance occurs when the bacteria in the colon form hydrogen gas and cause discomfort in the intestinal tract.

Symptoms

- Bloating

- Diarrhea
- Gas
- Abdominal pain
- Constipation

Treatment

The following foods should be avoided or eaten infrequently if there is an intolerance:

Apple	Bread
Soft cheese	Beans
Honey	Lentils
Milk	Beer
Artichokes	

Food Intolerance #7 - Sulfites

- These chemicals are used as preservatives in foods, drinks and in some medications.
- Sulfites are added to foods to delay natural browning and to wine to prevent it from spoiling.
- Most people can tolerate sulfites.
- It is not unusual for people with asthma to have a sulfite intolerance.
- The Food and Drug Administration (FDA) has instructed food and drink manufacturers to add to the label that sulfites are used in processing their products.

Symptoms

- Hives
- Swelling of skin
- Stuffy nose
- Low blood pressure
- Flushing
- Diarrhea
- Wheezing
- Coughing

Treatment

The best way to avoid this food intolerance is to completely eliminate or eat sparingly foods that contain sulfites.

Canned fruits	Canned vegetables
Fruit juices	Vegetable juices
Fruit fillings	Dried fruit
Cereal	Corn meal
Deli meats	Crackers
Corn starch	Wine

Beer

Soy products

Food Intolerance #8 - Fructose

- Fructose is a sugar found in fruits and vegetables, honey, agave and high fructose corn syrup.
- Fructose is being consumed more than ever before. Its intake has increased 1000% in the last 40 years.
- Fructose overconsumption has been linked to an increase in obesity, liver and heart disease.
- People with this intolerance aren't able to absorb fructose into the blood.
- Fructose is absorbed by the large intestine which then causes distress in the digestive process.

Symptoms

- Gas
- Diarrhea
- Nausea
- Abdominal pain
- Vomiting
- Bloating

Treatment

In order to avoid this food intolerance the following foods should be avoided:

Soda

Apples

Watermelon

Cherries

Sugar snap peas

Honey

Agave nectar

High fructose corn syrup

Pears

4. Summary

Food intolerances trigger the digestive system, but not the immune system. The symptoms tend to be less severe than those of food allergies. However, food intolerances can negatively affect health and ought to be taken seriously.

Consulting a physician is the best practice if you suspect that you may have a food intolerance to food or a food additive.

Let's Review!

A MATCHING ACTIVITY

Use the information above to complete this worksheet. Write the letter of the term in the box next to the best description of that term.

TERM		DESCRIPTION
A. Food allergy		Intolerance of a protein found in the wheat family
B. Food intolerance		An inability to digest lactose. You can use lactose-free milk
C. Dairy intolerance		Sometimes severe immune system reaction to food
D. Gluten intolerance		You would need to stop drinking coffee and tea
E. Caffeine intolerance		Rare intolerance caused by eating plants
F. Salicylate intolerance		Caused by eating foods with preservatives
G. Amine intolerance		Usually an uncomfortable digestive system reaction to food
H. FODMAP intolerance		Inability to digest a sugar found in plants and a manufactured corn syrup
I. Sulfite intolerance		When the gut bacteria produces hydrogen gas after eating some foods
J. Fructose intolerance		Body can't break down histamine

Let's Review!

A MATCHING ACTIVITY ANSWER KEY

- A. Food allergy - sometimes severe immune system reaction to food
- B. Food intolerance - usually an uncomfortable digestive system reaction to eating food
- C. Dairy intolerance - an inability to digest lactose, you can use lactose-free milk
- D. Gluten intolerance - intolerance of a protein found in the wheat family
- E. Caffeine intolerance - you would need to stop drinking coffee and tea
- F. Salicylate intolerance - rare intolerance caused by eating plants
- G. Amine intolerance - caused by eating foods with preservatives
- H. FODMAP intolerance - when the gut bacteria produces hydrogen gas after eating some foods
- I. Sulfite intolerance - caused by eating foods with preservatives
- J. Fructose intolerance - inability to digest sugar found in plants and a manufactured corn syrup