



# **Managing Food Allergies & Gluten Free Needs in Colleges and Universities**

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# Meet the Panel

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## Speaker



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## Speaker



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# Overview

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## Part I

- Food Allergies
- Gluten & Celiac Disease
- Gluten Free

## Part II

- Knowing your audience
  - How to Manage Food Allergies
  - Gluten Free Recipes
  - Resources
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# **FOOD ALLERGIES**

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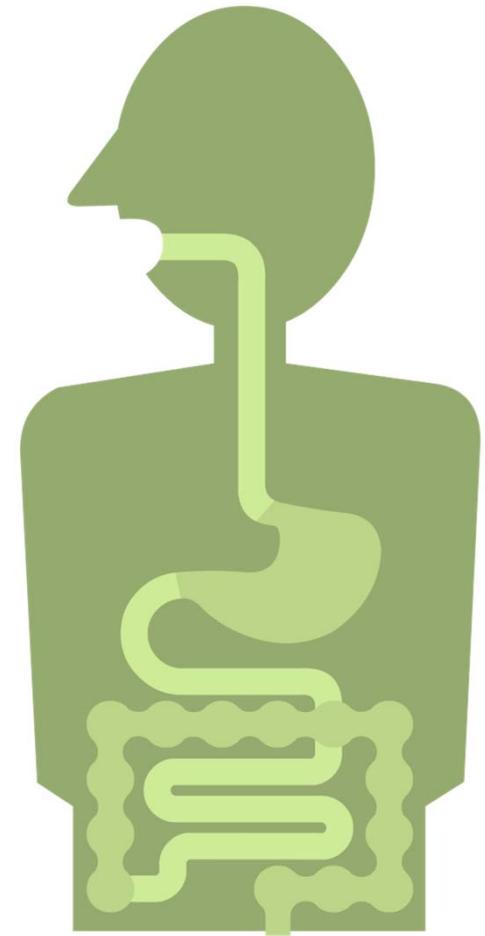


# What is a Food Allergy?

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- Adverse reaction to food that involves the immune system.  
Immunoglobulin E (IgE) mediated.
  - IgE: an antibody that fights foreign substances in our body

Onset is often immediate and more severe
- Symptoms
  - Mild to Severe/Life-threatening
  - Hives to severe gastrointestinal and respiratory irritation
  - Anaphylactic shock





# Factors Involved in Development of a Food Allergy

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Genetics



Exposure to allergenic food



Age at exposure



Dose, frequency, and duration of exposure

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# Most Common Food Allergens

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- Cows' Milk



- Egg



- Shellfish

- Fish



- Peanut



- Soy

- Tree nuts

- Wheat

Allergens must be listed on labels! There are eight (8) major food allergens that are required to be placed on a food label.

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# Prevalence

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**As many as 15 million Americans have food allergies:**

- An estimated 9 million, or 4%, of adults have food allergies.
- Number of individuals born between 1997 and 2011 with allergies increased by 18%



# Allergy Considerations by Age

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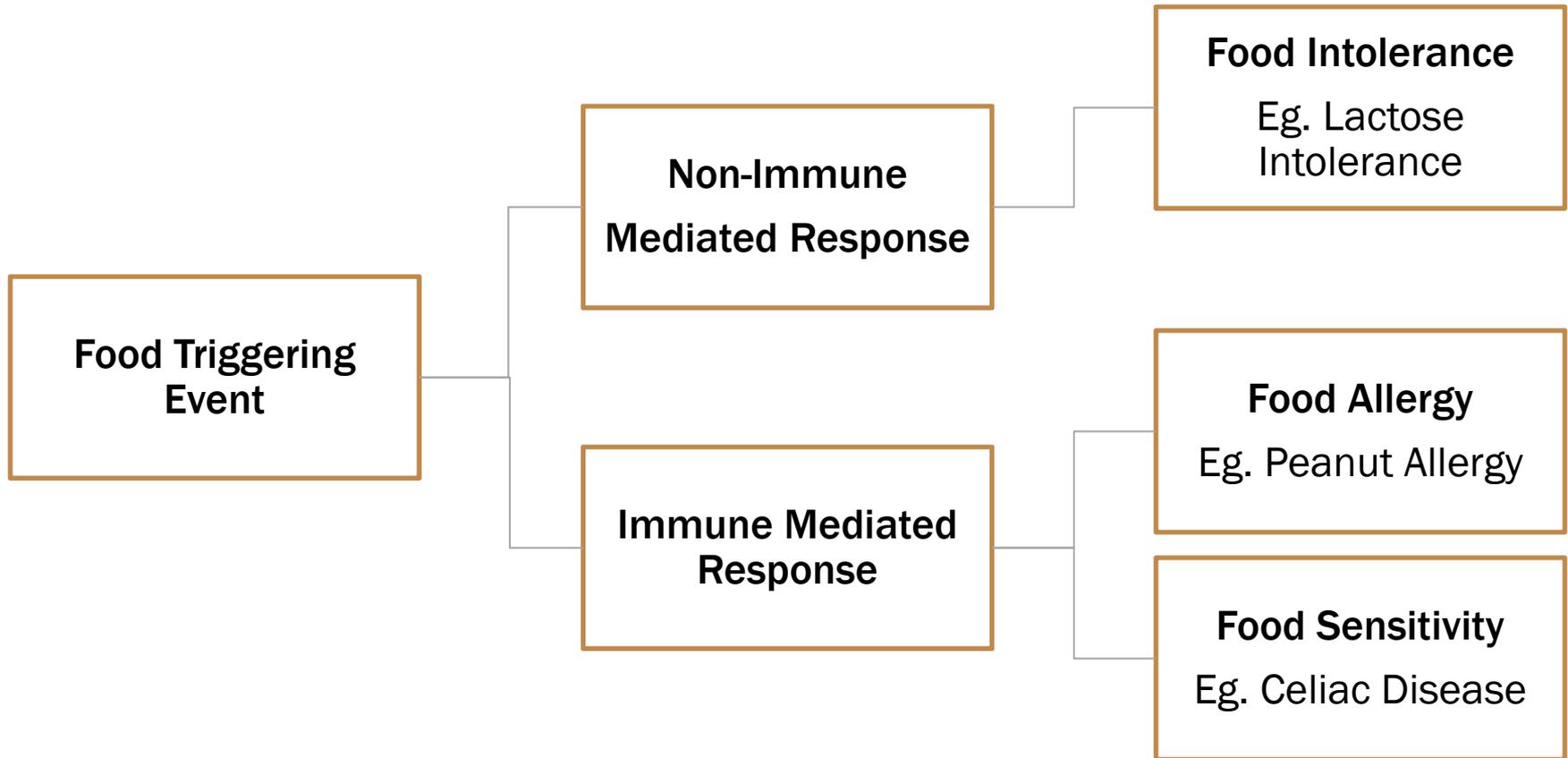
- Teens with food allergies are taking risks
  - 42% of food-allergic teens ignore “may contain” labeling
    - 19% claim no prior reaction to allergic food
    - 13% taste test
  - Only 33% consider their allergy life threatening
- Younger millennials also tend to be adventurous
  - 40% will order something different every time they visit a restaurant





# Allergy vs. Sensitivity vs. Intolerance

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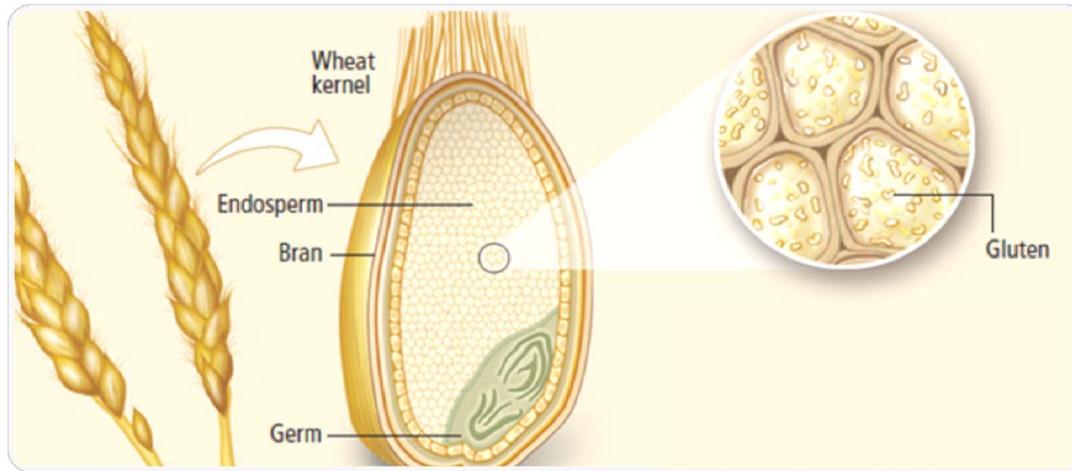


# **GLUTEN AND CELIAC DISEASE**

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# What is Gluten?

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- The primary storage proteins in wheat, barley and rye.
  - The specific protein families that make up gluten are very functional in food and make replacing gluten difficult
    - Glutenin: dough elasticity, leavening, chewiness in baked products
    - Gliadin: gas-holding properties
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# What is Celiac Disease?

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- Celiac disease is a genetic, autoimmune disorder triggered by the ingestion of gluten or other related proteins in grains
- It is the only autoimmune disorder with a known trigger: gluten
- 3 components necessary for disease diagnosis:
  - Environmental Trigger (gluten)
  - Genetic susceptibility
  - Unusually permeable intestinal wall
- Celiac Disease can lead to malabsorption
  - Nutrient/mineral deficiencies are common in newly-diagnosed CD patients



# What Celiac Disease Is Not

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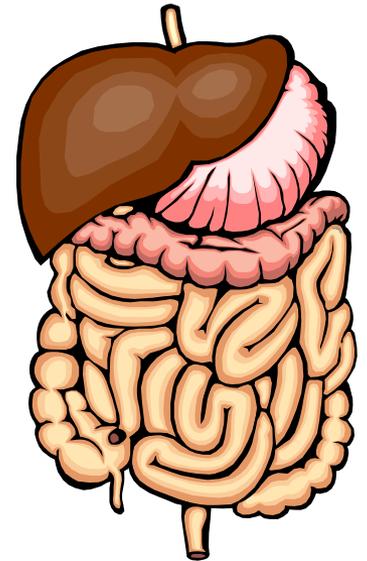
- **A food allergy**
    - Food allergy stimulates different immune response (IgE)
  - **The same as intolerance**
    - Indigestibility of gluten is not due to the absence of required enzymes
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# What Happens When a Person With Celiac Disease Ingests Gluten

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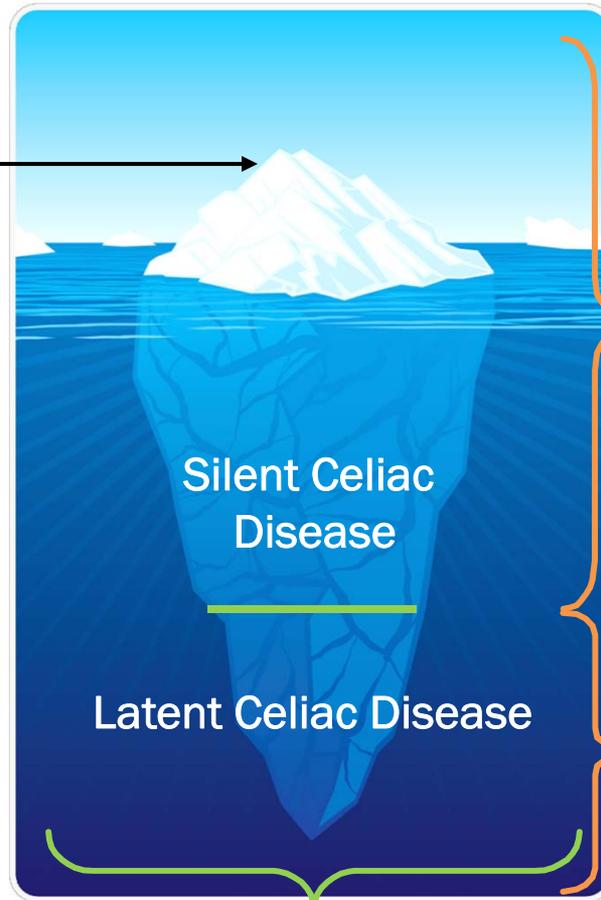
- 1 Absorptive villi become inflamed and damaged due to the body's response to gluten
- 2 Damaged villi are unable to carry out their normal function
- 3 Prevents delivery of nutrients throughout the body





# The Celiac Iceberg

Symptomatic  
Celiac Disease:  
Classic & Atypical



Intestine  
is damaged

Intestine  
appears normal

Genetic susceptibility



# Celiac Disease Symptoms

## Gastrointestinal Manifestations (“Classic”)

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### Children:

#### Gastrointestinal Manifestations (“Classic”)

- Chronic/recurrent diarrhea or Constipation
- Lack of appetite
- Weight loss

### Adults:

#### Atypical Symptomatic Celiac Disease

- Fatigue
- Irritability and behavioral changes
- Skin Disorders
- Bone and Joint Pain
- Dental enamel defects & discoloration
- Muscle Cramps
- Epilepsy and seizures
- Depression



# How Common Is Celiac Disease?

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1 in 141 Americans (<1%) have Celiac Disease<sup>1</sup>



At least **1.8 Million** Americans have Celiac Disease<sup>1</sup>

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1. Rubio-Tapia A1, Ludvigsson JF, Brantner TL, Murray JA, Everhart JE. The prevalence of celiac disease in the United States. *Am J Gastroenterol.* 2012 Oct;107(10):1538-44;



# Celiac Disease Prevalence in C&U

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Of 1000 students following a gluten-free diet:

- 58% identified themselves as having celiac disease
- 61% said they are uncomfortable eating in the dining hall



# How Is Celiac Disease Diagnosed?

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- Two Step Process
  - Blood Test
  - Biopsy
- Who Should Get Tested?
  - First Degree Relative
  - Symptomatic
- Average length of time prior to diagnosis with celiac disease for a person showing symptoms is 4 years in the US.





# Treatment

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- The only known treatment for Celiac Disease is a life long gluten free diet.
  - Elimination of gluten leads to resolution of symptoms and intestinal damage
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**GLUTEN FREE**

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# What Is Gluten Free?

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- The FDA definition: a food labeled “gluten free” must have <20ppm of gluten
  - Foods can be labeled gluten free if they contain <20ppm of gluten
- Foods can be naturally free of gluten or manufactured to be free of gluten
- Gluten free foods often do not contain the following grains because of their naturally high level of gluten:
  - Wheat
  - Barley
  - Rye





# Wheat Free $\neq$ Gluten Free

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- Gluten is not only found in wheat, but is also found in rye, barley and hybrids of these grains and ingredients made from these grains.
- "Wheat free" is not defined by FDA.
- A product labeled "wheat free not necessarily gluten free
- Check ingredient list or package for "gluten free"





# Gluten-Free Grains

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- Amaranth
- Buckwheat
- Corn
- Millet
- Quinoa
- Montina™ (Indian Rice Grass)
- Rice
- Sorghum
- Teff
- Wild Rice
- Oats\*



*\*Oats are inherently gluten-free, but are frequently contaminated with wheat during growing or processing.*



# Nutritional Considerations of a Gluten Free Diet

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- Whole grain & enriched grain foods are major sources of nutrients in the American diet
- Fortified cereals provide key nutrients of need
- Removing these types of foods from the diet when following a GF diet can result in lower intakes of various nutrients

## **Nutritional Concerns of a Gluten-Free Diet:**

- Lower antioxidant status
  - Decreased levels of vitamin A, vitamin E and selenium
- Other ingredients/nutrients/minerals of concern:
  - Whole Grain
  - Iron
  - B-vitamins
  - Fiber
  - Vitamin D
  - Fat Intake
  - Calcium
- There are plenty of foods, including cereals, that are gluten free and provide these key nutrients of need



# Gluten Free Lifestyle

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Two other groups who may be following a gluten free diet:

- Those who have symptoms that don't relate to Celiac Disease
- Those who don't have symptoms but have chosen to follow a Gluten Free diet for other reasons (i.e social, personal)
  - 95% of individuals indicate that they consume gluten free for reasons beyond treatment of celiac disease<sup>2</sup>



# Summary

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- A food allergy is an adverse reaction to food that involves the immune system.
  - Generally IgE mediated
  - Onset is immediate
- Celiac Disease is an autoimmune disease triggered by gluten and is largely undiagnosed in many populations
- A gluten-free diet is the only treatment for Celiac Disease





# Overview

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## Part I

- Food Allergies
- Gluten & Celiac disease
- Gluten Free

## Part II

- **Knowing your audience:**
    - Celiac Disease
    - Gluten Sensitivity
    - Gluten Avoiders
  - **How to Manage Food Allergies in C&U**
  - **Gluten Free Recipes**
  - **Resources**
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# Know Your Customer

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# Interact with your Students

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# Why is it important to accommodate food allergies and sensitivities?

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- Mandatory dietary accommodations for Students with food allergies
  - Severe food allergies and Celiac disease can be considered a disability





# Managing Food Allergies in the C&U Setting

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- 1 Inform yourself
- 2 Communicate the information received
- 3 Test the knowledge





# Gluten Free Zones/Stations

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- A separated area within the on-campus dining hall where gluten free products are offered.
  - Ex. Breads, pastries, tortillas
- Food from other areas of dining hall are prohibited in Gluten Free zones
- Signage & purple serving equipment can remind patrons and workers of the importance of reducing cross-contact



University of New Hampshire



# Gluten Free Zones/Stations

Use of Nutritional Icons can help with labeling across dining halls and retail locations



## Programs and Services Allergen Reference Icons

Campus Dining uses easy-to-read allergen icons to help students identify foods with certain ingredients. You can find these icons online at the [Nutrition Facts](#) for each of our restaurants.

-  **Gluten-Free:** foods that do not contain gluten products such as wheat, barley, rye or triticale.
-  **Dairy-Free:** foods that do not contain lactose such as milk, cheese, yogurt, or butter.
-  **Peanut-Free:** foods that do not contain peanuts.
-  **Low-Fat:** foods which have 3 grams of fat or less per 100 gram serving.



Ohio State University



# Gluten Free Zones/Stations

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## Example: Bulk Cereal

- Purchase new bins, store, and display away from gluten-containing cereals



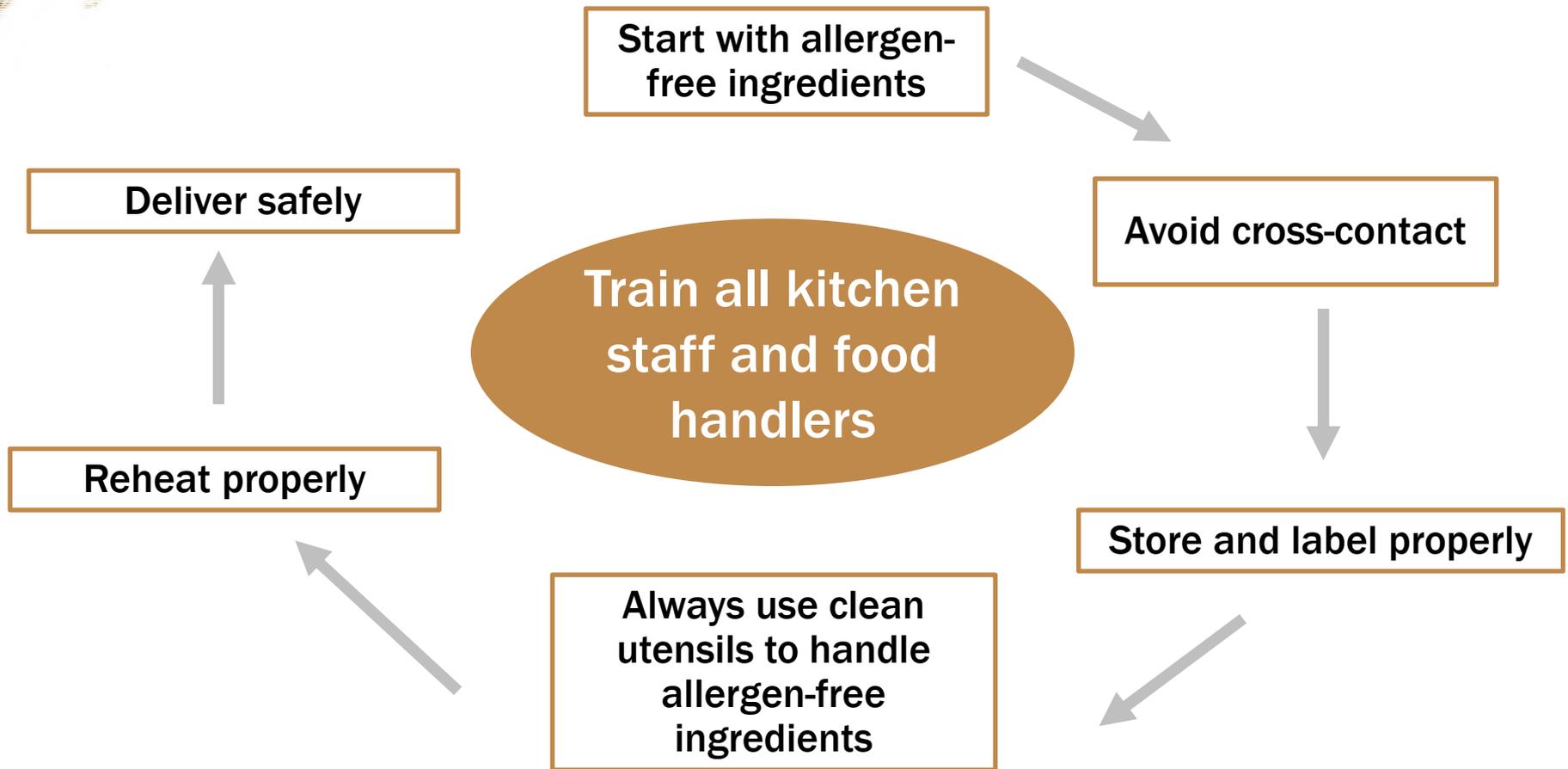
All three bins on this station should be gluten-free and labeled individually

- ❖ Student education around cross-contact is important – consider cross-contact signage for gluten free foods not included in GF Zones
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# Managing Food Allergies in the Kitchen

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# How to Manage Food Allergies in the Kitchen

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## GOOD

- Clean surfaces
- Isolate ingredients
- Label foods
- Different equipment
- Train employees
- Good hygiene



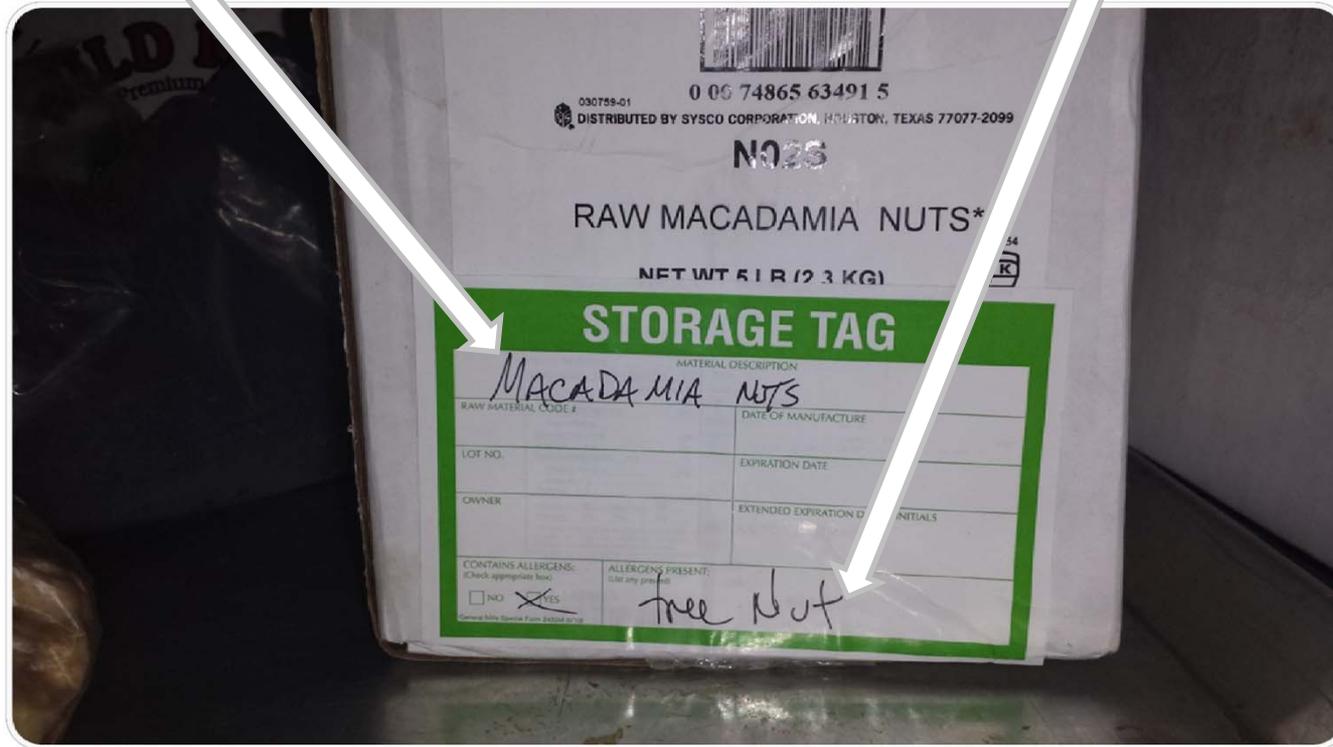
## NOT SO GOOD

- Carelessly preparing the food
  - Sharing equipment
  - Not labeling allergens
  - Poor communication
  - Poor hygiene
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# Example of Good Labeling Practices

Name of the product

Allergen





# Food Markers

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# Consider Purchasing an Allergen Kit

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- Purple cutting board
- Knives
- Tools
- Serving trays
- Sautee pans
- And many more solutions....





# Cereal Dispenser Best Practices

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- Start with a new or visibly clean dispenser
  - Ensure that product is clearly labeled
  - Provide ingredient information at point of use
    - Or provide reference to ingredient information
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# Using Food Labels to Determine the Presence of Allergens

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fructose corn syrup, modified corn starch, salt, mono and diglycerides, potassium sorbate [preservative], xanthan gum, sodium bicarbonate, artificial flavor), **Walnut Pieces, Cocoa Processed with Alkali, Corn Syrup. Contains 2% or less of:** Partially Hydrogenated Soybean and/or Cottonseed Oil, Corn Starch, Salt, Carob Powder, Artificial Flavor. Freshness Preserved by BHT.

**CONTAINS WHEAT, WALNUT, MILK AND SOY INGREDIENTS.**

INGREDIENTS: DATES, **CASHEWS, ALMONDS,** LEMON JUICE CONCENTRATE, DRIED LEMON JUICE CONCENTRATE, NATURAL LEMON FLAVOR.

- All products are required by law to list the allergens contained in common terms
- Some products will list a “contains” statement for allergens at the end of the ingredient declaration
- Some products will simply list the common names in the ingredient statement



# Using Food Labels to Determine the Presence of Allergens

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**Ingredients: Chicory Root Extract, Semisweet Chocolate Chips** (sugar, chocolate liquor, cocoa butter, soy lecithin, natural flavor), **Whole Grain Oats, Corn Syrup, Rice Flour, Barley Flakes, Sugar, Canola and Palm Kernel Oil, Vegetable Glycerin, High Maltose Corn Syrup, Maltodextrin, Tricalcium Phosphate, Sugarcane Fiber, Soy Lecithin, Cocoa Processed with Alkali, Salt, Fructose, Malt Extract, Caramel Color, Cellulose Gum, Baking Soda, Milk, Natural Flavor, Mixed Tocopherols added to retain freshness.**

**CONTAINS SOY, MILK; MAY CONTAIN PEANUT, ALMOND, SUNFLOWER AND WHEAT INGREDIENTS.**

## “May Contain” Statements

- Not a required statement by FDA, so not all food labels will bear a "may contains" or “shared on equipment” statement
- There is a small chance the allergen could be present although it is not explicitly added to the product recipe
- Follow the recommendation of the licensed physician or your facility’s allergen management policy when deciding whether to use these products



# Gluten Free Recipes!

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Gluten-Free Apple  
Bread Pudding



Gluten Free Granola



Gluten-Free Crispy  
Chicken Pot Pie



Gluten-Free Grilled Chicken  
Peanut Noodle Salad



Gluten-Free Swiss Yogurt  
Oatmeal



Gluten-Free Tex-Mex  
Veggie Burgers



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Recipes available at [www.generalmillsfoodservice.com](http://www.generalmillsfoodservice.com)



# RESOURCES

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# Resources

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- Centers for Disease Control and Prevention:  
<http://www.cdc.gov/healthyyouth/foodallergies/>
  - Food Allergy Research and Education:  
<http://www.foodallergy.org/>
  - NEA Health Information Network:  
[http://www.neahin.org/assets/pdfs/foodallergybook\\_english.pdf](http://www.neahin.org/assets/pdfs/foodallergybook_english.pdf)  
[http://www.neahin.org/assets/pdfs/foodallergybook\\_spanish.pdf](http://www.neahin.org/assets/pdfs/foodallergybook_spanish.pdf)
  - National Food Service Management Institute  
<http://www.nfsmi.org/ResourceOverview.aspx?ID=428>
  - United States Department of Agriculture, Food and Nutrition Service  
<http://origin.www.fns.usda.gov/fns/safety/pdf/FoodAllergyBook.pdf>  
[http://www.fns.usda.gov/sites/default/files/special\\_dietary\\_needs.pdf](http://www.fns.usda.gov/sites/default/files/special_dietary_needs.pdf)
  - Celiac Disease Foundation:  
<http://celiac.org/live-gluten-free/>
  - National Foundation for Celiac Awareness:  
<http://www.celiaccentral.org/education/>
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# Gluten Free Training

Take **GREAT Kitchens training** (20% off for General Mills customers) to learn how to meet the needs of your students with celiac disease and gluten sensitivity –

Go to: [www.greatGFKitchens.org/generalmills](http://www.greatGFKitchens.org/generalmills)

**GREAT Schools Training by the National Foundation for Celiac Awareness includes:**

- Tips for gluten-free preparation and service
- How to read labels to identify gluten sources
- How to avoid cross-contact
- Resources to conduct staff meetings and train new employees
- Increase confidence in your staff
- Increase trust with gluten-free students and parents



**Management Training includes:**



• **Recipe Adjustment**

> Easiest for savory dishes

- Use fresh ingredients
- Make simple sauces
- Grill (on clean grill), sauté or bake (don't deep fry)
- Substitute/replace side dishes



- : 2.5 hours on-line course
- : Training Manual – PDF includes checklists and recipes
- : Post-test and certificate of completion
- : Chefs and dietitians receive CE credit

[www.greatGFKitchens.org/cheerios](http://www.greatGFKitchens.org/cheerios)



# Questions

