

# FAD Diets and GI

## Should anyone follow it?

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04/26/2018

## Objectives

- Know the dietary philosophies of common novel diets
- Review the most recent evidence related to those diets
- Identify and better counsel patients who would benefit from specific dietary changes

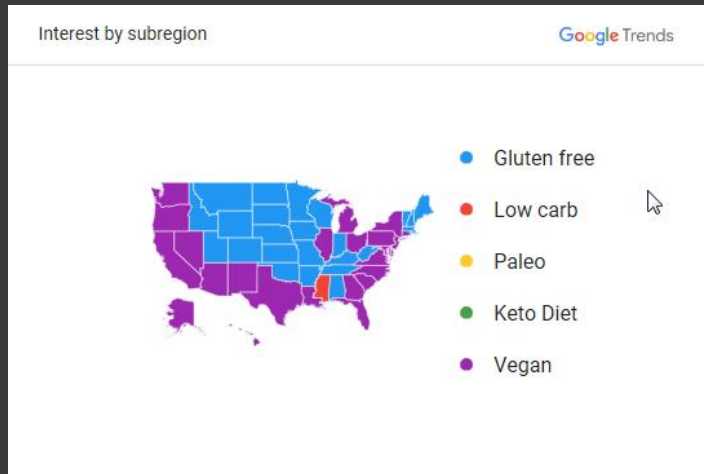
- I have no relevant financial relationships with the manufacturers(s) of any commercial products(s) and/or provider of commercial services discussed in this CME activity
- I do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation.

## FAD Diet

- Diet or Diet cult that makes promises of weight loss or other health advantages such as longer life without backing by solid science.
- Restrictive of food choices





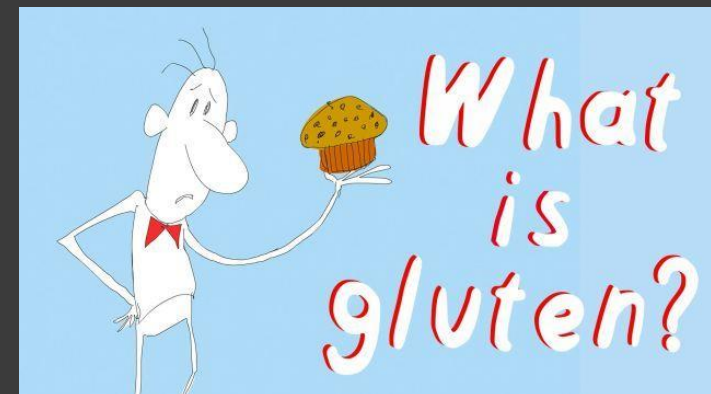


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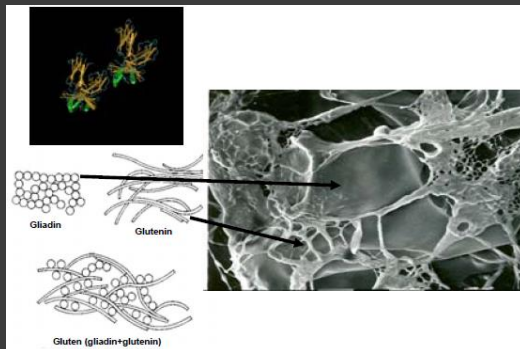
## Topics to cover

- Gluten Free Diet
- Low Carbohydrate Diets
- Low Fat Diets
- Vegan Diet
- Milk Free, Lactose Free
- Food allergies?



# Gluten

- Protein composite found in **wheat** and related grains, including **barley** and **rye**



## Celiac disease

1%

Onset of symptoms weeks to years

Autoimmune disease

HLA-DQ2, DQ8

Any age

Celiac disease autoantibodies

Duodenal Biopsies

## Wheat Allergy

0.1%

Onset of symptoms hours to days

IgE mediated

No gene associated

Infants, young children

Serum specific IgE

Skin prick/patch test

## Non Celiac gluten sensitivity

Unknown

Onset of symptoms minutes to hours

Immune-mediated?

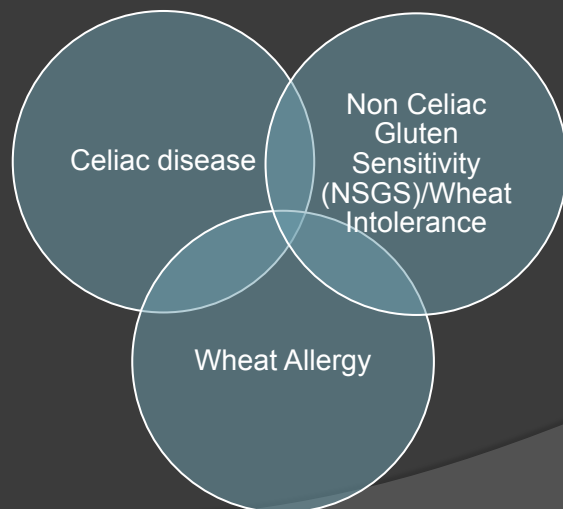
No gene associated

Mostly adults

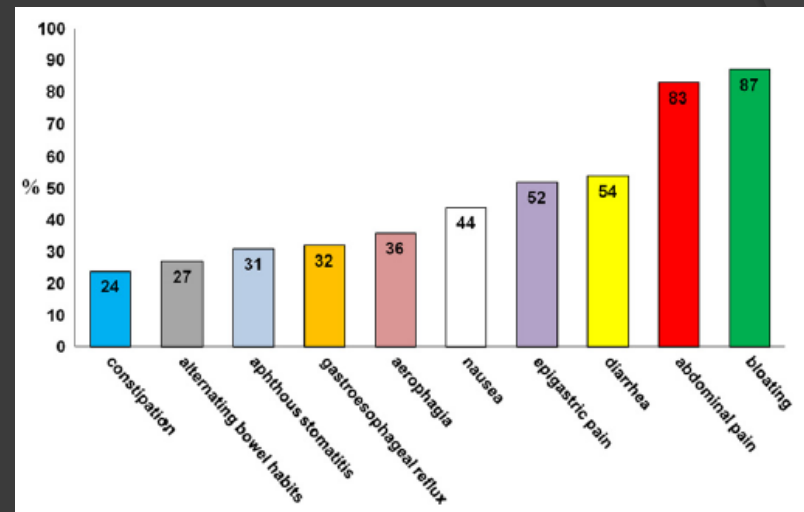
No diagnostic Marker



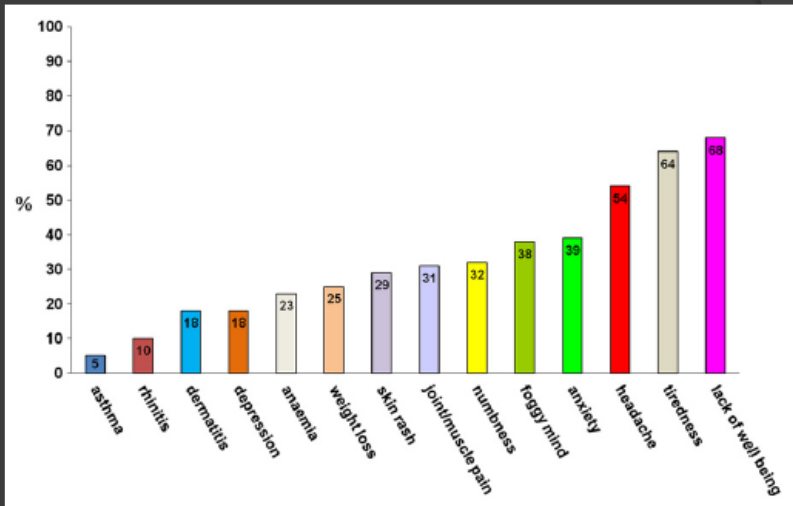
## Wheat related disorders



## Gastrointestinal Symptoms

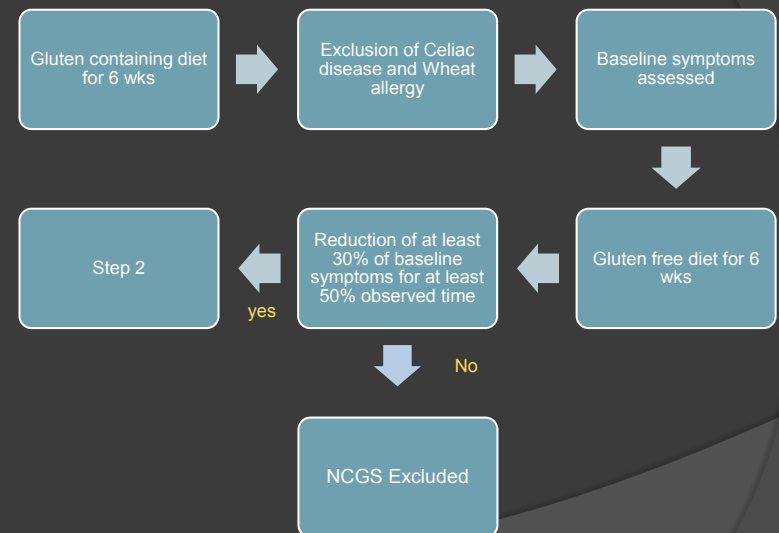


## Extra intestinal Manifestations



Volta U et al., BMC Medicine 2014

## Step 1



Catassi C et al, Nutrients 2015

*Nutrients* **2015**, *7*, 4966–4977; doi:10.3390/nu7064966

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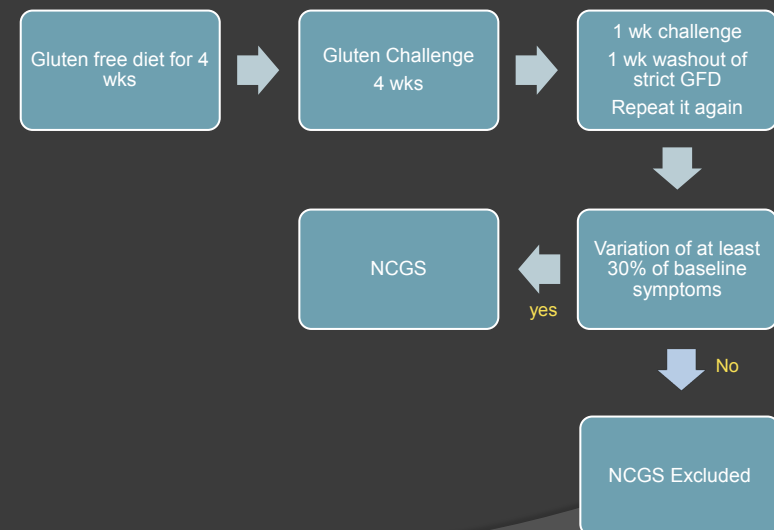
www.mdpi.com/journal/nutrients

Article

### Diagnosis of Non-Celiac Gluten Sensitivity (NCGS): The Salerno Experts' Criteria

Carlo Catassi <sup>1,\*</sup>, Luca Elli <sup>2</sup>, Bruno Bonaz <sup>3</sup>, Gerd Bouma <sup>4</sup>, Antonio Carroccio <sup>5</sup>, Gemma Castillejo <sup>6</sup>, Christophe Cellier <sup>7</sup>, Fernanda Cristofori <sup>8</sup>, Laura de Magistris <sup>9</sup>, Jernej Dolinsek <sup>10</sup>, Walburga Dieterich <sup>11</sup>, Ruggiero Francavilla <sup>8</sup>, Marios Hadjivassiliou <sup>12</sup>, Wolfgang Holtmeier <sup>13</sup>, Ute Körner <sup>14</sup>, Dan A. Leffler <sup>15</sup>, Knut E. A. Lundin <sup>16</sup>, Giuseppe Mazzarella <sup>17</sup>, Chris J. Mulder <sup>4</sup>, Nicoletta Pellegrini <sup>18</sup>, Kamran Rostami <sup>19</sup>, David Sanders <sup>20</sup>, Gry Irene Skodje <sup>21</sup>, Detlef Schuppan <sup>22</sup>, Reiner Ullrich <sup>23</sup>, Umberto Volta <sup>24</sup>, Marianne Williams <sup>25</sup>, Victor F. Zevallos <sup>22</sup>, Yurdagül Zopf <sup>11</sup> and Alessio Fasano <sup>26</sup>

## Step 2



Catassi C et al, Nutrients 2015



# The “GLUTOX” trial



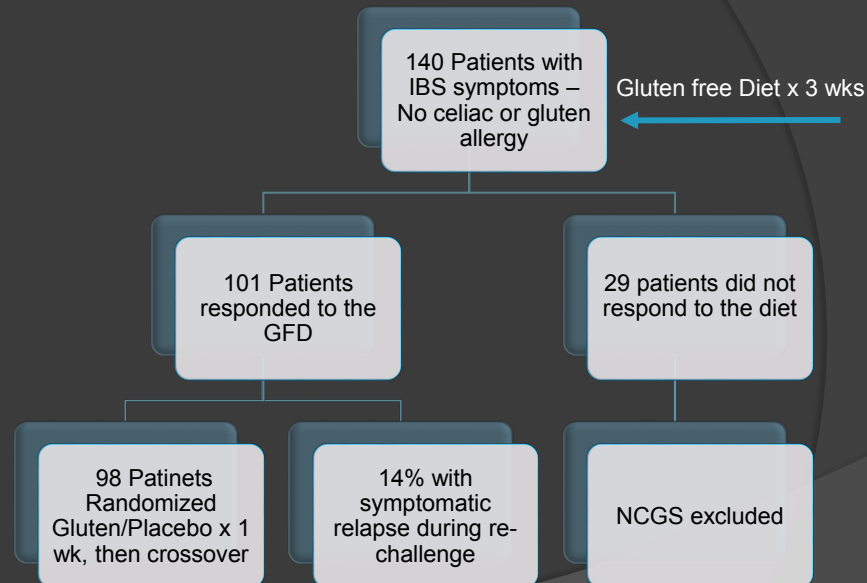
Article

## Evidence for the Presence of Non-Celiac Gluten Sensitivity in Patients with Functional Gastrointestinal Symptoms: Results from a Multicenter Randomized Double-Blind Placebo-Controlled Gluten Challenge

Luca Elli <sup>1,\*</sup>, Carolina Tomba <sup>1,2</sup>, Federica Branchi <sup>1,2</sup>, Leda Roncoroni <sup>1,2,3</sup>, Vincenza Lombardo <sup>1</sup>, Maria Teresa Bardella <sup>1</sup>, Francesca Ferretti <sup>1,2</sup>, Dario Conte <sup>1,2</sup>, Flavio Valiante <sup>4</sup>, Lucia Fini <sup>5</sup>, Edoardo Forti <sup>6</sup>, Renato Cannizzaro <sup>7</sup>, Stefania Maiero <sup>7</sup>, Claudio Londoni <sup>8</sup>, Adriano Lauri <sup>9</sup>, Giovanni Fornaciari <sup>10</sup>, Nicoletta Lenoci <sup>11</sup>, Rocco Spagnuolo <sup>12</sup>, Guido Basilisco <sup>13</sup>, Francesco Somalvico <sup>14</sup>, Bruno Borgatta <sup>15</sup>, Gioacchino Leandro <sup>16</sup>, Sergio Segato <sup>17</sup>, Donatella Barisani <sup>18</sup>, Gaetano Morreale <sup>19</sup> and Elisabetta Buscarini <sup>8</sup>

## Nutrition considerations

- No requirements to enrich or fortify gluten free grains
- Thiamin, Riboflavin, Iron, Vitamin B12 and Folate
- Whole wheat products: fiber



Elli L. et al., Nutrients 2016

## Nutrition Considerations

- Can result in weight gain if increased intake of refined carbohydrates or processed foods
- Gluten containing grains – source of FODMAP's

# Is it really the gluten?

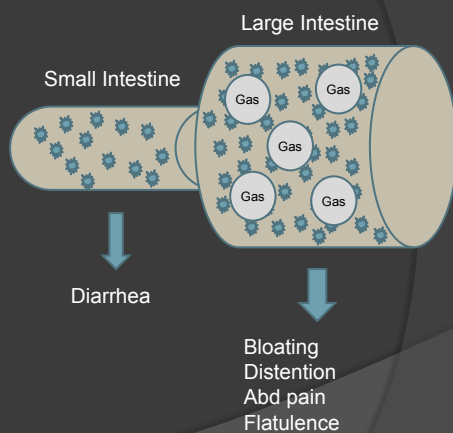
GASTROENTEROLOGY 2013;145:320-328

## No Effects of Gluten in Patients With Self-Reported Non-Celiac Gluten Sensitivity After Dietary Reduction of Fermentable, Poorly Absorbed, Short-Chain Carbohydrates

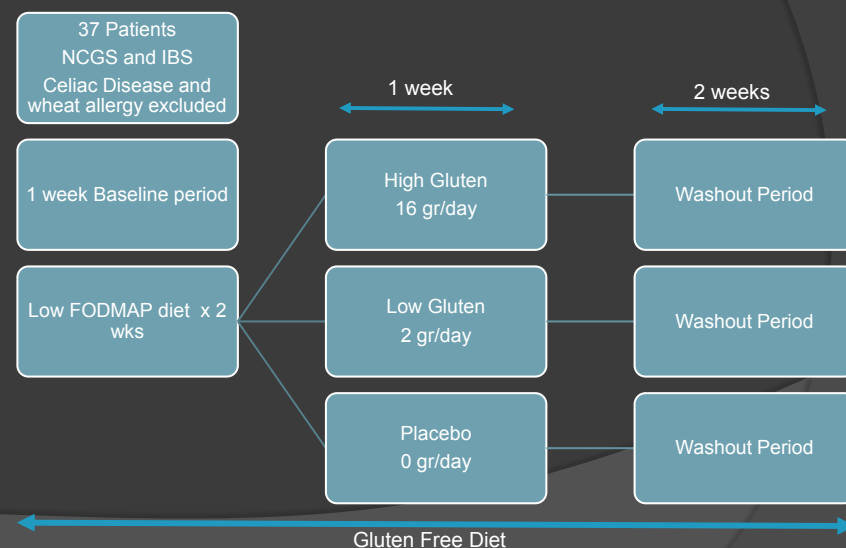
JESSICA R. BIESIEKIERSKI,<sup>1,2</sup> SIMONE L. PETERS,<sup>2</sup> EVAN D. NEWNHAM,<sup>1</sup> OURANIA ROSELLA,<sup>2</sup> JANE G. MUIR,<sup>2</sup> and PETER R. GIBSON<sup>2</sup>

<sup>1</sup>Department of Gastroenterology, Eastern Health Clinical School, Monash University, Box Hill, Victoria, Australia and <sup>2</sup>Department of Gastroenterology, Central Clinical School, Monash University, The Alfred Hospital, Melbourne, Victoria, Australia

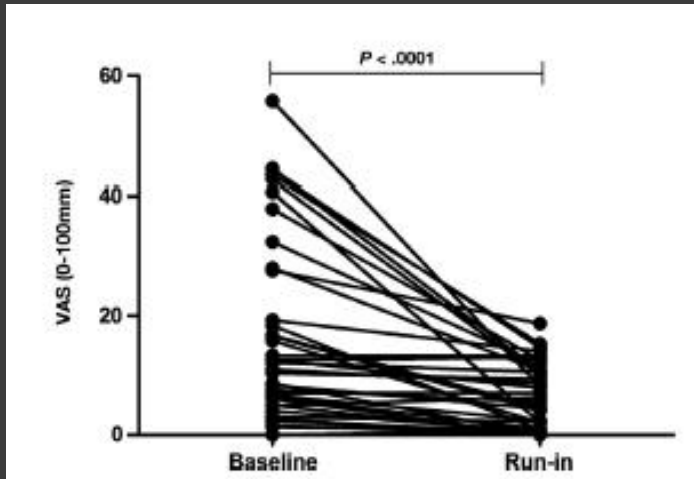
Fermentable  
Oligosaccharides  
Disaccharides  
Monosaccharides  
And  
Polyols



## Study design (RDBPCT Crossover)



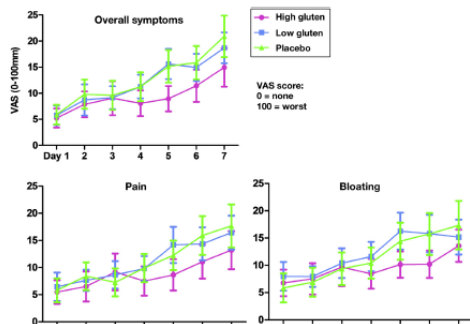
## Effects of a low FODMAP Withdrawn



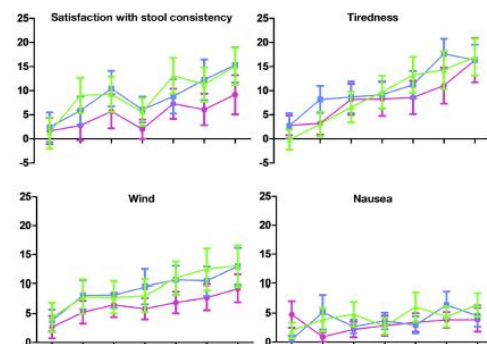
Biesiekierski JR et al, Gastroenterology 2013

## Low Carbohydrate diets

- Atkins Diet
  - High intake of protein, fiber
  - Low sugar, no trans fats
- South Beach Diet
  - Three phases, gradually less restrictive
- Ketogenic Diet



No effect of  
Gluten



Biesiekierski JR et al, Gastroenterology 2013

## Ketogenic Diet

- 70-90% of energy from fat
- Seizure Disorder
- Autism (+/- Casein free, grain free, MCT)
- Weight Loss



## Low Fat Diets

- Pritikin Diet
- Dean Ornish Diet
- Paleo Diet
  
- Limit fat intake to about 10% of calories
- Limit simple sugars, high fiber intake

## Nutrition Considerations

- Potential deficiencies on pediatrics
  - Low calcium intake
  - Iron, Zinc deficiency
  - Other grains used may not be fortified
  
- Limit fat: fatty acid deficiency

## Paleo Diet

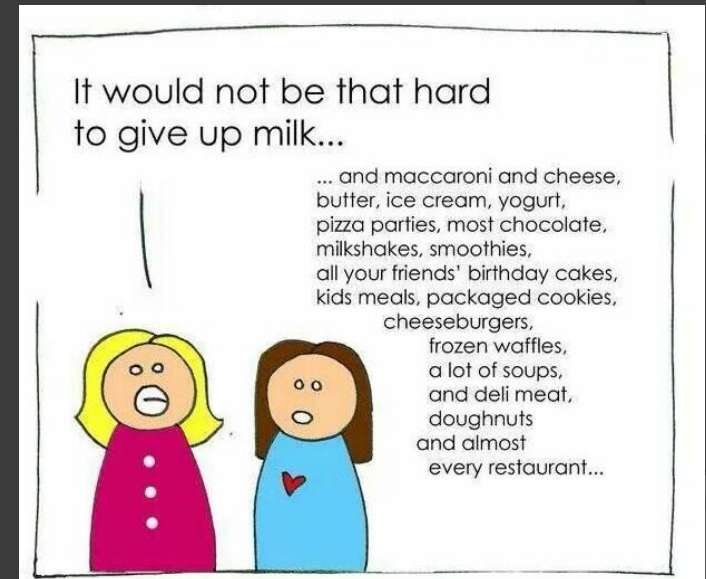
- Paleolithic or “Old stone Age”
  
- High protein, high fiber
- Lean meats, eggs, fish, fruits/vegetables, nuts, seeds
- No processed foods
- No wheat/grains, legumes, dairy, potatoes, refined sugar, refined vegetable oils

## De-tox

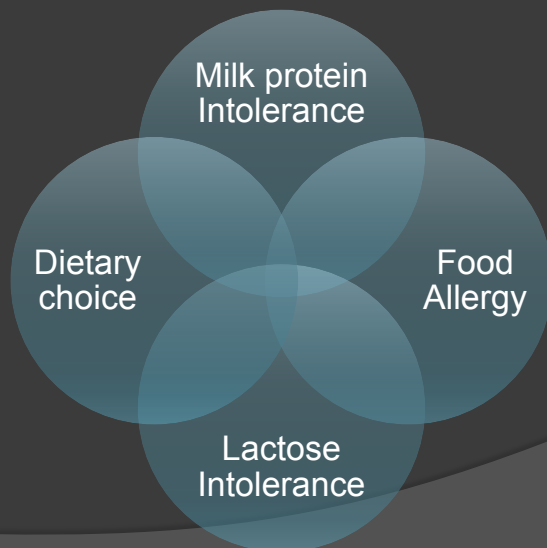
- “Cleansing” foods
- Limit caloric intake
- Fluid Imbalance – high output
  
- Liver and Kidney De-tox ?

## Vegetarian, Vegan, Plant Based

- Vegetarian
  - Lacto-ovo
  - Lacto
  - Ovo
- Vegan
- Whole Food Plant Based Diet
  - No Processed foods



## Dairy Free Diet - Pediatrics



## Dairy Free Diet

- Nutrients to be replaced: Protein, Fat, Vitamin A, D, B12, Calcium, Riboflavin, pantothenic acid and phosphorus
- Nutritionally adequate substitute for cow's milk until 2 years of age

# Food allergies

- Adverse immuno-mediated response which occurs reproducibly on exposure to a given food and it is absent during avoidance

## • 85-90% of food allergies caused by:

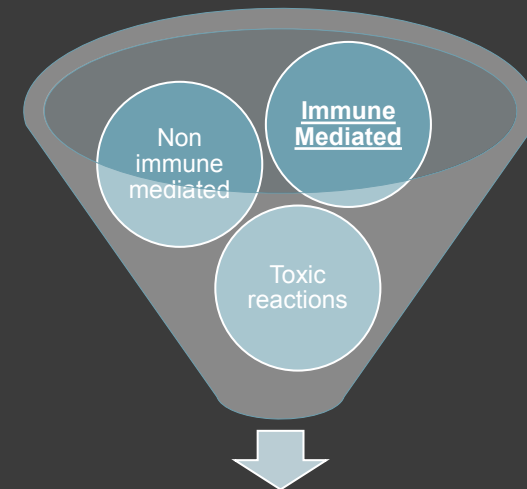
- Milk (2.5%)
- Eggs (0.8-2%)
- Peanuts (0.6%)
- Tree nuts (0.4-0.5%)
- Crustacean Shellfish (0.5%)
- Fish (0.2%)
- Wheat
- Soy

Turnbull et al, A P & T Jan 2015

# Food Allergy

- IgE mediated food allergy: 4-7% of preschool children
- Adults IgE mediated food allergy: 1-2%
- Prevalence increased by 1.2% points per decade between 1988 and 2011

Turnbull et al, A P & T Jan 2015



Adverse reactions to foods

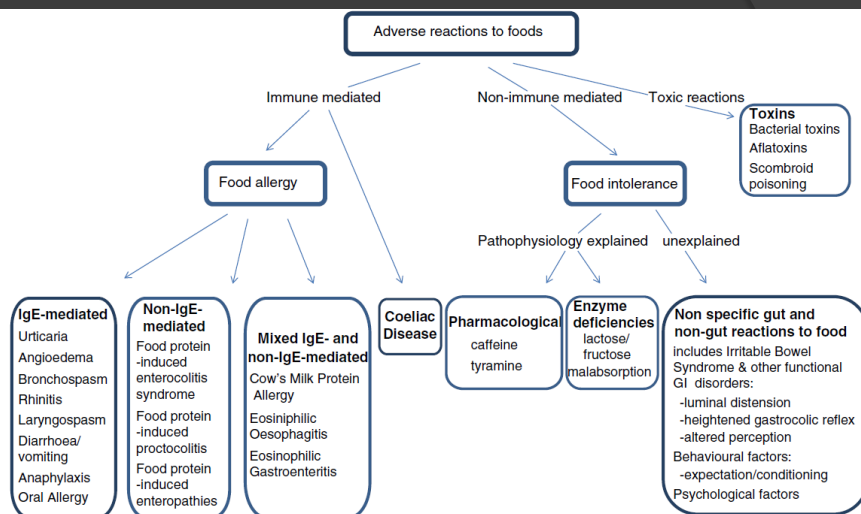


Figure 1 | Classification of adverse reactions to foods.

Turnbull et al, A P & T Jan 2015

Table 5 | Predictive value of food allergen-specific IgE levels (from ref 52)

Allergen	sIgE (kU/L)	Positive predictive value (%)
Egg	7	98
Milk	15	95
Peanut	14	100
Fish	20	100
Tree nuts	15	95
Soybean	30	73
Wheat	26	74
Egg <2 years	2	95
Milk <2 years	5	95

Turnbull et al, A P & T Jan 2015

## Diagnosis

- No single test can accurately diagnose food allergy
- Gold standard: Double blind placebo controlled food challenge

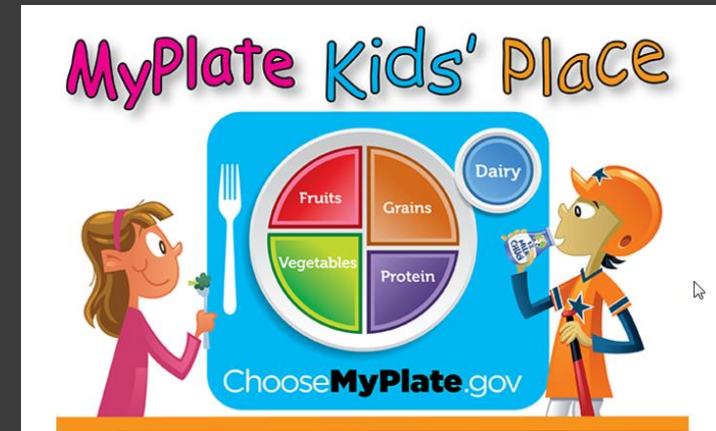
		Likelihood of allergy from specific IgE (kU/L)		
		LOW (eg. nut<0.35)	INTERMEDIATE (eg. nut 0.35 to <15)	HIGH (eg. nut>15)
Likelihood of allergy from history	HIGH eg urticaria & wheeze on 2 exposures	Possible allergy	Probable allergy	Allergy
	INTERMEDIATE eg urticaria on single exposure	Possible allergy	Possible allergy	Probable allergy
	LOW eg non-IgE symptoms	No allergy	Possible allergy	Possible allergy

Turnbull et al, A P & T Jan 2015

# Medical Nutrition therapy

- Ensure a safe, allergen free diet that supplies all the nutrients required for adequate growth and development
- Patients with food allergy at nutritional risk
- US Food Allergy Guidelines: Nutrition counseling and regular growth monitoring for all children with a food allergy
- Lower intake of Vit D and E, Iron, Calcium, Zinc, Fat

Nutritioncaremanual.org



# Discussing diets with families

- Concept of a balanced diet including protein, fat and carbohydrates
- Most diets are designed for adults, not growing children
- Recommend lifestyle changes, balanced intake
- Nutrition counseling

# Questions?