



# Nutritional Aspects of GI Disorders

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# Objectives

- Discuss latest recommendations for introducing complementary foods to infants
- Review medical nutrition therapy for GI disorders

# Disclosures



- I have no commercial relationships to disclose relevant to the topic being presented.
- In the past I have been a speaker for Mead Johnson Nutritionals



# Complementary Foods

Introduction of complementary foods for  
babies



# Complementary Feeding

- 4 months—renal and GI function matures
- 6 months – oral motor function develops

# AAP feeding recommendations

- “there is no evidence waiting to start complimentary foods beyond 6 mos. lowers the risk of atopic disease in BF or FF infants”
- Infants after 4-6 months there are insufficient data
- “To support the protective effect of any dietary intervention relative to atopic disease”
- No evidence that delay of specific foods thought to be allergenic reduce food allergies



# AAP Recommendations

- Delay of complementary foods beyond 6 months may lead to deficiencies in protein, iron, zinc and vitamins B and D and have a negative effect on growth and development



# AAP Introducing Complementary Foods

- Introduce foods one at a time in order to detect reactions and isolate foods that are problematic
- It may be necessary to identify and restrict specific foods in a child who develops an allergic reaction or atopic disease
- Unnecessary delay of foods may deprive child of healthy choices





# Advising Parents on Complementary Foods

- Emphasis on healthy food choices
- Eat together as a family
- Emphasis on fresh fruit, vegetables and whole grains
- Lean protein including fish



# Nutrition and Celiac Disease

# Gluten-Containing Grains to Avoid

- Wheat
- Wheat Bran
- Wheat Starch
- Wheat Germ
- Flour/Meal
- Semolina
- Spelt
- Bulgar
- Couscous
- Durum
- Einkorn
- Barley
- Barley Malt/ Extract
- Rye
- Filler
- Graham flour
- Kamut
- Matzo
- Emmer
- Faro
- Triticale

# Sources of Gluten



## ■ SOURCES

- Bread
- Bagels
- Cakes
- Cereal
- Cookies
- Pasta / noodles
- Pastries / pies
- Rolls

# Ingredients to Question

(*may contain gluten*)



- Seasonings and spice blends or mixes
- Modified food starch
- Malt/ malt extract/ flavoring
- Modified hop extract and yeast-malt sprout extract
- Dextrin
- Caramel color

# Sources of Gluten



- **POTENTIAL SOURCES**
  - Candy
  - Communion wafers
  - Cured Pork Products
  - Drink mixes
  - Gravy
  - Imitation meat / seafood
  - Sauce
  - Self-basting turkeys
  - Soy sauce

# Gluten-Free Grains and Starches



- Amaranth
- Arrowroot
- Buckwheat
- Corn
- Flax
- Millet
- Montina
- Oats\*
- Potato
- Quinoa
- Rice
- Sorghum
- Tapioca
- Teff
- Flours made from nuts, beans and seeds

**\*for possible cross-contamination with gluten containing grains**

# Safe Ingredients



- **Starch**
- **Maltodextrin**
  - **Made from cornstarch, potato starch, or rice starch, but not from wheat**
- **Vinegar and Alcohol**
  - **Distilled vinegar and distilled spirits are gluten-free, however avoid malt vinegar and malt beverages (e.g. beer)**



# Other Items to Consider



- Lipstick/Gloss/Balms
- Mouthwash/Toothpaste
- Play Dough
- Stamp and Envelope Glues
- Vitamin, Herbal, and mineral preparations
- Prescription or OTC Medications

# Lactose Intolerance & Celiac Disease: Incidence



- Secondary lactase deficiency is estimated to be 20-40%
- Increasing lactose Intolerance with delayed diagnosis
- Increased incidence in patients with GI symptoms in Celiac Disease
- Decrease calcium and vitamin D intake in lactose intolerance

# Lactose Intolerance & Celiac Disease: Treatment



- Gluten free diet
- Temporary lactose-reduction
- Lactase enzymes
- Lactose-free milk
- Gluten-free milk substitute
- Supplement with calcium & vitamin D where appropriate



# Potential Nutritional Complications in Untreated Celiac Disease

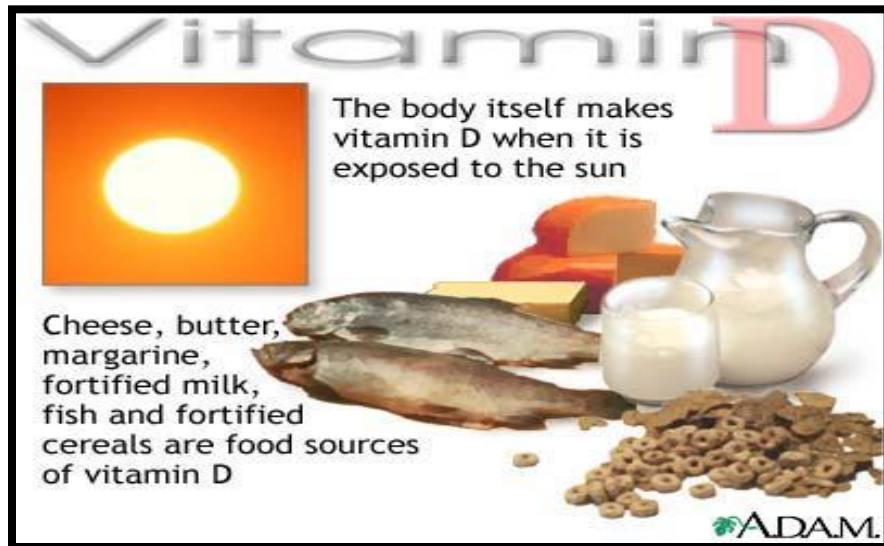
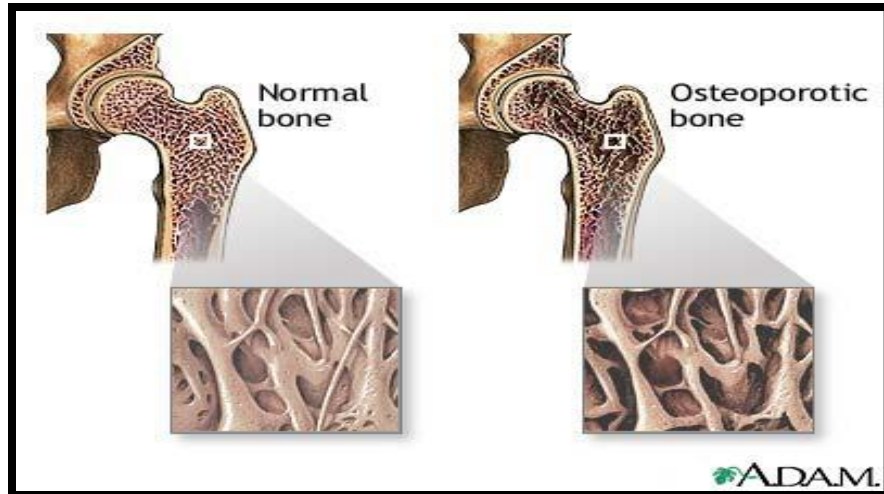
- **Low Iron**
- **Low Folate**
- **Low Vitamin B-12**
- **Low Vitamins ADEK**
- **Low Thiamine**
- **Low Niacin**
- **Low B6 (rare)**
- **Low Beta-carotene**
- **Low Zinc**
- **Essential Fatty Acid Deficiency**



# Potential Nutritional Complications in Untreated Celiac Disease

- **Prolonged PT**
- **Hypocalcaemia**
- **Elevated PTH**
- **Increased Alkaline Phosphatase**
- **Hypophosphatemia**
- **Hypomagnesaemia**
- **Hypoalbuminemia**
- **Re-feeding syndrome**

# Calcium and Vitamin D Requirements



- 800 to 1200 mg/day of Calcium for low bone mineral density (LBMD) in males
- 1200-1500 mg/day of Calcium for treatment of LBMD in females
- 400 IU of Vitamin D daily
- Up to 2/3 of patients on a gluten-free diet have suboptimal calcium intake



# Importance of Folic Acid Supplementation

- Folate hydrolases are needed in the brush border for absorption
- Best absorbed in proximal 3<sup>rd</sup> of duodenum.
- Increased use of folate in apoptosis
- Low folate impairs cell division



# Improving Nutrient Density of a GF Diet

- Use nutrient-rich grains/seeds

Amaranth

Bean

Rice Bran

Buckwheat

Quinoa

Teff

Sorghum

Millet

Soy





# GF Grains

- These grains are:
  - higher in protein and amino acids
  - moderate carbohydrates
  - good sources of calcium
  - some are higher in iron than wheat
  - low sodium.

# Dietary Adherence: A Common Problem



- Only 50% of Americans with a chronic illness adhere to their treatment regimen including:
  - diet
  - exercise
  - medication
- Dietary compliance can be the most difficult aspect of treatment
- Good news- more GF food products than ever



# Gluten free diets

- The “HYPE”
- Latest fad diet for weight reduction- no science evidence base studies suggesting that GF diets are a key to obesity treatment



# Nutrition and Eosinophilic Gastrointestinal disorders



# Eosinophilic GI disorders

- Difficulty feeding
- Vomiting
- Abdominal pain
- Difficulty swallowing (dysphagia)
- Food impaction
- No response to GERD medication
- Failure to thrive (poor growth, malnutrition and weight loss)



# Medical Nutrition Therapy

- **Elimination diet to determine possible allergy**
- **Use of elemental formulas for nutrition support:  
Amino acid formulas**



# Medical Nutrition Therapy

## COMMON ALLERGIES:

- Milk
- Eggs
- Wheat
- Soy
- Beef
- Chicken
- Potato
- Corn



# Medical Nutrition Therapy

- **6-Food elimination diets-** involves avoiding the 6 major food allergens
- milk, egg, wheat, soy, “nuts,” and “seafood
- **4-food elimination diets-** milk, egg, wheat, and soy





# Medical Nutritional Therapy

- **Food trials:** adding back one ingredient at a time to determine specific foods causing a reaction



# Medical Nutrition Therapy

Goal:

- Avoid of provoking foods
- Provide nutritional support
- Weight gain and growth



# Resources

- [www.Kidseatright.org](http://www.Kidseatright.org)
- [www.aap.org](http://www.aap.org)
- [www.foodallergy.org](http://www.foodallergy.org)
- [www.Kidswithfoodallergies.org](http://www.Kidswithfoodallergies.org)

Microsoft Windows [Compatibility Mode] - Microsoft Internet Explorer


http://www.eatright.org/resources/for-kids/ (61 unread) - lbeseler\_fnc@bel... For Kids

# KIDS eat right.


For Kids For Baby For Toddler For Preschooler For Gradeschooler For Teen

## Grow Healthy



Food provides the energy and nutrients that young children need to be healthy



### Make Your Kid's Meal a MyPlate Superstar



### Tips for Kids

-  Feed Your Toddler Right
-  Is Your Baby Sensitive to Food?

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Questions? Thank you