Cooperative Extension

- Nationwide educational network
- Reaching out
  - Extends the education and research from the university into the local community
  - Solve public needs with university resources through non-formal programs
- Partnership between University of Florida & County Governments
  - All 67 counties in Florida have Extension offices
  - Most have a Family & Consumer Sciences Agent
  - Main website www.SolutionsForYourLife.com

MODIFYING FOOD FOR SPECIAL NEEDS CHILDREN

April 15, 2015
Wendy J. Dahl, Food Science and Human Nutrition Department
University of Florida

Learning Objectives

Participants will:
- describe how and why modifying food texture can improve swallowing for children with dysphagia.
- list the ideal characteristics of pureed foods
- outline the potential nutritional concerns of special needs kids with swallowing problems
- discuss ways to improve meal presentation of pureed foods.

So many eating problems....

- picky eating
- limited diets
- sensory food aversion
- selective eating
- food avoidance emotional disorders
- pervasive refusal syndrome
- tactile defensiveness
- neophobia
- toddler anorexia
- functional dysphagia – chewing and swallowing problems...

Please complete the evaluation that will be sent following the webinar
Chewing (mastication)

- Breaks down food into smaller pieces.
- Saliva – functions
  - Moistens and lubricates to facilitate swallow
  - Enhances taste
  - Also initiates digestion of starch, antibacterial, contributes to oral health

Chewing

- Insufficient moisture content of a food may delay or prevent swallowing

Causes:
- Dry mouth – inadequate saliva production – e.g. medications
- Decreased lip closure
- Poor tongue control
- Reduced oral sensation or awareness
- Inflammation of the oral cavity

Chewing

Problems with breaking food down to particles

- Poor tongue control
- Reduced oral sensation or awareness
- Inflammation of the oral cavity or dental issues

Chewing

A food bolus is ‘ready to swallow’ at a moisture content of about 70% or greater most often due to saliva

Examples:
- Nuts: increases from 2% to 70% moisture at swallow
- Beef: increases from 60% to 70% moisture at swallow
- Bread: starts at 35% to only 60% moisture at swallow – a food noted to cause swallowing problems
Swallowing problems - Dysphagia

- delayed, absent or uncontrolled swallow (many causes)
  https://www.youtube.com/watch?v=8fA3hhKevq
- reduced esophageal peristalsis (reduced muscle contractions)
- obstruction/blockage of the esophagus

Signs of Dysphagia

- Coughing
- Gargling voice quality
- Drooling
- Pockeiting of food inside cheeks or under tongue
- Regurgitation of food
- Delayed or slow swallow
- Very slow eating
- Weight loss
- Food remaining in mouth
- Increased food "pickiness"

Health risks of Dysphagia

- Aspiration of food and liquids
- Obstruction of the airway
- Bacterial infection
- Decreased oral intake
- Dehydration
- Weight loss
- Malnutrition

Diet Management for Dysphagia

Texture Modification

Viscosity (resistance to flow, thickness)

- Thicker consistencies decrease aspiration risk.
- Tongue force required during the swallow increases with an increase in viscosity.
Cohesiveness

- Internal bonds of a food system (marshmallow).
- Prevents the inhalation of small particles of food into the airway.
- May be critical for the initiation of a swallow.
- Achieved with reduction in particle size and adequate moisture through gravies and sauces.

Adhesiveness - Stickiness

- Food sticking to the tongue, teeth and palate (e.g. peanut butter)
- May lead to slow swallowing.

Particle Size

- Larger particles in food may cause immediate choking.
- Food particles can be “pocketed” or “squirreled” in the cheek or under the tongue.
- Larger particles prevent the formation of a cohesive bolus (mouthful) for safe swallowing and may delay swallowing.

Water Separation

- Pureed foods with water separation should not be served to someone that has dysphagia as they pose a risk for aspiration
- Starches and or other thickeners may be used to eliminate water separation – but need recipe development and testing.
The ideal pureed food.....

- Smooth
- Moist
- Cohesive
- Spoon-thick
- Pudding-like
- Homogenous

Priorities:
- Texture
- Taste
- Temperature
- Nutrient Content

Goals for Pureed Foods

A pureed food should have the ideal pudding-like texture each and every time it is prepared and served.

Pureed Foods - Consistency

Pureed carrot of “pudding consistency”

Goals for Pureed Foods

A pureed food should be spoon thick.

Pureed carrot that is “too thin”
Goals for Pureed Foods

• To prepare and serve acceptable and appealing pureed foods
  Pureed foods should be prepared with optimal flavor, appearance and aroma.
  Roast turkey & gravy with corn stuffing, carrots, mixed berries and vanilla yogurt

Packing in the protein!

• Pureed meats may be unacceptable due to grittiness and unrecognizable color.
  Ideas to try:
  - Canned meats and fish
  - Keep the fat, skin and flavor
  - Canned beans, low sodium if appropriate
  - Mixed dishes
  - Hiding it in desserts, vegetables etc.
  - Protein powders?

Goals for Pureed Foods

• To prepare and serve pureed foods with adequate nutrient content.
  The foods and beverages served should meet nutrient needs of the child.
  Southwest scrambled eggs & vegetable medley with toast, OJ, and mixed berries yogurt

Fruits and Veggies

• Many fruits make great purees!
  - Remember that they can double as a beverage.
  - Starchy vegetables make the best purees
  - Canned fruits and veggies - easy to puree
  - Veggies that are too runny or have water separation – try some pureed canned beans.
  - Beware of skins etc.

Getting in the grains!

• Often neglected due to difficulty with preparation. Sticky – tasteless! Try fat or fiber... canned pasta...

Dairy and Vitamin D

• Great selection of smooth yogurts
  - Greek - higher in protein – need to ensure that it's not too thick
  - Some commercial puddings can be too thick
  - No need for thickened milk (for those that require) as long as yogurt or pudding has added vitamin D or made with fortified milk.
  - Vegetarian options too!
What fiber ingredients can be added to pureed foods?

- Soy fiber
- Oat fiber
- Cottonseed fiber
- Pea fiber
- Sugarcane fiber
- Rice bran
- Corn bran
- Corn or wheat dextrin (resistant)
- Inulin (chicory root fiber)
- Not - psyllium seed husk or regular wheat bran

What about calories?

Decide whether the following food items are nutrient dense, energy dense, neither, or both!

Green Beans  Chocolate  Spinach  Whole Chocolate Milk

Make it Energy Dense

- Add a butter or cheese sauce to cooked vegetables.
- Use whole milk instead of skim or low-fat.
- Incorporate butter, peanut butter.
- Add gravy to meat and potatoes.
- Instead of a plain baked potato, load it up with sour cream, cheese, and butter.

Color and Flavor

- Important for food identification
- Flavor is optimal with normal chewing and oral manipulation of foods.
- Ability to perceive flavor decreases with low salivary flow
- Flavor perception is low with semi-solid foods because of the viscous (thick) texture.
- Try flavor enhancement

Presentation Tips

- Attractive color of texture-modified foods is essential to acceptance.
- Positive comments about food by caregivers important to support acceptance and food intake.
- Attractive dishes greatly enhance the sensory experience of the meal.
Presentation Tips

- Use of garnishes enhances the food presentation, however, ensure that all garnishes have the suitable texture.

- Colored sauces of pureed texture that are piped onto foods are most appropriate and safe.

EDIS Publications

- www.mypureedfoods.com

What is your evaluation?

Pasta alfredo with fish, broccoli & peas
Skin Mkt

What’s your evaluation?

BBQ Beef with baked beans, corn, and peach yogurt smoothie

What is your evaluation?
What’s your evaluation?

Cheese pizza, peach & pear fruit salad, strawberry yogurt

Breakfast: honey-nut cheerios, strawberry yogurt and mango/apple/pear

Breakfast: pancakes with syrup, apricot and blueberry yogurt

Breakfast: cinnamon roll, peach with raspberry yogurt drizzle and milk

Breakfast: honey-nut cheerios, strawberry yogurt and mango/apple/pear

Lunch: ham salad with mustard, green peas, parmesan herb pasta, chocolate mousse and milk

Lunch: mac and cheese, butter beans, garbanzo beans, cheez whiz garnish and milk
Dinner: BBQ baked beans, spinach/banana with mango garnish and cheese soup

Dinner: Meatloaf with ketchup garnish, mashed potato with gravy, sweet potato, chocolate pudding and apple juice

Dinner: spaghetti with cheese and tomato sauce, squash, apricot/mango, chocolate mousse and milk