Caries Management Course
Module: Diet

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Module Objectives
• How the ‘Simple Message’ is Complex
• Processed Foods and Caries Risk
• Importance of Cheese
• Recommendations

Nighttime Feedings
• Limit frequency of nighttime feedings and going to bed with juice and milk.
• ‘Dirty Teeth can’t Sleep’

Image courtesy of Dan Shaw
Extended Nursing or Bottle

- Always ask what recommendations their physician has made.
- This allows you to usually reinforce that the physician recommendations are good for the teeth.

Simple Message

We all convey the message that frequency of fermentable carbohydrates are more important than the total amount ingested.

Fermentable Carbohydrates?

- Any carbohydrate that has the potential to be hydrolyzed by amylase (in saliva).
- Sugars and starches are broken down into in the initial stage of carbohydrate digestion and subsequently fermented by bacteria.

Sugars and Starches

- Glucose-Sugar monosaccharides
- Starches-long chain carbohydrates
Sugars and Starches

 Sucrose-Sugar
 Disaccharides

 Starches-long chain carbohydrates
 Mainly branched

Both Bacteria and Saliva have enzymes that can breakdown Sugars and starches

Processed Foods

 Takes longer for Starches to breakdown
 More complex the longer the time Needed to break it down

• Also Starches (potato chips) processed by heating etc tend to pre-breakdown very long and complex starches.
  • Easier to convert to simple sugars.
• Simple Sugars (mono & di-saccharides) are converted to different acids by bacteria.
Processed Foods

• Oreos and Potato Chips also have longer intraoral retention rates than milk chocolate or jelly beans. Kashket et al J Dent Res 1996;75:1885–91.

• So Jelly Beans may cause a stronger immediate pH drop but Oreos and Potato Chips have a longer low pH

• But it also depends on other foods and saliva

Risk of Potato Chips

• Total fermentable sugars in the particles of high-starch foods were similar to high-sucrose foods.

  • Potato Chip ~ Candy Bars

  • But we lack good epidemiology evidence

Risk of Anything

• Very complicated
  – Saliva flow
  – Plaque thickness and composition
  – Other foods eaten (cheese)
  – Retention time
  – Availability of other sugars

Below pH 5.5

• Almost everything that we eat
• Fruits: Apples, Bananas
• Crackers, Cereals, Pasta
• Potato Chips
• Raisins
• Cooked carrots
• Instant Oatmeal > Steel Cut Oatmeal
• Breads: White > Carb

  • Relationship between plaque pH and glycemic index

List Partially From Pinkam et al Pediatric Dentistry
Hidden Sugars

- Some Yogurts- (6oz)- 26 grams of sugars
- Squeezable yogurts (tube)- 9-10 grams of sugars
- McDonald’s Fruit ‘N Yogurt Parfait- 17 grams of sugars

Hidden Sugars

- Juice-Drinks, sugared beverages and soda are obviously bad.
- Caries risk with 100% Juice is low in epidemiology studies
- 100% juice in smaller studies suggests caries potential

WIC programs

- WIC programs (regulated by State & Federal Agency by tend offer sizable amount of 100% juice in food packages.
- Any veggies, fruit, or juice with sugar added is not covered by most state WIC programs.
- Offer the benefit of finishing juice portions versus dilution as a benefit.

Practical Substitutes

- Milk and dairy products, apples, cranberries, tea, peanuts and high-fiber foods
- Cheese Raises pH and Increases saliva. High in bioavailable Ca and P.
Cheese

- Cheese eaten with sugars can counteract the pH drop caused from the sugars substantially


Looking up Info for Parents

- http://ndb.nal.usda.gov/ndb/foods

These things do not pack well

- Meat and Whole Wheat Sandwiches- Super good
- When Snacking
  - Cheese and Dairy with typical snack foods (chips, cookies, etc). Nuts are great snacks. No grazing!
  - Keep juices and sugar beverage consumption within 15 minutes period. No sippers!
  - Fruit is good. Juice less good. Limit frequency.
  - Don’t forget tap (fluoridated water) with snacks especially.
  - Flavored waters and non-calorie beverages are a substitute for the sugar addict
  - Candy sucks!

Practical Tips for Parents
Special Considerations

• Some young children are told by pediatrician to increase carbohydrates (Pediasure-18g of sugar per 8 oz) to improve on growth and weight.

• Need to increase frequency of fluoridated water drinking and brushing diligently 2-3x day

Reference Links

• Evidence Based Dentistry Perspective

• Nice review on Sugars in Foods and Caries

Conclusion

• Nutrition Recommendations are complicated in the dental office

• Consider food sources (WIC, etc) and other health care provider recommendations.

• Keep your message simple