Nutrition for Infants and Toddlers
Mainpro C Workshop
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Objectives
- Provide key messages from Nutrition for Healthy Term Infants (NFHTI)
- Provide information about the use of breast milk substitutes (formula)
- Introduce use of World Health Organization (WHO) growth charts
- Provide information about feeding toddlers and nutrition-risk screening using NutriSTEP®

Resources
Region of Waterloo Public Health
www.regionofwaterloo.ca/ph
- Breastfeeding Your Baby
- Formula Feeding Your Baby
- Teddy Bear’s Picnic – introduction to solids
- Teddy Bear Toddlers – feeding guide 12-36 months
- Healthy Choices Start Now resources to support NutriSTEP®

Case Study - 1
A 28 year old woman presents with her nine month old boy for a follow-up on his growth progress. A discussion with the mother reveals that she:
- Exclusively breastfed for the first six months
- Introduced cereal, vegetables and fruit at 6 months
- Is returning to work and will need to ask a caregiver to feed her son on days she will be away for a prolonged period of time
- Wants to know if she should be giving formula with the addition of essential fatty acids since she read an article about their role in infant development

Case 1 – Discussion Points
- Assess growth using the WHO Growth Charts
- “Routine growth monitoring is important to assess infant health and nutrition”
- Use the World Health Organization (WHO) Growth Charts for Canada for optimal monitoring of infant growth at all well child and acute care visits
- Be trained to interpret growth pattern
- Help parents interpret growth pattern

Differences Related to Growth
A different growth pattern is observed for breastfed and formula fed infants

Breastfed infants tend to gain weight more quickly than formula fed infants in the first six months, and then slower growth during the second six months of life
Differences in Monitoring Growth Using WHO vs. CDC

- Under six months: WHO reflects a heavier sample leading to higher rates of under-nutrition and lower rates of overweight and obesity
- Over six months: WHO generally reflects a lighter, longer/taller sample leading to lower rates of under-nutrition and higher rates of overweight and obesity

Resources for Health Professionals
www.dietitians.ca/growthcharts

- Promoting Optimal Monitoring of Child Growth in Canada: Using the New WHO Growth Charts
- A Health Professional’s Guide for using the new WHO Growth Charts
- Growth charts are available to download
- Growth chart training – Mainpro-M1 credits (details on Family Physicians of Canada website)

Resources for Parents
Is My Child Growing Well? Questions and Answers for Parents

- English
- French
- Spanish
- Traditional Chinese
- Cree
- Farsi
- Punjabi
- Inuktituk
- Vietnamese

Is My Child Growing Well?

Case 1 – Discussion Points
Discuss feeding options: expressed breast milk vs. breast milk substitute (formula)

- Provide information for an informed decision
  - Importance of continued breastfeeding
  - Costs of formula feeding
  - Difficulty reversing the decision
- If mom decides to use formula:
  - Offer in a cup or bottle
  - Vitamin D supplement (400 IU) if still breastfeeding
  - Exclusively formula fed infant drinking < 1000 ml/day may need a vitamin D supplement; need to assess individually

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Key Messages: Use of Formula

- Cow’s milk based iron fortified commercial infant formula (0.4 -1.3mg/100 ml)
- Discourage use of home-made formula, cow/goat milk, soy/rice beverages
- Soy-based formula only for galactosemia or for cultural/religious reasons
- Advise on proper preparation and storage
- Warn of choking risk if infant left alone or if bottle is propped
Case 1 – Discussion Points
If mom decides to use formula:
• Iron fortified cow’s milk based formula fortified at the higher range (1.3mg/100ml)
• Formula with DHA/ARA is an option if cost is not a factor
• Recommend sterile liquid formula
• If using powdered formula use safe preparation guidelines

Formula Feeding Your Baby
• Booklet provided at the hospital only if mom leaves feeding formula
• Available from Region of Waterloo Public Health Resource Centre
• Nurse answers questions on the Healthy Children Info Line (519-883-2245)
• EatRight Ontario Dietitians answer questions on-line and by phone

Specialty Formulas
• Partially Hydrolyzed:
  – Little evidence to support benefit
  – May delay or prevent atopic dermatitis for exclusively formula fed infant at high risk for atopic disease
• Extensively Hydrolyzed:
  – First choice for diagnosed cow’s milk protein allergy or when high risk of atopic disease and some malabsorption syndromes

Key Messages
• Even when not breastfeeding, skin to skin contact is encouraged when feeding
• Breastfed and bottle fed infants should be fed based on feeding cues according to their appetite

Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months
Feeding Changes are unnecessary for most common health conditions in infancy
• Feeding changes do little to manage infant colic
• True constipation is rare
• Reflux is common and rarely needs treatment
• Manage mild to moderate dehydration with continued breastfeeding and oral rehydration therapy

Case 1 – Discussion Points
May want to screen for iron deficiency
Rourke Baby Record (2011) recommends high-risk infants be screened for iron deficiency between 6 and 12 months of age
What are the risk factors?
• Prenatal & Perinatal
• Dietary
• Socioeconomic
• Other
Iron Deficiency

- Iron deficiency is the most common nutritional deficiency worldwide
- In Canada, 4-8% of non Aboriginal pre-school children are iron deficient
- Affects cognitive and behavioural development – it may be irreversible

Primary Prevention - Diet

Dietary Sources of Iron:
- Heme-iron (15-25% absorption):
  - Red meat, fish & poultry
- Non heme-iron (2-4% absorption):
  - Legumes, vegetables & fortified cereals

Factors that enhance iron absorption:
- Heme-iron
- Vitamin C

Dietary Modifications

- Formula fed baby – iron fortified formula (1.3 mg/100ml) for first 12 months
- If baby is on whole milk – switch to iron fortified formula (1.3 mg/100ml)
If baby is one year or older:
  - Restrict milk intake to 500 - 750 ml
  - Do not offer juice, or limit to 60 ml/day to promote intake of iron rich foods
  - Offer iron rich foods with vitamin C rich foods

Case 1 – Discussion Points

- Introduce meats and alternatives for sources of iron

Iron-rich Foods as First Foods
- Meat and alternatives
  - lean meat, poultry, fish
  - cooked legumes, beans
  - eggs, tofu
- Iron-fortified infant cereals – single grain

Introduce Solids When:

- Baby is six months old
- Baby shows signs of readiness
- Offer one new food at a time, waiting 3-5 days before offering another new food to identify food sensitivity/allergy
- Breastfeed before offering solid foods to sustain breast milk supply and ensure breast milk is the major source of energy and nutrients

Introducing Solid Foods

- After iron-rich foods, introduce a variety of vegetables, fruit, grains and milk products (other than fluid milk) in any sequence
- No evidence that delaying introduction of allergenic foods will prevent food allergy
- Common food allergens that are sources of iron may be offered at six months (e.g. whole eggs, fish)
- Honey should not be offered before one year of age due to risk of food poisoning
Case 1 - Discussion Points
• Ensure texture of food being offered is age-appropriate (lumpier, chunky foods)
• Is child drinking any beverages other than breast milk or formula?
• Are parents feeding according to hunger cues?
• Refer parent to Teddy Bear’s Picnic
• Refer parent to EatRight Ontario

Case Study 2
A 30 year old woman presents with her 21 month old daughter, concerned she does not eat at meals and is too small. You plot her length and weight on the WHO Growth Charts, and find the child is small for her age, but following a normal growth pattern for her.

Case 2 – Discussion Points
• Identify issues that might be contributing to the mother’s concern
• Use nutrition screening tool for toddlers
  - NutriSTEP®

NutriSTEP®
Nutrition – Risk Screening Tools
• Evidence-based, valid and reliable tool to identify children at nutrition risk
• Simple questionnaire for parent
• Toddler version (18-35 months) NEW!
  – Only available in English and French
• Preschooler version (36 months – 5 years)
  – Available in multiple languages

Why Use NutriSTEP®?
• To identify potential nutrition issues early
• Allows for early intervention
• Referral for further assessment if high risk
• Provides an opportunity to:
  – Increase parental awareness of nutrition issues
  – Provide information to parents

When to Use NutriSTEP®?
• When a parent has a nutrition concern
• When a nutrition issue is suspected
• At any well-child visit between 18 months and 5 years of age
• As part of the 18 month well-child visit
• As part of preschool visit
Nutrition Issues of Toddlers

- Food and Nutrient Intake
  - types and amounts of foods eaten and how often
- Beverages – juice, milk, use of bottle
- Growth concerns – too big, too small
- Eating behaviour – feeding environment
- Food security – access to food
- Problems chewing or swallowing

NutriSTEP® – Where?

- www.nutristep.ca
- At Region of Waterloo Child Health Fairs
  - Public Health website or call Healthy Children Info Line (519-883-2245)
- At the Ontario Early Years Centres
  - Call individual centres for information
- Acquire a license to implement it yourself
  - www.flintbox.com
- Will be available on-line, Spring 2013

NutriSTEP® – Risk Score

- Discuss any issues identified
- Refer to EatRight Ontario for nutrition information and resources
  - 1-877-510-5102 or www.eatrightontario.ca

High risk score

- Full nutrition assessment may be required

Case Study 2

NutriSTEP® screening tool for toddlers is used and it indicates that the child is identified at high risk:

- Eats foods from the four food groups
- Eats more than six times a day
- Parent rarely lets their child decide how much to eat
- Usually eats in front of the TV
- Drinks milk and juice from a bottle throughout the day and takes a bottle of juice to bed

Case 2 – Discussion Points

- Based on NutriSTEP® results, discuss:
  *The "Division of Responsibility" in Feeding*

The “Division of Responsibility” in Feeding

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www.ellynsatter.com
Feeding Toddlers - What
Offer a variety of healthy foods from Canada’s Food Guide
• Do not restrict fat
• Frequent small portions
• Food prepared for the child’s stage of development – texture, bite sized pieces
• Do not give foods that may cause choking – raw, hard vegetables, whole wieners, grapes etc.

Feeding Toddlers - When
Parent provides food at regularly scheduled meals and snack times
• Offer three meals and two to three snacks a day
• No “grazing” allowed
• Water for thirst anytime

Feeding Toddlers - Where
Child should be eating at a table with an adult
• Children should always be supervised when eating
• Children should always eat sitting down
• Include child at family meals
• Parents are important role models

How much should the toddler eat?
The toddler is left to eat as much or as little as they choose, and to investigate new food choices
• Offer small portions
• Allow the toddler to eat according to their appetite

Factors that interfere with toddlers’ self-regulation
• Parental pressure to eat
• Parents/caregivers failing to recognize or respect verbal and non-verbal cues with respect to hunger and satiety
• Parental control
• Lack of limits or structure

Normal Toddler Eating
• Toddlers do not like new foods
• Toddlers have strong likes/dislikes
• Food intake varies from day to day, week to week
• Food jags - favorite foods (change over time)
• Want to be independent – will not eat something just because you want them to
Case 2 – Discussion Points

- Limit milk intake to 750 ml/day only at meal and snack times
- Do not offer juice, or limit to 60 ml/day only at meal or snack time
- Switch to a cup (weaned from bottle by 14 months)
- No bottle or cup in bed (dental concern)
- Suggest parent call EatRight Ontario

EatRight Ontario

- For Health Professionals and Consumers
- Website with nutrition information, resources and links to tools
- "Ask a Dietitian" Service
  – Weekdays and two evenings a week
  www.eatrightontario.ca
  1-877-510-5102

Contact Information

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