NORMAL FEEDING IN NEONATES AND INFANTS

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OUTLINE OF PRESENTATION

- Breastfeeding
- Infant formula
- Feeding options
- Feeding methods
- Special cases
  - Premature / sick infant
  - HIV exposed / infected child
- Complementary feeding
- Adequacy of infant feeding

GLOBAL STRATEGY :

- Exclusive breastfeeding for 6 months
- Nutritionally adequate and safe
- Complementary feeding starting from the age of 6 months with continued breastfeeding up to 2 years of age

Prevent 13% of deaths < 5 yrs

IMPORTANT TOPICS FOR SELF REVISION

- Advantages and disadvantages of breastfeeding
- Breast milk composition
- Anatomy of the breast
- Hormonal control of milk production and reflexes
- Attachment and suckling from the breast
- Reasons for low breast milk supply
- Demand feeding
- Kangaroo mother care
- Relactation

BABY FRIENDLY HOSPITAL INITIATIVE

1. Written breastfeeding policy
2. Train all health care staff in skills necessary to implement this policy
3. Inform all pregnant women about benefits and management of breastfeeding
4. Help mothers initiate breastfeeding within half hour after birth
5. Show all mothers how to breastfeed and maintain lactation even if they are separated from their infants
6. Newborns no food or drink except breast milk unless medically indicated
7. Practice rooming in
8. Encourage breastfeeding on demand
9. No artificial teats or pacifiers to breastfeeding infants
10. Establish breastfeeding support groups

LACTOGOGUES

- First rule out all causes of low breast milk supply
  - Breastfeeding factors
  - Psychological factors of mother
  - Mother's physical condition

Use side – effect, stimulate prolactin secretion

Not registered for this indication

Metoclopramide 10mg tds for 7-10 days

Domperidone 20-40mg tds for 7-10 days

Sulpiride (Eglonyl / Espiride)

DOPAMINE AGONIST

- Inhibits prolactin secretion
- Stop lactation in mother that doesn’t want to breastfeed

- BROMOCRIPTINE (Parlodel®)
  - FDA Black box warning

- CABERGOLINE (Dostinex®)
  - Long-acting dopamine receptor agonist

  CONTRAINDICATED
  - Pregnancy-induced hypertension
  - Hypertension
  - Cardiac Valvulopathy

MEDICAL REASONS FOR BREASTMILK SUBSTITUTES

- INFANT
  - Galactosemia
  - Maple syrup urine disease
  - Phenylketonuria
- MOTHER
  - HIV infection
  - Severe infection
  - Herpes simplex virus type 1 infection
  - Drugs
    - Sedating psychotherapeutic drugs
    - Anti-epileptics
    - Opioids
    - Radio-active iodine
    - Cytotoxic chemotherapy

INFANT FORMULA

- STARTER FORMULA
  - Cow's milk protein
  - Soy protein
  - Specialized formula
    - Lactose free
    - Hypoallergenic
    - Acidified
    - Anti-reflux
    - Hydrolysed
    - Amino acid feeds
- FOLLOW – ON FORMULA
- TODDLER FORMULA / GROWING UP MILK

SOY PROTEIN FORMULA FEEDS

- Not indicated in cow's milk protein intolerance
- Develop soy protein intolerance
- ESPGHAN, soy protein formula should particularly not be used in infants with food allergy during the first 6 months of life.
- Cochrane systematic review : cannot recommended for prevention of allergy or food intolerance in infants

SA CODE OF ETHICS FOR MARKETING OF BREASTMILK SUBSTITUTES

- WHO 1981
- Developed and developing countries
- Aim
  - Control promotion of artificial feeds
  - Not to ban the sale or use of infant feeds
  - Provide safe and adequate nutrition for infants
  - Protect and promote breastfeeding
  - Ensure proper use of artificial feeds

SUMMARY OF FEEDING OPTIONS

- TERM INFANT
  - Breastfeeding
  - Infant formula

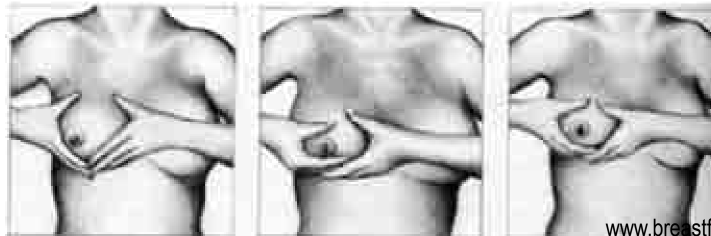
- SICK INFANT / PREMATURE INFANT
  - Breastfeed
  - Expressed breast milk
  - Donor breast milk
  - Infant formula
  - Total parenteral feeds

EXPRESSED BREASTFEEDING

To express milk manually, gently massage to start the milk moving down the ducts. Work evenly around the breast, stroking repeatedly downward toward the areola.

Starting about halfway up the breast, run your thumb firmly down. As it reaches the edge of the areola, press in and up and the milk will squirt from the nipple. Repeat all the way around

Do not squeeze the nipple as this will close the ducts, nor continue expressing until you think the breast is empty. Stop when the milk starts coming in drips rather than jets.



www.breastfeeding.com

DONOR BREAST MILK

- 17 human milk banks in South Africa
- Non-profit organization
- Supplying the premature infant in the NICU with safe donate breastmilk.
- Public hospital facilities are independent and generate their own milk supply
- Provide support structure for equipment, training and top-ups of DBM when the collection cycle hits a low
- Donated breastmilk (DBM) is prescribed as an emergency procedure, to maintain healthy premature babies and healthy NICU environments.

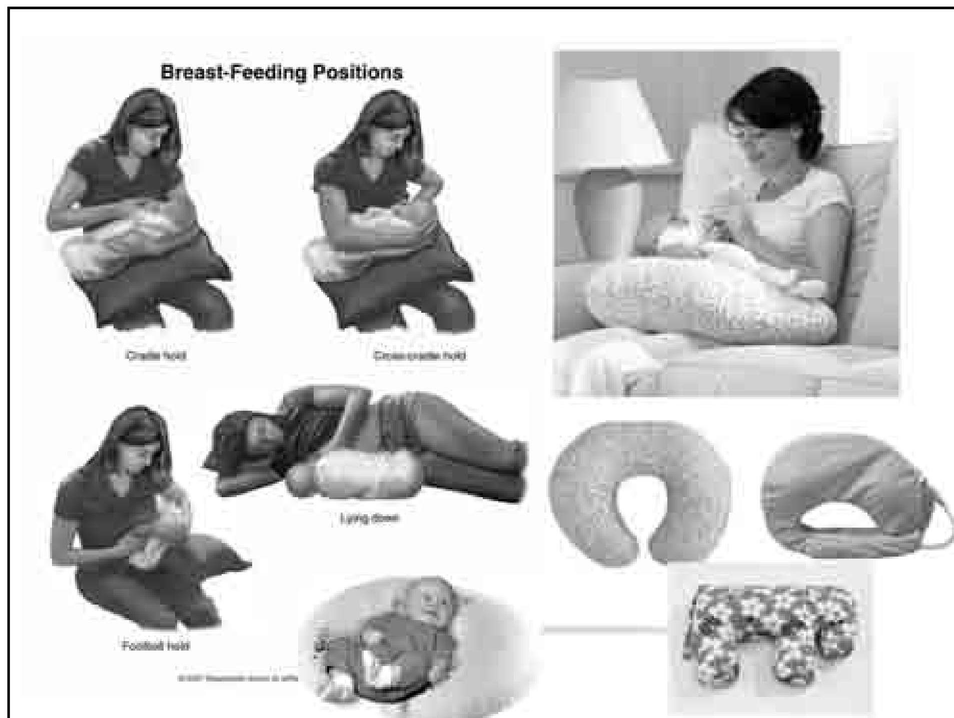
South African Breastmilk Reserve
Bringing milk to babies, safely

INDICATIONS FOR PARENTERAL FEEDING

- All premature infants (<34 weeks) while enteral nutrition is gradually introduced
- Illness
  - GIT congenital abnormalities
  - Immediate period post - surgery
  - Necrotizing enterocolitis

COMPLICATIONS OF PARENTERAL FEEDING

- Venous line related: sepsis, tissue infiltration
- Deficiency or excess of parenteral nutrition components
  - glucose
  - minerals
  - electrolytes
- Liver abnormalities
  - abnormal liver enzymes
  - cholestasis
- Metabolic bone disease
- Growth impairment

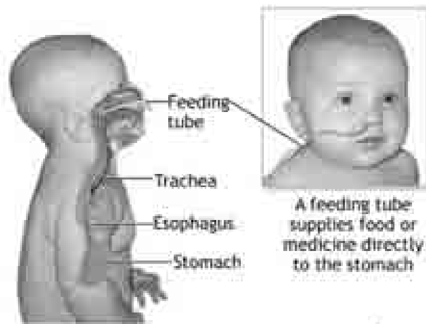


FEEDING METHODS

- CUPFEEDING

1. Breastfeeding infants nearing discharge whose mothers can't lodge in hospital.
2. Preterm infants too immature to breast feed or unable to complete a breast feed, or whose mothers were not present at the time of a feed.
3. Infants with a cleft lip and/or palate before surgery
4. Infants with an uncoordinated suck, swallow, and breathing pattern caused by asphyxia / neurological condition
5. Infants born by caesarean section, if breast feeding was not possible within the first few hours of surgery
6. Infants whose mothers were initially unwell but who intended to breastfeed.
7. Term or preterm infants at discharge who became tired before they were able to complete a breast feed

FEEDING TUBES



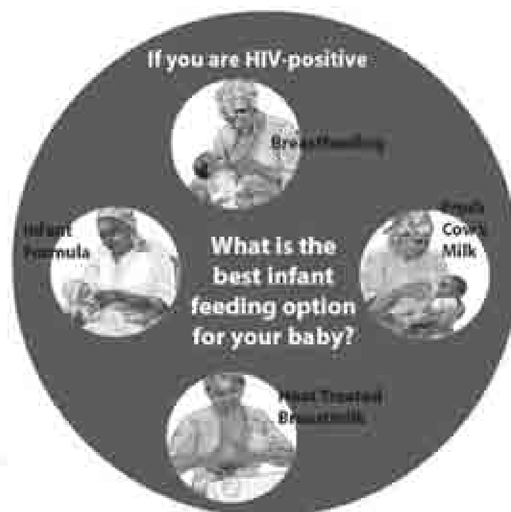
ADAM.

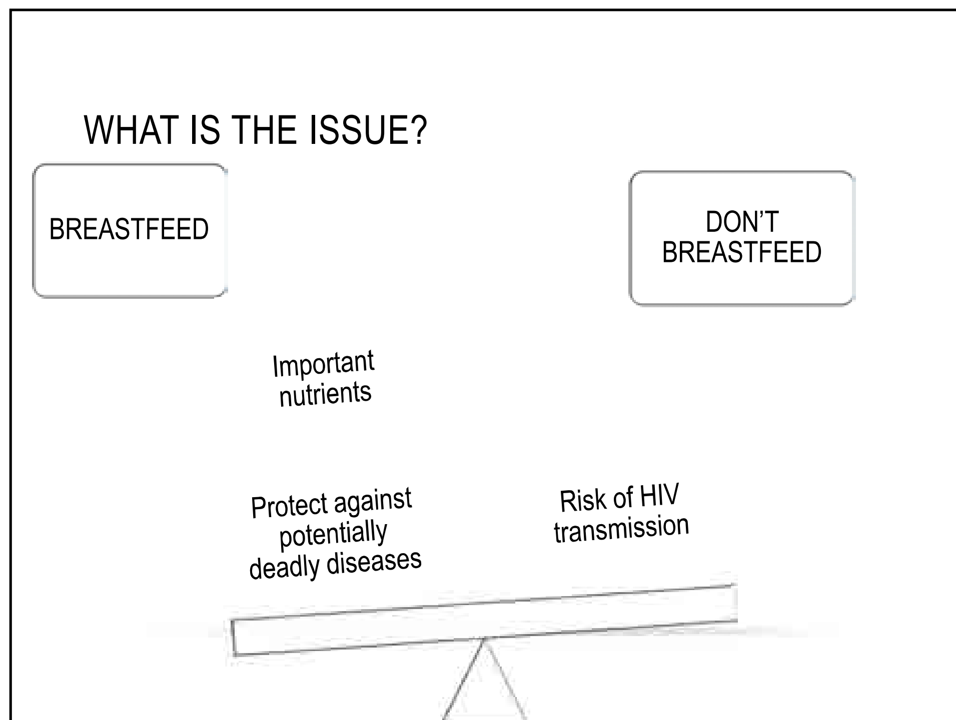
3 STRATEGIES TO MAXIMIZE NUTRIENT DELIVERY

- Orientate milk syringe with tip upright, fat rise to top and gets delivered first
- Shortest feeding tube possible
- Empty syringe completely into infant at end of feed

Exogenous fat doesn't mix with human milk, give directly in tube before feed.

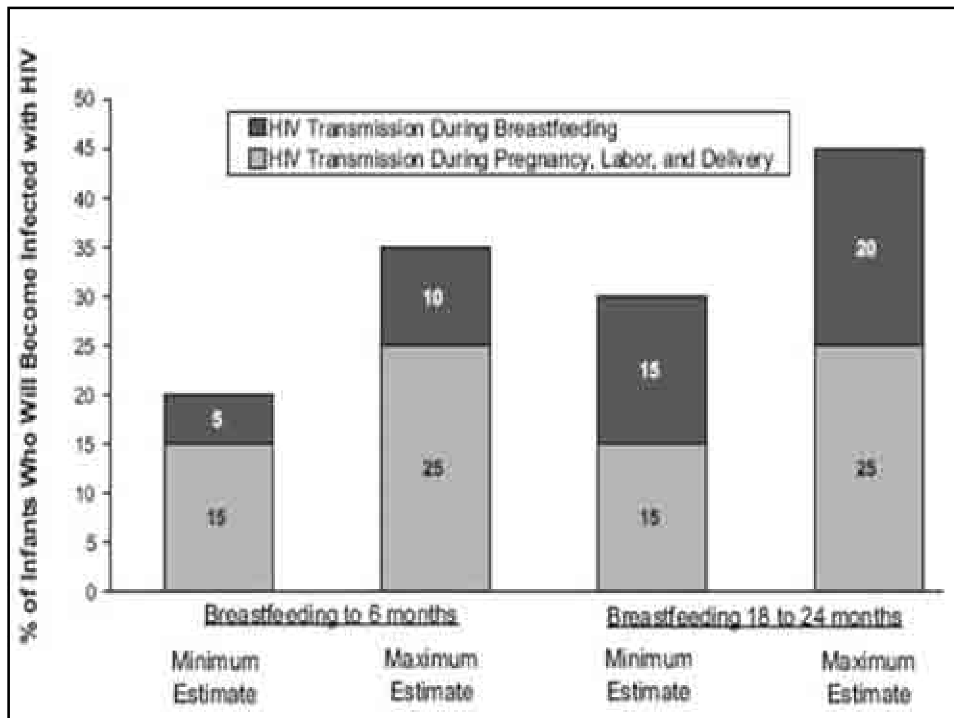
FEEDING IN THE HIV EXPOSED/INFECTED INFANT





MAIN FACTORS INCREASED RISK HIV TRANSMISSION THROUGH BREAST MILK

- Acquire HIV infection during breastfeeding
- Severity of disease
- Poor breast health
- Mixed feeding
- Longer duration of breastfeeding
- Possibly
  - Oral infection in infant (thrush and herpes)
  - Nutritional status of mother



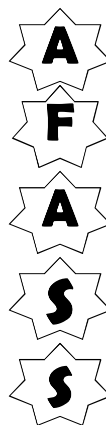
EXCLUSIVE BREASTFEEDING

- No other food or drink – not even water – except breast milk
- NO MIXED FEEDING
- Drops and syrups (vitamins, minerals and medicines) if needed
- Stop early to decrease amount of time exposed
- Stop when exclusive breastfeeding no longer nutritionally adequate
- Stop breastfeeding at once, rather than gradually

World Health Organization

AFASS CRITERIA

- Acceptable
  - No cultural or social barriers
  - No fear of stigmatization or discrimination
- Feasible
  - Adequate time, knowledge, skills and resources
  - Support to cope with family, community and social pressures
- Affordable
  - Pay for feeds incl fuel and clean water
  - Without compromising family health and nutrition
- Sustainable
  - Access to continuous and uninterrupted supply of all commodities
- Safe
  - Correctly and higienically prepared and stored
  - Fed in nutritionally adequate quantities
  - Clean hands and clean utensils



ALTERNATIVES

- Heat pasteurised breastmilk
- Commercial infant formula
- Home modified animal milk
- Wet nursing

HEAT PASTEURIZED MILK

PRETORIA PASTEURISATION

FLASH PASTEURISATION

HOLDER TECHNIQUE

Equipment

- •1Lt Hart pot (milk warmer)
- •450gr Glass Peanutbutter jar
- •Kettle or other utensil in which to boil water
- •Clock / timer

Method

- Label glass jar with baby's name, the date and time
- Mother expresses 50 to 150ml into glass jar
- Close lid and place jar into 1Lt pot
- Pour boiling water - 450ml or 2cm below pot brim
- May need weight on top of jar
- Leave standing for ½ hr
- Remove milk, cool, administer to baby or store in fridge

COMMERCIAL INFANT FORMULAS

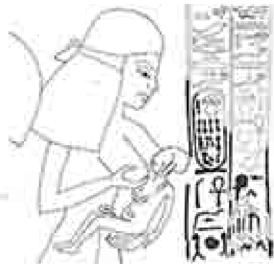
- Affordable
- Reliable supplies
- Clean water, fuel, utensils, preparation skills, and time to prepare foods correctly and hygienically
- Liquid commercial formulas closest in nutrient composition to breastmilk,
- Modified animal milk or soy protein
- Lack essential fatty acids, hormones, immune cells
- Risk of bacterial contamination

HOME MODIFIED ANIMAL MILK

- No longer recommended as safe replacement feed
- Milk from cows or goats
- Fresh or powdered form
- Can cost less than commercial formula
- Not fit for infants less than six months of age
- Diluted with clean boiled water to increase the fluid content
- Mixed with sugar to improve the energy content
- Not enough vitamins and micronutrients

WET NURSING

- Allowing a family member or someone else to nurse the baby
- Acceptable in some cultures
- When the infant's mother is too ill or does not have enough breastmilk
- May not be safe
- Wet nurses with undiagnosed HIV infection can transmit
- Wet nurse must test HIV-negative and remains so during the feeding period



COUNCELLING

- START IN THE ANTENATAL PERIOD
- Risk of mother to child transmission of the virus
- Appropriate feeding options
- Advantages and disadvantages of each option
- Risk of transmission significantly reduced if mom on HAART / infant receives daily antiretroviral prophylaxis
- Replacement feeding
    - Increased risk of morbidity and mortality
    - High risk infections and malnutrition
- Mixed feeding is the worst option
- Safe sexual practices
- Family planning

REMEMBER

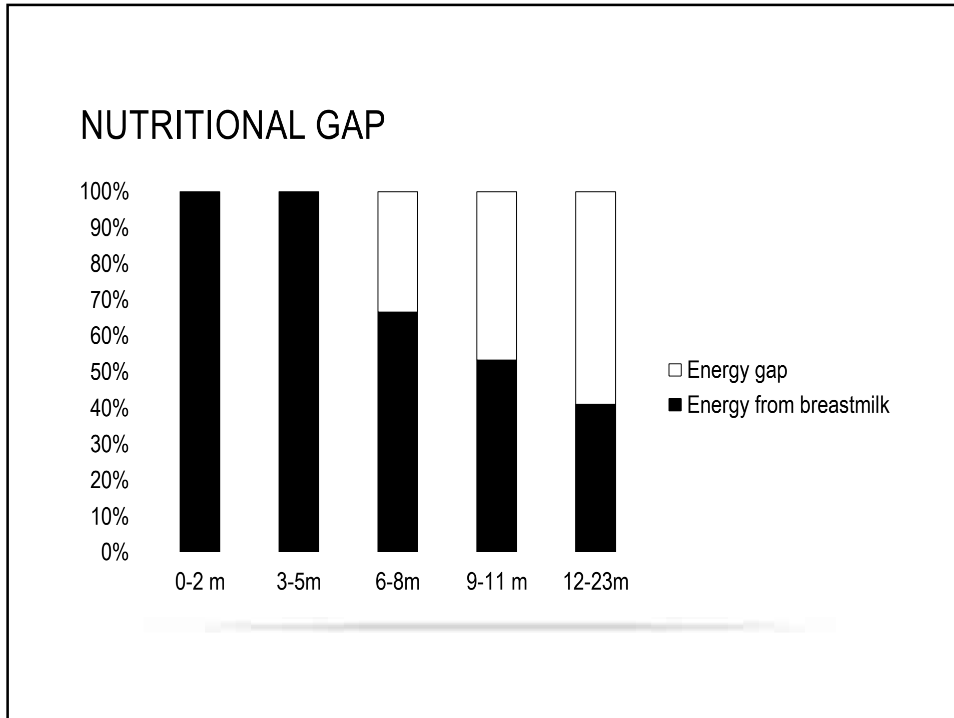
IT REMAINS THE MOTHER'S CHOICE

GUIDING PRINCIPLES COMPLEMENTARY FOOD

1. Exclusive breastfeeding 0-6 months, introduce complementary foods and continue breastfeeding till 2 years
2. Practise responsive feeding
3. Good hygiene
4. Start with small feeds, increase quantity
5. Gradually increase food consistency and variety as grows older, adapt to requirements and abilities

GUIDING PRINCIPLES COMPLEMENTARY FOOD

1. Increase number of times fed as grows older
2. Variety of nutrient rich food
3. Use fortified complementary foods or vitamin mineral supplements as needed
4. During illness:
   - Increase fluid intake
   - More frequent breastfeeding
   - Encourage soft, favourite foods
5. After illness
   - Encourage to eat more
   - More frequent feeds

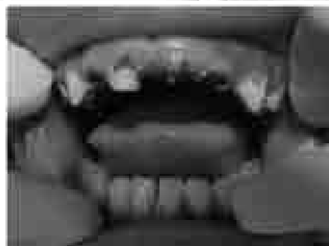

NUTRITIONAL GAP
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0-2 m
3-5m
6-8m
9-11 m
12-23m
Energy gap
Energy from breastmilk

COMPLEMENTARY FOOD?

THEY CLAIM…

- Promote active lifestyle
- Boost personality
- Gives body essential sugars
- A lifetime of guaranteed happiness

THE TRUTH



BABY BOTTLE DENTAL CARIES

ASSESS ADEQUACY OF FEEDING

1. Child's growth
2. Take a feeding history
3. Observe a breastfeed
4. Child's health
5. Mother's condition

ROAD TO HEALTH BOOKLET

EVERY CHILD MUST HAVE ONE!

Every health care professional has a responsibility to keep the record up to date.

- A few minutes can make the world of difference
- Ask to see the record at every single visit.
- Act sooner than later.

CLASSIFICATION INFANT YOUNG CHILD FEEDING

REFER

- Unconcious
- Lethargic
- Severely malnourished
- Not able to eat or drink anything
- Unable to breastfeed after assist with attachment
- Vomits copiously

ASSIST

- Growth faltering
- Low weight for age
- Poor attachment
- Poor feeding pattern
- Mixed feeding < 6/12
- Breast abnormality
- Breastfeeding problems
- Inappropriate complementary feeding
- Mom not healthy
- No family planning

SUPPORT

- Adequate growth
- Exclusive breastfeeding with good practices
- (0-6months)
- Continue breastfeeding & adequate complementary feeding (6-23months)
- Child healthy
- Mother healthy
- Appropriate family planning