

# The Benefits of Human Milk

Mohammadbagher Hosseini MD  
Associate Professor of Neonatology  
Tabriz University of Medical Sciences

July 15 2020  
Children Hospital of Tabriz

# Breastfeeding

- Reduces the risk of necrotising enterocolitis (NEC), gastrointestinal tract infections, respiratory tract infections, otitis media, atopic dermatitis, childhood asthma, childhood leukaemia, diabetes type I, obesity, and sudden infant death syndrome (SIDS).
- Breastfeeding also facilitates maternal-infant bonding through complex behavioural and neuro-endocrine responses between the mother and her infant.
- in women: reduced risk of breast and ovarian cancers, osteoporosis, diabetes type II, cardiovascular disease, and rheumatoid arthritis

# Preterm infants who receive human milk during their stay in the NICU:

- have a reduced risk of NEC, chronic lung disease, retinopathy of prematurity, SIDS, and rehospitalisation after NICU discharge.
- The positive impact of human milk appears to be linked to precise exposure in the **early post-birth period**, during which the exclusive use of human milk and the avoidance of commercial formula, are most vital

# preterm milk

- has higher levels of energy, lipids, protein, nitrogen, some vitamins, some minerals, and in particular immune factors, including **live cells, immunoglobulins and anti-inflammatory elements**
- protection against infection, provide nutrition and promote **optimal development** of critical bodily systems
- development of the gastrointestinal tract, for neurological development and immunological protection.

Schanler R.J Am J Clin Nutr 85, 625S-628S (2007).

# components of human milk

- The **live cells** from the infant's mother, cannot be replaced by artificial sources, which is why the feeding of human milk should be a NICU priority
- Fresh human milk, has the highest level of functional nutrients, growth factors, and many other protective components such as lactoferrin, secretory IgA and lysozyme.
- Moreover, fresh human milk is not sterile but rather contains a wide variety of **living organisms, including non-pathogenic bacteria** that colonise the infant intestine

# the benefits of HMBs

- Increasing BF rates
- beneficial effects on neurodevelopmental outcomes
- risk of sepsis
- risk of necrotizing enterocolitis
- tolerance of feedings
- length of stay in the NICU
- direct cost savings.

# Very preterm infants who received more than 50% breastmilk within the first month of life:

- had better neurodevelopmental outcomes at 7 years of age.
- An **0.5 point increase in IQ** was seen for **each additional day**.
- Furthermore, there was an association between breastmilk intake and size of the deep nuclear grey matter and the hippocampus at term
- Academic achievement, working memory and motor scores at 7 years of age



# Human milk bank, or breast milk bank

- A human milk bank is a service established for collecting, screening, processing, storing and distributing donated human milk
- The optimum nutrition for newborn infants is breastfeeding, if possible, for the first year.
- Human milk banks offer a solution to the mothers that cannot supply their own breast milk to their infant
- Mothers' Milk Bank (MMB) says, this service provides mothers with an alternative to infant formula



# International statement

WHO and UNICEF, made a joint statement in 1980:

- "Where it is not possible for the biological mother to breast feed, the first alternative, if available, should be the use of human milk from other sources.
- Human milk banks should be made available in appropriate situations."

# اهداف برنامه جمعیت سالم تا 2020

## جدول ۱-۲: اهداف کلی «جمعیت سالم تا سال ۲۰۲۰»

### اهداف اختصاصی «جمعیت سالم تا سال ۲۰۲۰»

MICH-21: افزایش نسبت شیرخوارانی که با شیر مادر تغذیه شده‌اند.

MICH-21.1	تغذیه با شیر مادر تا هر سنی و هر مقداری	۸۱/۹ درصد
MICH-21.2	در ۶ ماهگی	۶۰/۶ درصد
MICH-21.3	در یک سالگی	۳۴/۱ درصد
MICH-21.4	انحصاری با شیر مادر در طول ۳ ماه اول	۴۶/۲ درصد
MICH-21.5	انحصاری با شیر مادر در طول ۶ ماه اول	۲۵/۵ درصد
MICH-22	افزایش نسبت کارفرمایانی که برنامه‌های حمایت از شیردهی را در محیط کار فراهم می‌کنند.	۳۸ درصد
MICH-23	کاهش نسبت شیر مادر خوارانی که در ۲ روز اول تولد شیر مصنوعی دریافت می‌کنند.	۱۴/۲ درصد
MICH-24	افزایش نسبت تولدهای زنده در مراکز زایمانی که مراقبت‌های لازم را برای مادران شیرده و شیرخواران فراهم می‌کنند.	۸/۱ درصد

# KMC and Milk expression in unit








# Fresh human milk contains bacteria

- including intestinal bacteria that are thought to contribute to vital programming of the infant's immune system to respond to commensal and pathogenic bacteria.
- The majority of identified organisms in milk are non-pathogenic normal skin flora from the mother's nipple or breast.
- Nonetheless, potentially pathogenic bacteria are also common in human milk. Staphylococcus aureus, including MRSA, B-haemolytic streptococci, Pseudomonas species, Klebsiella species, Proteus species, and enterobacteria are frequently identified and may place the infant at risk of infection.

Jeurink,P.V. et al. Human milk: A source of more life than we imagine. Benef Microbes 4, 17-30 (2013).

**Best**

- 
1. Mother's own breastmilk (fresh)
    - Helps bonding
    - Helps establish lactation
  2. Donated fresh preterm milk
    - Good balance of nutrients (may need supplemental calcium and Vit. D)
    - Prevents infection
    - Easily digested
  3. Donated fresh term mature milk
    - Prevents infection
    - Easily digested, but lacks adequate protein
    - Usually foremilk, so may lack fat
  4. Pasteurized donated breastmilk
    - Easily digested
    - HIV destroyed, anti-infective factors partially lost
  5. Preterm formula
    - Correct nutrients, but not necessarily easily digestible
    - No anti-infective properties
    - More severe infections
  6. Ordinary formula
    - Wrong balance of nutrients
    - No anti-infective properties
    - Less optimal growth and development
    - More severe infections
    - Difficult to digest and utilize

**Worst**





# Specific Refrigerator in Each unit

## One basket for one Infant



# Participation of Family in care is an Integral part of NIDCAP





# بانک شیر مادران دانشگاه علوم پزشکی تبریز

Breast Milk Bank of  
Tabriz University of Medical Sciences

بانک شیر مادر، مسئول جمع آوری و آماده سازی  
شیر مادر اهدایی برای نوزادانی است که یا بیمار یا نارس اند.

اهدای شیر مادر پاستوریزه شده  
به نوزادانیکه شیر مادر ندارند



اهدای شیر مادر



شستشوی و  
استریل کردن ظروف



پاستوریزه کردن



ذخیره سازی



آزمایش از نمونه ها

سازمان بهداشت جهانی (WHO) برای نوزادانیکه به هر دلیل از شیر مادران خود محروم اند شیر مادران دیگر را توصیه می کند.  
مادران محترمی که قصد اهدای شیر را دارند لطفاً با آدرس و شماره تلفن زیر تماس بگیرند:  
تبریز، خیابان ارتش جنوبی، بیمارستان الزهرا، ساختمان شماره ۳، بانک شیر مادران. تلفن: ۵۵۷۲۲۲۵-۰۴۳.

Alzahrahosp.tbzmed.ac.ir



# Logo of Breast Milk bank of TUOMS



# Opening Ceremony of First Iranian Breast Milk Bank





# Opening Ceremony of First Iranian Breast Milk Bank



# Opening Ceremony of First Iranian Breast Milk Bank





# 10 Human BM Bank in



# At First Consider your Mothers in your NICU's





# Facilitate KMC and Breast feeding

