

- **Appropriate  
Follow-Up Care**

# AAP Policy statement 2012

*Mothers were encouraged to continue breastfeed as primary nutritional source for their infants for at least 6 months*

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# Feeding preterm infant after hospital discharge

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*Infant with an appropriate weight for postconceptional age at discharge should be breast-fed when possible*

# Feeding preterm infant after hospital discharge

- *Infant discharge with a subnormal weight for postconceptional age are at increase risk of long-term growth failure*
  - *Breast-fed infant : supplement with HMF*
  - *Formula-fed infant : should receive special post discharge formula*

“



# Growth and Nutrition

# Feeding



- Feed every 1.5-3 h, no more than one period of prolonged sleep of up to 5 h
- Ad-libitum feeding is encouraged to optimize infant growth



- Mother should be advised to express after feeds



# Postdischarge Assessment

- 1 week
- 1 month

# Nutrition monitoring 1 week after discharge

1. Assess intake
  - History
  - Observation of feeding
  - Consider test weighing
2. Growth-weight and length
3. Biochemical indices (optional)

Assessment

Optimal

Suboptimal



# ● Sign of effective breastfeeding

## **Baby**

- Mouth is moist and pink
- Alert & move eye actively
- Vigorous cry
- Good skin turgor
- Fontanelles are flat and soft
- No fever
- Looking relaxed and sleepy
- Adequate output

## **Mother**

- Breasts feel softer and less full after breastfeeding
- Experience letdown reflex
- Nipple is elongated after breastfeeding



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*Test weighing remains the most accurate and reliable than clinical indicator for preterm infant*

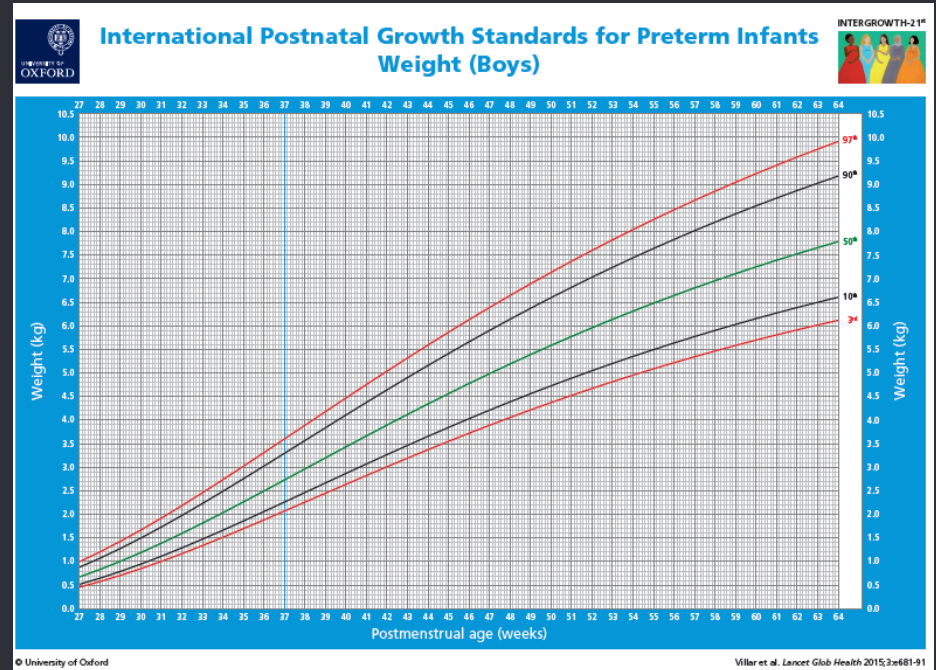


## Target growth parameter

Age	Weight (g/day)	Length (cm/week)	Head Circumference (cm/week)
0-3 months	25-30	0.7-1	0.5
3-12 months	10-15	0.4-0.6	0.25

# Assessing growth and body composition

- *INTERGROWTH-21<sup>st</sup> Postnatal Growth of Preterm Infants Charts* : up to 64 wk
- *Fenton chart* : up to 50 wk
- *WHO growth chart* : postnatal growth from 50 wk (PMA) to 24 months



# • Biochemical indices

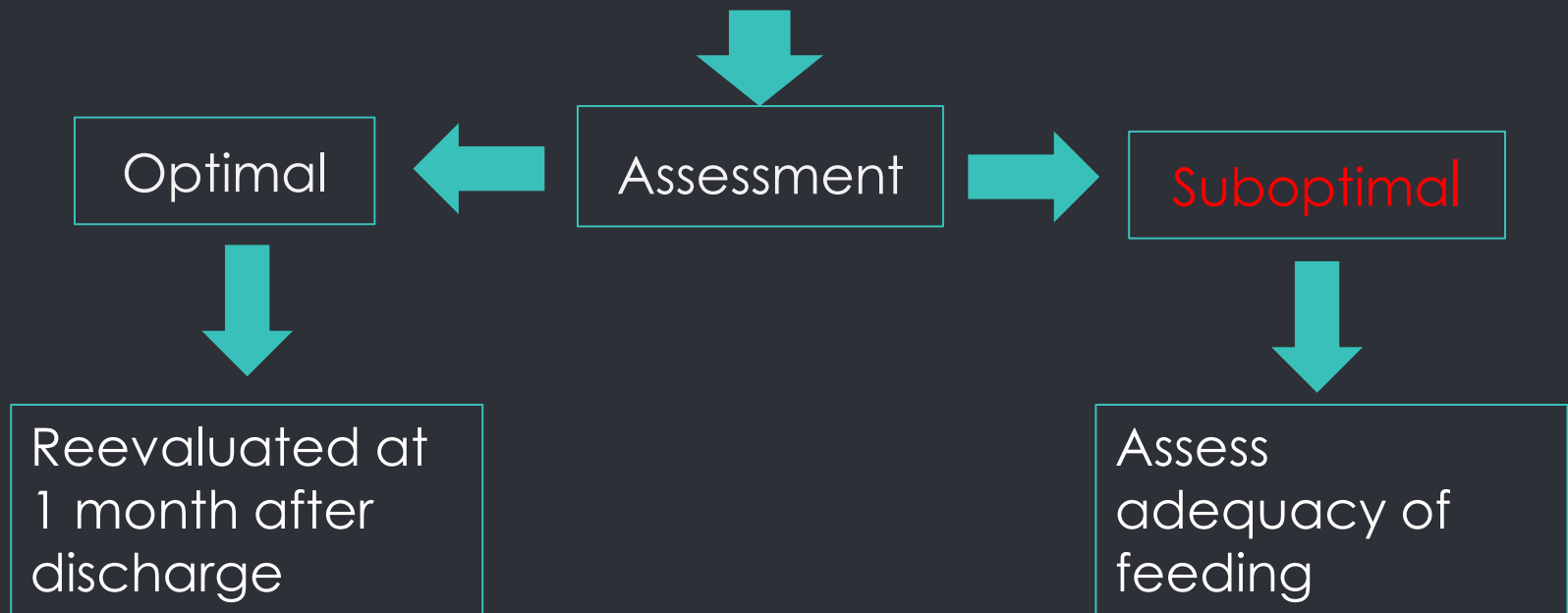
- Osteopenia of prematurity
  - ↓ Ca and P and ↑ALP
  - ↑↑ ALP related to bone fractures and stunting of growth
- Anemia
  - hemoglobin (10.5-13.5 g/dL) and/or hematocrit (33-39%)
- Protein intake
  - BUN

# Biochemical and Growth Monitoring for Premature Infants in the Postdischarge Period

Parameter	Action values
<b>Growth</b>	
Weight gain	<15 g/day
Length increase	<0.5 cm/wk
Head circumference increase	<0.5 cm/wk or > 1 cm/wk
<b>Biochemical markers</b>	
Phosphorus	<5 mg/dL
Alkaline phosphatase	> 500 IU/L
Blood urea nitrogen	< 8 mg/dL
Hemoglobin	<11 g/dl

# Nutrition monitoring 1 week after discharge

1. Assess intake
2. Growth-weight and length
3. Biochemical indices



# Triple feeding

## BREASTFEED

Put the baby to breast

## SUPPLEMENT

With expressed breastmilk/  
formula

Use a bottle  
syringe/  
fingerfeed tube  
at breast

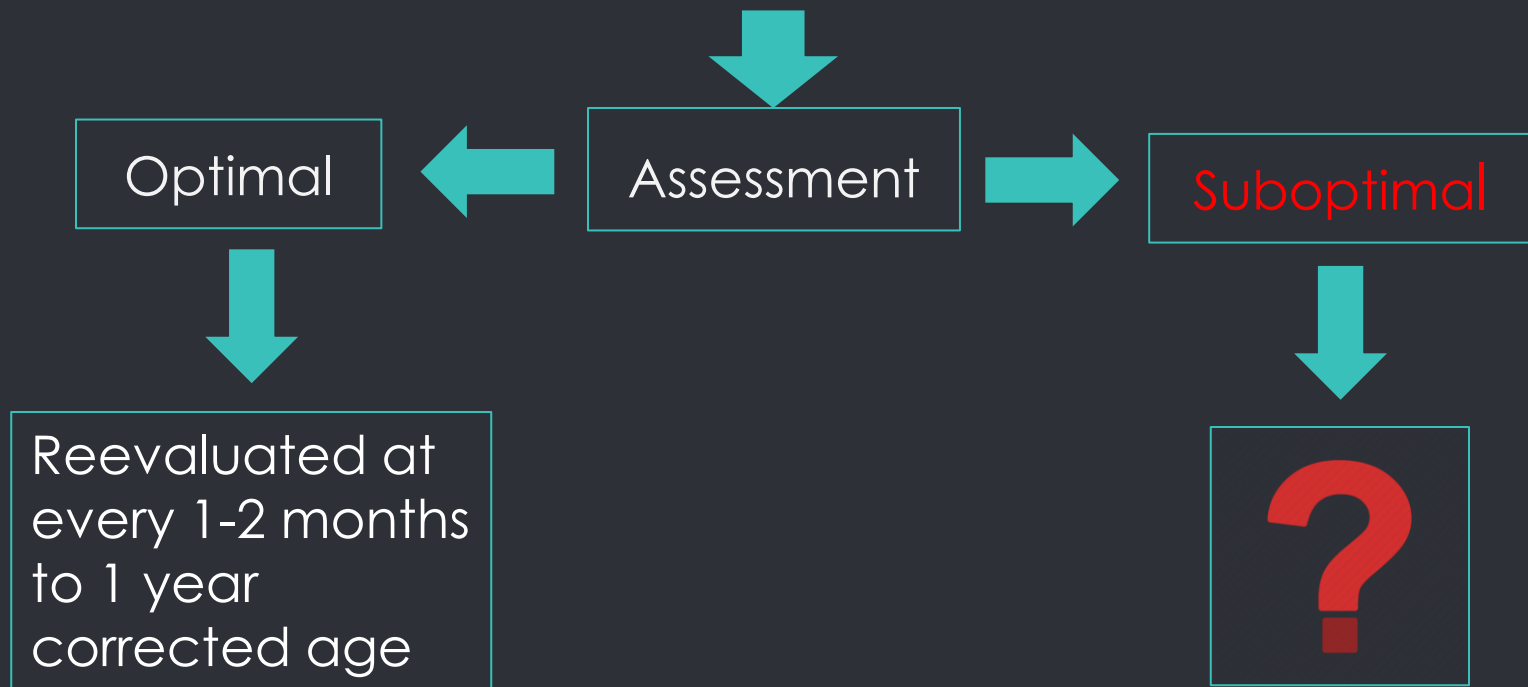
## PUMP

until empty to  
maintain milk  
supply



# Nutrition monitoring 1 month after discharge

1. Assess intake
2. Growth-weight and length
3. Biochemical indices



# • Three options for fortification of human milk

Option	Fortification
1. Some formula feed	<ul style="list-style-type: none"><li>• HM + post-discharge formula (22kcal/Oz) x3/d</li><li>• HM + 30 Kcal formula x1/d</li></ul>
2. Enriching feeds	<ul style="list-style-type: none"><li>• Add post-discharge formula to expressed HM</li></ul>
3. Nursing supplementer	<ul style="list-style-type: none"><li>• Supplement with 15 ml of post-discharge formula (22kcal/Oz) in all feeding</li></ul>

# Vitamin and mineral supplementation

AAP CPS WHO recommend

- Vitamin D supplement of 400 IU (10 mg) daily from birth to 1 year of life for breastfed infant
- Discontinued if infant consumes a minimum of one liter of formula daily



# ● Iron supplement



AAP (2009)

- 2 mg/kg/day at 1 month and continuing for 12 months.



CPS (1995)

- 3-4 mg/kg/day for those born at <1000 g and
- 2-3 mg/kg/day for those born >1000 g at 6-8 weeks and continuing until 12 months of corrected age.

ESPGHAN (2006)

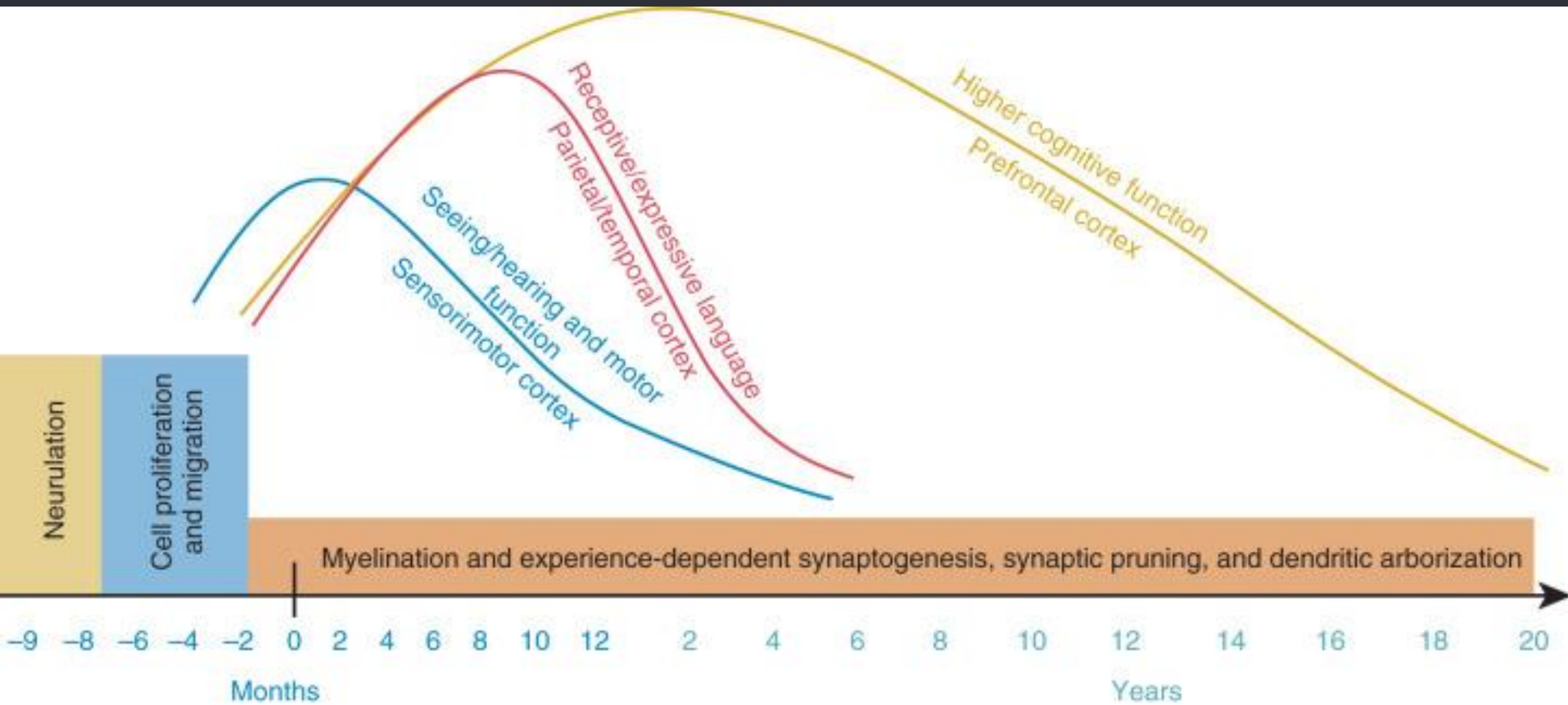
- 2-3 mg/kg/day at 2-6 weeks and continuing until 6-12 months

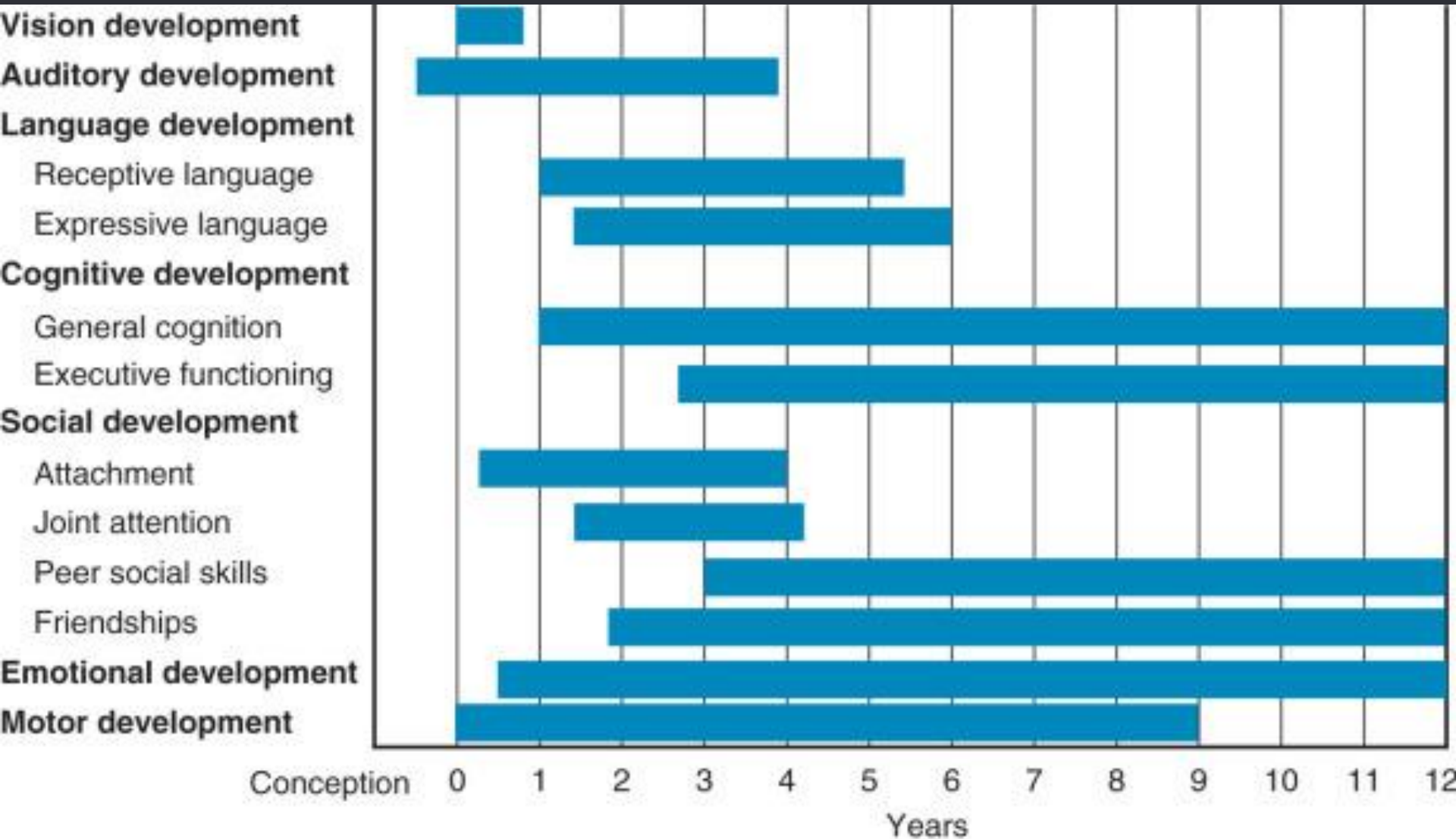




# Neurodevelopment

# Human brain development





# • Neurodevelopmental outcomes of preterm infants fed human milk a systematic review

- There is evidence to support beneficial effects of HM on brain, visual, and cognitive development from infancy to adolescence
- Volume of breast milk consumed is an important predictor of cognitive outcomes

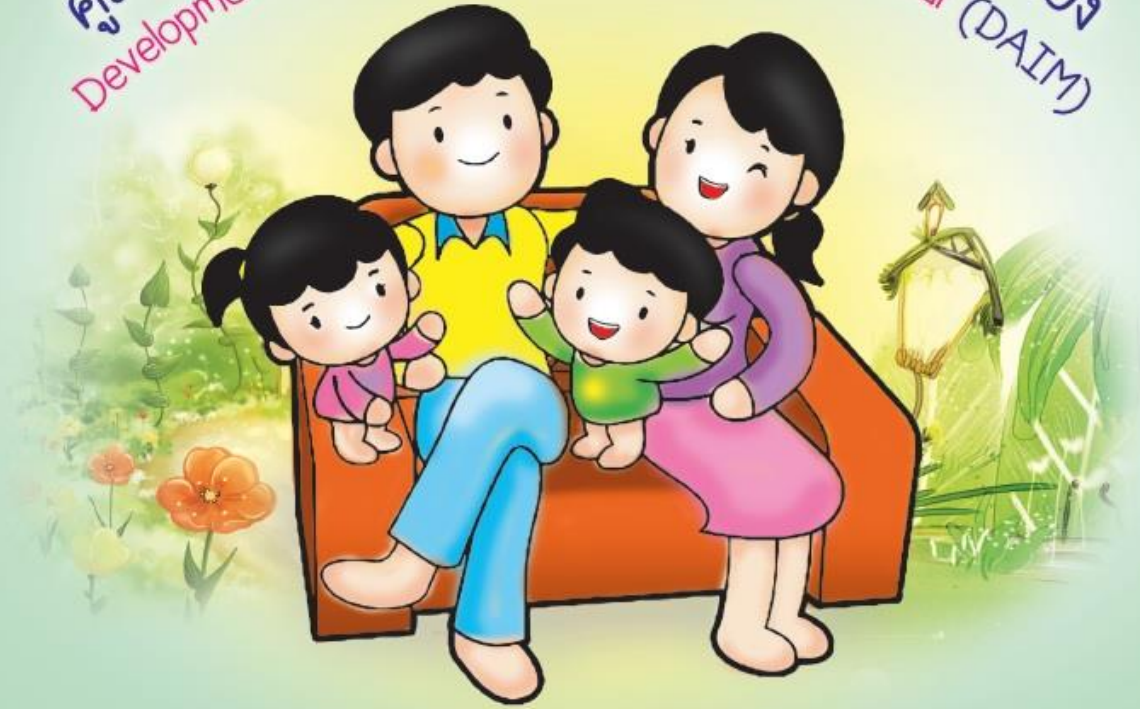




# Cognition and Learning

- Meta-analysis suggests that breastfeeding is associated with increased performance in intelligence tests in childhood and adolescence, of 3.5 points on average.

คู่มือประเมินและส่งเสริมพัฒนาการเด็กกลุ่มเสี่ยง  
Developmental Assessment For Intervention Manual (DAIM)



# WHO : Baby-Friendly Hospital Initiative 2009



- Hospital have a system of follow-up support for mothers after discharged such as
  - Early postnatal follow-up
  - Lactation clinic follow-up
  - Home visit (nurse, lactation consultant)
  - Telephone call
  - Community/social service support
  - Mother support group

# The revised BFHI 2018



**80%**

Mothers can access  
breastfeeding support in  
their community

# Success of breastfeeding

- Parental education and support
  - Antenatal education and postnatal support
  - Father who are engaged and educated in breastfeeding process is associated with increase rate of breastfeeding

# ● Knowledge management

## Problems

- Loss follow up/contact
- Hospital service
  - System
  - Place
  - Team

## Management

- knowledge
- Relationship
- Follow up system



- Hospital record /transfer system
- Set place and team
- Home visit
- Analyze data



Happy breastfeeding