



WABA | WORLD BREASTFEEDING WEEK 2024

Feeding one, two or more babies successfully

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Objectives

- WHO recommendations
- Initiation of breastfeeding
- Maintenance of supply
- Breastfeeding multiples
- Questions





What does the WHO recommend?

WHO and UNICEF recommend that children initiate breastfeeding within the first hour of birth and be exclusively breastfed for the first 6 months of life – meaning no other foods or liquids are provided, including water.

Infants should be breastfed on demand – that is as often as the child wants, day and night. No bottles, teats or pacifiers should be used.

From the age of 6 months, children should begin eating safe and adequate complementary foods **while continuing to breastfeed for up to two years of age or beyond.**

The breast is the only gland
in the body that does not
fully mature until lactation.



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Hormonal/endocrine control

During pregnancy

- Placenta raises levels of **oestrogen, progesterone, placental lactogen**
- Ductal growth begins under the influence of **oestrogen** and **growth hormone**
- **Progesterone** and **prolactin** influence growth of lobes and alveoli (lobulo-alveolar growth)

Breast development is sufficient in the first half of pregnancy

- Secretory activity and alveoli growth continues in the 2nd half of pregnancy
- **Prolactin** receptors increase in number
- **Prolactin** and **placental lactogen** are high enough to produce milk
- Optimal milk production is **INHIBITED BY PROGESTERONE** from the placenta



The third trimester

High **placental lactogen** = 2-3mls colostrum is secreted per day

- High in protein, immunoglobulins and sodium
- Low in lactose





Hormonal/endocrine control

After birth – milk production begins

- Removal of placenta = a decrease in **placental lactogen**, **oestrogen** and **progesterone**
- This removes inhibition of **prolactin**
- **Cortisol**, **prolactin** and **insulin** are needed
- ↑ blood flow to the breast and the stomach to accommodate the increase in metabolic needs

Breast anatomy

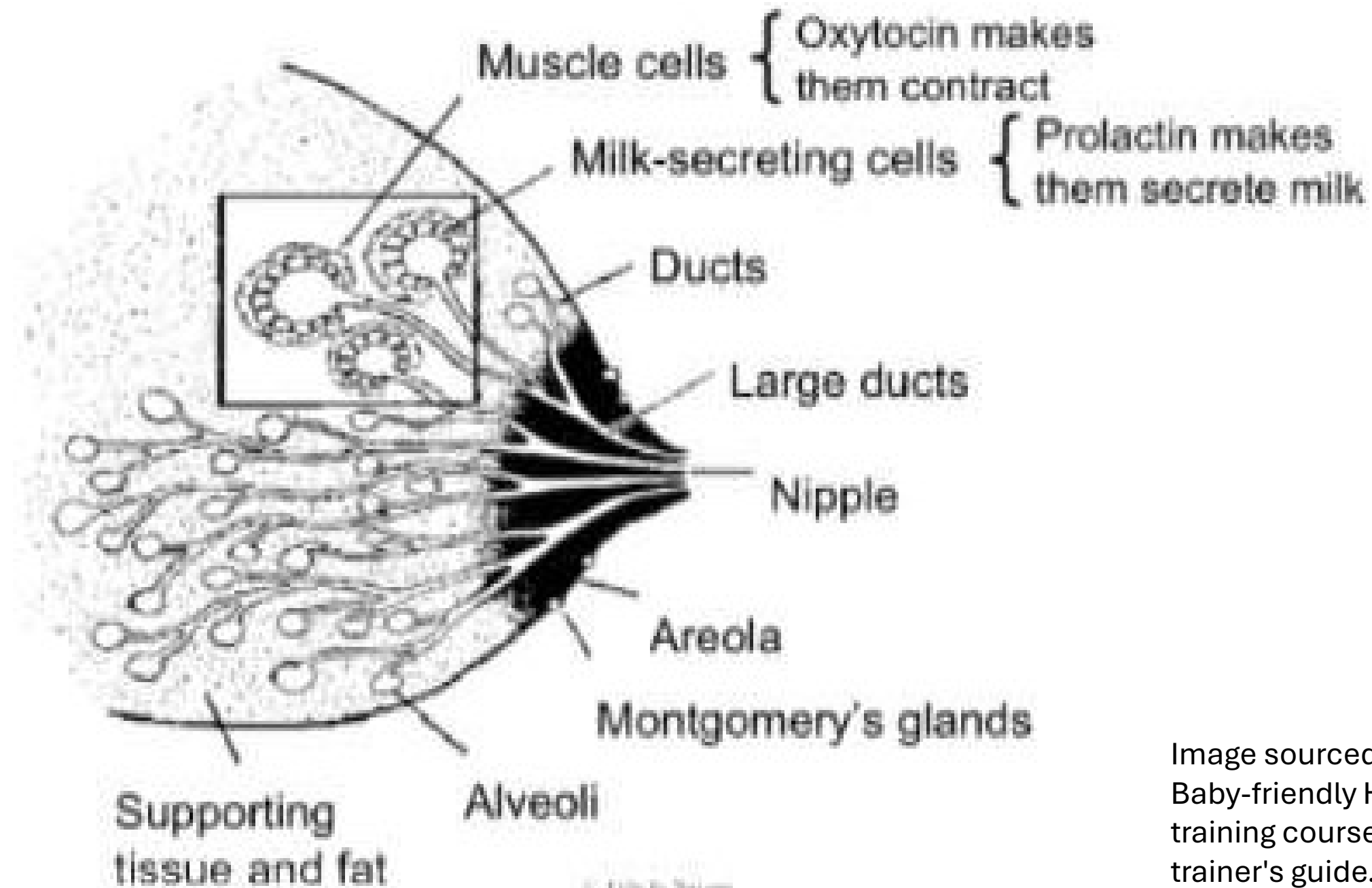
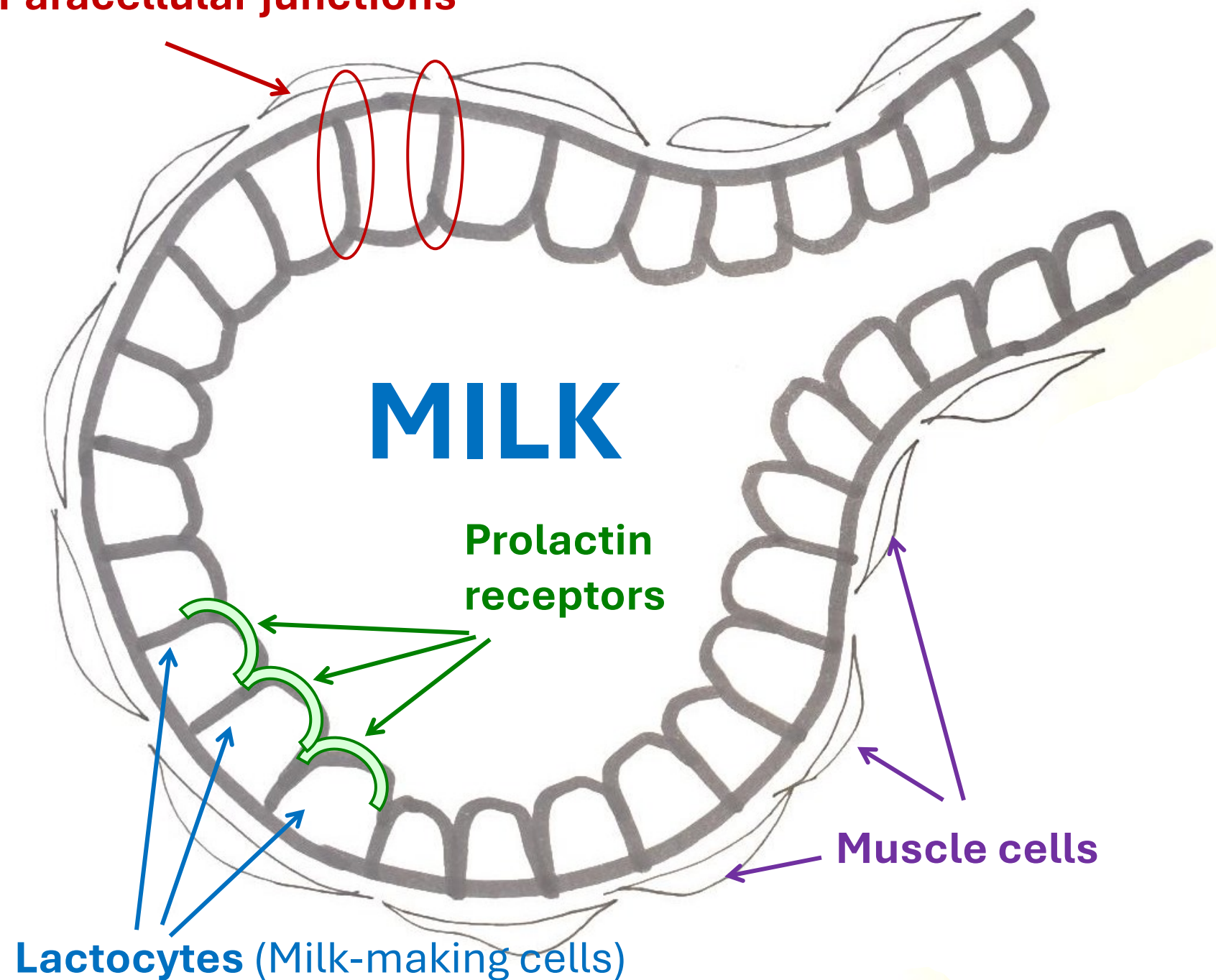


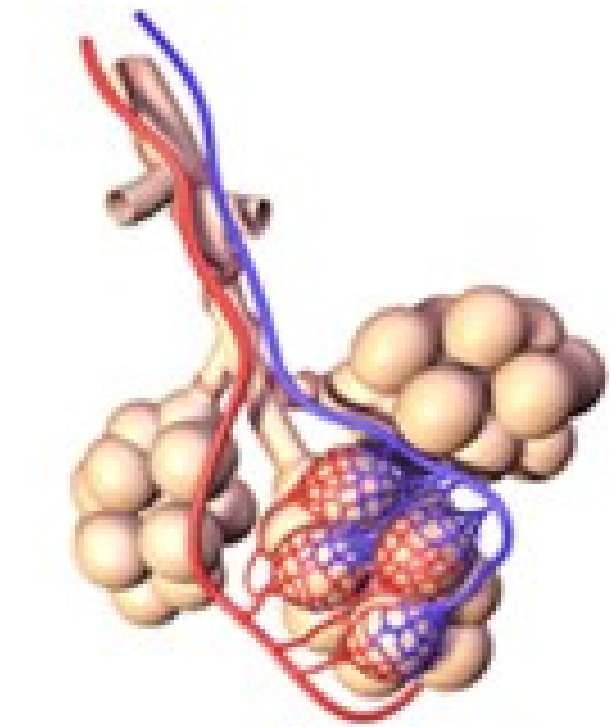
Image sourced from:
Baby-friendly Hospital Initiative
training course for maternity staff:
trainer's guide. P. 122

The alveoli

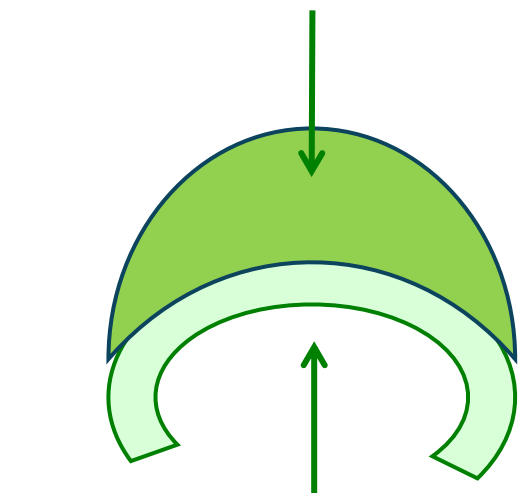
Paracellular junctions



Lobule

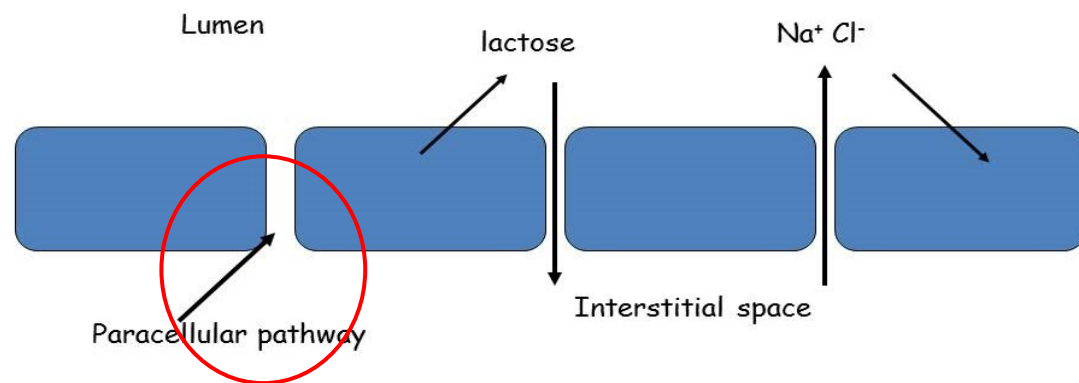


Prolactin molecule

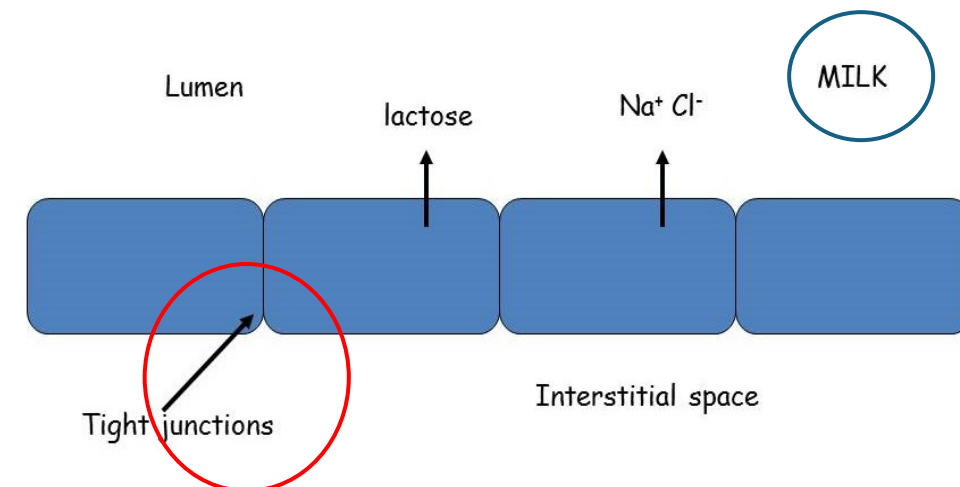


Prolactin receptor

Colostrum to mature milk



Adapted from Neville M, Morton J 2001, Lactogenesis. The transition from pregnancy to lactation. Pediatric Clinics of North America 48(1):35-52



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Colostrum

- High concentrations of Secretory IgA (SIgA) and lactoferrin
- Stays high for 48 hours
- Levels fall as milk volume rises
- ↑ Oligosaccharides

Paracellular pathways

- Tighten by 72 hours
- Proteins hold cells together so fluid **must** pass through the cells
- Physiological control of milk components

↓ sodium and chloride and ↑ lactose draws fluid into the interstitial space by osmosis

Milk production

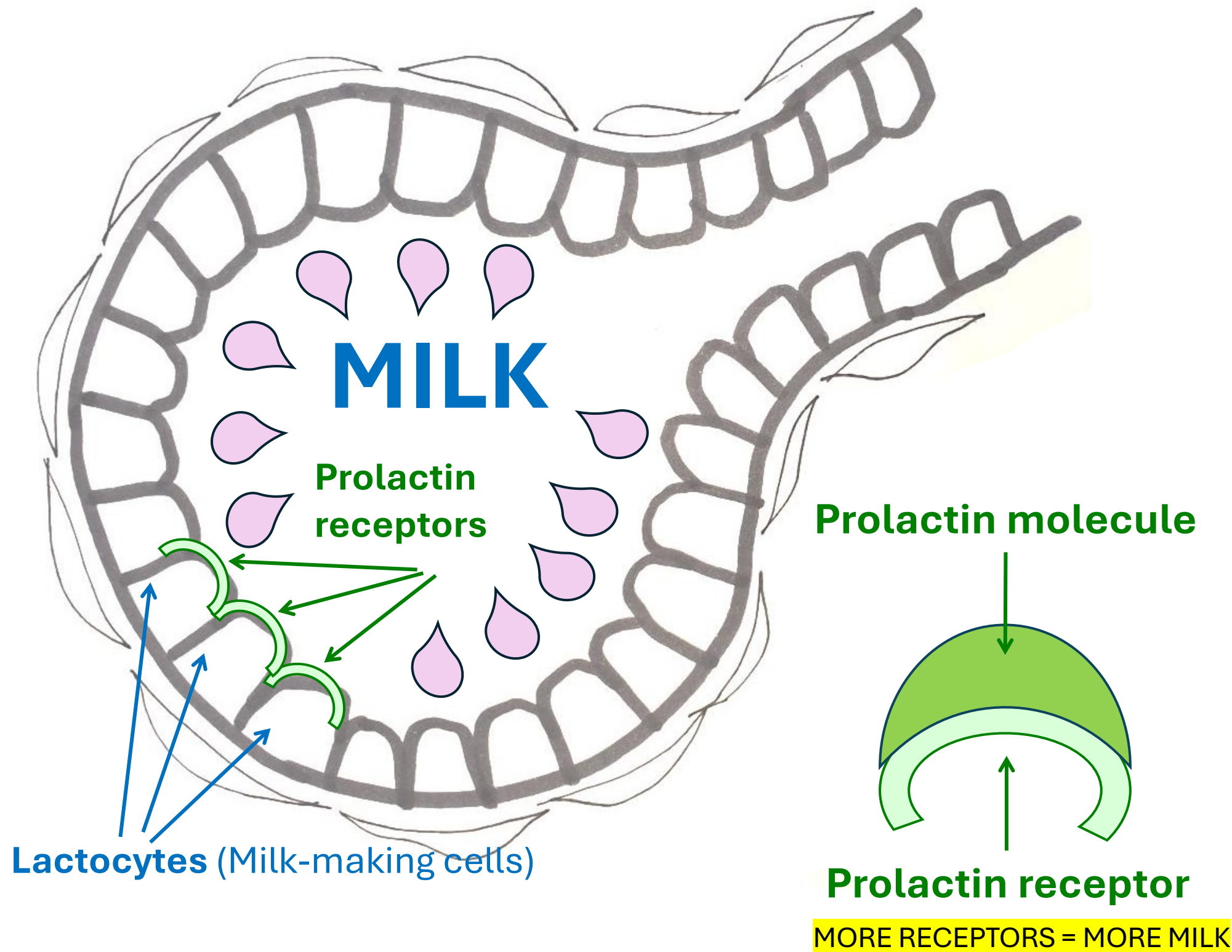
Endocrine

Early on milk production is dependent on hormones (prolactin & oxytocin)
(6-8 wks)

Autocrine

Ongoing milk production is dependent on suckling and milk removal (after 6-8 wks)

Prolactin



- Released from **anterior** pituitary
- Prolactin causes the alveoli to make milk
- Following birth, prolactin levels remain elevated, with peaks at each feed – **levels are proportionate to the amount of nipple stimulation in the first 4 days**
- Levels gradually fall to non-lactating range.

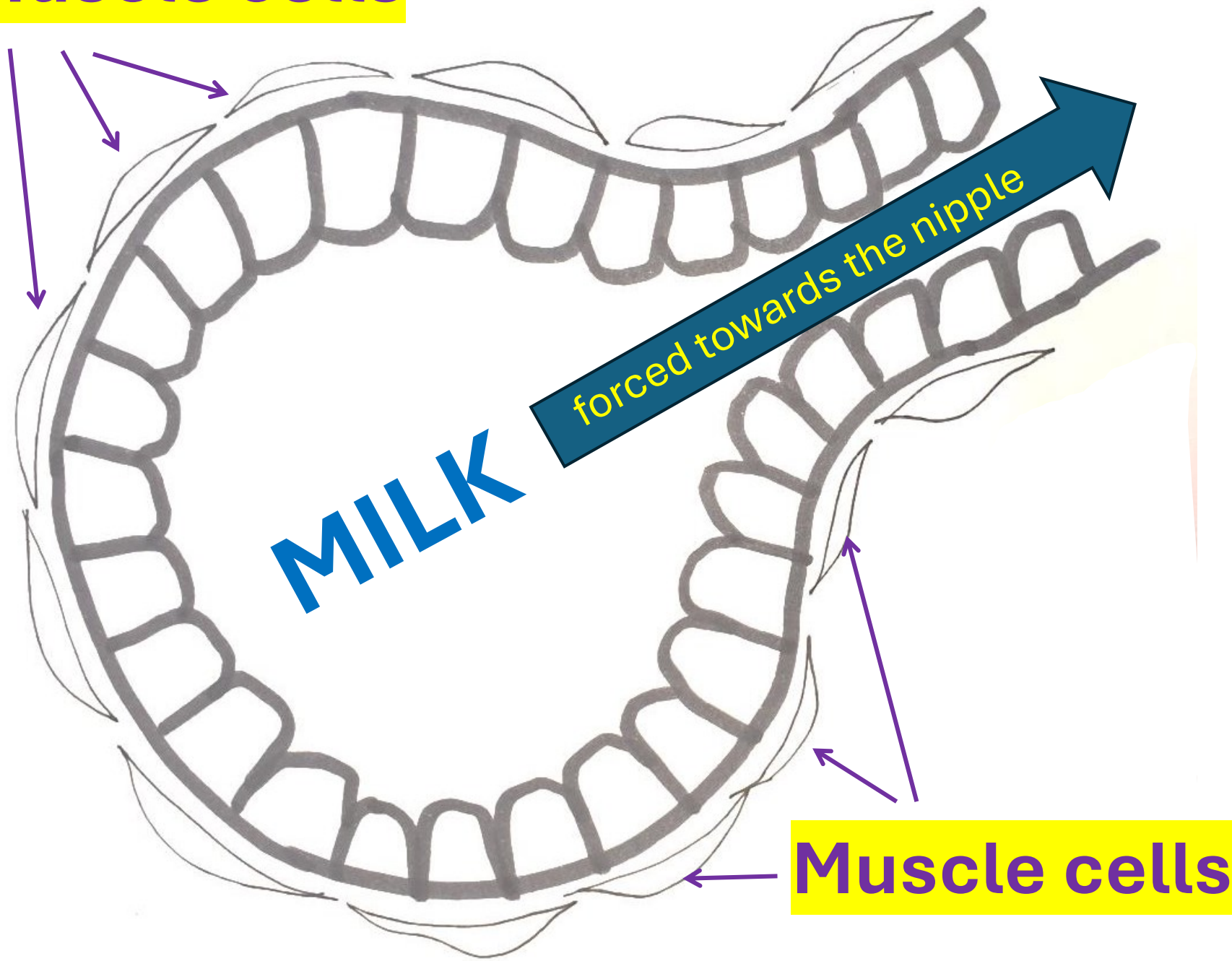
Prolactin

- ↑prolactin is produced at night, and when the mother is relaxed
- breastfeeding at night is helpful for maintaining supply
- prolactin makes a mother feel relaxed, and sometimes sleepy
- mothers rest well even with night breastfeeds

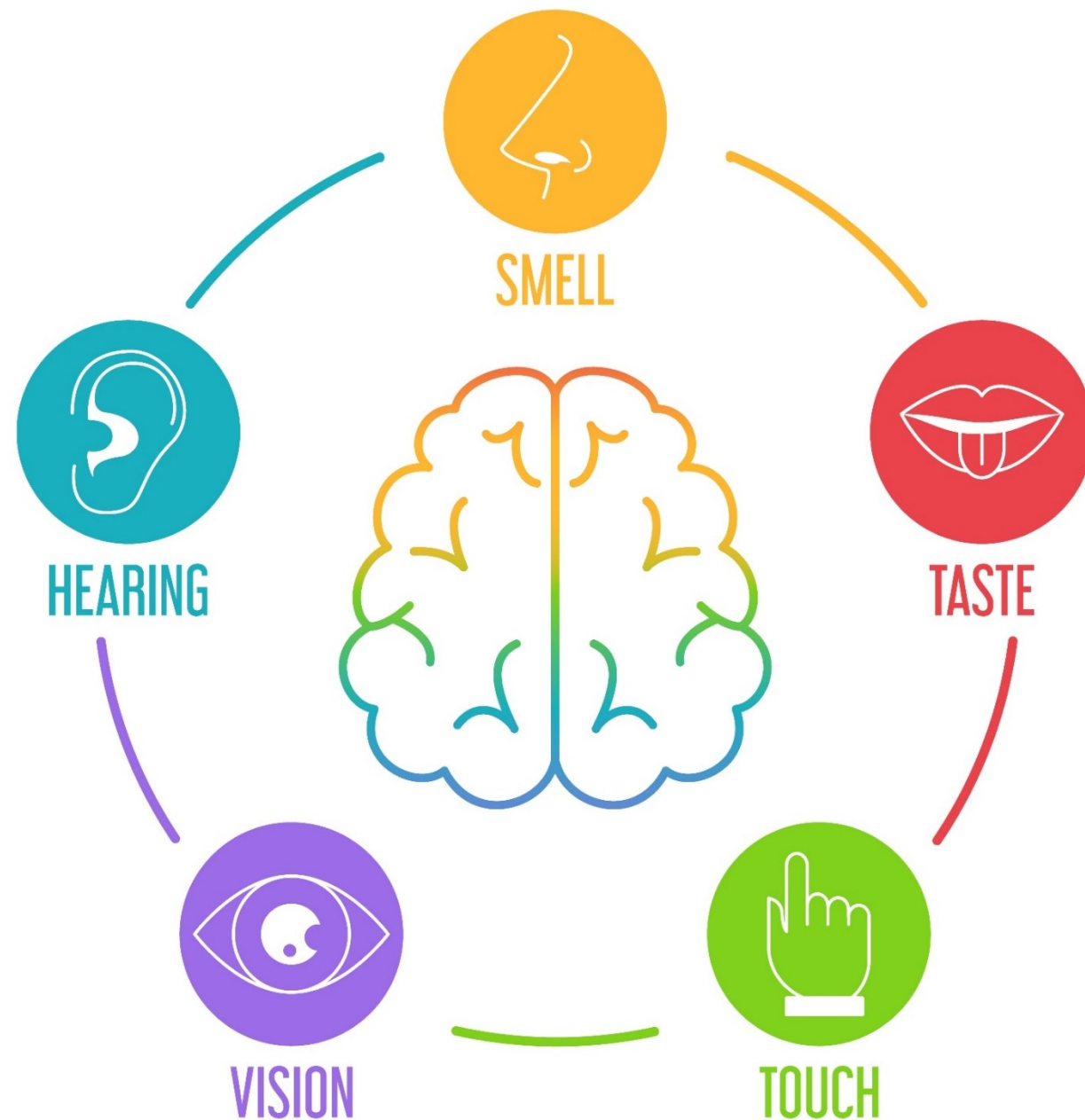


Oxytocin

Muscle cells



- Released from **posterior** pituitary
- Oxytocin contracts myoepithelial cells surrounding the alveoli and lobular ducts, forcing milk out of alveoli and smaller ducts into larger ducts and into the baby's mouth



Oxytocin

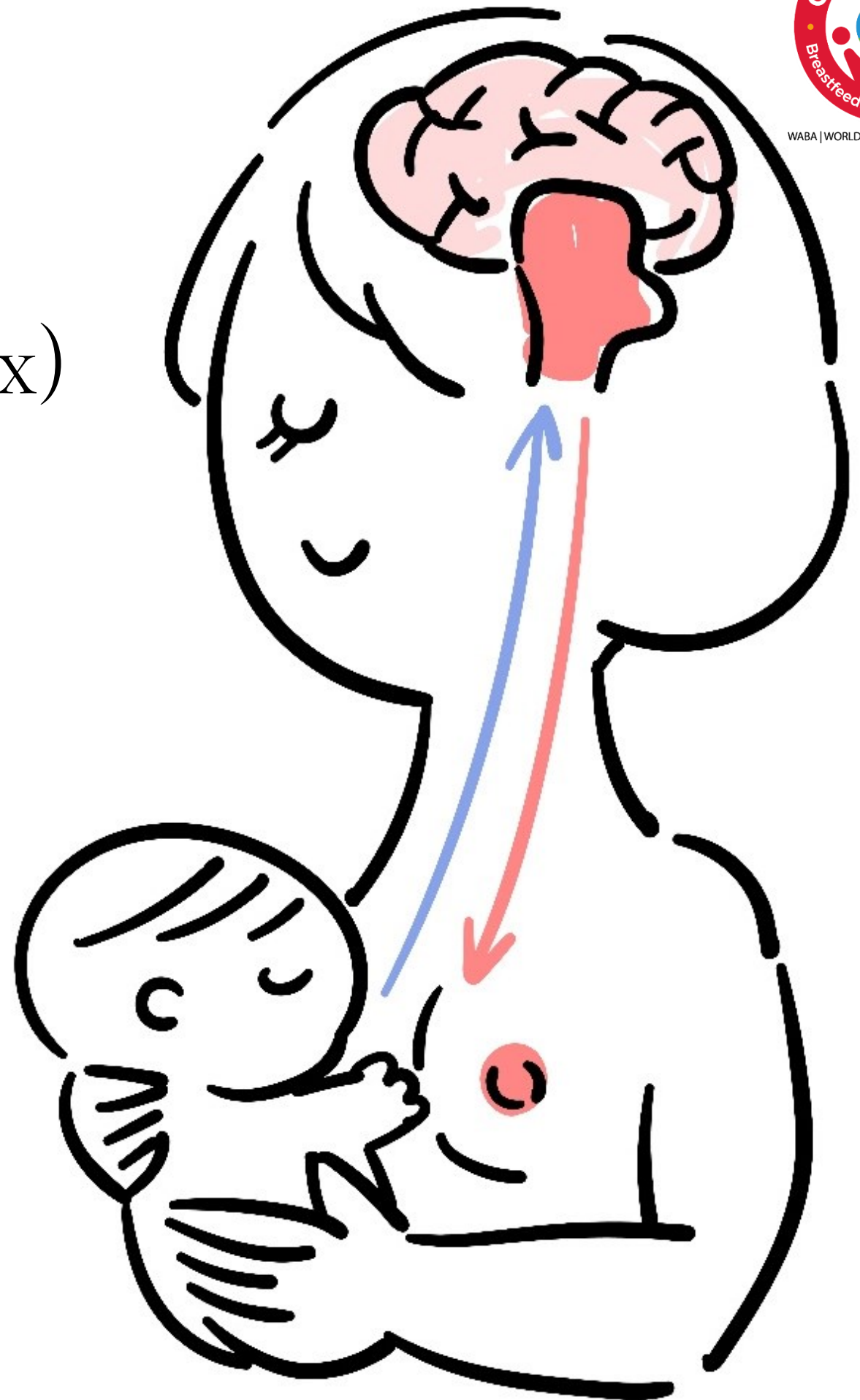
Apart from nipple stimulation, **oxytocin** is released by other sensory pathways:

- sight
- touch
- Smell
- Hearing
- Thinking about baby

Milk Ejection Reflex (MER or Let-down Reflex)

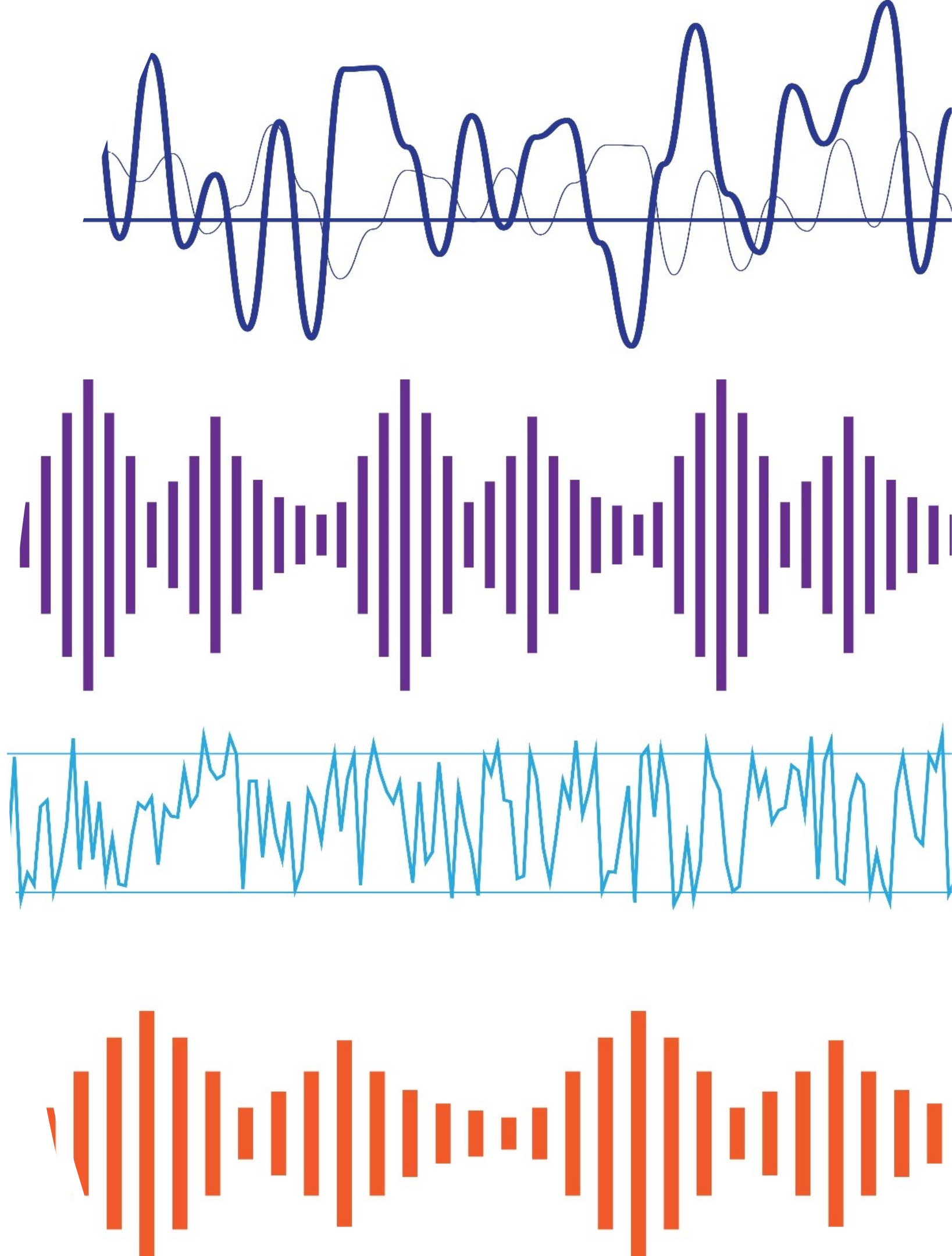
Suckling/sensory stimulation

- **Prolactin** released – makes milk
- **Oxytocin** released – makes milk available



Milk Ejection Reflex (MER)

- After suckling has begun, **Oxytocin** release is transient and intermittent.
- Contractions last about a minute
- Can be 4-10 in 10mins
- Each release uses about 50-100mU of Oxytocin even though the pituitary gland stores between 3000 & 9000 mU



Milk Ejection Reflex (MER or Let-down Reflex)

Several let-downs occur during a feed, mother usually only aware of first

Mother may **feel at let-down:**

- a tingling sensation
- a feeling of fullness in her breasts
- thirst
- nausea
- **rarely** - short-lived feeling of depression during let-down (DMER)

Mother may **see at let-down:**

- milk leaking from the other breast
- change in infant's sucking pattern

Milk Ejection Reflex (MER or Let-down Reflex)

Can be triggered by:

- Suckling
- mother thinking about baby
- Sounds, smells and visual cues
- when the breasts are very full
- conditioned by a routine

Can be inhibited by:

- distractions
- adrenaline release in stressful situations such as pain, embarrassment
- may be slower when milk supply is compromised



Stress and lactation

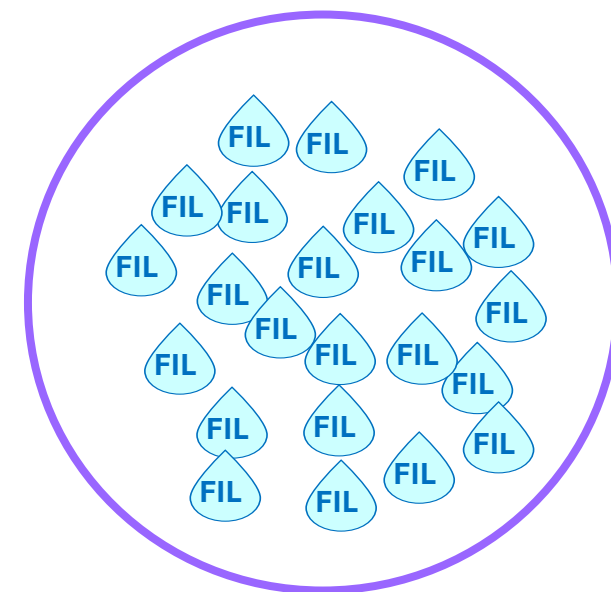
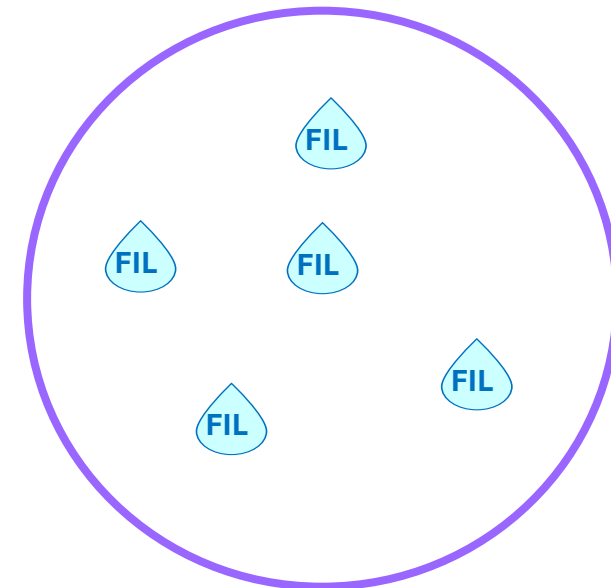
- May **delay**/inhibit the normal pulsatile release of oxytocin **temporarily** during a breastfeed, thus affecting milk ejection and making less milk available to the infant
- May stimulate sympathetic nervous system and thus inhibit prolactin release, causing vasoconstriction and poor function of the muscle cells
- May alter mother's behaviour – may be distracted and offer breast less often



Milk synthesis

FIL - Feedback Inhibitor of Lactation

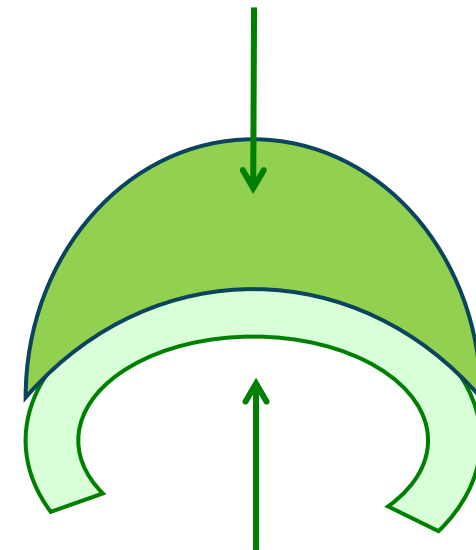
- Whey protein synthesised by lactocytes and accumulates in the alveoli
- Controls local milk synthesis
- Milk production slows when it accumulates and vice versa
- Frequent, effective milk removal



Milk synthesis

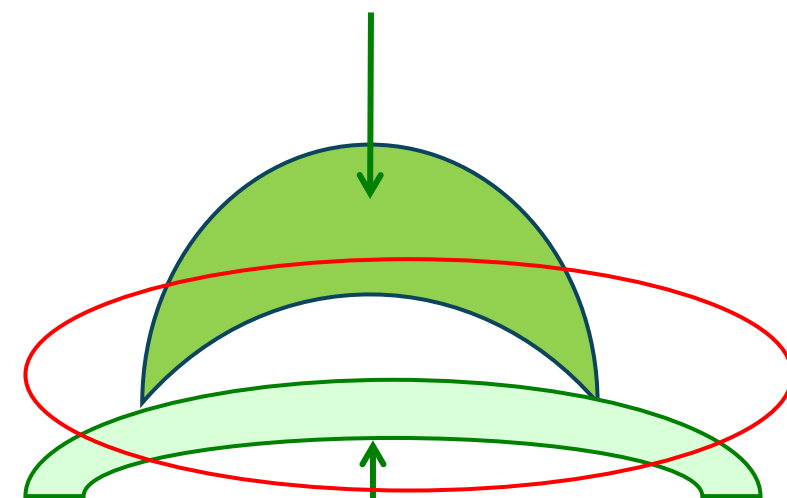
- Prolactin receptors are present in the alveoli membranes where the lactocytes attach
- Milk accumulation in the breast may distort the lactocyte shape **preventing the prolactin from binding to the receptor**
- Results in down regulation of milk supply (over time)

Prolactin molecule



Prolactin receptor

Prolactin molecule



Prolactin receptor

Distended milk-making cell



Genuine inadequate milk supply

- Retained placenta
- Post-partum haemorrhage $>2L$ – infarction of the pituitary gland
- Incomplete/inadequate milk removal **over time**
- Damage to the pituitary gland (eg tumor)

BREASTFEEDING

offers more advantages
than you think.....

Language

- Abundant supply - not oversupply
- Compromised supply not low supply
- Breast reluctance - not breast refusal
- Unrestricted access – not intervals
- Responsive feeding – not demand feeding
- Growth – not weight

FOR BABY:

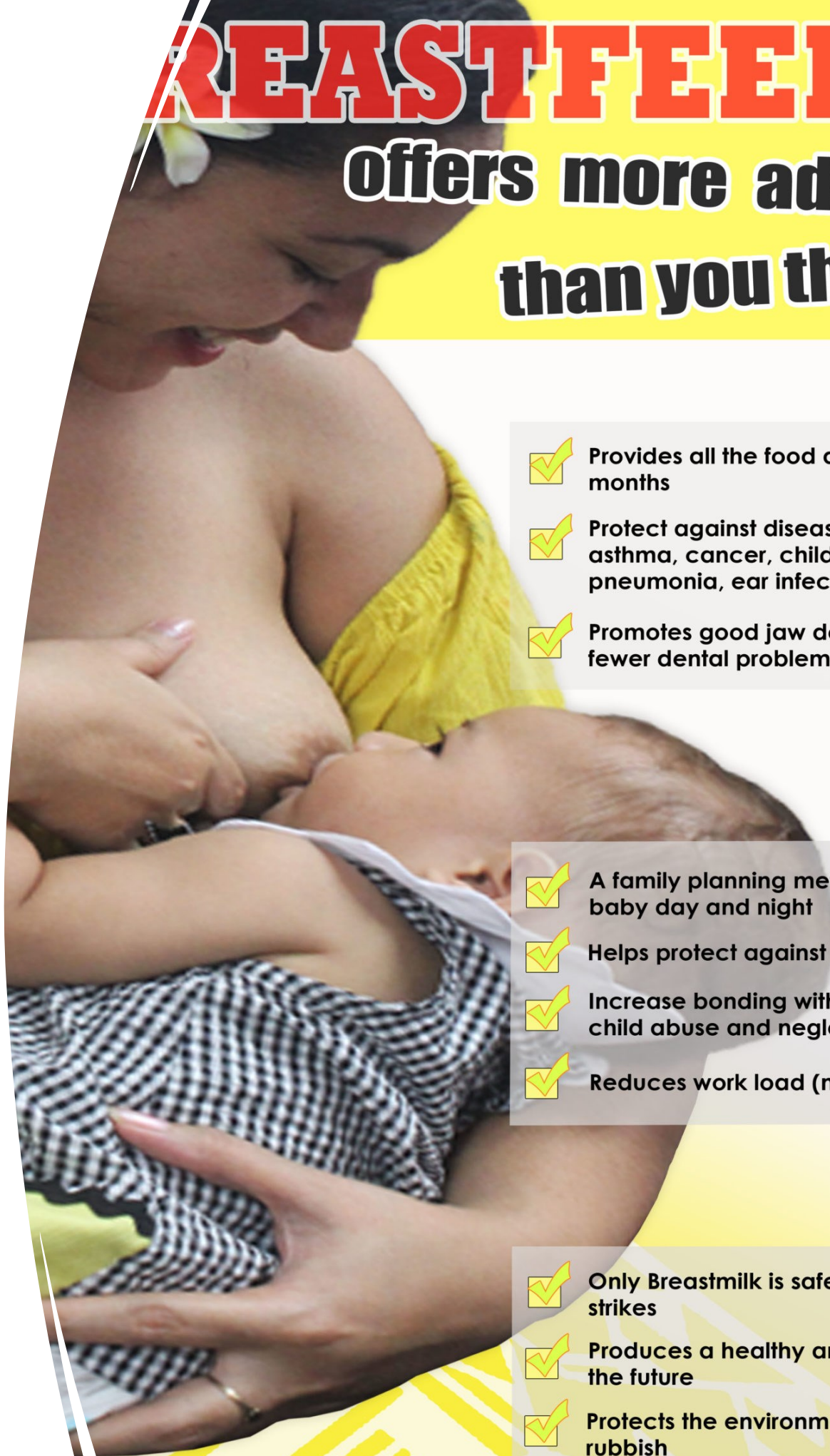
- ✓ Provides all the food a baby needs for the first six months
- ✓ Protect against diseases and infections such as asthma, cancer, childhood diabetes, diarrhoea, pneumonia, ear infections.
- ✓ Promotes good jaw development so baby has fewer dental problems

FOR MUM:

- ✓ A family planning method if mother breastfeeds baby day and night
- ✓ Helps protect against breast and ovarian cancer
- ✓ Increase bonding with baby which helps prevent child abuse and neglect
- ✓ Reduces work load (no bottles to prepare)

FOR SAMOA:

- ✓ Only Breastmilk is safer for infants when disasters strikes
- ✓ Produces a healthy and intelligent workforce for the future
- ✓ Protects the environment because there is less rubbish
- ✓ Reduces health care costs



Breastfeeding Multiples



Gabriel 1.69kg

Jeremy 2.2kg



Breastfeeding Multiples

- Identify breastfeeding risk factors for twin families
- Discuss practices that contribute to breastfeeding success
- Suggest resources for staff and families to optimise confidence and success

Multiple Birth statistics

- 2.7% of births (Australia 2021)
- 98% were twins, 2% were triplets, quadruplets or more
- 63% born early
- 75% Caesarian
- twins - 54% LBW - other multiples 99% LBW/VLBW
- 65% of multiple births were admitted to SCN or NICU, and 45% had hospital stays of 6 days or more.

Australian Institute of Health and Welfare 2024 Australia's mothers and babies retrieved from <https://www.aihw.gov.au/getmedia/bf03fda0-6d37-46f3-8ba6-9c3ebadc26f8/australia-s-mothers-and-babies.pdf?v=20240730023047&inline=true>

Antenatal preparation

- Involve the partner
- Be positive
- Expose families to pictures, videos and stories of successful BF
- Give ideas about ways supporters can help (*Leonard 2002, Yokoyama, Wada et al. 2006*)
- Antenatal expressing



Intrapartum Risks - birth

- Caesarian
- Separation
- Mother sick



Risks - Delay

“Each hour delay in the first breastfeeding session



for twins was associated with a reduced likelihood of breastfeeding throughout the hospital stay and this relationship was observed for singletons also. ”

Kim, B. (2016). Factors that influence early breastfeeding of singletons and twins in Korea: a retrospective study. *International Breastfeeding Journal*, 12(1).

Risks - size

- Smaller stomachs
- Discordant sizes
- Intervention
- Separation



Risks - prematurity

- Separation
- Certain intervention
- Physical barriers
- Poor understanding of feeding ability



Postnatal risks

- Misinformation
- Conflicting information
- Negative attitudes
- Commercial influence
- Unhelpful help



Kangaroo Care

- Close physical contact can allay fears about being able to bond with more than one baby at a time
- Overcome some of the attachment difficulties



Exclusivity

*When twins are fed breastmilk **exclusively** in the early weeks this contributes to an increase in the duration of breastfeeding.*

Damato EG, Dowling DA, Madigan EA, Thanattherakul C, Duration of breastfeeding for mothers of twins. JOGNN. 2005. 34(2): 201-209.



Achieving Exclusivity

- Sensible, evidence-based feeding frequency
- Antenatal expressing
- Ensure mother can hand express
- Evaluate the breastfeed using clinical indicators
- Use evidence-based growth indicators
- Avoid formula



Breastmilk Sufficiency

- Anxiety about being able to produce enough milk
- 2200mls – 3400mls in 24 hrs

based on studies of 8 mothers with 2 mth old twins, triplet mother made 3080mls/24hrs

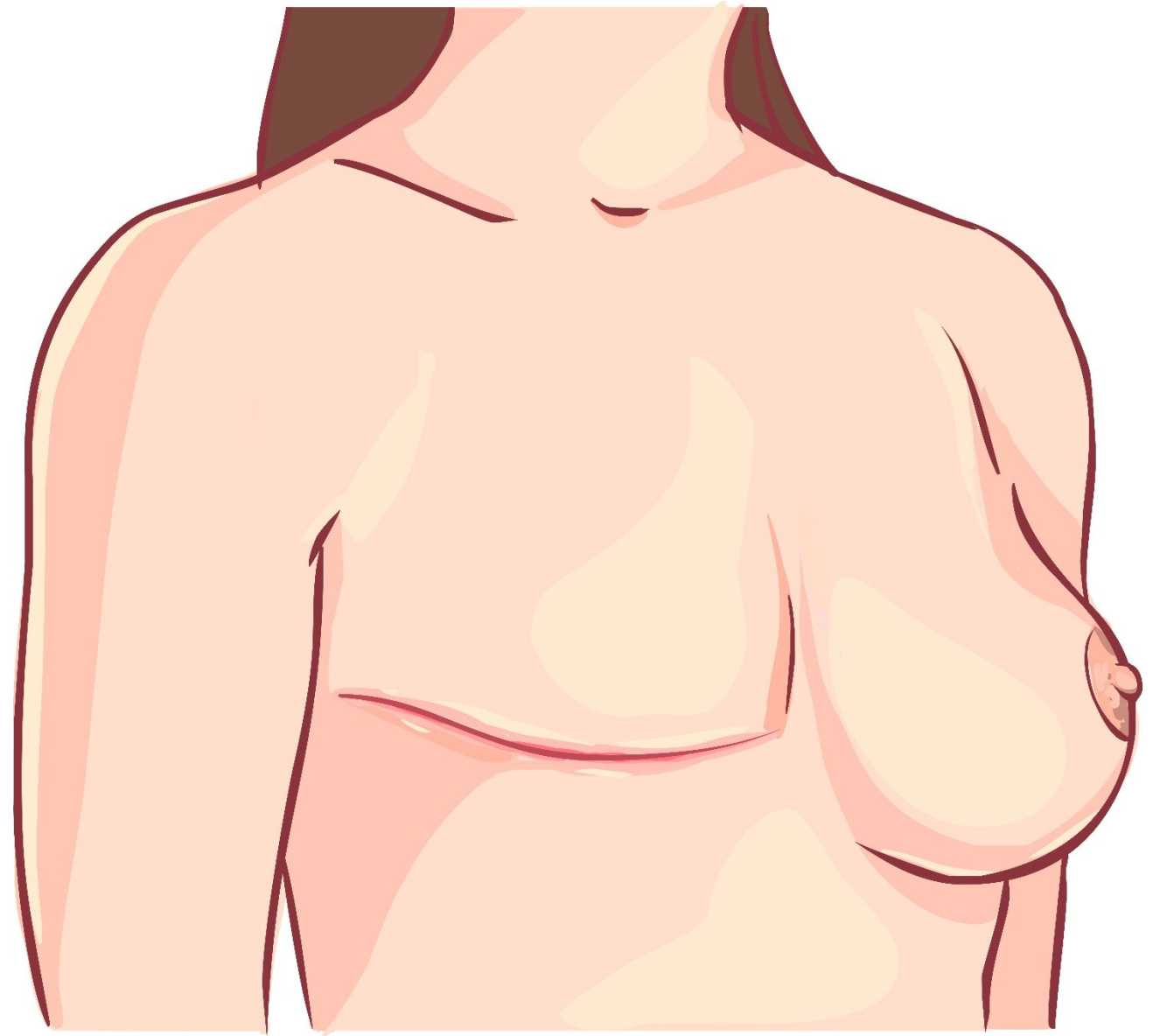


[Saint, Maggior et al. 1986](#)

Breastmilk Sufficiency

“There is no magic to nursing two babies from one breast. I'm confident in my ability to ensure these babies grow well. I've never followed any feeding schedule and see no reason to start now - I just feed whoever's hungry.”

Blomme PG One breast is enough, *Mothering*. 2005.
March-April: 58-61.



Supporting Breastfeeding

- Address feeding concerns
- Antenatal expressing
- Begin expressing within 1hr of birth
- Aim for oversupply
- Specific reassurance
- Short term goal setting
- Advocate for the mother to stay
- Avoid supplements



INDIVIDUAL FEEDING

- gives an opportunity for individual attention.
- is easier in the early days when the twins are small, particularly if they are having difficulty latching on.
- allows for individual differences in suckling needs and feeding frequency.
- may mean that feeds take twice as long.
- may mean that one baby is awake and crying while the first one is being fed.

SIMULTANEOUS FEEDING

- tends to take less time.
- calms two babies at once.
- reinforces efforts for a mother to feel independent in managing more than one baby
- takes practice to learn
- may mean that one baby has to be woken to feed.
- is initially more awkward if the babies have different temperaments and demands, and different feeding needs.
- may be more difficult to manage discreetly in public.

Growth

"During the first 2.5 years of life, there is a difference in growth between twins and singletons. Twins catch up in body size, i.e they grow faster after birth, but do not yet achieve the same height and weight till they reach 2.5 years of age."

Dommelen P van, Gunst M de, Vaart AV der, Buuren S van, Boomsma D. Growth references for height, weight and body mass index of twins aged 0-2.5 years *Acta Paediatr.* 2008. 97: 1099-1104.





Framing success

Results by Yokoyama and Ooki found that

"irrespective of prematurity or low birth weight, establishment and continuation of breast-feeding after multiple births was difficult."



Key Points

- Women are capable of adequately nourishing more than one baby through breastfeeding. The more milk that is taken from the breasts, the more milk is produced.
- It is an individual choice whether the babies are fed together or separately.
- Flexibility will enable a family to pass through the early weeks and establish breastfeeding successfully.
- Most problems occur because of the difficulty of handling more than one baby, and the physical demands on the mother in caring for multiples.
- Setting and achieving breastfeeding goals in cooperation with the family will build confidence and contribute to successful breastfeeding.



Resources

- Mothers of twins who have breastfed successfully
- The Illustrated Guide to Breastfeeding Twins - https://daswochenende.blogspot.com/2009_02_01_archive.html
- Facebook Group – Breastfeeding Twin & Triplets UK Public Page
- Dommelen P van, Gunst M de, Vaart AV der, Buuren S van, Boomsma D Growth references for height, weight and body mass index of twins aged 0-2.5 years *Acta Paediatr.* 2008. 97: 1099-1104.

Thank You



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