Initiating milk production

Reaching an adequate milk production begins with developing the breast tissue (Develop) and initiating milk synthesis (Initiate). Getting things right from the start will have a substantial impact on long-term milk production success. The following information is relevant for mothers in the first days after birth, before milk has “come in” (Initiation).

**Develop**

This stage is known as secretory differentiation (lactogenesis I). Pregnancy is not only about growth of the infant, but is also a time for the breast to prepare for lactation.

- **Up to 46% breast growth**
  - Breasts can increase up to 46% in size from pre-pregnancy to birth. Not all mothers experience such an increase and for some it may occur after the infant is born.  

- **Mammary structural change**
  - An intricate system of branching milk ducts and milk producing cells (lactocytes) are formed within the mammary gland throughout pregnancy. During this time, small volumes of early milk (colostrum) may be produced.  

**Initiate**

This stage is known as secretory activation (lactogenesis II), commonly referred to as milk “coming in”. In the first few days after birth, changes in key hormones, as well as breast stimulation, switch on the lactocytes to initiate copious milk production.

- **Day 1: 10–50 ml**
  - Mothers produce between 10–50 ml in the first 24 hours after birth. These volumes increase in the coming days, coinciding with colostrum changing to transitional milk.

- **Day 3: milk “comes in”**
  - The timing of secretory activation is different for each mother, ranging from 24–120h after birth. Delayed secretory activation has been associated with a shortened lactation.

**The develop and initiate stages of lactation**

**Starting things right**

Directly after birth, mothers have high levels of oxytocin – a principal lactation hormone. Early and frequent breastfeeding or expressing takes advantage of these high oxytocin levels and helps facilitate long-term milk production in mothers of both term and preterm infants.

- **Breastfeeding in the first hour**
  - Placing the infant skin-to-skin early is best practice to encourage the first breastfeed.  

- **Frequent breastfeeding**
  - Feeding every two to three hours is recommended. Continued skin-to-skin encourages mothers to recognise her infant’s early feeding cues.

- **Anticipate 3x soiled nappies**
  - Three or more yellow stools over 24 hours from ~day 4 are an indicator that initiation has occurred and milk production is on track.

- **Pumping in the first hour**
  - Stimulating the breasts with research-based initiation technology in the first hour is important. This supports timely initiation and long-term milk production.

- **Frequent pumping**
  - Pumping multiple times a day with initiation technology helps to achieve adequate volumes. Double pumping every two to three hours is beneficial for this.

- **Anticipate 3x 20 ml**
  - Pumping ≥ 20 ml in each of three consecutive sessions indicates that initiation has occurred. It is then time to use a pumping program designed to extract milk.

Mothers should be taught the valuable skill of hand expressing. When breastfeeding is not possible, a combination of hand expression and pumping may be used. Hand expression may help remove milk in the first few days after birth, while pumping with research-based initiation technology helps to achieve adequate long-term milk volumes. The use of early hand expression alone has been shown to yield significantly less cumulative daily milk production.

**References:**


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