medela

No. 1 choice of hospitals & mothers

Symphony with Symphony PLUS:
Initiate, build and maintain lactation

"The combined use of the initiation technology and 2-Phase Expression technology makes more milk available when it is needed most."

Prof. Paula Meier

Symphony with Symphony PLUS

The distinctive Symphony breast pump with its research-based pumping programs has been developed specifically to support mothers throughout their lactation journey: to initiate, build and maintain an adequate milk production.

Passionate about human milk

As a leading breastfeeding partner in the hospital sector, Medela has contributed to infants' wellbeing for over 50 years with innovative and research-based products. Medela supports professionals and helps mothers throughout the lactation journey.

Breastfeeding is clearly the most natural way to provide the benefits of human milk to the growing and developing infant. For this reason, Medela promotes human milk as the best nutrition for all infants and breastfeeding as the best method to provide it.

Medela's comprehensive breastfeeding solutions have been designed to reliably deliver mother's milk to the infant. In doing so, the objective is to ensure healthy mothers and infants.

Human milk is liquid gold

Breastfeeding and human milk are the normative standards for feeding both term and preterm infants [1–3]. The American Academy of Pediatrics, the World Health Organization (WHO) and the United Nations Children's Fund recommend human milk as the exclusive nutritional source for full-term infants for the first six months of life [1–3]. This recommendation ensures that infants receive the complete nutritional, immunological and developmental benefits of human milk [4], in addition to the physical and psychological benefits that breastfeeding provides to the health of the mother and her infant [2].

For mothers, every extra drop of milk is a step forward on the path to an adequate milk production. Adequate milk volumes support both an exclusive mother's milk diet for the infant and offer the best chance for continued breastfeeding upon discharge. The value of mothers producing adequate volumes of milk lies in the fact that human milk reduces the incidence, severity and risk of debilitating morbidities for hospitalised and preterm infants [1]. Importantly, it does so in a dose-response manner – more milk, more benefit – with an especially potent impact in the first months of life [5, 6].

Every drop of human milk counts for fragile preterm infants. It contains antimicrobial, anti-inflammatory and immunomodulatory factors that compensate for many aspects of the infant's immature immune system through varied and synergistic mechanisms [5, 7]. These mechanisms include specific human milk components that are not present in the milk of other mammals. Together, the protective and nutritious components of own mother's milk result in a reduced incidence and severity of prematurity-related morbidities, including late-onset sepsis, bronchopulmonary dysplasia, necrotising enterocolitis, retinopathy of prematurity and also rehospitalisation after NICU discharge [8–17].

More human milk means indirect cost reduction on these morbidities, while possibly also directly reducing NICU hospitalisation costs [18]. The compelling benefits of human milk are such that all preterm infants should receive it [1, 19, 20], making the feeding of own mother's milk a NICU priority.

Research by Patel *et al.* [6] demonstrated that the dose-response relationship between morbidities and average daily dose of human milk in the NICU is such that, from the economic perspective, infants who receive the highest daily dose of human milk not only have the lowest risk of sepsis, but also the lowest NICU cost.

Mothers of hospitalised infants often experience difficulties initiating lactation due to lack of infant sucking contact, so the provision of adequate volumes of human milk for an exclusive human milk diet often represents a significant logistical challenge for the hospital. Additionally, there are other barriers such as mother-infant separation due to health conditions, or returning to work.

Since the value of human milk is such that it is considered a basic right for all infants [8, 21], an in-depth understanding of lactation, as well as evidence-based interventions that can support mothers throughout their milk production journey, are essential to:

- Help mothers achieve and maintain an adequate milk supply.
- Support an exclusive human milk diet for infants in the hospital.
- Offer the best chance for continued breastfeeding for as long as possible.

The milk production journey

All mothers experience the same lactation processes to reach an adequate milk production[22–25], whether delivering at term or prematurely[26–28]. This milk production journey can be described as being a continuum of four stages:

- Develop – developing the breast tissue
- Initiate – initiating milk production
- Build – building milk production
- Maintain – maintaining milk production (Figure 1).

As the stages are clearly interrelated, getting things right from the start will have a substantial impact on long-term milk production success.

The first stage, develop, is known as secretory differentiation (lactogenesis I). It encompasses dramatic changes to the mammary gland in preparation for lactation. Following birth, the second stage, initiate, is known as secretory activation (lactogenesis II), and is synonymous with 'milk coming in'[27–29].

In order to allow mothers to set appropriate expectations, it is important that they are informed of this journey and that mothers are aware that their milk supply will increase during the first month after birth, and then stabilise from one to six months[22, 24].

When the infant cannot be fed at the breast, or cannot effectively remove milk from the breast, the mother requires assistance to initiate, build and maintain an adequate milk supply. Access to timely support and appropriate equipment is essential for this.

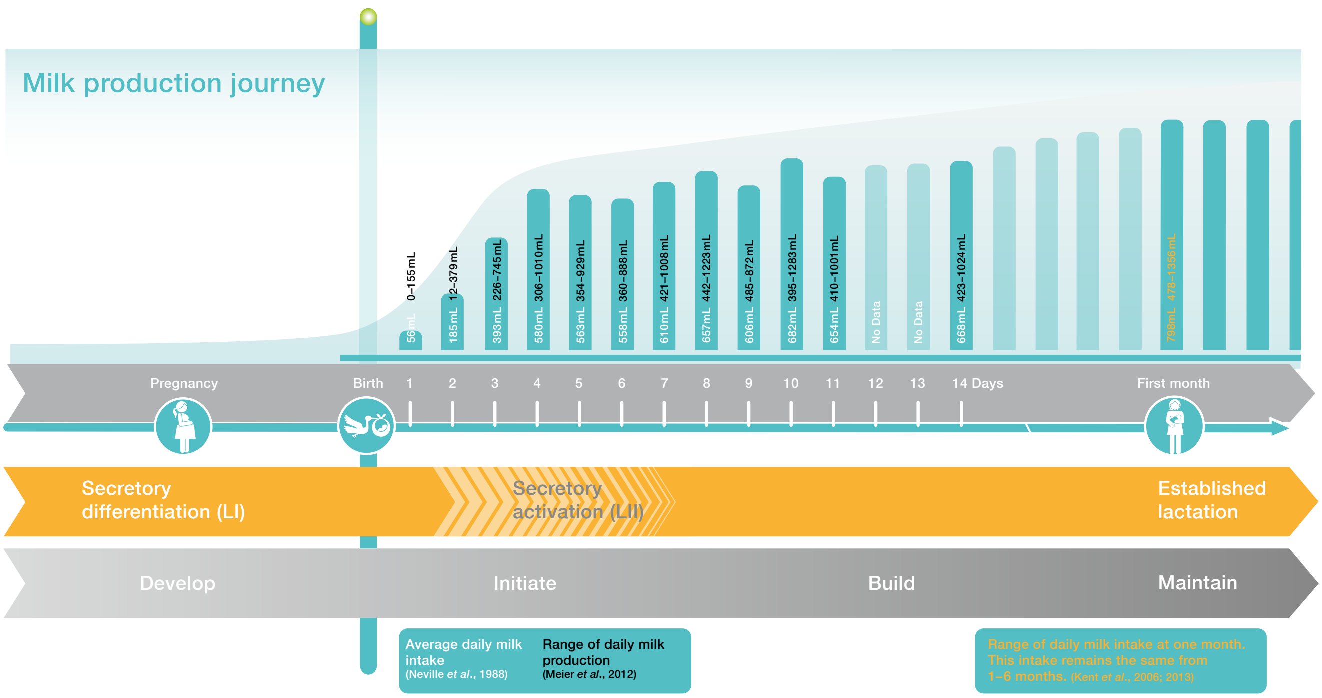


Figure 1 – The milk production journey[22–25]

Develop

Unlike other organs, the mammary gland undergoes continuous rearrangement, most notably during specific developmental windows: puberty, pregnancy, lactation and menopause [30]. Functionally, the most significant of these changes occurs over the course of pregnancy and lactation, during which the mammary gland structure differentiates and then activates, resulting in the ability to synthesise sufficient quantities of milk for the infant. However, an intricate series of events must occur to achieve this successful endpoint.

At the end of puberty, the functional structure of the mammary gland is rather basic, consisting of a network of ducts capped with structures known as terminal end buds [31]. This ductal tree and the breast itself grow in coordination with general body growth during puberty, but the milk-producing capacity is not set up until pregnancy.

During pregnancy, changes in the hormonal make-up drive remodelling of the mammary gland, resulting in significant changes to the basic ductal tree structure in the breast (Figure 2a) [32]. In particular, existing ducts are elongated *via* extension of the terminal end buds and new ducts are developed. Furthermore, the ducts start to branch, creating a more complex structure (Figure 2b). Most importantly, alveoli are formed at the ends of the newly formed ducts (Figure 2c) [33, 34]. These alveoli contain the milk-producing mammary epithelial cells that, following these structural changes, differentiate to become functional lactocytes [32].

a) b) c)

Figure 2 – Structure of the mammary gland a) Basic ductal structure at the end of puberty, lacking significant branching of the main ducts b) Ductal structure by mid-pregnancy, with significant branching of the main ducts c) Mature ductal structure and alveoli by late pregnancy.

Even though the mammary gland may become mature prior to birth, hormones, particularly progesterone from the placenta, prevent copious quantities of milk being produced. Overall, this developmental stage is referred to as secretory differentiation (also known as lactogenesis I) and the timeline for these changes to occur is different for each woman [32]. Work by Cox and colleagues [35], looking at changes in mammary gland volume during pregnancy and after birth, has shown that some women may develop quickly, others follow a more gradual development timeline, and some may even develop mainly after birth (Figure 3). This does not seem to cause any problems for those women who deliver at term, as Cox and co-workers went on to show that milk production was adequate for all study mothers at the end of the first month of lactation.

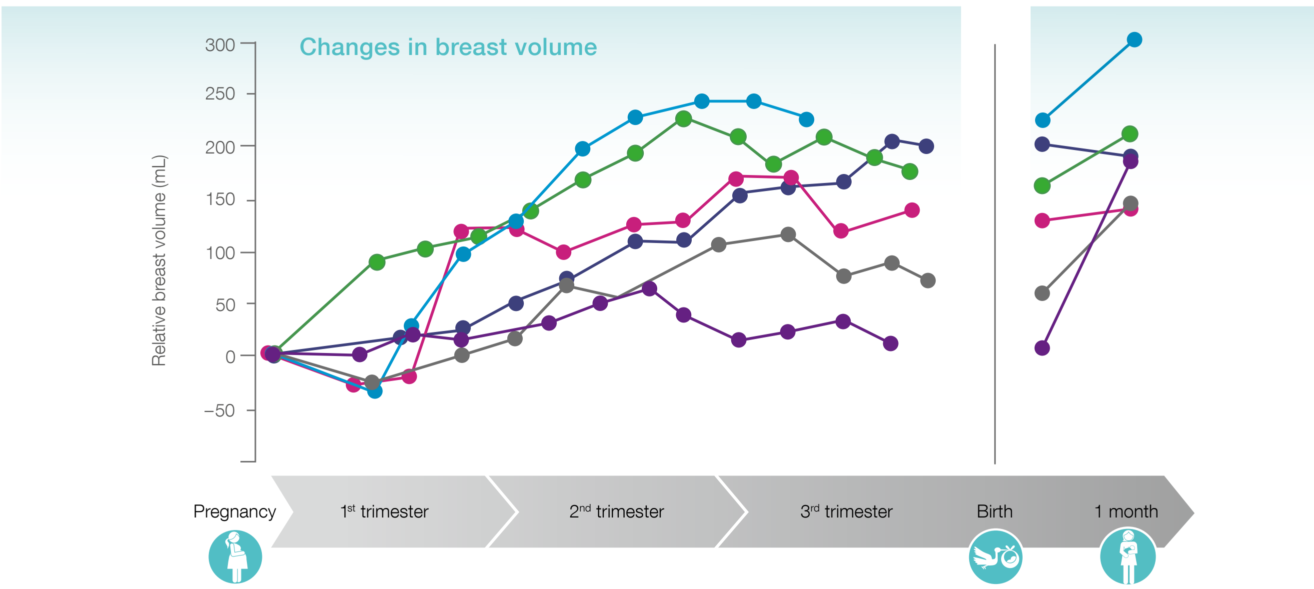


Figure 3 – Change in breast volume of six study subjects during pregnancy to one month after birth. Adapted from Cox et al 1999 [35].

In contrast, for mothers who deliver preterm, this variable timing of breast preparedness could result in significant problems as preterm delivery may interrupt development of the mammary gland and result in future lactation difficulties [36]. Further research is required to determine the impact that preterm birth actually has on long-term milk production, especially with respect to the preparedness (development) of the mammary gland.

Initiate

The initiate stage of lactation begins after the birth of the infant. The lactocytes that were developed during secretory differentiation can now be activated (secretory activation), as delivery of the placenta causes a decline in progesterone levels, allowing milk production to be initiated. The timing of secretory activation ('milk coming in') varies between mothers, occurring on average at around three days postpartum [36, 37], after which it is considered delayed.

Prior to secretory activation, it is normal for little milk to be available to the infant [37]. Healthy, term-born infants have been shown to transfer on average 56 mL in the first 24 hours after birth, increasing this volume to 185 mL and 393 mL on days 2 and 3 postpartum respectively [22]. While this volume may be small, it is in fact the infant's first critical exposure to human milk. Known as colostrum, this early milk contains an extremely potent array of growth factors and cytokines, similar to that in amniotic fluid. Colostrum should serve as the transition from intrauterine to extrauterine nutrition and therefore be the first feeding for all infants.

As a result of the limited availability of milk, early infant feeding behaviour is usually 'irregular', with the infant spending long periods sucking and pausing at the breast and obtaining only a small volume of nutrition. Therefore, in the first days after birth, infants spend large proportions of time non-nutritively sucking (no milk transfer), with short bursts of nutritive sucking (milk transfer) and periods of pausing (Figure 4) [38–43].

Ideally, the infant should be placed at the breast as soon as possible after birth, and feeding every two to three hours should be encouraged in the first days [44]. Good indicators that breastfeeding is on a successful path include a feed that is deemed 'effective' (successful latch and bursts of sucking) occurring within the first six hours after birth, and the infant providing around 100 minutes of suck stimulation in the first 24 hours [45].

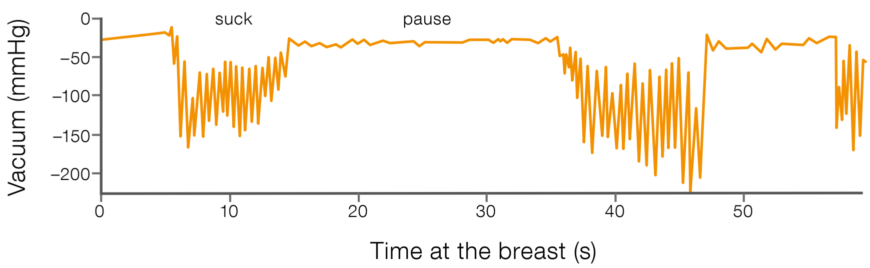


Figure 4 – Example of an infant's non-nutritive sucking pattern. The trace exhibits short suck bursts, and longer periods of pausing.

Delayed secretory activation

Unfortunately there are many factors around the early postpartum period that can result in delayed secretory activation (after approximately three days postpartum)[45, 46]. Delayed secretory activation has been consistently associated with negative breastfeeding outcomes. In the short term, these include an increased risk of excess neonatal weight loss, suboptimal breastfeeding behaviour and increased formula use[45, 46]. In the longer term, these include a heightened risk of a shorter breastfeeding duration compared to mothers who have timely secretory activation[47].

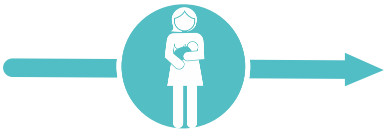
Factors potentially associated with the delay of secretory activation may be biological or behavioural, and are often interrelated[46]. On the maternal side, biological factors that may delay the timing of secretory activation include primiparity, caesarean section birth[48], preterm delivery[36, 46], a negative labour experience[49], high body mass index[50], smoking, illness (such as gestational diabetes)[51], anxiety and stress[49]. Behavioural factors may also impact the timing of secretory activation and include lack of social support[46], reduced nursing frequency[45] and the use of supplements, such as glucose water or formula[46].

The characteristics of the infant also play a key role in the establishment of lactation. Low birth weight and early gestational age[45], labour medications[52], as well as poor sucking skills and diminished alertness[46] are major determinants of the ability to effectively latch on to the breast and extract milk, thereby stimulating continued milk production.

Timely support and monitoring of the mother-infant pair is needed in order to minimise the impact of these factors on secretory activation. The early post-birth period is a critical window in which appropriate interventions can have a powerful long-term impact. For example, skin-to-skin care is associated with significant benefits during the immediate postpartum period, in particular, it improves infant thermoregulation and stability, and increases the opportunities for the infant to attempt breastfeeding[53, 54].

Similarly, when it is not possible for the infant to effectively breastfeed, expressing in the first hour after birth, rather than the first six hours, has been shown to be beneficial for milk production[55, 56], as has frequent pumping – more than eight times per 24 hours[57–59].

Build



Rapid increases in milk production begin to occur after secretory activation. Data from healthy term-born breastfeeding infants shows that milk intake can increase from around 100 mL per day in the first days after birth, to more than 500 mL at the end of the first week, and around 700 mL by the end of the first two weeks [22]. This build stage of lactation will last for the first month of lactation as the mother's physiology balances supply and demand; how much milk the infant requires per day.

As the mother's milk production proceeds through the lactation processes, infant feeding behaviour also develops accordingly [38, 60]. With a higher rate of milk flow after secretory activation, infants begin to utilise a more biphasic sucking pattern and they start spending a larger proportion of time removing milk, nutritively sucking, compared to non-nutritively sucking. Prior to milk ejection, infants utilise a faster pattern to stimulate a milk ejection; after milk flow, a slower pattern is applied to remove milk (Figure 5). This is often described as a 2-phase suck pattern [61].

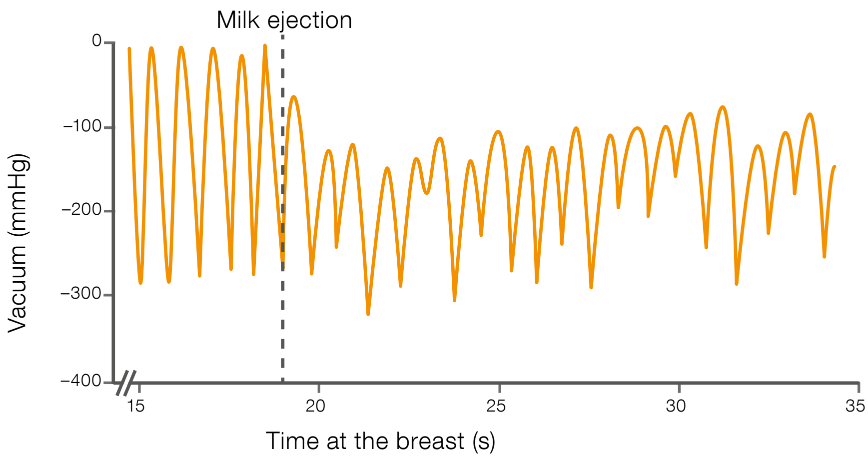
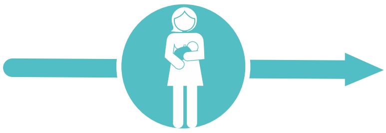


Figure 5 – Mature 2-Phase suck pattern employed by the infant during established lactation. A faster pattern is applied to stimulate a milk ejection; after milk flow, a slower pattern is applied to remove milk.

If a mother is pump-dependent, frequent and effective pumping is essential during this build stage. Mothers should log their pumping output and be provided evidence-based information on what milk volumes to expect over time [62].

Successfully building the mother's milk production will firstly allow the infant to benefit from an exclusive human milk diet and secondly help to ensure that the mother has an adequate milk supply, so that when possible her infant can transition to exclusive breastfeeding.

Maintain



By one month postpartum, milk production stabilises at around 800 mL per day (range 478–1356 mL per day) and the infant's daily intake of breast milk remains relatively constant between one and six months [24, 25]. This daily intake data can be considered the range of normal milk production, so long as it facilitates healthy growth of the infant (Figure 6).

As infants age between one and three months postpartum, they spend more time actively removing milk and less of the feed pausing and non-nutritively sucking [60, 63]. Infants also become more efficient at breastfeeding by obtaining more milk per suck, utilising longer suck bursts and shorter pauses [60, 63] to feed faster [24]. Therefore, from one to six months, the infant begins to become even more efficient at breastfeeding and removal of most of the milk by the infant is thought to occur early in the breastfeed [39].

The production of breast milk is governed by a process of supply and demand and, in order to maintain their mother's lactation, infants remove an average of 67 % of the available milk from the breast during their feeds [25]. If a mother is unable to exclusively breastfeed her infant, because she is returning to work, for example, then removing a similar amount of the available milk from the breast in the infant's absence is essential to maintain lactation.

Many mothers use a breast pump as a supporting tool to maintain lactation when the infant is unable to be fed at the breast. One method to optimise pumping is to use a vacuum level that is as high as still feels comfortable for the mother. Research has shown that when mothers pump at their maximum comfortable vacuum, they can remove 65.5 % of the available milk in the breast [64], similar to the 67 % that the infant removes during breastfeeding [25], and thus support maintenance of lactation.

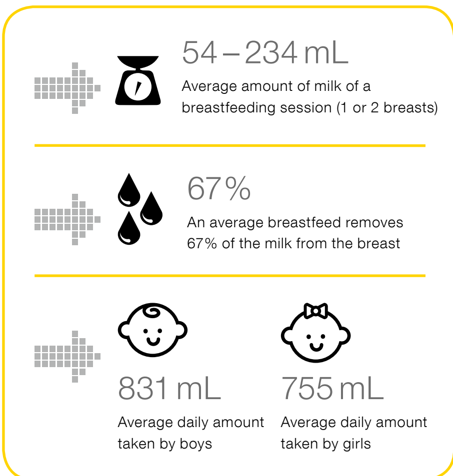


Figure 6 – Breastfeeding characteristics at one to six months postpartum [25].

Symphony – supporting mothers throughout their lactation journey

Symphony is a leading breast pump that is met with a high degree of customer appreciation. The large number of satisfied mothers and healthcare professionals bears witness to its reliability and quality.

This distinctive breast pump operating with research-based pumping programs is often the starting point of the human milk journey in the hospital. One aim of using a hospital-grade breast pump is to maximise milk output, so that the infant can benefit from an exclusive human milk diet. A second aim is to ensure that the mother achieves an adequate milk supply to nourish her infant once they return home and transition to exclusive breastfeeding.

Implementing new research insights

Research is a continuing journey of discovery and the Symphony breast pump is designed with the flexibility to be upgraded as new research is released, with a simple change of the program card. One of these major upgrades was the addition of initiation technology to the Symphony. Originally this initiation technology was intended for pump-dependent mothers of preterm infants and as such the program card was named 'Preemie+' [23]. However, it is now clear that this technology is suitable to support mothers of preterm- and term-born infants. Therefore, we have now created a new program card, 'Symphony PLUS', containing the INITIATE and MAINTAIN programs, to support all mothers that need to express in order to initiate, build and maintain an adequate milk supply.

Comfort

Comfort is especially important for pump-dependent mothers. It is well established that pain and discomfort inhibit milk ejection and reduce milk removal [65]. When mothers require a breast pump to support their milk production, they should always pump at a vacuum level that feels comfortable. This is a feature Medela keeps to the forefront of the mind. The Symphony has been shown to provide a range of vacuum settings that allows mothers to find their maximum comfortable vacuum [64] and, when compared to a single-phase breast pump, mothers considered 2-Phase Expression technology to be more comfortable [66].

Features of the pumping patterns contained on the Symphony PLUS card include, for the initiation technology, pauses that allow the breast tissue to rest briefly. For the 2-Phase Expression technology, there is a gentle transition between the stimulation and expression phases (Figure 7). Research has not only helped to understand which vacuum patterns were effective for stimulation and expression phases, but also which patterns were comfortable for mothers [67, 68].

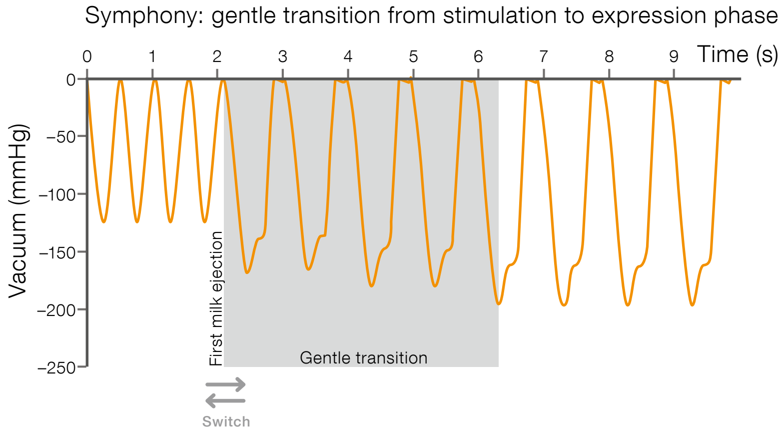


Figure 7 – The Symphony vacuum curve measured at a medium vacuum level. The vacuum gently increases after switching from the stimulation to the expression phase.

Additionally, a range of breast shield sizes is required for individualised support. An incorrectly-sized breast shield can lead to discomfort, friction and may even restrict the flow of milk [69]. This is of particular importance for frequently pumping mothers. An infrequent pumper may not have any noticeable negative effect, as the time spent pumping is transient. However, as the minutes spent pumping per day increase, the importance of effective and efficient breast drainage also increases.

The Symphony breast pump, with its technical features, accessories and research base, is an excellent partner for supporting mothers and their individual needs throughout the milk production journey. It is designed to:

- Support mothers of preterm- and term-born infants to initiate, build and maintain milk production [23, 59, 66-68, 70].
- Alleviate the symptoms of engorgement by expressing milk.
- Support the healing process in case of mastitis by removing milk from the affected breast.
- Relieve sore and cracked nipples and bring out flat or inverted nipples.

Supporting the first days of lactation: initiating lactation

When the infant cannot be fed at the breast or cannot effectively remove milk from the breast, the mother requires assistance to initiate her lactation. Factors such as maternal-infant separation and inadequate breast stimulation can interfere with establishment of breastfeeding and increase the likelihood of complications [46, 71–73].

For these mothers the milk production journey may begin with breast milk expression. The Symphony breast pump system, with its research-based Symphony PLUS program card containing the INITIATE and MAINTAIN programs, is designed to support mothers throughout the stages of the milk production journey.

The unique INITIATE program supports pump-dependent mothers to successfully initiate milk production. This program is simply followed by the MAINTAIN program after secretory activation, in order to effectively remove milk, thus building and maintaining the mother's milk supply.

The unique combination of pumping programs was developed through a research partnership with Prof. Paula Meier and the Rush University Medical Center (RUMC), Chicago, USA. The patterns, both of which are intended to mimic infant sucking behaviour within the respective stage of the milk production journey, yielded significant improvements in milk production of pump-dependent mothers [23].

The key features of the INITIATE program are:

- Fixed 15 minute pumping session.
- Inclusion of irregular stimulation and expression patterns.
- Variation of the pattern frequencies.
- Incorporation of pauses.

This irregular suction pattern mimics that of a term-born infant in the first days after birth, before secretory activation has occurred (Figure 8).

The INITIATE program should therefore be used every two to three hours until the mother pumps 20 mL or more in three consecutive pumping sessions. This is an indicator that secretory activation has occurred, ideally within the first three days after birth. However, to account for the increasing incidence of delayed secretory activation, this pattern can be used if necessary for the first five days after birth. The mother can then progress to the MAINTAIN program, which is designed to efficiently extract milk after secretory activation.

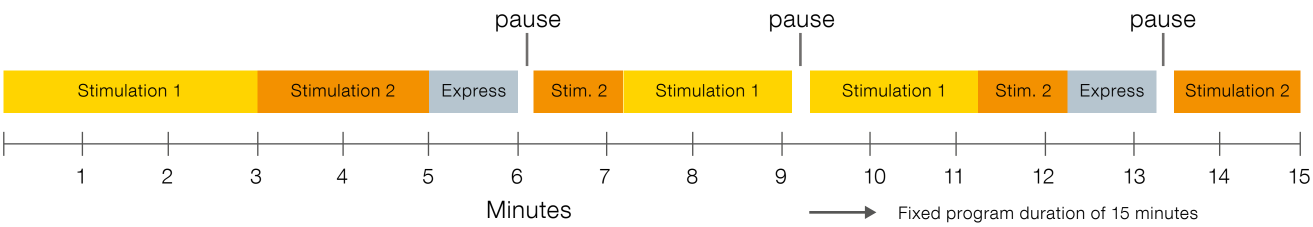


Figure 8 – The INITIATE program provides two different stimulation phases with fast cycles (Stimulation 1: –70/–200 mmHg, 120 cycles per minute; Stimulation 2: –70/–200 mmHg, 90 cycles per minute), an "expression" phase of slower cycles (–100/–250 mmHg, 34–54 cycles per minute) and pauses.

Mimicking nature to optimise milk output: build and maintain lactation

The MAINTAIN program assists mothers to build and maintain their milk production [23, 59] after secretory activation has occurred. The MAINTAIN program is designed to mimic the two phases of infant sucking. At the beginning of each breastfeed, prior to milk ejection, infants suck rapidly to stimulate milk flow; this changes to a less frequent sucking pattern after milk starts flowing (after milk ejection) [61].

In Symphony, this research-based 2-Phase Expression technology starts with a higher frequency stimulation phase of 120 cycles per minute to elicit milk ejection. When milk begins to flow, the mother can switch to the expression phase, which uses around 60 cycles per minute, to comfortably and efficiently remove milk (Figure 9) [66, 67].

The mother should switch from the stimulation to the expression phase as soon as milk flows, and she should adjust the vacuum of the expression phase to the highest possible vacuum that still feels comfortable [64]. Combining the MAINTAIN program with double pumping has added benefits compared to sequentially pumping. Mothers can obtain on average 18 % more milk when double pumping [70]. Apart from the increased volume, it was also found that double pumping effectively drained the breasts as it stimulated an additional milk ejection, and furthermore the pumped milk had higher energy content [70].

Compared to single pumping, the combination of double pumping with 2-Phase Expression technology offers mothers the following benefits:

- Saves time – more milk in less time [70].
- Maintains milk supply when the infant is not able to directly breastfeed [64, 67].
- Yields milk with higher energy content – especially beneficial for preterm infants [70].
- Achieves 18 % more milk [70].

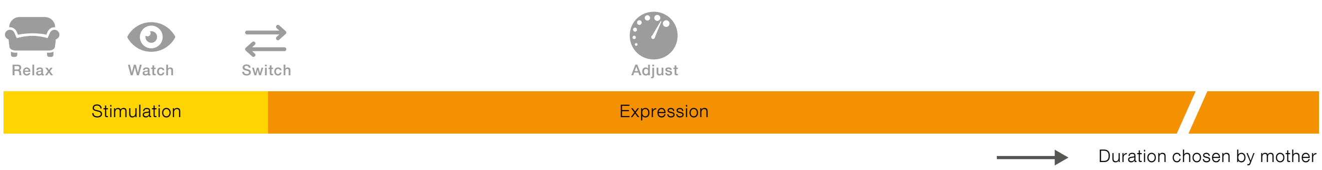


Figure 9 – The MAINTAIN program, with the research-based 2-Phase Expression technology, starts with a high frequency stimulation phase (120 cycles per minute) to elicit milk ejection. After switching to the expression phase, a breast pump suction pattern with low frequency (54–78 cycles per minute) and variable vacuum (–50 to –250 mmHg) is used to comfortably and efficiently remove milk. As mothers may not sense milk ejection, they should watch out for milk flow and actively switch to the expression phase if needed.

Symphony PLUS – Research demonstrates a clear advantage

A randomised controlled trial was undertaken to compare pump-dependent mothers of premature infants using the Symphony breast pump with the INITIATE program in the early days until secretory activation, followed by the MAINTAIN program, to mothers using the MAINTAIN program alone.

In the study, mothers using INITIATE followed by MAINTAIN achieved significantly higher daily milk volumes over the first two weeks (Figure 10) than mothers using the MAINTAIN program alone [23], and were more likely to achieve a supply greater than 500 mL per day by the end of the second week after birth.

The volumes that the mothers were expressing after using the Medela initiation technology were similar to those volumes consumed by the term infant from day 6 to 14 after birth [22].

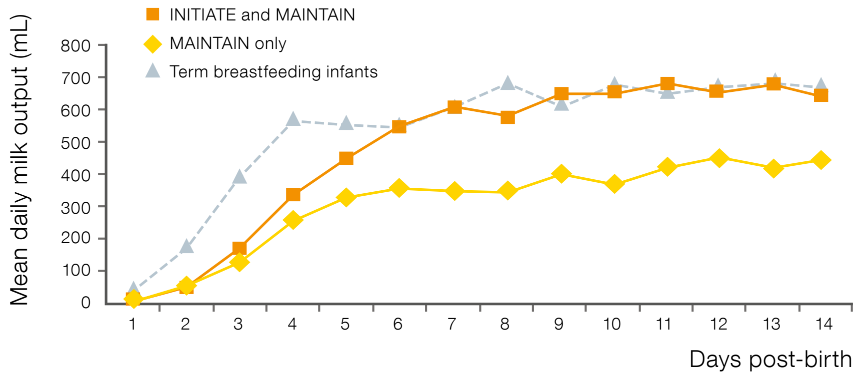


Figure 10 – Randomised controlled trial demonstrating mean daily milk output was significantly higher ($p<0.05$) from days 6–13 when using the INITIATE program followed by the MAINTAIN program, compared to the MAINTAIN program alone [23]. This higher output is comparable to reference data of term breastfeeding infants [22].

This significantly higher milk output occurred while the number of pumping sessions and minutes spent pumping were the same. This meant that mothers using INITIATE followed by MAINTAIN were pumping 45 % more efficiently (mL per minute of pumping) by day 7 than mothers using the MAINTAIN program alone (Figure 11).

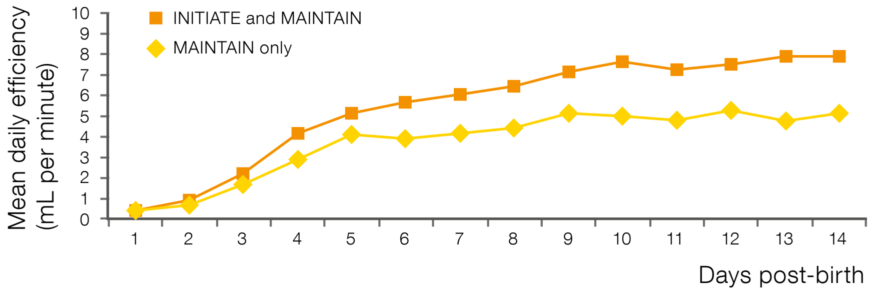


Figure 11 – Randomised controlled trial demonstrating mean daily efficiency was significantly higher ($p<0.05$) on days 8–14 when using the INITIATE program followed by the MAINTAIN program, compared to the MAINTAIN program alone [23].

Effective for pump-dependent mothers of preterm and term infants

Both the INITIATE and MAINTAIN patterns are based on the behaviour of a full-term infant at the breast. The initial research of Meier *et al.* [23], conducted with the Symphony PLUS program card, was performed with mothers of premature infants, as these represent the most challenging patients under the most compromised conditions [36, 74]. This was to ensure that the technology would be applicable and efficacious for the broader population of mothers.

Two additional studies have now further demonstrated that the Symphony PLUS program card is effective for pump-dependent mothers of both preterm and term infants [59, 75]. This reinforces that all mothers, whether delivering at term or prematurely, undergo the same physiological processes along the milk production continuum [27, 36].

A recent study, conducted in the Netherlands, recruited 130 mothers of preterm, late preterm and term infants. The results indicated that regardless of the age of the infant, using the INITIATE followed by the MAINTAIN pattern was more effective for supporting mothers to reach an adequate milk production than using the MAINTAIN program alone [75].

In addition, a prospective cohort study was conducted in the USA. It followed 62 pump-dependent mothers delivering term-born infants with congenital heart disease. Mothers in the study were able to reach an adequate milk supply when initiating lactation with the Symphony PLUS card in conjunction with evidence-based lactation support [59].

It is therefore appropriate to use the Symphony PLUS program card to initiate, build and maintain the milk supply of any mother whose infant, delivered at term or prematurely, is unable to feed directly at the breast.

The main advantages of using the Symphony PLUS program card include:

- The INITIATE program is effective for mothers of preterm and term infants [23, 59, 75].
- Mothers using the INITATE program, followed by the MAINTAIN program, achieve significantly higher daily milk volumes over the first two weeks than mothers only using the MAINTAIN program [23].
- Pump-dependent mothers express enough milk to support an exclusive human milk diet for their infant [23, 59].

Translating evidence into best practice

The mother's milk production journey is complex and each stage relies on the preceding stages. The Symphony breast pump, with the Symphony PLUS program card, is a solution for all pump-dependent mothers. It combines unique and research-based pumping patterns that support mothers to initiate, build and maintain their lactation (Figure 12).

When every drop counts, the following interventions are very important to support the mother's ability to produce adequate volumes of milk in the coming weeks:

- Teaching mothers how to use their hands for breast massage [76–78].
- Removing milk early [58, 79, 80]. Pumping in the first hour after birth helps to remove more milk than pumping in the first six hours, and increases milk production in the following weeks [55, 56].
- Initiating lactation using the specifically designed, research-based initiation technology of Symphony PLUS [23, 59, 75].
- Expressing frequently. Pump-dependent mothers who express their milk more than six times a day have greater milk production than mothers who pump less frequently [57, 58].
- Container sizes that reflect the volume of milk the mother will be expressing can help manage expectations in the early days.
- Double pumping increases milk output [70, 78, 80, 81].
- Expressing in close proximity to the infant, at the bedside, for example, or directly after/during skin-to-skin contact [82–86] has also been shown to increase milk volume yielded.
- Utilising 2-Phase Expression technology at maximum comfortable vacuum to maintain lactation [64].

Figure 12 – The distinctive Symphony breast pump with its research-based pumping programs has been developed specifically to support mothers throughout their lactation journey: to initiate, build and maintain an adequate milk production.

“We exist to enhance mother and baby health through the life-giving benefits of human milk.”

Medela’s Destiny Statement

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