



## Investing in human milk for the next generation

The health and developmental benefits of an exclusive own mother's milk diet make it an invaluable area of investment in infant health. By optimising the milk expression process when breastfeeding is impaired or not possible, the PersonalFit™ PLUS pump set for Symphony® plays an important part in ensuring infants can still receive the benefits of this diet.

**PersonalFit™ PLUS pump sets for Symphony®**

More milk. More comfort. More efficiency.



# Why mother's milk is medicine for preterm infants

Mothers of preterm infants are among the most likely to need help initiating milk supply, while their infants have the most to gain from a human milk diet. Feeding preterm infants with their own mothers' milk is particularly important, as it has more components specific for enhanced immunity and protection than term milk.<sup>1</sup>

Own mother's milk (OMM) also helps protect against a range of conditions associated with prematurity, including:

- necrotising enterocolitis (NEC)<sup>2</sup>
- sepsis<sup>3</sup>
- retinopathy of prematurity<sup>4</sup>
- bronchopulmonary dysplasia<sup>5</sup>



An OMM diet is crucial for an infant's neurodevelopment. Infants born at 32 weeks still have to develop at least a further 35% of brain volume to reach the capacity of a term infant.<sup>6</sup> This means they need to catch up rapidly in the postnatal period.



As well as the protective benefits of an OMM diet, preterm mother's milk contains 20% more medium chain fatty acids than term milk: these fatty acids aid brain growth.<sup>7</sup>



Research also shows that, by the time they are 18 months old, very low birth weight (VLBW) infants who received more than 110 ml (3.7 fl oz) per kg (2.2 lb) per day of mother's milk in intensive care have as much as a five-IQ-point advantage over those who were not.<sup>8</sup>



Preterm infants fed human milk are:

- on average discharged two weeks earlier than those fed formula<sup>9</sup>
- 6.8 times less likely to return to hospital in the first year<sup>8</sup>

There is also evidence that breastfeeding and feeding infants breast milk reduce the risk of sudden infant death syndrome (SIDS) and leukaemia, as well as other infections including otitis media.<sup>10</sup>

# Advantages that last a lifetime

## Immediate returns

Infants can start benefiting from an exclusive human milk diet from the beginning – as well as providing optimal nutrition for growth, colostrum is rich in factors that promote intestinal development and reduce infection risk.<sup>11,12</sup>

The first few hours, days and weeks after birth are a golden opportunity to initiate and build milk production. If this does not happen because breastfeeding is impaired, it is likely to be difficult for the mother to compensate for the resulting shortfall in milk volume.

This is where PersonalFit™ PLUS can help. Used together with the Symphony® breast pump it creates a milk removal system that supports mothers of preterm and term infants to initiate, build and maintain adequate milk production over time. The PersonalFit™ PLUS pump set further enhances Symphony®'s performance by improving the comfort and efficiency of each pumping session, helping mothers express higher milk volumes for infants.<sup>13,14</sup>

## Every drop counts

The more own mother's milk (OMM) an infant receives each day, the lower the risk of disease.

Each additional 10 ml (0.3 fl oz) per kg (2.2 lb) per day reduces the risk of sepsis by up to 19%.<sup>3</sup>

And each additional 10 ml (0.3 fl oz) of human milk per kg (2.2 lb) per day that an infant receives in the NICU is associated with a 0.35 increase in cognitive index score at 20 months.<sup>19</sup>

## A long-term investment

The benefits of an exclusive human milk diet last much longer than the infant's hospital or NICU stay, which is why it is important to ensure mothers are building an adequate supply for life at home with their babies.

Human milk feeding reduces the risk of disease over a lifetime. Infants who are breastfed are 13% less likely to become overweight or obese as children or teenagers.<sup>15</sup> This in turn lowers the risk of associated conditions, including type 2 diabetes, coronary heart disease, and a number of cancers.<sup>15-17</sup>

Producing breast milk has positive health implications for mothers, too: for every 12 months a woman produces milk, her risk of breast cancer decreases by 4.3%, and this effect is cumulative.<sup>18</sup>



## An investment for hospitals

Because it significantly improves both short- and long-term health outcomes, human milk has a high economic value. The fact that it reduces the incidence and/or severity of prematurity-related illnesses means it indirectly reduces associated hospital costs. Taking the examples of necrotising enterocolitis (NEC) and sepsis:

- Preterm infants fed human milk are up to 10 times less likely to contract NEC.<sup>20</sup>
- USD 43,818 = average costs per case of NEC.<sup>21</sup>
- Each additional 10 ml (0.3 fl oz) per kg (2.2 lb) per day of mother's milk reduces a preterm infant's risk of sepsis by up to 19%.<sup>3</sup>
- USD 10,055 = average costs per case of sepsis.<sup>3</sup>

Increased milk volumes with PersonalFit™ PLUS, together with Medela's Initiation technology, can also help to reduce hospitals' reliance on donor milk and formula. As well as having a positive impact on infant health, this can cut costs:

- Own mother's milk costs 60% less than formula and 92% less than donor human milk (when mothers provide 300 to 399 ml, or 10 to 13.5 fl oz, a day).<sup>22</sup>
- On a wider scale, if hospitals increased the average daily dose of human milk to more than 50 ml (1.7 fl oz) per kg (2.2 lb) per day in the first 28 days of life, they could save USD 31,154 per infant, or a total of USD 1.8 million.<sup>3</sup>

While everyone benefits from more human milk being available, it is healthcare professionals who have the opportunity to really make a difference to infants by supporting mothers to provide an exclusive human milk diet. PersonalFit™ PLUS helps make this not only possible, but easier and more efficient.

## An investment for every generation

If the next generation of infants benefit from a human milk diet, society benefits too, thanks to increased life expectancy, improved quality of life,<sup>10</sup> and the economic advantages of lower healthcare costs.<sup>23</sup>

- On average, in the UK every preterm infant who receives human milk instead of formula contributes lifetime healthcare savings of approximately GBP 904.<sup>10</sup>
- GBP 46.7 million: the estimated total lifetime cost saving to the UK's National Health Service if 100% of premature infants were fed mother's milk in the NICU.<sup>10</sup>
- There would also be 238 fewer deaths due to neonatal infections and SIDS: this is associated with an economic impact of GBP 153.4 million in lifetime productivity.<sup>10</sup>

## Only Medela

Medela offers a portfolio of comprehensive, evidence-based feeding development solutions for neonatal intensive care. The aim is to provide milk to hospitalised infants in ways that are as close to breastfeeding as possible, in a manner that supports each individual's feeding ability and maturation.



**Own mother's milk costs:**  
(when expressing 300–399 ml per day)<sup>22</sup>

**60%**

less than formula

**92%**

less than donor human milk

### View the evidence

1 Meier P et al. *J Pediatr.* 2017; 180:15–21. 2 Sisk PM et al. *J Perinatol.* 2007; 27(7):428–433. 3 Patel AL et al. *J Perinatol.* 2013; 33(7):514–519. 4 Hylander MA et al. *J Perinatol.* 2001; 21:356–362. 5 Patel AL et al. *Arch Dis Child Fetal Neonatal Ed.* 2017; 102(3):F256–F261. 6 Kinney HC. *Semin Perinatol.* 2006; 30(2):81–88. 7 Fleith M, Clandinin MT. *Crit Rev Food Sci Nutr.* 2005; 45(3):205–229. 8 Vohr BR et al. *Pediatrics.* 2006; 118(1):e115–e123. 9 Schanler RJ et al. *Pediatrics.* 2005; 116(2):400–406. 10 Mahon J et al. *Health Econ Rev.* 2016; 6(1):54. 11 Meier PP et al. *Clin Perinatol.* 2010; 37(1):217–245. 12 Ballard O, Morrow AL. *Pediatr Clin North Am.* 2013; 60(1):49–74. 13 Prime DK et al. 6th ABM Europe Conference, Rotterdam, NL; 2018. 14 Clinical study. (NCT02492139). 2016. 15 Horta BL et al. *Acta Paediatr.* 2015; 104(467):30–37. 16 Bener A et al. *Eur. J. Cancer.* 2001; 37(2):234–238. 17 Amitay EL, Keinan-Boker L. *JAMA Pediatr.* 2015; 169(6):e151025. 18 Collaborative Group on Hormonal Factors in Breast Cancer. *Lancet.* 2002; 360(9328):187–195. 19 Patra K et al. *Neonatology.* 2017; 112(4):330–336. 20 Lucas A et al. *BMJ.* 1990; 300(6728):837–840. 21 Johnson TJ et al. *Neonatology.* 2015; 107(4):271–276. 22 Jegier BJ et al. *J Hum Lact.* 2013; 29(3):390–399. 23 Rollins NC et al. *The Lancet.* 2016; 387:491–504.

Discover what PersonalFit™ PLUS can do for your next generation. Go to [medela.com/pfp](https://medela.com/pfp) or contact your Medela representative