NEOTECH BRIDGE®

A Bridge Toward Breastfeeding Success

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Human milk (HM) is the ideal nutrition for infants of all gestational ages, and particularly, for those infants born prematurely or critically ill and who required prolonged hospitalization in the neonatal intensive care unit (NICU) or other pediatric areas.[1,2] Premature infants and their parents face several obstacles to the initiation and maintenance of successful breastfeeding. The most common obstacles to breastfeeding while in NICU stem from the infant's age, neurological maturity, and severity of illness. These factors result in limited time that a sick or premature infant can spend directly nursing at the breast which ultimately impacts the establishment of an adequate milk supply. This situation is further complicated with the fact that neurologically immature or injured infants have difficulty latching on to and feeding from the breast directly due to their small size, lack of strength, poor endurance, and insufficient suck-swallow coordination. Bottles are often used to deliver supplemental nutrition to premature infants, which further reduces time spent at the breast.

Breastfeeding assistance systems have been designed to deliver supplemental nutrition to infants while keeping them at the breast and are not dependent on a bottle. When used in the hospital and NICU setting, breastfeeding assistance systems may reduce the time for premature infants to achieve exclusive breastfeeding which ultimately can impact the infant's length of stay in the NICU.[14]

The Neotech Bridge ("the Bridge") is an easy-to-use breastfeeding assistance system that enables nursing parents to use the device independently (saving nursing and lactation consultant time) and is more developmentally supportive and safer than legacy systems since the parent can control the rate, timing, and amount of supplementation their infant receives. With the Bridge, parents of infants in the hospital can be empowered to overcome many of the common hurdles to establishing a positive and long-lasting breastfeeding relationship with their baby.

BENEFITS OF BREASTFEEDING

For babies in the NICU, HM is more than nutrition - it is a vital component of medical care.[1] HM has many well-known benefits derived from its unique composition of anti-microbial, anti-inflammatory, and immunoregulatory agents, and it is particularly beneficial for infants born prematurely.[2] Receiving HM decreases the risk for necrotizing enterocolitis, late-onset sepsis, lower respiratory tract infections, severe diarrhea, and ear infections.[1] An exclusively HM diet also decreases feeding intolerance, time to full feeds, length of NICU stay, and hospital and physician charges for very low birth weight infants.[3,4] Given these benefits and more, both the World Health Organization (WHO) and the American Academy of Pediatrics (AAP) recommend all babies, including those born prematurely, receive an exclusively HM diet for the first 6 months of life.[5,6]

BARRIERS TO BREASTFEEDING

Although the AAP and WHO recommend an exclusive HM diet, many premature infants do not receive this standard of care. Parents of infants in the NICU are faced with challenges both initiating breastfeeding during their hospital stay and continuing breastfeeding after the infant is discharged home. Infants born prematurely have decreased breastfeeding rates 1 month postpartum compared to term newborn infants.[7,8]

There are several factors that can lead to difficulties with breastfeeding and milk production in the hospital setting. In the NICU there is delayed opportunity for the infant to latch on the breast due to acuity of illness, neurologic injury, developmental immaturity, as well as oral-motor strength and endurance challenges. The lactating parent is often left to pump their breasts to maintain their milk supply but this results in decreased milk emptying which further reduces milk production. Lastly, the necessary separation of infants in the NICU from the lactating parent significantly interferes with successful breastfeeding initiation and continuation.[1]

Milk supply is a major hurdle to breastfeeding success for parents of infants of any gestational age. Most nursing parents report feeling as if they are not making enough milk to meet the demands of their baby.[9] Inadequate milk supply is perceived as a major barrier for breastfeeding success for both term and preterm infants, and a top reason why parents stop nursing.[10–12] Strategies to address milk supply and weight loss issues often involve supplementation typically using a bottle, which can further hinder successful breastfeeding.[13]

SUPPLEMENTATION & BREASTFEEDING ASSISTANCE SYSTEMS

Depending on their gestational age at birth, premature infants are often fed through a gavage tube before attempting to feed at the breast. It is not uncommon for infants to receive supplementation with donor human milk or formula as a stopgap measure until their lactating parent's milk supply increases. Furthermore, premature infants may need even more volume than their parent is producing due to hypoglycemia (low blood sugar), jaundice, micronutrient deficiency, or weight loss.

Supplementation is often delivered by bottle. Bottle-feeding can interfere with breastfeeding success by decreasing time spent at the breast stimulating milk production and may cause nipple confusion as infants may prefer the faster and easier flow of bottles, and become frustrated when switching back to the breast.[13] Given these issues, other methods of supplementation have been developed to ensure that premature babies get the nutrition they need while not interfering with breastfeeding skills.

Breastfeeding assistance systems are devices designed to supplement infants with milk or formula while keeping the infant at the breast. By providing supplementation at the breast the baby may receive enough nutrition from both the breast and the device to feel satisfied and reduce the need for gavage or bottle feeding. In a randomized control trial of preterm infants, oral stimulation and a breastfeeding assistance system shortened the transition period to full breastfeeding and increased breastfeeding rates.[14]

Existing breastfeeding assistance systems can be difficult to use, requiring the help of hospital staff to attach the device to the nursing parent, and then to deliver the supplemental nutrition to the baby while latched on the breast. Additionally, in many of these systems, the tube used to deliver supplemental nutrition is taped to the breast and can disrupt a baby's latch and seal around the nipple. Furthermore, the flow rate of these systems is difficult to control. Babies may receive milk or formula too quickly, which can overwhelm the infant with more volume than they can swallow safely, or too slowly, which can frustrate the infant resulting in agitation and crying instead of nursing.

An intuitive breastfeeding assistance system is needed to solve these issues and allow the nursing parent to use the device independently and simultaneously control the amount, rate, and timing of the supplementation.

A NEW SOLUTION: THE NEOTECH BRIDGE

The Bridge is an easy-to-use breastfeeding assistance system that allows babies to latch to the breast while receiving supplementation. It consists of a silicone nipple cover with a built-in channel system that attaches to a syringe filled with colostrum, expressed milk, donor milk, fortified human milk, or formula. Syringes of variable size are held by the person breastfeeding, giving them full control over the amount, flow rate, and timing of supplementation. With this control, the baby can be encouraged to work at the breast, maximizing output from the breast and stimulating the wearer's milk supply.

Unlike other options, the Bridge can be attached to the breast and used by the person nursing with ease. The Bridge requires no tape and less than a minute of set-up time. Given that the inconvenience of breastfeeding supplemental systems is a major impediment to nursing success,[15] the ease of use of the Bridge is a major asset.

The Neotech Bridge is the first breastfeeding assistance system available that provides a latching surface as part of the device. The nipple piece can help overcome the difficulties many premature infants experience with achieving and maintaining attachment to the breast.[16] The 23.8mm silicone piece has one large center and five smaller outer holes that mimic the breast. For infants who prefer the bottle, the thin silicone nipple piece feels similar to a bottle nipple, which may also encourage latching on at the breast.

For parents aiming to overcome two of the most common impediments to nursing - milk supply and latching issues, the Bridge offers a simple solution. Its easy-to-use design and silicone nipple piece are intended to minimize frustrations for both the nursing parent and the baby, respectively. Implementation of the Neotech Bridge may help parents and providers successfully establish breastfeeding for infants of any gestational age.

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