



Biological Nurturing: Closing the gaps in midwifery to support breastfeeding

AIMS Journal, 2025, Vol 37, No 3



By Joelle Colson and Suzanne Colson

Biological nurturing (BN), a neurodevelopmental approach to breastfeeding, was created in 1995. Radically different from the mainstream approach, mothers practising BN lean back instead of sitting upright or lying on their sides. During the day, sleeping babies lie cheek to breast on top of their mothers' bodies in continuous ventral contact. Gravity pins the baby's body to the mother's. This means mothers have both hands free; they become active agents. When the baby moves, mothers place them spontaneously mouth to nipple, helping their babies find the breast and latch. When these prerequisites are met, mothers are as competent as their babies.

In 1998, BN was first evaluated with vulnerable, at-risk newborn babies during metabolic research projects.^{1,2} Notably, 11 late preterm babies and one small for gestational age baby were breastfed exclusively and directly from the breast at hospital discharge (around 5 postnatal days). Seven babies (57%) required no supplementation/complementation during the hospital stay. Colson encouraged mothers to BN their babies during the day with as much skin-to-skin contact as they wanted, and as often as they wanted. At that time, skin-to-skin contact was emerging as best practice. However, in this study, all mothers and babies remained lightly dressed. All mothers recorded BN non-nutritive cuddling time and intermittent BN active sucking and swallowing times in a diary. During the first 24 hours, mothers held their babies in BN for an average of 7 hours and 40 minutes (range 4 to 16 hours) during which time, babies actively transferred colostrum directly from the breast for a mean total of 2½ hours. All babies

maintained a warm stable temperature in BN. At four months, 11 of the 12 mothers were continuing to breastfeed, 8 exclusively. The complete study is reported elsewhere.^{1,2}

More recent research continues to reveal exciting results. In 2021, a meta-analysis examining 1936 mothers and babies, showed that just using the laid-back maternal posture reduced sore nipples by 42%.³ Another RCT⁴ published in 2020 compared BN to the teaching protocol in a baby friendly (BFI) hospital.⁵ For that study, the researchers included five of the six basic BN components. Practising BN reduced the number of mothers experiencing sore or cracked nipples by half and more mothers in the BN group were breastfeeding exclusively at 5 months than in the BFI group. An historic study, undertaken in a paediatric Baby Friendly Initiative (BFI) community practice, implemented BN as their go-to strategy. During the study, 252 newborn babies, born at or over 30 weeks' gestation, were registered. At 5 months 62% were breastfeeding exclusively with a further 24.5% having some breastmilk alongside other milk or solid foods.⁶ At 1 year, the prevalence of breastfeeding was 59%. At three years, 7% of mothers were still breastfeeding, a statistic comparable to the 6-month rates of exclusive breastfeeding in many countries today!

These studies are in open access, freely available on the internet, yet few midwives and healthcare professionals know about biological nurturing. Some choose to ignore these studies, but many midwives just don't feel comfortable talking about BN to mothers.⁷ The original BN concepts have been underreported and require clarification. This introductory article aims to increase understanding of BN. If BN is instinctual breastfeeding for mothers, it requires learning new observational skills for midwives and others supporting breastfeeding.

What is biological nurturing?

Health professionals use BN as a method to observe maternal and infant behaviours which are divided into three groups: mother/baby positions, behavioural state, and innate behaviours such as actions and reactions. BN theory is anchored in the continuity of behaviours from womb to world. In other words, midwives identify, at a glance, whether the baby is in a sleep or awake state and if mothers appear calm and relaxed or stressed and uncomfortable. Health professionals recognise immediately if gravity is helping or hindering. They know instantly if mothers have both hands free and can gaze comfortably at their babies. Importantly, all health care providers can observe sequences of universal spontaneous breastfeeding movements. Under certain preconditions, maternal breastfeeding actions are instinctual, genetically programmed. Everyone knows that babies are hard-wired to breastfeed but few are aware of the self-generated movements that precede and enhance baby's breastfeeding reflexes. Reciprocity is the watchword: Colson's doctoral thesis⁸ clearly demonstrated that the six BN components interrelate, releasing spontaneous mother-baby interactions in skin-to-skin contact or when both are lightly dressed.

The mechanisms of biological nurturing (2006)⁷

In Colson's doctoral research, forty mother-baby dyads were observed:

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3 mothers spontaneously started breastfeeding in the BN position with no difficulty.

- 37 initiated breastfeeding in traditional positions (upright or on their sides).
- More than half the sample (55%) encountered difficulties that prevented effective milk transfer.
- 23% (9/40) sacrificed their own physical or psychological comfort when their baby latched on and suckled with effective milk transfer.
- 15% (6/40) of babies in traditional positions latched on and suckled effectively without maternal or neonatal problems.

Mothers experiencing problems were encouraged to make positional changes and to wait for the baby to fall asleep to continue the feed. Importantly, mothers and babies remained lightly dressed during breastfeeding initiation, prioritising close body BN cuddling rather than skin-to-skin contact to overcome their difficulties.; instead, all practised BN and all continued to breastfeed beyond four months, 88% exclusively.⁷

People often ask: if it's not skin-to-skin contact what are the prerequisites?

In BN, mothers are proactive; they find their own comfortable position and place their sleeping babies cheek to breast or mouth on nipple. Comfort is a subjective concept. No two people are absolutely comfortable in the same positions. However, no mother is ever upright or flat-lying. Instead, the degree of recline works with gravity so the mother's hands spontaneously touch and caress her baby. Since gravity maintains the baby on mum's body, her arms often make a nest. Non-verbal cues are a crucial part of the Homo sapiens behavioural repertoire; essentially, our hands express our thoughts and emotions. With their hands free, mothers can self-adjust their position, ensuring their body is fully supported. They also unconsciously change their baby's orientation - helping their babies to achieve what we call "*the right address*".

What is the right address ?

The right address, illustrated in the photos below, concerns the place of the baby and is always defined in relation to the maternal laid-back position using 3 essential criteria.



© Photo by Laurel K. Tharrington, RN, IBCLC, RLC 2008

1- The baby's face is always in bare-breast contact, whether lightly dressed or in skin-to-skin contact. In-between feeds, mothers keep their *sleeping* babies, cheek on top of their naked breast. This face-on-bare-breast contact immediately increases breastfeeding opportunities: as soon as the baby makes the slightest movement, he or she is in the 'right place' to latch even during sleep, enabling and conditioning a reciprocal breastfeeding bodily learning. Keeping the sleeping baby at *the right address* during the day reduces intervals between feeds, promoting exclusive breastfeeding during the early postpartum period ^{7;9}. Frequent, early and prolonged BN cuddles enable mothers to cultivate their breastfeeding relationship beyond upright latching techniques. The results are enhanced maternal satisfaction ¹⁰ and reduced midwifery workload. ¹¹ Maintaining continuity of baby sleep rhythms (behavioural state) is underpinned by recent advances from neurodevelopmental physiology. We discuss these in the next article 'Breastfeeding? Babies can do it in their sleep!'.

2- Lightly dressed or in skin-to-skin contact the force of gravity pins the baby to the mother's abdomen. She doesn't have to apply pressure to the baby's back, neck or head. Instead, gravity does the job! Furthermore, when mothers lean back, they open their bodies enabling full ventral uninterrupted contact. Gravity blunts the force and amplitude of the baby's movements which become smooth and fluid. This helps mothers and babies get started with breastfeeding: in BN it is as though the baby is swimming the crawl, a series of auto-generated movements rapidly conditioning breastfeeding reflexes. These observations contrast markedly with the skin-to-skin contact breast crawl, where mothers do not help and the baby's movements are described as a fixed action pattern that occurs in nine stages. ¹²

3- Crucially, babies feet are in contact with the maternal body or part of the environment; this foot support enables babies to stabilise themselves during latch and milk transfer.

What about mothers? How far back is laid-back ?

The degree of maternal recline varies from mother-to-mother and depends on the environment. Mothers do not experience any tension in their backs, shoulders or necks; they don't expend energy lifting their heads against gravity to see their baby (as in a flat-lying position) or bend or crane their necks to look down at their baby (as in the traditional positions). Mothers often spend hours gazing, stroking and savouring the sweet scent of their newborn babies. This effortless visual dialogue primes breastfeeding, producing powerful oxytocin highs that are essential for instinctual breastfeeding. Notably, these innate

maternal breastfeeding gestures are only triggered when oxytocin is released directly from the brain. We can't teach mothers to coo, count fingers and toes and groom their babies. That's why we say that BN is instinctual!

The mother's laid-back, physiological body slope is also protective: it facilitates baby's breathing. Since the mother is never flat on her back, the baby is never flat on his or her stomach; the baby's lungs do not expand against gravity. This is an important safety point.

Furthermore, upright or dorsal postures close or fold the maternal body and force the baby to lie across mum's midriff. Whether in skin-to-skin contact or not, seated in an upright position, mothers must hold their babies at breast level, exerting pressure on the baby's back, neck or sometimes on the baby's head. At a glance the pictures below may appear the same, however the first picture illustrates the interrupted ventral contact often resulting from this dorsal position.¹³ You can see the breastfeeding pillow helping to keep the baby in place at the breast. In the third picture, the BN mother has slightly increased her angle of recline. The result: the baby lies on top closing the gap. As the force of gravity pins the baby to the mother's body, tummy on tummy, mum has both hands free. These subtle positional differences have a huge and positive impact. Finally, the central picture illustrates the gap almost always observed between the baby's body and the breast in the so-called 'rugby hold' position. This gap is often exaggerated by 'writhing movements', those same jerky movements observed in the awake baby 'fighting the breast', often termed 'breast refusal' or 'latch failure'. Using gravity as an ally as in picture 3 can change everything.



Conclusion

Biological Nurturing is much more than a laid-back maternal position that we can teach mothers. Rather BN is a structured method to observe universal mother-baby breastfeeding behaviours. BN can be implemented straight from birth for all healthy term newborn babies and all vulnerable babies eligible for skin-to-skin contact. BN can also be used as a rescue strategy for any mother experiencing difficulties such as latch refusal, sore nipples, engorgement and other breast problems. The maternal laid-back posture always makes use of gravity and never exhausts maternal physical capacities. Babies lie on top of mum's bare breast in continuous ventral contact.

Even though research findings show that BN reduces sore/cracked nipples and increases the duration of exclusive breastfeeding, maternity staff often remain sceptical or apprehensive using it. Changing

practice is always uncomfortable! Mainstreaming BN requires the ability to step out of one's comfort zone, away from teaching, protocols and received ideas. In BN, midwives continue to advocate and protect mothers' privacy; they inform rather than teach. The universal positional interactions, regardless of dress state, explain how BN aids breastfeeding initiation and increases exclusivity. Further research is needed to examine how all of the BN variables interrelate and interact to release instinctual breastfeeding.

Author Bios:

Suzanne Colson PhD, MSc is a retired midwife and the creator of Biological Nurturing – laid-back breastfeeding.

Joelle Colson BSc, BA is a public health nurse and the director of The Nurturing Project, created to disseminate biological nurturing research. For more information see www.biologicalnurturing.com

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4 Editor's note: A RCT or randomised controlled trial is a prospective study that measures the effectiveness of a new approach, intervention or treatment by comparing outcomes with a similar group receiving the standard care or adopting the standard approach.

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13 Editor’s note: ‘ventral contact’ means that the front of the baby is lying in close contact to the front of the mother. In this picture, that contact is interrupted or incomplete.