

# Integrating health care practices with the promotion of breastfeeding

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*The last ten years, the next ten years in Neonatology*

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## Abstract

Although breastfeeding is the normative standards for infant nutrition, exclusive breastfeeding rates at hospital discharge in the general population of newborns are still suboptimal. Besides many other psychological, social, economical, cultural factors, breastfeeding success is also significantly influenced by maternity practices that have the potential to foster or otherwise to hinder breastfeeding physiology during postpartum hospital stay. On their part, health professionals need to improve their knowledge on lactation, to acquire better skills to manage breastfeeding problems and to commit themselves to prepare evidence based clinical protocols that support breastfeeding and the use of human milk.

At the Institute for Maternal and Child Health in Trieste (Italy), we have developed two surveillance protocols related to situations that commonly challenge health professionals to give their qualified advice to the breastfeeding dyad. Particularly, we have documented the feasibility of a protocol on the management of skin to skin contact between mother and his/her newborn infant. This protocol is applied in the delivery room in the context of the prevention of sudden unexpected postnatal collapse. The second protocol refers to the management of early neonatal weight loss.

Finally, we believe that combining an effective promotion of breastfeeding with good clinical practice is appropriated and safe and we recognize that both the competence and the attitude of staff have an essential role in the success of the initiation of breastfeeding.

## Keywords

Breastfeeding, human milk, skin to skin contact, sudden unexpected postnatal collapse, neonatal weight loss, clinical protocol.

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## Health professionals and breastfeeding protocols in early days after childbirth

The concept that human milk is more than a simple food for infants and young children is widely recognized and accepted. Breast milk is unique, species-specific, ready to use, hygienic, and cheap. Few interventions rival breastfeeding in the promotion of mother and child health. Notably, nutrition in the first years of life can permanently modify an individual’s biological and social development. As breastfeeding improves the health of the nursing couple, it consequently leads to reduced cost of health care [1].

We must recognize that science just provides clues of what we should have recognized intuitively: breastfeeding – being the natural form of feeding infants – should be seen as standard, normal nutrition.

Understandably, promotion of breastfeeding enjoys wide consensus among professionals working in mother-child care. Yet in everyday practices, adequate support is still lacking, as can be seen in certain clinical advices and organizational choices. In other words, although health care professionals are called to promote breastfeeding, they are concerned to disregard good clinical practice; ultimately they may interfere with the success of breastfeeding (**Tab. 1**). Such a concern sounds paradoxical, as an ample scientific literature is currently available to update the knowledge on the physiology of lactation, to make the medical advice more effective to solve breastfeeding problems and eventually also to implement appropriate clinical protocols supporting breastfeeding.

**Table 1.** Breastfeeding management and health professionals’ concerns.

Practice	Concern
Skin to skin contact in delivery room	Neonatal collapse
Weight loss	Hypernatremia
Delayed regain of birth weight	Hypogalactia; malabsorption
Medication intake by the nursing mother	Side effects in the nursing infant
Contrast media agents for radiological imaging	

In the present paper, we affirm the feasibility of combining an effective promotion of breastfeeding with good clinical practice. Particularly, we report 2 clinical circumstances – skin-to-skin (STS) contact in delivery room and early neonatal weight loss – that commonly challenge health professionals (pediatrician/neonatologist, obstetrician, midwife, pediatric nurse) to give their qualified advice to the breastfeeding couple.

## Skin to skin contact and the prevention of neonatal collapse

The importance of the immediate postpartum period for healthy child development has been clarified through scientific investigation since the 1960ies. The research assumption was that this is a sensitive early phase with sudden and lasting attachment between the infant and the mother [2]. Most of the many interactions of the dyad in the first hours of life are closely related to successful early breastfeeding. Immediate contact may be provided initially and most effectively by placing the infant on the mother abdomen/thorax, even before the umbilical cord has been clamped. Another way is to place the infant at the mother’s side, facing the mother. Both facilitate the touching and the eye-to-eye contact. Obviously, the immediate postnatal period is not the only moment when attachment can develop. If the process is delayed, however, it may take longer and be more difficult to achieve. In addition to contributing to early attachment, close mother-infant contact immediately after birth also favors metabolic, cardiorespiratory and thermal adaptation to the extra-uterine life [3, 4]. Moreover, intimate contact with her/his mother facilitates colonization of the skin and the gastrointestinal tract of the newborn infant with mother’s non-pathogenic microorganisms.

In light of the improvement in mother-infant bonding and of the facilitation of breastfeeding, prolonged STS contact of the mother and her/his healthy newborn soon after birth and subsequently in the first days of life is recommended by the Baby-friendly Hospital Initiative [5, 6]. However, such intervention has not been completely adopted in the maternity wards of industrialized countries due to some concerns about safety. Indeed, a few reports have associated STS contact with an increased risk of sudden and unexpected neonatal collapse (SUPC) [7, 8]. The British Association of Perinatal Medicine (BAPM) defines SUPC as a severe condition that includes any term or near term (> 35 weeks gestation) infant who is well at birth and shows an unexpected cardiorespiratory collapse that requires resuscitation with intermittent positive pressure ventilation [9]. Newborn infants are affected in the first 7 days of life (particularly in the first 2 hour of life) and either die or require intensive care or develops an encephalopathy. Prone position of the infant on his/her mother's abdomen/thorax during early STS contact has been recognized as a risk for SUPC. In many cases, the mother is primiparous, very tired, not observed by health professionals during the initiation of STS contact and breastfeeding, sometimes distracted even by the use of a smartphone [10]. In view of the risk of SUPC, STS contact in delivery room has been criticized and currently is possibly denied, for safety reasons. Consequently, immediate care of both baby and her/his mother is prone to be provided separately, thus interfering with the successful beginning of breastfeeding.

At the Maternal and Child Health Institute of Trieste (Italy), we have developed a surveillance protocol to prevent SUPC especially focused on the first 2 hours of life. Such protocol aims to promote a safe mother-infant bonding and an early beginning of breastfeeding, while correcting the risk factors for SUPC, thus possibly overcoming the dilemma on the appropriateness of newborn care in the delivery room.

Interventions provided by our protocol include: antenatal and early postnatal oral and written information to parents, periodical assessment (position, colour, breathing) of the infant (at 10, 30, 60, 90 and 120 minutes of life) by midwives and/or pediatrician in the delivery room (**Tab. 2**), avoidance of mothers left alone with the baby in the first hours after birth particularly during STS contact and first breastfeeding attempts, encouragement of STS contact only when mothers

**Table 2.** Parameters included in the checklist of the protocol to prevent sudden and unexpected neonatal collapse (SUPC) in the delivery room. Records by midwife and/or paediatrician are scheduled at 10, 30, 60, 90 and 120 minutes of life.

- Infant positioned with visible and unobstructed mouth and nose
- Pink color (skin and mucous membranes)
- Normal breathing (no retractions nor grunting nor flaring of the nares)
- Normal respiratory rate: 30-60 breaths/min
- Normal SpO<sub>2</sub>: > 90% (only if deemed necessary)
- Sub-axillary temperature at 60 and/or 120 minutes after birth (normal range: 36.5-37.5°C)
- Mother never left alone with her infant

are fully awake and finally discouragement of bed-sharing,

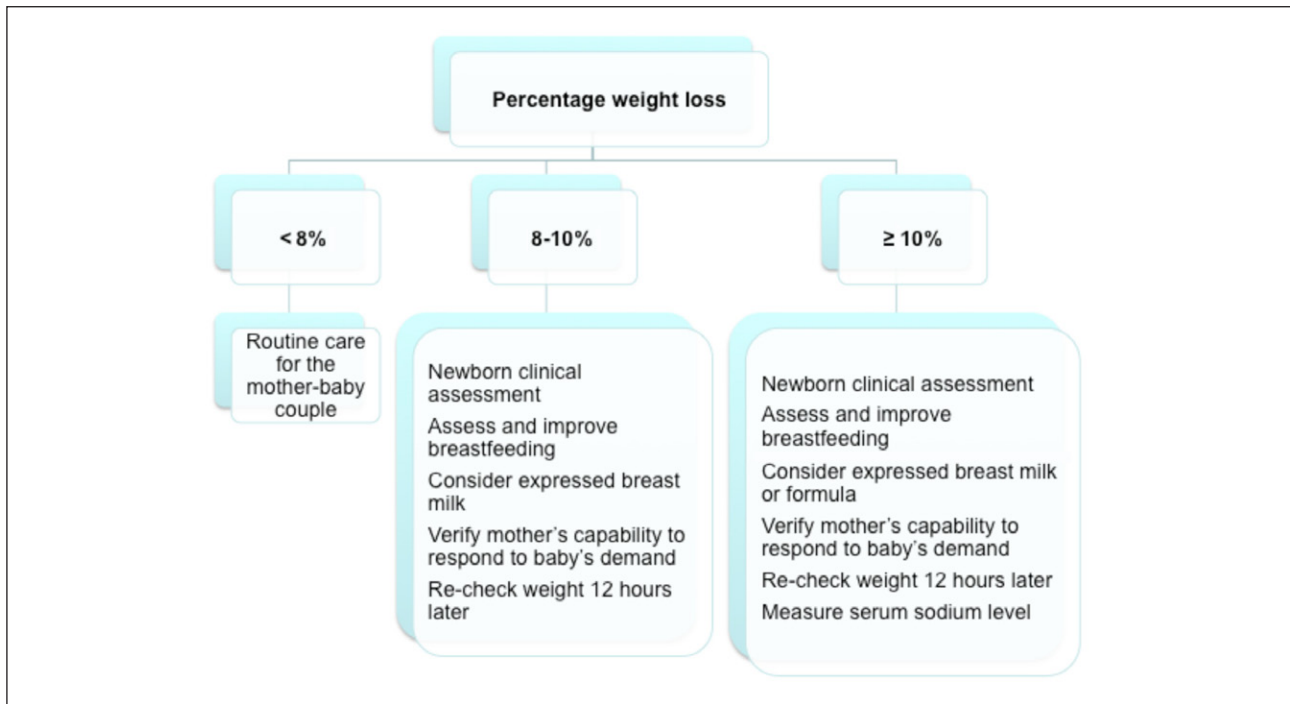
As there is not yet evidence of effective interventions to prevent SUPC, currently, our protocol represents a potential best practice.

### Neonatal weight loss management

Neonatal weight loss is a universal phenomenon [11, 12]. Postnatal weight loss is the result of a physiological fall of extracellular fluid after birth and is influenced by humidity, environmental temperature, neonatal health conditions (e.g. jaundice), type of delivery and feeding practices. Nevertheless, limited data exists to define both the average normal weight loss (around 5%) and the upper limit of a safe weight loss (around 10%) in order to avoid hypernatremic dehydration [13, 14]. This lack of evidence puts advice and intervention of health workers at risk of being arbitrary, thus hindering the start of breastfeeding.

In order to monitor neonatal weight loss in the first days of life, a specific protocol has been applied in our Maternity Hospital to all newborns. When interpreting the early neonatal weight loss and deciding proper intervention, we routinely considered the following 4 items (**Fig. 1**): 1) infant's general conditions, including the hydration status; 2) mother's general condition, in term of her capability to respond to the feeding demand of her/his newborn infant; 3) assessment of breastfeeding; 4) percentage of neonatal weight loss.

Although breastfeeding is the natural norm, it needs to be trained and facilitated through appropriate environmental stimuli also in healthy term infants with a competent mother. Helping mothers to breastfeed implies the ability to assess how good the



**Figure 1.** Flow chart on the management of neonatal weight loss (modified from Davanzo R et al., 2013 [18]).

latch to the breast is, as it is related to the success of breastfeeding [15]. An accurate feeding assessment of infant position and latch on at the breast represents an essential task of health professionals, also because it allows to determine the neurobehavioral maturation of the neonate, anticipates a proper breast milk intake and provides information on maternal autonomy in the management of breastfeeding, which are factors to be considered for hospital discharge after childbirth.

Science and clinical experience in breastfeeding demonstrates that correct infant position and latch on at the breast are crucial factors for copious milk transfer and adequate growth, particularly during the first weeks of life [16]. Close attention to these factors by health care workers assisting the new mother in these early days/weeks may prevent or resolve many of the breastfeeding problems (breast engorgement, nipple fissures, mastitis, poor growth, etc.) that arise in the first months after childbirth.

In their everyday practice maternity health professionals need reliable, reproducible tools to assess the effectiveness of breastfeed in healthy newborns and to identify the mother-infant pairs in need of extra help and follow-up. In our Maternity Hospital all breastfeeding mother-infant pairs are evaluated primarily by nurses using the LATCH score in order to promptly recognize and correct ineffective breastfeeding (**Tab. 3**) [15, 17]. A delayed onset of lactation, defined as > 72 hours after delivery, is a

well known risk factor for excessive weight loss, and should also be recognized and treated.

During hospital stay, all newborn infants are weighed at least once daily [18]. Double weight assessment, before and after a breast milk, in order to derive the amount of breast milk ingested, is very rarely applied. If neonatal weight loss is  $\geq 8\%$ , special support during breastfeeds is given to both mother and her/his baby. We use a neonatal weight loss  $> 8\%$  and especially  $> 10\%$  as an indicator of possible hypernatremic dehydration [13]. Consequently, serum sodium concentration is measured in newborn infants with 1) a weight loss  $\geq 10\%$  and 2) a weight loss between 8 and 10% with either clinical signs of dehydration or “unconvincing” appearance. Such infants are given at least some expressed breast milk and/or formula and weight is reassessed after 12 hours.

**Table 3.** LATCH Score. A numerical score (0, 1, or 2) is assigned to five key components of breastfeeding. Each letter of the acronym LATCH denotes an area of assessment.

- “L” is for how well the infant latches onto the breast
- “A” is for the amount of audible swallowing
- “T” is for the mother’s type of nipple
- “C” is for the level of comfort of mother’s breasts/nipples
- “H” is for help needed to hold baby to breast

Healthy newborns are routinely discharged from hospital at a postnatal age  $\geq 36$  hours. Babies with a neonatal weight loss  $> 10\%$  are not considered for discharge. A post-discharge weight check is scheduled 24-72 hours after discharge depending on: a) percentage of in-hospital weight loss, b) need for jaundice assessment, c) uncertainty on breastfeeding.

Using an *ad hoc* neonatal weight loss protocol, we experienced a low rate of weight loss  $> 10\%$  (6%), few episodes of hypernatremia before discharge (0.2%), few readmissions due to hypernatremia (0.3%) [18].

Our low percentage of excessive weight loss before hospital discharge may be due to the use of a neonatal weight loss protocol, which implies daily weight monitoring, early detection of newborn feeding problems, extra breastfeeding support if needed, prompt intervention and, eventually, selected supplementation of formula.

## Conclusion

A successful promotion of breastfeeding requires effective interventions on the part of health professionals. In principle, health professionals need to improve their knowledge on lactation, to acquire better skills to manage breastfeeding problems, to commit themselves to prepare evidence based breastfeeding protocols.

Finally, we must recognize that all these efforts will be more productive if coupled with the development of an improved attitude towards the value of breastfeeding.

## Declaration of interest

The Authors declare that there is no conflict of interest.

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