

# Utilizing a Risk Factor Approach to Identify Potential Breastfeeding Problems

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Promoting successful breastfeeding presents as an opportunity for pediatric providers to positively influence breastfeeding. Although pediatric providers recognize breastmilk as the optimal nutrition for infants, many perceive they lack the skill to provide a lactation assessment or do not consider it part of their role.<sup>1</sup> This is a barrier to providing comprehensive care to the breastfeeding dyad and may ultimately lead the mother to premature cessation of breastfeeding.

Utilizing a targeted risk factor approach, which incorporates obtaining a history and performing a physical examination, can be useful to identify actual or potential lactation problem. When a mother presents with a breastfeeding concern or the infant has feeding problem, the pediatric provider can review the risk factors and provide care based on their level of expertise or refer the mother to a lactation consultant. Lactation problems that are not addressed promptly can be irreversible due to decreasing milk supply and/or maternal frustration. By utilizing the risk factor approach, potential problems can be identified during the routine history and physical examination during an office visit. It is suggested that providers who are seeing patients who are being breastfed review these risk factors as part of their chart review, history taking, and physical examination of the patient. If there are any concerns regarding the breastfeeding process or nutritional status of the infant, incorporation of the risk factor approach can guide timely treatment and referral.

Risk factors for potential lactation problems are divided into 4 categories related to (1) maternal history, (2) infant history, (3) maternal physical examination findings, and/or (4) infant physical examination findings. The more risk factors present, the more likelihood lactation problems will arise. When risk factors are recognized and utilized in conjunction with individual concerns identified in the office visit, education and interventions can be initiated to promote successful breastfeeding. A pediatric provider may see a mother during her pregnancy for a prenatal “chat” as parents decide on their pediatric

practice. The pediatric provider may perform a hospital admission or discharge visit of a newborn following birth. Any history or physical problem(s) identified prior to delivery or during the hospital stay can be discussed with the mother and family. This gives the mother the opportunity to obtain lactation support to promote breastfeeding prior to delivery or following delivery prior to discharge.

## Risk Factors Related to the Maternal History (Table 1)

Maternal history risk factors can be divided into 2 categories.

### Category 1: Maternal History Risk Factors

These risk factors are not easily modified by the mother and include (1) parity, advanced maternal age (35 years and older); (2) prior breastfeeding experience and degree of success; (3) history of breast surgery; (4) lack of breast enlargement in the third trimester of pregnancy; (5) infertility and subsequent intervention/treatment received; (6) maternal health problems such as breast cancer and treatment, HIV, active tuberculosis, depression,<sup>2</sup> endocrine disorders (thyroid, diabetes), hypertension, obesity, malnutrition, and anemia prior to or after delivery; and (7) delivery-related events including type of delivery (spontaneous vaginal delivery, cesarean section), excessive blood loss during delivery, or retained placenta fragments.<sup>3</sup> Any of the aforementioned risk factors either alone or in combination have the potential to significantly decrease milk supply either initially or over time. Risk factors such as breast cancer and treatment, HIV, active tuberculosis and illicit

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**Table 1.** Maternal History Risk Factors.

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| Cannot be altered or easily altered by the mother  |
| Parity   |
| Advanced maternal age (35 years and older)   |
| Prior breastfeeding experience and degree of success   |
| A history of breast surgery (reduction/augmentation) and reason for surgery and date of surgery  |
| Lack of breast enlargement during the third trimester of pregnancy   |
| Infertility and subsequent intervention/treatment  |
| Maternal health problems such as breast cancer and treatment, HIV, active tuberculosis, depression, endocrine disorder (thyroid, diabetes) hypertension, obesity, malnutrition, positive TORCH and anemia prior to or after delivery |
| Delivery related, including type of delivery, spontaneous vaginal delivery, cesarean section, excessive blood loss during delivery, or retained placenta fragments   |
| May be altered by the mother   |
| Attendance at a prenatal breastfeeding class   |
| Minimal social support (related to breastfeeding experience or cultural beliefs)   |
| Exposure or current interpersonal violence or other home stressors   |
| Late or lack of prenatal care  |
| Pain management during labor such as epidural, medicated versus unmedicated delivery   |
| Medication received intrapartum and postpartum   |
| Use of oral contraceptive pill/hormonal birth control postpartum and when initiated  |
| Substance use: tobacco, alcohol, other ingested or intravenous substance use, and positive toxicology screen for substances.   |
| Plan to return to work within 6 months postpartum  |

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substance use may be considered contraindications for breastfeeding according to the American Academy of Pediatrics.<sup>4</sup> The maternal risk factor of a cesarean section delivery increases the risk for delayed lactogenesis by 1 to 3 days depending on the presence of other risk factors.<sup>3</sup>

### Category 2: Maternal History Risk Factors

These risk factors may be modified by the mother and include (1) lack of prenatal breastfeeding education; (2) social support factors (related to breastfeeding experience or cultural beliefs); (3) history of interpersonal violence or other home stressors; (4) late or lack of prenatal care; (5) pain management during labor such as epidural, medicated versus unmedicated delivery, and medication received intrapartum and postpartum<sup>3</sup>; (6) use of hormonal contraception postpartum and when initiated<sup>5</sup>; (7) ingested or intravenous substance use, positive toxicology screen for substances<sup>6</sup>; and (8) plan to return to work within 6 months postpartum (Abdulwadud & Snow, 2012).<sup>7</sup> The desire to have an unmediated delivery has become more prevalent, which has been shown to improve outcomes for successful latching in the first 24 hours.<sup>8</sup> Decreasing risk factors can be influenced by knowledge the mother may obtain at a prenatal or breastfeeding class, education by the obstetrical provider, and the use of a doula at the time of delivery. Returning to work within 6 months postpartum may be a financial and/or a personal choice. If the mother desires to exclusively breastfeed for 6 months and continue breastfeeding and offering complimentary feedings until the infant is 12 months of age, outcomes are improved if the

mother has a plan to combine returning to work with breastfeeding. Although modification of these noted risk factors is ultimately the mother's choice in conjunction with her obstetrical provider, it is important that she make an informed decision.

### Risk Factors Related to Infant History (Table 2)

#### Infant History Risk Factors

Infant history risk factors stem from maternal factors. As with maternal risk factors, the combination of infant risk factors is cumulative and can decrease the infant's ability to successfully latch and transfer milk. Unless the mother is instructed on a breastfeeding individual plan of care, the presence of infant history risk factors may lead to a decrease in milk production (due to inadequate milk transfer) and subsequent weight loss for the infant. Weight loss in the infant often results in the pediatric provider recommending formula supplementation. The use of formula supplementation, without an individualized breastfeeding plan of care, leads to a further decrease in milk production.

### Risk Factors Related to Maternal Physical Examination Findings (Table 3)

#### Maternal Physical Findings Risk Factors

Maternal physical risk factors may stem from the result of the maternal history risk factors, such as scar tissue

**Table 2.** Infant History Risk Factors.

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| Maternal anesthesia used during labor  |
| Length of the labor especially during late labor and pushing 2 hours or longer   |
| Delivery related including type of delivery, spontaneous vaginal delivery  |
| Use of vacuum or forceps during delivery   |
| Suctioning at birth and type of suctioning (bulb vs catheter)  |
| Meconium aspiration  |
| Apgar at 1 minute and 5 minutes less than 7  |
| Skin to skin provided immediately after birth or delayed   |
| Prematurity—late preterm (34 to 36 6/7 weeks) or preterm (<34 weeks)   |
| Neonatal intensive care following delivery, which results in neonatal distress and separation of mother-infant dyad                                      |
| Multiple births  |
| Infant at risk for hypoglycemia and following glucose protocol—small for gestational age, large for gestational age, late preterm, and maternal diabetes |
| Use of pacifier in the first 2 weeks of life   |
| Formula supplementation in a mother who desires to exclusively breastfeed  |
| Output (voids and stools) less than expected for newborn at days 1 through 7   |
| Circumcision performed for male infants  |
| Neonatal jaundice  |
| Weight loss from birth weight exceeds expected norms   |

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**Table 3.** Maternal Physical Findings Risk Factors.

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| Abnormal breast tissue distribution (tubular breasts)   |
| Evidence of breast surgeries (reduction/augmentation, mastectomy) as physical finding of scar tissue      |
| Nipple evidence of trauma—scab formation, cracked skin, and bleeding (diagnosis of nipple infection)      |
| Nipple shape (short, large), inverted nipples, and nipple piercing  |
| Breast engorgement due to overproduction and/or edema which could be from maternal IV fluids during labor |
| Nipple vasospasm  |
| Mastitis  |
| Milk duct obstruction, which may result in bleb   |
| Maternal pain from delivery, breastfeeding, or other source   |
| Obesity   |
| Positioning of infant and/or improperly latching  |

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formation from breast surgery. A mother may have a breast augmentation due to mammary gland insufficiency often referred to as tubular or hypoplastic breasts. Mammary gland insufficiency cannot be corrected with breast augmentation. Although the breasts may appear normal, breast-milk production may be reduced. Therefore, inquiring about the reason for breast surgery is important to identify any underlying risk factors. Maternal physical risk factors may also stem from infant risk factors such as nipple trauma and pain due to a poor latch. The development of mastitis,<sup>9</sup> milk blebs, and engorgement may be due to poor milk transfer.<sup>10</sup> A nipple that is small and/or inverted may provide less palate stimulation and result in an initial poor latch. A nipple that is large, especially if the infant is small, may result in an initial poor latch. Improper positioning and nipple vasospasm (poor blood flow to the nipple) may result in nipple pain or less frequent feeding of the newborn. Pain from delivery (especially cesarean section and extensive

episiotomy repair) may result in less frequent feeding of the newborn.<sup>8</sup> Maternal obesity and engorgement may also interfere with the mother's ability to latch her infant, and obesity is a risk factor for decreased milk production.<sup>10</sup>

### **Risk Factors Related to Infant Physical Examination Findings (Table 4)**

#### *Infant Physical Findings Risk Factors*

Infant physical risk factors may be long-term or short-term. Long-term risk factors include facial and/or congenital abnormalities and prematurity.<sup>11,12</sup> The mother can be educated and provided support regarding the option of providing expressed breastmilk to her infant. Infants who have medical problems derive benefits from receiving breastmilk that may optimize their growth and development.

**Table 4.** Infant Physical Findings Risk Factors.

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| Oral facial abnormalities, such as cleft lip  |
| Palate abnormalities, such as cleft palate  |
| Congenital anomaly that may affect feeding such as cardiac defect or genetic anomalies/condition (in particular, facial anomalies)                    |
| Tongue tied (anterior, posterior—ankyloglossia)   |
| Lip tie (labial frenulum)   |
| Prematurity—late preterm (34 to 36 6/7 weeks) or preterm (<34 weeks)  |
| Sucking uncoordinated due to gestational age or physical abnormality  |
| Infant difficult to arouse due to gestational age, jaundice, and illness  |
| Infant exposed to substance use in utero and subsequent NAS   |
| Sepsis or rule out sepsis   |
| Infant hypoglycemia and following glucose protocol—small for gestational age, large for gestational age, late preterm, maternal diabetes, and illness |
| Large for gestational age/small for gestation age   |
| Neonatal jaundice   |
| Caput/cephalohematoma (from trauma during delivery)   |

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Infants with short-term physical risk factors such as neonatal jaundice<sup>13</sup> caput or cephalohematoma, sepsis (which may include separation from the mother) often require expressed breastmilk to be provided to the infant until the problem resolves. Infants with hypoglycemia,<sup>14</sup> those small for gestational age, large for gestational age, or the late preterm may also require expressed breastmilk on a short-term basis.<sup>15</sup> Infants born with ankyloglossia or a labial frenulum that interfere with latching and milk transfer require identification, evaluation, and probable medical intervention to effectively breastfeed.<sup>16</sup> Education regarding the expected course of the problem, the benefits of providing expressed breastmilk to the infant, and an individualized breastfeeding plan provide the best outcome for breastfeeding success.

## Conclusion

One or more maternal and/or infant risk factors are present when breastfeeding problems arise. Utilizing an organized approach to obtain a comprehensive lactation assessment during the hospital or office visit of a newborn can identify potential lactation problems to promote early intervention and referral. Pediatric providers who are knowledgeable of these risk factors while conducting a visit of the newborn or infant can assist mothers to achieve their breastfeeding goal through education, intervention, and referral. References from the Academy of Breastfeeding Medicine support the risk factors identified and provide a source of further information for the reader. Tables of each risk factor category provide an easy reference to use in the office setting.

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