

PROTOCOL OF SUCKING SKILLS OF NURSING INFANT

*Nehring-Gugulska M, Żukowska-Rubik M, Stobnicka-Stolarska P (The Centre for Lactation Science) Paradowska B (Association of Castillo Morales Method Therapists)
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Breastfeeding is the optimal way of feeding for the health and development of newborns, infants and young children. The proper course of breastfeeding is influenced by maternal and infant factors. Sucking skills and effective milk removal are key factors for the process of natural feeding. Detailed assessment of oral structures and function, latching and sucking skills, effectiveness of milk removal, mother's and newborn's position during breastfeeding and the analysis of diurnal indicators of effective breastfeeding allow for early diagnosis of any problems and the initiation of appropriate intervention. This protocol was developed in cooperation with physicians with IBCLC certification and speech therapists specializing in early intervention. This is a tool that may be useful in many different clinical situations.

The assessment tool presented here can be useful for:

1. assessment of sucking skills of nursing infants in the early days in maternity wards
2. assessment of sucking skills of nursing infants after discharge in first days/weeks
3. practice training of lactation consultants and speech therapists and all health practitioners working with mothers and nursing infants,
4. research in human lactation

The usefulness of the protocol was assessed in our study (2015-2017). 100% users confirmed usefulness of the tool in their daily practice. The research allows to find some abnormalities in the period when appropriate intervention can stimulate mothers' lactation.

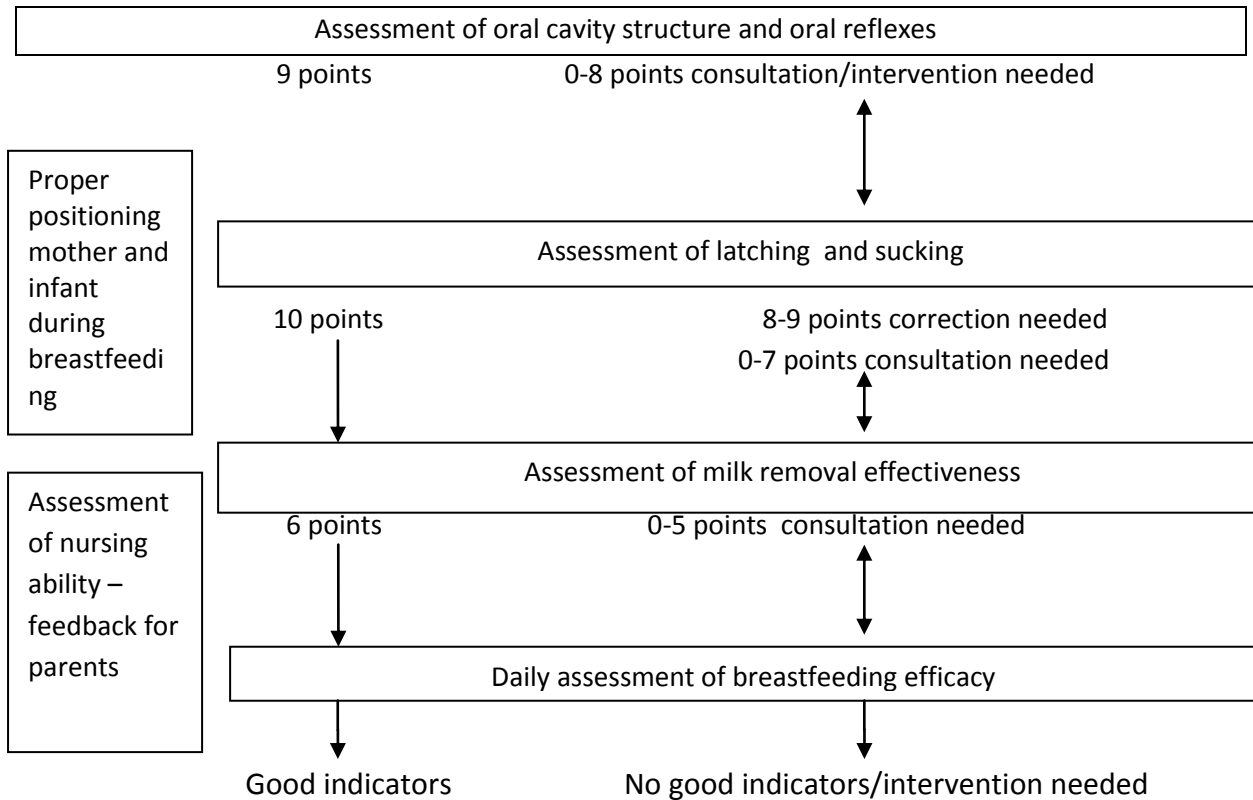
NOTE: This protocol can be use in the assessment of newborns between 37 and 42 weeks gestational age or premature infants, who achieved 37 weeks gestational age, in first days/weeks of lactation. For assessment of premature infants we propose using additional tools created for such infants because the assessment with our tool can be not sufficient.

The protocol of sucking skills of nursing infants includes 6 parts as below:

1. Assessment of the oral cavity structure and oral reflexes (table 1)
2. Assessment of latching and sucking (table 2)
3. Assessment of effectiveness of milk removal (table 3)
4. Daily assessment of breastfeeding efficacy (table 4)
5. Proper positioning mother and newborn during breastfeeding (table 5)
6. Assessment of nursing ability – feedback for parents (table 6)

The protocol should be used according the algorithm and time frame which are presented below:

ALGORITHM OF THE PROTOCOL USE:



RECOMMENDED TIME FRAME FOR THE PROTOCOL USE

| | | |
|-------------------|---|---|
| First assessment | 1 | First 12 h after delivery |
| | 2 | Between 2nd day and discharge |
| | 3 | Between 2nd day and discharge, optimally after the start of lactogenesis II |
| | 4 | After birth and 1-2 times a day at hospital |
| | 5 | 1-2 times a day at hospital |
| | 6 | After collecting data give parents information before discharge |
| Second assessment | 1 | In the following days if the result of first assessment is 0 - 8 points |
| | 2 | 3-5 days after intervention if 0-7 points scored in first assessment |
| | 3 | 3-5 days after intervention if 0-5 points scored in first assessment |
| | 4 | Repeated at every visit with the mother until the desired effect is achieved |
| | 5 | 3-5 days after discharge, every 3-5 days if there are breastfeeding problems or every few weeks if no abnormalities were observed |
| | 6 | After collection of data give updated feedback |

If during the second assessment the infant does not achieve the required score the situation requires specialized care (lactation consultant, speech therapist, doctor). Subsequent assessment to be carried out according to the needs.

Table 1. Assessment of oral cavity structure and oral reflexes

| Element assessed | <i>For correct 1 point, for incorrect 0</i> | Score | <i>If incorrect Underline as applicable</i> | Action/treatment (if 0 points) |
|--|---|---|--|---|
| lips | Correct tone, closed/sealed | | Flaccid, open Tense, clenched | Lactation consultant/ Early intervention speech therapist consultation |
| cheeks | Well developed fat pads | | Underdeveloped fat pads | Lactation consultant/ Early intervention speech therapist consultation |
| jaw | Physiologically withdrawn | | Excessively withdrawn retrognathia | Lactation consultant/ Early intervention speech therapist consultation |
| tongue | High, physiological position | | withdrawn flaccid, extended flat | Lactation consultant/ Early intervention speech therapist consultation |
| Hard palate | correct | | high gothic | Lactation consultant/ Early intervention speech therapist consultation |
| frenulum | correct | | Short, but flexible Short, anterior type Short, posterior type | Further observation frenulotomy neonatologist/pediatrician frenulotomy (ENT specialist/dental surgeon) |
| Reflexes: | | | | |
| rooting | correct | | weak absent | Further observation neurologist |
| sucking | correct | | weak absent | Further observation neurologist |
| biting | correct | | excessive | Early intervention speech therapist consultation |
| | Total score | | | |
| If 9 points Normal oral cavity structure and reflexes. | | If 0-8 points Abnormalities in oral cavity structure and function requiring further intervention. | | |

| Table 2. Assessment of latching and sucking | | | |
|--|---|--------------|--|
| Element assessed | Correct | Score | Incorrect |
| | <i>for correct element 1 point</i> | | <i>for incorrect 0 points</i> |
| Assessed before the nipple is grasped | | | |
| Preparation for latching on – after touching infant’s philtrum with a nipple | Wide opening of mouth, tongue extension | | Mouth not wide open, attempts to suck in the nipple, shutting of mouth |
| Assessed after the latching on the breast | | | |
| Angle between lips | Obtuse, over 130° | | Straight, acute Less than 130 ° |
| lips | Lower flanged out, upper slightly averted | | One or both lips sucked in |
| Nose and chin | Tip of the nose close to breast, chin touching breast | | Nose and chin do not touch the breast |
| cheeks | Not collapsing or dimpled | | Collapsing or dimpled |
| Depth of latch | Mouth covers large part of areola (1,5 - 2 cm from the base of the nipple) | | Mouth covers small part of areola or only nipple |
| Position of areola | Lower lip covers larger part of areola than the upper lip | | Upper lip covers larger part of areola than the lower lip |
| Clicking sound | absent | | present |
| Mother’s feeling | Nursing not painful for the mother Discomfort only at the beginning of feeding | | Nursing painful throughout feeding |
| After feeding | | | |
| Nipple shape | Nipple round | | Nipple flat, “pinched” |
| Total points | | | Recommendations |
| Correct latching and sucking | | 10 | Assessment of milk removal effectiveness (tab. 3) |
| Latching or sucking requires slight correction | | 8 - 9 | Correction of latching or sucking |
| Incorrect latching and sucking | | 0 - 7 | Lactation consultant/ Early intervention speech therapist consultation |

| Table 3. Assessment of effectiveness of milk removal | | | | |
|--|--|--------------|---|--|
| Element assessed | Correct <i>For correct element 1 point</i> | Score | Incorrect <i>For incorrect 0 points</i> <i>Underline</i> | |
| Assessed before milk ejection | | | | |
| Sucking | Fast, about 2/sek (1-2 day irregular) | | lazy | |
| | | | absent | |
| Assessed during milk ejection | | | | |
| Sucking | present deep, 1/sec slower than before milk ejection (change of rhythm!) | | Shallow, biting | |
| | | | Still fast (no change of rhythm) | |
| Sucking bursts (the sequence of sucks) | long (10-30 sucks per burst) | | short | |
| | | | (less than 10 sucks per burst) | |
| Sucking rhythm | Rhythmic, regular (30-60/min), with short breaks between sucking bursts (3-5 sec) | | irregular, slow, with long breaks between sucking bursts | |
| Swallowing | Present Regular Suck per swallow ratio 1:1; 2:1, 3:1 | | Absent Irregular Suck per swallow ratio > or = 4 | |
| Length of feeding |minutes of sucking (On average 15 minutes from one breast, 30 min from both breasts, minimum 10 minutes from one) | |minutes of sucking (Less than 10 minutes from one breast) | |
| Total points | | | Recommendations | |
| Infant effectively nursed from breast during assessed breastfeeding act | | 6 | Daily assessment of breastfeeding efficacy (Tables 5) | |
| Features of ineffective nursing observed | | 0 - 5 | Lactation consultant consultation | |

Table 4. Proper positioning of mother and infant during breastfeeding

| Table 4. Proper positioning of mother and infant during breastfeeding | | | |
|--|--|-----------------------|--|
| Mother's position | | Tick | If not well chosen, suggest change. |
| | Sitting, cradle hold | | |
| | Sitting, cross-cradle hold | | |
| | Sitting, football hold | | |
| | Side -lying | | |
| | Lying supine, lateral prone | | |
| | Natural (australian) | | |
| | | IF Yes, tick ✓ | IF NO, THEN: |
| Mother's position | Back and feet supported | | Encourage back and feet support |
| | Forearms supported (eg. with pillows) | | Encourage support, offer pillows |
| | Mother is comfortable | | Encourage to find comfortable position |
| | | | |
| Supporting breast | Fingers not on areola | | Suggest placing fingers away from areola |
| | Support the breast with C – hold or U – hold, nipple directed up, hand does not squeeze breast | | Show correct way of support the breast and offering the nipple |
| | Mother is latching on the breast when infant's mouth is wide open, does not push nipple in | | Advise mother to encourage the infant open his mouth wide before latching on the breast |
| Infant's position | Head and body in one line Infant close to mother Infant's body well supported Nose opposite to the nipple | | Suggest correcting infant's position to include all elements |
| | Head slightly flexed back | | |
| Mother's manner of latching on | skillful insecure nervous | | If mother has a problem with proper latching on the baby to the breast, suggest practice with a lactation consultant |

Table 5. Daily assessment of breastfeeding efficacy

| Question to mother | Mother's answer | Correct answer | What if incorrect? |
|---|-----------------|---|---|
| How often does the baby nurse during a day (24 hours)? | | 8-12 times | Increase number of feeds, if below 8 If over 12 – control position and nursing ability |
| Do you breastfeed at night? | | Yes, 1-2 time | At least 1 feed a night, mother should wake him up to nurse |
| How many stools a day (24 hours) does the infant pass (up to 6 week)? | | 3-4 mushy stools | Check infant's body weight |
| How many diapers does infant wet in the day (24 hours) (from 3 day to 6 week)? | | 6-8 wet diapers | Check infant's body weight |
| How many grams a day does infant gain on average, from the lowest weight to the last measurement? | | 26-31 grams/day (between 0-3 months) Check on WHO growth charts (differences based on percentiles) | If weight gain is slower than average – individually chosen intervention: - correct position and latching on - increase number of feeds (day and night) - offer both breast at each feeding - monitor feeding effectiveness - stimulate lactation by pumping - consider supplementary feeds Intervention should be conducted by a lactation consultant |

Table 6. Assessment of nursing ability – feedback for parents

Infant’s name: Date

Infant’s age(days) (weeks) (months)

| | | | |
|---|---|---|--|
| Oral cavity structure and reflexes | 9 points | points | |
| | Correct oral cavity structure and correct oral reflexes | <u>Interpretation:</u> 0 - 8 points incorrect oral cavity structure and function | <u>Recommendations:</u> <input type="checkbox"/> lactation consultant advice <input type="checkbox"/> speech-therapist advice <input type="checkbox"/> neurologist advice <input type="checkbox"/> If short frenulum - frenulotomy |
| Latching and sucking | 10 points | points | |
| | Correct attachment and sucking | <u>Interpretation:</u> 8-9 points Grasping or sucking requires some correction | <u>Recommendations:</u> <input type="checkbox"/> correction of latching and nursing <input type="checkbox"/> lactation consultant advice |
| | | 0-7 points incorrect latching and nursing | <input type="checkbox"/> lactation consultant advice <input type="checkbox"/> neuro speech-therapist advice |
| Nursing effectiveness | 6 points | points | |
| | Infant nursed effectively during observed feeding | <u>Interpretation:</u> 0-5 points ineffective sucking | <u>Recommendations:</u> <input type="checkbox"/> lactation consultant advice |
| Assessed by: | | Date of next assessment: | |

..... **CAN NURSE WELL**
 (Infant’s name)

..... **NEEDS TIME TO LEARN TO NURSE WELL**
 (Infant’s name)