

The 9 Instinctive Stages



Based on the research of Ann-Marie Widstrom, a Swedish researcher on skin-to skin contact between mother and baby. There are nine observable newborn stages that occur in the first hour or two after birth when a baby is placed *immediately* skin to skin with his mother. These are innate and instinctive to the baby. Within each of these stages, there are a variety of actions the baby may demonstrate. The baby may do one, some, or all of these actions.

The evidence supporting the practice of skin-to-skin contact after birth is robust, indicating multiple benefits for both mother and baby.

Advantages for the mother include

- ♥ earlier expulsion of the placenta,
- ♥ increased breastfeeding self-efficacy
- ♥ reduced bleeding,
- ♥ lowered maternal stress levels.

It has been suggested that the rise in the mother's oxytocin (love hormone) during the first hour after birth is related to the establishment of mother-infant bonding.

Advantages for the baby include

- ♥ a decrease of the negative consequences of the 'stress of being born',
- ♥ more optimal thermoregulation, continuing even in the first days
- ♥ less crying.

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Skin-to-skin contact has been shown to increase breastfeeding initiation and exclusive breastfeeding while reducing formula supplementation in hospital, leading to an earlier successful first breastfeed, as well as more optimal suckling. During this first hour after childbirth, both mother and newborn infant experience a special and unique time, a sensitive period, which has been biologically predetermined, especially after vaginal birth. This is aided by the physiological state of each: the mother's high oxytocin levels and newborn infant's extremely high catecholamine (stress hormone) levels.

Being in skin-to-skin contact with the mother after birth elicits the newborn infant's internal process to go through what could be called *9 instinctive stages*. This process is suggested to contribute to an early coordination of the infant's five senses: sight, hearing, touch, taste and smell, as well as movement.

The mother is attracted to the infant's smell, facilitating a chemical communication between the two. This highlights the importance of a new mother's access to her newborn infant's bare head to smell her baby.

The newborn infant has high levels of catecholamine immediately after a normal, vaginal birth. These are highest closest to the time of birth, especially for the first thirty minutes.

Catecholamines strengthen memory and learning. The odour of the mother's colostrum increases the amount of oxygenated haemoglobin over the olfactory cortex. In addition, the closer to birth, the more oxygenated haemoglobin was observed over the olfactory cortex (part of the brain that deals with smell). This increased sensitivity for the odour of breastmilk, especially soon after the birth, indicates a physiologically based early sensitive period in the newborn infant. This reaction matches the mother's biologically based enhancements of the breast odour through the increase of the surface of the areola and Montgomery gland secretions during the corresponding time. Thus, the increased early sensitivity for the odour of breastmilk, in the presence of high levels of catecholamine which strengthens this memory, is indication of a physiologically based early sensitive period in the newborn infant.

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Stage 1 - The Birth Cry

This distinctive cry occurs immediately after birth as the baby's lungs expand for the first time as the newborn infant transitions to breathing, and other survival instincts. These behaviours could include the moro reflex, grimacing, coughing, lifting the full body from the mother's tummy, abruptly opening the eyes and tension in the body. The baby's motions during the birth cry stage emanates from the drive to survive.

During this extremely alert period, the newborn infant is able to make defensive movements with the hands to protect their airway, for example against a suction catheter. The initial birth cry, and the subsequent crying during the first minutes after the birth, has the effect of clearing the airways of the amniotic fluid. In addition, extremely high catecholamine levels at birth help in absorbing liquid from the airways.

Standard practice includes drying the baby's head and body with a clean, dry towel to help maintain body temperature. The baby's face should initially be turned to the side, which facilitates free airways and monitoring of the baby's breathing. After settling in the skin-to-skin position with the mother, the baby's body should be covered with a dry towel, leaving the face uncovered.

Placement of the newborn infant skin-to-skin increases uterine contraction immediately after birth, increases the completeness of the delivered placenta and decreases excessive blood loss. Skin-to-skin also significantly decreases the duration of the third stage of labour.

Safe interactive Skin-to-Skin contact in the first hour after birth

1. Make sure that the mother is in a comfortable semi-reclined position with support under her arms
2. After drying the newborn infant, lift the newborn infant gently to avoid compression of the thorax when placing the baby skin-to-skin. Put the baby on his tummy, in a lengthwise position with the head on the mother's chest above the breast.
3. Cover the baby with a dry blanket/towel. Leave the face visible.
4. Make sure that the nose and mouth are not enveloped by the mother's breast or body or obscured by the blanket. Initially, the baby's head should be turned to the side.



5. The newborn infant must have the opportunity to use its reflexes to lift the head so the nose and mouth can be free. This is of special concern if the mother has large and/or very soft breasts.
6. The nipple must be accessible to the newborn infant. For some mothers, this may require positioning a towel or pillow under or on the side of the mother's breast.
7. Support the breast to secure free airways especially during the time the baby starts searching for the breast.
8. Parents to focus on the newborn infant and follow the newborn infant's early behaviour, making sure that the parents follow the 9 stages. The other parent should be observant, not distracted by mobile phones, etc., during skin-to-skin.
9. Extra attention may be required if the mother is affected by sedation after childbirth as well as during possibly postpartum suturing. The other parent should be aware of the situation and watch for the safety of the infant.

Stage 2 - Relaxation

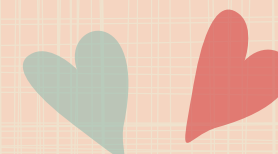
The newborn's hands are relaxed. The baby is skin to skin with the mother. During the relaxation stage, the newborn infant is still and quiet, making no movements. It is not possible to elicit a rooting reflex during the relaxation stage. The baby's sensory system seems to be depressed.

When lying quietly on the mother's chest, the baby can hear the mother's heartbeat. This familiar sound from in utero seems to comfort the newborn infant after the rapid transition to extra-uterine life.

It is suggested that the pressure on the head through the birth canal is the cause of extremely high catecholamine levels after birth, a level 20 times higher than that of a resting adult. This high catecholamine concentration might partly be the cause of the higher pain threshold in the baby close to birth and be a mirror of nature's way to relieve pain in the baby when passing through the birth canal. Consequently, the baby's temporarily impaired sensation at birth causes the relaxation stage – the baby has decreased sensitivity to the surroundings.

Babies do NOT need to be rubbed or massaged in a disruptive and vigorous manner, repositioning or lifting the baby from the mother. If, during the relaxation stage, the newborn infant is disturbed by the actions of the staff, the baby will react with crying, grimacing and protective reflexes.

It is possible to conduct the assessment of the APGAR score, as well as any other necessary assessments, on a healthy full-term newborn infant without disturbing the infant, allowing skin-to-skin to continue uninterrupted. It is more effective and advantageous to assess the newborn infant when skin-to-skin with mother since babies are less likely to cry; they are more likely to remain warm and not waste energy.



If administration of vitamin K injection is a routine, this should occur soon after birth while the catecholamine levels are highest, preferably with the newborn infant skin-to-skin with the mother, as skin-to-skin contact has been shown to lower the baby's reaction to pain in the postpartum.

Stage 3 - Awakening

The awakening stage is a transition from the relaxation stage to the activity stage.

The newborn exhibits small thrusts of movement in the head and shoulders. Occurs about 3 minutes after birth. His eyes will probably be open. The baby makes small motions. Small movements of the head, face and shoulders gently ripple down through the arms to the fingers. The baby makes small mouth movements. They will gradually open their eyes during this stage, blinking repeatedly until the eyes are stable and focused.

Stage 4 - Activity

The newborn begins to make increased mouthing and sucking movements as the rooting reflex becomes more obvious. This stage begins about 8 minutes after birth

The newborn

- ♥ has more stable eye movements
- ♥ looks at the breast, then at mom and back to the breast
- ♥ increased mouthing and suckling movements
- ♥ moves his hand to the mouth
- ♥ protrudes the tongue
- ♥ looks at his mother
- ♥ massages the breast with one or both hands

During the activity stage, the baby exhibits a greater range of motion throughout the head, body, arms and hands. The limbs move with greater determination; the baby may root and lift the head from the mother's chest. The fingers often begin the stage as fisted but may expand to massage, transfer tastes with a hand-to-nipple-to-mouth movement, catch the nipple and explore the mother's chest. Rooting also becomes more obvious during this stage.

The successive protrusion of the tongue continues throughout this stage. At the beginning of this stage, the newborn infant may have only moved the tongue within the mouth.

During the activity stage, the baby will bring the tongue to the edge of the lips, then protrude beyond the lips, then protrude repeatedly beyond the lips. These tongue exercises, which may pave the way for later tongue behaviours, specifically suckling, can be affected by medications, such as pethidine.

During pregnancy, the nipple has become more pigmented and is easy for the newborn infant to discover. We have observed that soon after birth, the areola expands and takes a bulb-like shape. The Montgomery glands also become more pronounced. The scent of areolar secretions

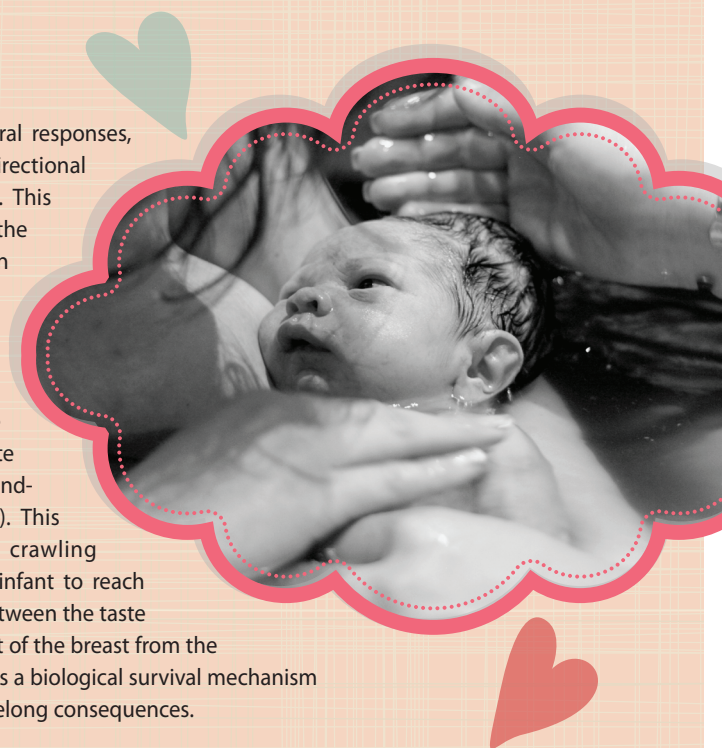
has been linked to behavioural responses, such as head turning and directional crawling in newborn infants. This release of the breast odour by the Montgomery glands is known to help the newborn infant find the nipple. The newborn infant recognises the scent of the mother's breast from the amniotic fluid, touches the breast and transmits the taste of the breast to the mouth (hand-to-breast-mouth movements). This stimulates rooting and crawling movements in the newborn infant to reach the nipple. The connection between the taste of amniotic fluid and the scent of the breast from the Montgomery glands highlights a biological survival mechanism – a pathway of flavour with lifelong consequences.

The infant has learned to recognise the mother's voice during intrauterine life. The infant's learning and memory skills are quite sophisticated; the foetus can learn to recognise a vowel from the surrounding language and is some days after birth able to discriminate this vowel from a vowel from a foreign language.

After the newborn infant has located the nipple by sight, the mother's voice will attract the baby's attention to her face. Pupillary contagion (respond to pupil size with changes in one's own) is fundamental for social and emotional development. 'Immediately after birth the newborn's eyes become wide open, usually with large pupils'. When skin-to-skin with the mother after birth and free to safely move, the newborn infant searches for eye contact with the mother around half an hour after birth. Infant-maternal bonding through pupillary contagion may start early after birth as mothers often recall the first moment of eye-to-eye contact as unforgettable. The complex experiences of the newborn infant during the first hour encompass more than simply a journey to the breast; the opportunity for eye contact emphasises the importance of parents valuing instinctive behaviour during this time, and the avoidance of interruptions.

Stage 5 - Rest

At any point, the baby may rest. The baby may have periods of resting between periods of activity throughout the first hour or so after birth. This does NOT mean baby is disinterested in the breast and needs help latching. JUST let him rest. He will continue in his own time



Stage 6

Stage 6 - Crawling

The baby approaches the breast with short periods of action that result in reaching the breast and nipple. Begins about 35 minutes after birth. Can involve crawling, leaping, sliding or pushing, bulldozing or many other interesting names of ways to move from the position between the breasts to a position very close to the nipple. Sometimes this process is so subtle that parents are surprised to notice that the baby has made its way over to the breast. Other times, the baby may make strong and overt motions, collecting the attention of everyone in the room.

The newborn infant's innate stepping reflex becomes clear as the newborn infant crawls to the mother's breast. The movements of these steps of the feet over the mother's uterus may contribute to the contractions of the uterus, and the decreased time to expel the placenta and decreased blood loss during skin-to-skin.

During this process, it is important to protect the newborn infant's effort to reach the breast, with the intention not to lift or turn the baby's body. Placing a towel or pillow under the mother's arms is important during this stage, since the newborn infant will be travelling over to one side of the chest and therefore (in many settings) close to the edge of the bed.

This support can help the newborn infant to reach the nipple without becoming exhausted by unnecessary sliding in the wrong direction. It is also important for parents to be aware of the travelling process, since they may try to reorient the baby back to the middle of the chest, to keep the newborn infant from the edges of the bed. Support under the mother's arms may also allow the nipple to remain in an area easy for the baby to find and grasp. A mother might use her own palm to arrange the breast as well.



Stage 7

Stage 7 - Familiarization

The newborn becomes acquainted with the mother by licking the nipple and touching and massaging her breast. Begins around 45 minutes after birth and can last for 20 minutes or more.

Since the baby is prone on a semi-reclined mother, the alert newborn infant has the control over their experience, rather than being placed in a dependent position by the mother. To reach the breast, it must be possible for the baby to manoeuvre into an appropriate position. When approaching the breast the newborn infant performs specific soliciting calls to mother – a short clinging call that usually results in a gentle response from the mother. The frequency of these sounds increases as the newborn infant gets closer to the mother's nipple. The odours from the mother's breast are likely to be inducing this response. Parents respond to the newborn infant's soliciting.

During the familiarization stage, the baby becomes familiar with the breast by licking the nipple and areola. This period could last 20 minutes or more. The newborn infant massages the breast, which increases the mother's oxytocin levels and shapes the nipple by licking. During this stage, it is evident that the baby is smelling and tasting, and previous actions become more vigorous and more coordinated. Therefore, it is important not to interfere or introduce odours from unfamiliar hands.

The baby continues with tongue activity during this stage, now more overtly related to eventual breastfeeding, by licking above and below the nipple. The baby may make noises with the mouth and lips, like smacking sounds, during this stage. The breast and nipple are shaped by the massaging and licking actions of the newborn infant. The newborn infant is preparing the tongue, breast and nipple for the moment of attachment and suckling.

The actions of the tongue inform the staff of the newborn infant's coordination of the tongue with the rooting reflex, and the ability to move the tongue to the bottom of the mouth, curved and thin. The newborn infant needs to practice this coordination of the rooting-tongue reflex. Staff and parents should allow the baby the time needed to practice this coordination during this stage; the newborn infant is perfecting many important oral-motor functions. This learning is vital as the newborn infant initiates the suckling process.

There is often a resting stage between the familiarization stage and the suckling stage, which unfortunately can make parents and staff prone to (so-called) help the newborn infant to the breast. It is also common for the baby to attach, suck once or twice, and then disengage. The

newborn infant will be conducting a normal step of the familiarization stage, but it may look like the newborn infant is unable to attach. The baby must thus be allowed to do these moves to adjust into an instinctive position. This is conducive to the newborn infant's chin making an initial contact with the mother's breast as the baby endeavours to catch the nipple.

'Chin-first contact' is associated with sustained deep, rhythmical suckling. In a study of babies who had later been diagnosed with significant latch problems, the majority of mothers reported that the newborn infant had been forced to latch to his mother's breast. According to the mothers, the babies screamed, acted in a panicky way, exhibited avoidance behaviours and had other strong reactions against the forceful treatment. It has also been shown that mothers who had this type of so-called help have a more negative experience of the first breastfeeding and breastfeed for a shorter time. If infants with an aversive behaviour are allowed to peacefully go through the stages in skin-to-skin contact at a later time, they may successfully reach the nipple, attach to the nipple by themselves and start suckling. This could happen even weeks after birth if not possible earlier. This is a promising way to calmly solve breastfeeding problems.

Baby may

- ♥ Touch the mother's breast
- ♥ Mouth on his own hand
- ♥ Lick the breast
- ♥ Look at mom
- ♥ Make sounds to get moms attention
- ♥ Look at other people in the room

During all these stages, baby moves in a purposeful manner but without frustration or hurry. The challenge for those watching is to relax, leave the baby and the mother alone and marvel at the amazing drama unfolding as the baby finds the breast, latches and suckles without assistance or interference. Interestingly – the newborn's tongue is flat and high in the roof of the mouth, whereas just prior to self-attaching, the baby cups the tongue and drops it while opening the mouth wide for a deep and effective latch. When babies are rushed to the breast before all their senses are awakened and before their tongues are familiar enough with the nipple, latching is often unsuccessful and everyone is frustrated.

Stage 8 - Suckling

The newborn takes the nipple, self attaches and suckles. This early experience of learning to breastfeed usually begins about an hour after birth. The newborn infant attaches to the nipple during this stage and successfully breastfeeds. When babies self-attach, they are positioning the wide-open mouth appropriately on the areola and nipple, protecting against sore nipples. It is interesting to note that the hands, which have been so busy, often stop moving once suckling begins; the eyes, which have been looking at the breast, the mother and the room, often become focused after attaching.

During this first hour, when the unmedicated baby self-attaches, it is a perfect first breastfeeding, although the infant will continue to readjust until satisfied with the latch. The newborn infant does not need help to adjust the latch. Babies who self-attach during the first hour after birth have few problems with breastfeeding, latch and milk transfer. Skin-to-skin in the first hour strengthens the mother's self-confidence, including decreasing the concerns about having enough milk. When babies are placed skin-to-skin with the mother, they have more optimal blood glucose levels. Both skin-to-skin and the suckling contribute to this effect. Thus, this reduces the risk of supplementation.

Medicated babies can successfully go through the nine stages and self-attach. However, there is increasing evidence concerning the negative consequences of certain medications such as fentanyl and oxytocin, on success with breastfeeding. Parents and staff must take into account the consequences when considering amount, timing and choice of specific labour medications. If the mother has had analgesia or anaesthesia during labour, it may take more time with skin to skin for the baby to complete the stages and begin suckling

Stage 9 - Sleep

The final stage is sleep. The baby and sometimes the mother fall into a restful sleep. Babies usually fall asleep about 1 ½ to 2 hours after birth.



Skin-to-skin contact the first hour after birth, underlying implications and clinical practice
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 First published: 14 February 2019. <https://doi.org/10.1111/apa.14754>
 Acta Paediatrica

Stage 1 – The birth cry

The distinctive cry occurs immediately after birth as the baby's lungs expand.



Stage 2 – Relaxation

It is as though baby is taking a deep breath after this unusual experience of labour and birth. "Whew that was quite something to experience!"



Stage 3 – Awakening

The newborn exhibits small thrusts of movement in the head and shoulders. He is feeling the wide spaces around him.



Stage 4 – Activity

The newborn begins to make increased mouthing and sucking movements as he starts to explore his environment with his mouth.



Stage 5 – Rest

Baby may have periods of rest between the activity during the first couple of hours after birth. Just let him be and he will continue in his own time.



Stage 6 – Crawling

Baby "crawls" using sliding, pushing, leaping and crawling movements to reach the breast and nipple.



Stage 7 – Familiarisation

Baby becomes acquainted with the nipple by licking the nipple and touching and massaging the breast.



Stage 8 – Suckling

The newborn takes the nipple, self-attaches and suckles. This usually begins about an hour or so after birth.



Stage 9 – Sleep

The baby and probably mom as well will fall into a restful sleep together.



