

Uninterrupted Skin-to-Skin Contact Immediately After Birth

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Abstract and Introduction

Abstract

The manner in which a new baby is welcomed into the world during the first hours after birth may have short- and long-term consequences. There is good evidence that normal, term newborns who are placed skin to skin with their mothers immediately after birth make the transition from fetal to newborn life with greater respiratory, temperature, and glucose stability and significantly less crying indicating decreased stress. Mothers who hold their newborns skin to skin after birth have increased maternal behaviors, show more confidence in caring for their babies and breastfeed for longer durations. Being skin to skin with mother protects the newborn from the well-documented negative effects of separation, supports optimal brain development and facilitates attachment, which promotes the infant's self-regulation over time. Normal babies are born with the instinctive skill and motivation to breastfeed and are able to find the breast and self-attach without assistance when skin-to-skin. When the newborn is placed skin to skin with the mother, nine observable behaviors can be seen that lead to the first breastfeeding, usually within the first hour after birth. Hospital protocols can be modified to support uninterrupted skin-to-skin contact immediately after birth for both vaginal and cesarean births. The first hour of life outside the womb is a special time when a baby meets his or her parents for the first time and a family is formed. This is a once-in-a-lifetime experience and should not be interrupted unless the baby or mother is unstable and requires medical resuscitation. It is a "sacred" time that should be honored, cherished and protected whenever possible.

Introduction

The power of first impressions is well known. None may be more significant than the first experiences of a newborn baby exiting mother's womb. Our first impression of life outside the womb, the welcome reception we receive immediately after birth, may color our perceptions of life as difficult or easy, hostile or safe, painful or comforting, frightening or reassuring, cold and lonely or warm and welcoming. The events surrounding birth have the potential to set the stage for patterns of subconscious thought processes and behaviors that persist for a lifetime.

Second only to the experience of dying, the experience of being born may be the most mysterious. Since most adults have no conscious memory of what it was like to be a newly born infant, let alone what it was like to be a fetus in the womb, most have not bothered to speculate about the birth process from the baby's perspective. Yet, when the unconscious memory is open to recall during hypnosis, vivid and detailed memories of prenatal life, the birth experience and early events as a newborn infant readily emerge for many.

While the mechanism for how a fetus or a newborn can create such fully formed memories with such immature brains remains unknown, the reality of prenatal, birth and newborn memories cannot be denied. There are many accounts of young children (usually up to about age 3–5 years) who remember events that occurred around the time of their birth and feelings they experienced. The perceptions and interpretations are sometimes skewed, but the vividness and accuracy of specific details and events are often astounding.

In his groundbreaking book, "Babies Remember Birth," David Chamberlain, PhD, shares his research, which compared the birth stories of 10 different mothers with the birth memories of their children. During separate sessions under hypnosis, mothers and their children were asked to describe the birth process. Although the children, some now adults, had not been told about their birth history, their accounts of the events surrounding their births contained many specific and unique details in common with their mother's accounts, validating the accuracy of the children's birth memories.^[1] Dr. Chamberlain's newest book, "Windows to the Womb" documents the large body of research exploring the many and varied ways that unborn and newly born babies are able to show us their capacities for learning and memory.^[2]

Why is this important? If babies and even fetuses are, indeed, capable of forming memories that remain in their subconscious for life, how they are treated at birth and their early experiences outside the womb matter much more than we have been led to believe!

Because the first hour after birth is so momentous, we have named it "The Sacred Hour" at our hospital. Every culture has occasions and ceremonies it holds sacred that are honored, cherished and protected. In most cultures, for example, a wedding ceremony is considered a sacred occasion. This special event honors the symbolic union of two individuals who have chosen to share their lives together. No one would think of interrupting a wedding ceremony to give the bride and groom details about the flight arrangements for their honeymoon. Everyone recognizes that this information can wait until after the ceremony is completed. Birth is another sacred event. It is a time when a new member of the family arrives, is greeted for the first time and welcomed by his or her parents. Yet, in many hospital settings, this once-in-a-lifetime process is routinely interrupted for details that can easily wait until after the new baby has had time to adjust to life outside the womb in the loving arms of the mother, and after the baby and parents have had time to meet each other as a new family.

What might the first moments after birth be like for the newborn infant? If a fetus has been fortunate enough to spend his fully allotted 266 days in the womb since conception, he has had the luxury of having all his emerging developmental needs met. The uterus and the placenta have provided warmth, protection, nutrition and oxygen, as well as close and continual proximity to the mother's heart and voice. Being in the womb is the "natural habitat" for the unborn fetus. After birth, the mother's body and breasts take over the function of the uterus and placenta in providing warmth, protection, nutrition, and support for optimal oxygenation, as well as close and continual proximity to the mother's heart and voice. Being skin to skin with the mother is the newborn infant's "natural habitat" — the one place where all his needs are met.

This is true for all mammals and can readily be seen in the animal world. Everywhere one looks in nature, mother and newborn mammals are as close as they can get to each other skin to skin or fur to fur. Nature is wise and provides instincts that drive behaviors designed to assure survival of the species.

There are many well-documented benefits of skin-to-skin contact between a newborn infant and its mother. Skin-to-skin contact improves physiologic stability for both mother and baby in the vulnerable period immediately after birth, increases maternal attachment behaviors, protects against the negative effects of maternal–infant separation, supports optimal infant brain development, and promotes initiation of the first breastfeeding, resulting in increased breastfeeding initiation and duration rates. Although a complete review of all the benefits of early postpartum skin-to-skin contact between mother and newborn is beyond the scope of this article, we will briefly explore several of them.

Skin-to-Skin Contact Provides Physiologic Stability

Being skin to skin with mother stabilizes the newborn's respiration and oxygenation, increases glucose levels (reducing hypoglycemia), warms the infant (maintaining optimal temperature), reduces stress hormones, regulates blood pressure, decreases crying and increases the quiet alert state.^[3]

Thermal synchrony is a phenomenon whereby the temperature of mother's chest increases to warm a cool baby and decreases to cool an overly warm baby. While often seen with premature infants who are skin to skin in kangaroo care, this phenomenon is equally important for the newborn infant who has just exited the warmth of mother's womb into the cooler extra-uterine environment, wet and easily chilled. In a study done with babies after cesarean delivery, babies held skin to skin by their fathers had higher temperature and glucose levels compared to those of babies left alone under warmers.^[4]

Skin-to-Skin Contact Promotes Maternal Attachment Behaviors

Attachment is so necessary for survival of the newborn mammal, that nature has not left it to chance, and has provided biochemical activators that prime the brain's reward circuitry to increase maternal care-giving behaviors. Hormones known to influence attachment behaviors are increased by skin-to-skin contact. This is true in adults as well, but is especially important in the vulnerable newborn period. Oxytocin is one such hormone that has been particularly well studied in relationship to attachment and is often referred to as the "love hormone." It has been shown to increase relaxation, attraction, facial recognition, and maternal care-giving behaviors, all necessary to ensure infant survival. Oxytocin is increased during skin-to-skin contact and levels spike whenever the newborn's hand massages mother's breasts.^[5]

Multiple studies in the 1970–1980s compared behaviors of mothers who had short periods (as little as 15 minutes) of skin-to-skin contact with their newborns to those who briefly viewed their infants and then were reunited every 4 hours for feeding while the babies were otherwise kept in a nursery separate from their mothers. At the end of the postpartum hospital stay, mothers who had even brief early skin-to-skin contact with their infants were more confident and comfortable handling and caring for their babies than mothers who had been separated from their babies.^[6]

Results lasted well beyond the neonatal period. At 3 months, mothers with early skin-to-skin contact kissed their babies more and spent more time looking into their infant's faces. At 1 year they demonstrated more touching, holding, and positive speaking behaviors, kept more follow-up appointments with their primary care providers and breastfed their babies longer. One study showed double the breastfeeding duration associated with only 15 minutes of skin-to-skin holding immediately after birth.

Skin-to-Skin Contact Protects From the Negative Effects of Separation

Babies are born ready to interact with mother. If a newborn has not been exposed to excessive medication, its alert awareness and intense focus on its mother's face is obvious to all who are present. Until the moment the cord is cut, a mother and her baby are literally a single biological organism. Until several months after birth, mother and baby remain a single "psychobiological organism." The experience of an infant who is separated from the mother is graphically described by Gallager. "Mother and offspring live in a biological state that has much in common with addiction. When they are parted, the infant does not just miss its mother. It experiences a physical and psychological withdrawal from a host of her sensory stimuli not unlike the plight of a heroin addict who goes 'cold turkey.'" (p 13)^[7]

From a baby's perspective, separation is life threatening! The universal response of baby mammals to separation from the mother is biphasic; first protest, then despair. The initial response to separation from the mother is to protest with loud cries and intense activity. This is an instinctive response to being outside the newborn's "natural habitat," the place of warmth, nutrition and safety. Loud cries and intense activity are protests designed to bring the newborn's plight to the mother's attention so she can bring the newborn back into contact with her body, providing rescue from cold, starvation, potential harm, or even death.

While this is readily seen in the animal world, the same instinctive response is also clearly seen in newborn human infants. When the crying behavior of human infants who are separated from their mothers is compared to those who are skin to skin with their mothers, it has been found that separated infants have 10 times the number of cries and 40 times the duration of crying.^[8] Because separation is the cultural norm in the developed world and newborn crying is so common, many see it as normal behavior, yet frantic crying is not good for newborns. It impairs lung functioning, increases intra-cranial pressure, jeopardizes the closure of the foramen ovale, and increases stress hormones.

If separation continues for a prolonged period, the newborn mammal's response is "despair". The baby's cries eventually stop, intense activity ceases and the infant becomes still — the baby gives up. This is also an instinctive behavior to avoid attracting attention from potential predators. All systems slow down for prolonged survival. Temperature drops, heart rate decreases and metabolism slows down. Hypothermia, bradycardia, and hypoglycemia are all common complications of newborns that are separated from their mothers even in Special Care Nurseries. Short periods of separation resulting in protest is not thought to be harmful to the developing brain, but repetitive and prolonged separation resulting in "despair" has been well documented as harmful with lifelong consequences.

This was such a concern in primate research that a document was published in 2002 entitled, "The Welfare of Non-human Primates used in Research: Report of the Scientific Committee on Animal Health and Animal Welfare" in which the biphasic response of "protest" and "despair" to maternal–infant separation was described, including the physiological disturbance in the regulation of heart rate, body temperature, sleep patterns, cortisol secretion and the immune system. This document recommended that research primates not be separated from mothers for 6–18 months, depending on the species of monkey. Monkeys raised in isolation from their mothers invariably became deeply depressed within a few days and remained socially withdrawn. They often became pathologically violent in adolescence and thus unfit for research.^[9]

Hundreds of experiments in animal research have documented the negative effects of maternal–infant separation. In many studies designed to explore the effects of stress on various organ systems, separation of newborns from their mothers produces enough stress to see profound and often permanent changes in the organ system being studied that persist to adulthood. One such study examined the separation of piglets from their mothers on days 3–11 for only 2 hours per day. On days 12 and 56 the piglets' weight, behaviors, immune system, hormonal, and brain parameters were measured. Results showed decreased weight gain and activity levels, increased corticotrophin releasing hormone activation in the hypothalamus, higher plasma levels of cortisol, increased glucocorticoid receptors, suppression of the immune function and higher interleukin concentration in the limbic area.^[10]

A more recent study examined mare–foal attachment and the bonding and social development of foals during the first year of life, corresponding to the developmental period from birth to adolescence in humans.^[11] Foals that had experienced human handling for 1 hour after birth while being gently restrained from contact with their mothers (who remained in close proximity) showed the same biphasic response to separation as seen in primates. They first struggled valiantly, trembled and had increased respirations (protest), then became motionless but maintained high tone (freeze/despair). After 1 hour when they were released, there was a delay in the first standing and first suckling. Many had inappropriate suckling patterns, making sucking motions in the air or toward their human handler and chewing on the teat. All foals eventually learned to suckle and were raised with their mothers in the same pasture as were the foals that had not been handled for the first hour after birth. Experimental foals showed clear signs of insecure attachment by staying closer to their mothers, playing less with their peers, and showing

less curiosity in exploring novel objects in the pasture. More disturbingly, they were also more aggressive towards the other foals. All foals were weaned at 7 months with a temporary separation from their mothers. The experimental foals were less adaptable to the change, producing stress vocalizations for 4 compared to 2 days. All foals were reunited with their mothers after weaning and then permanently separated at 1 year. The experimental foals continued to keep more distance from their peers and showed more aggressive behaviors during adolescence and adulthood.^[11]

Stanley Graven, MD, a developmental neonatologist cautions, "It is a serious mistake for professionals who provide care for neonates to assume that the principles derived from careful animal studies do not apply to human infants. The risk of suppression or disruption of needed neural process...is very significant and potentially lasts a lifetime." (p 210).^[12]

Skin-to-Skin Contact Supports Optimal Brain Development

The brains of newborn infants are not fully mature. The human brain of a newborn is only 25% the size it will be in adulthood. While all cells are present, myelination and synaptic development are not yet complete. Allan Schore, PhD, a neurobiologist from UCLA, and others have been exploring the role of attachment and brain development for many years and explain that the amygdala is in a critical period of maturation in the first 2 months after birth. The amygdala is located deep in the center of the brain and is part of the limbic system involved in emotional learning, memory modulation, and activation of the sympathetic nervous system. Skin-to-skin contact activates the amygdala via the prefronto-orbital pathway and thus contributes to the maturation of this vital brain structure.^[13]

Harry Harlow, PhD, in his famous research with Rhesus monkeys found that monkeys raised without their mothers preferred the touch of a fur-covered wire surrogate mother to one without fur but with milk in a bottle. Touch was more important than food to motherless monkeys!^[14] Drs. William Mason and Gerson Berkson demonstrated that touch and movement were both required for normal brain and social development by a novel experiment where baby monkeys were raised with a motionless fur-covered surrogate mother or an identical fur-covered surrogate that moved in a random back and forth and up and down motion. Only monkeys who were raised with both touch and motion had normal brain development, demonstrating the importance of maternal holding and carrying throughout infancy for ongoing brain development.^[15]

Based on the work of Harlow, Mason and Berkson, James Prescott, PhD, a neuropsychologist and health scientist administrator at the National Institute of Child Health and Human Development (NICHD), one of the institutes of the United States National Institutes of Health (NIH) from 1966 to 1980, asserted that touch and motion were the most important senses for normal brain development. He was the first to identify that touch and motion were critical for normal neurointegration of the cerebellum–limbic–prefrontal cortex.^[16]

In addition to his own research, Dr. Prescott examined the research of anthropologists who had provided detailed descriptions of primitive cultures. After evaluating the data about 49 primitive cultures, Dr. Prescott was able to predict which cultures were peaceful versus violent cultures with a simple observation. Cultures in which babies were carried on mothers' bodies throughout the first year after birth were more peaceful cultures and those that did not were more violent cultures. Interestingly, he also identified an association between longer duration of breastfeeding (greater than 2 1/2 years) and low or absent suicide rates in 26 primitive cultures. Dr. Prescott speculated that there is a sensitive period during infant brain development when pleasurable touch and movement are necessary and protective against depression and violence.^[17] John Bowlby, the famous attachment psychologist, also claims that infant carrying and direct body contact are essential for normal infant development. Being skin-to-skin during the first hour after birth sets a pattern of behaviors between mothers and infants that supports continued body contact and carrying, and thus normal brain development of the infant.^[18]

Mother–infant attachment is important in the development of the newborn's ability to self-regulate and maintain homeostasis. At first, the mother is the baby's regulator. The dyadic interaction between the mother and the newborn controls and modulates the newborn's exposure to environmental stimuli and by doing so serves as a regulator of the developing individual's internal homeostasis.^[19] One-year old infants, who had spent the first 1–2 hours skin-to-skin with their mother, were found to have better self-regulation when evaluated in a research setting during a structured play session. They were less easily frustrated and better able to calm themselves.^[21]

Dr. Schore asserts that the brain is designed to be sculpted into its final configuration by the effects of early experiences and that these experiences are embedded in the attachment relationship.^[22] He and others who study attachment and brain development emphasize that early interpersonal events can positively and negatively impact the structural organization of the brain. Early experiences may shape brain structure and function in a manner that is designed to provide the individual with the type of brain best suited to the environment he or she is born into. A traumatic or hostile environment would require a brain designed for caution and defense, whereas a supportive environment would allow for a brain designed to grow and thrive. If the attachment relationship is, indeed, a major organizer of brain development, then attachment is far more important than simply providing a fundamental sense of safety or security.^[23]

If the birth process did not go as planned and the baby's first impressions of life outside the womb are less than ideal, all is not lost. Bonding and attachment are so critical for survival that nature has made it possible for both to occur at any time during a lifetime. However, the longer after birth the process is begun, the more difficult it is and greater is the risk of incomplete bonding or insecure attachment. Fortunately, human beings are capable of recovering from most types of trauma with appropriate insight, support, and healing techniques. The bottom line is — whatever supports early mother–infant attachment, supports infant brain development!

Skin-to-Skin Contact Increases Breastfeeding Rates and Duration

All mammals have a set sequence of behaviors at birth – all with a single purpose – to breastfeed. Baby mammals are born to breastfeed! Surprisingly, it is the newborn that initiates breastfeeding, not the mother. However, being warm, being fed and being protected are intricately and inseparably linked to being in the right place, and the "right place" is bodily contact with mother. When skin to skin, the newborn displays an impressive and purposeful motor activity, which, without maternal assistance, brings the baby to the mother's breast. All newborn mammals are born knowing how to breastfeed, but this is a place-dependent competence that requires skin-to-skin contact.

As early as the 1970s, Ann-Marie Widstrom, PhD, RN, MTD, a Swedish nurse-midwife, began to notice a pattern in the behaviors of babies that were placed skin to skin with their mothers immediately after birth and allowed to peacefully adjust to extra-uterine life with no interruptions. Being a researcher, she began to document what she saw and published her observations in 1990.^[24] In 2011, a beautiful teaching film was created by Healthy Children Project documenting nine instinctive stages Dr. Widstrom had observed in the behaviors of healthy newborn infants when they are placed skin to skin with the mother immediately after birth and left uninterrupted until after the first breastfeeding. The DVD, entitled "Skin to Skin in the First Hour After Birth: Practical Advice for Staff after Vaginal and Cesarean Birth" is a very useful tool for anyone involved in caring for newborns to learn about normal infant behaviors when babies are placed skin to skin after birth.^[25]

The nine instinctive stages include 1) the birth cry, 2) relaxation, 3) awakening, 4) activity, 5) resting, 6) crawling, 7) familiarization, 8) suckling, and 9) sleeping. The birth cry (1st stage) occurs immediately after birth as the baby's lungs expand but usually ends abruptly when the baby is placed onto the mother's chest. Relaxation (2nd stage) begins when the birth cry stops and usually lasts 2–3 minutes during which the baby is very quiet and still. Awakening (3rd stage) begins with small head movements, as the infant opens his eyes and shows some mouth activity. During activity (4th stage) the baby has more stable eye opening, increased mouthing, and suckling movements and often some rooting. Resting (5th stage) can occur at any time between the other stages. Many assume, when babies were resting, that they have given up trying to find the breast and seem to clearly need assistance to breastfeed successfully. With knowledge of the nine instinctive stages, we know this is simply a normal stage and babies will move on when they are ready.^[25] Indeed, rushing a newborn to the breast during a resting stage is usually counterproductive. During crawling (6th stage) the baby makes short pushing exertions with his feet or slides his body towards one of the mother's breasts. The baby may lift the upper torso and bob his head in a clear effort to get near the breast. After reaching the breast, familiarization (7th stage) begins and may last up to 20 minutes while the baby becomes acquainted with the nipple by licking, touching and massaging. During all of these stages, the baby moves in a purposeful manner but without frustration or hurry. The challenge for those observing 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. After adequate familiarization with the new environment and mother's nipple, the newborn opens his mouth wide, cupping the tongue which is now low in the bottom of the mouth, grasps the nipple in a correct latch and begins to suckle (8th stage). This usually occurs about an hour after birth. Sleeping (9th stage) follows usually between 1.5 and 2 hours after birth.^[25]

If all staff personnel are educated about this normal and instinctive process, they will be equipped to be supportive of baby's progress towards the first breastfeeding. Knowledge of the nine instinctive stages of newborn behaviors provides a roadmap to reassure staff that assistance is not necessary and often interferes rather than helps. Newborns should not be rushed to suckle when they have not had time to go through the previous seven stages, as they will not be ready. It has been noted, for example, that early in the familiarization stage, 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.

A DVD entitled "The Magical Hour: Holding Your Baby Skin to Skin During the First Hour after Birth" is a wonderful resource for families that includes interviews with parents whose babies had been placed skin to skin immediately after birth. The DVD includes an explanation of the nine instinctive stages of newborn behaviors and beautifully filmed video recordings of babies experiencing each stage. A double-sided, one-page handout describing the nine instinctive stages of newborn behaviors is also available to be given to parents prenatally and/or just prior to delivery.^[26]

If parents and family members are educated about what to expect after their baby is born, they will be less inclined to interrupt the process by wanting to hold the baby and be willing to leave the baby skin to skin with the mother until after the first

breastfeeding. Fathers and other family members love knowing what to expect and watch in amazement as babies progress through the stages as described by staff, in the DVD and on the handout.

Protocols That Promote Uninterrupted Skin-to-Skin Contact Immediately After Birth

Many postpartum hospital care protocols are not designed to support uninterrupted skin-to-skin contact between mother and baby immediately after birth. Instead, they consist of a list of care activities and tasks that nurses often feel they must accomplish as soon as possible to get through their work assignments. Anything that is not necessary for the immediate well-being of the newborn and mother can, and should, be delayed until after the first breastfeeding. This includes vitamin K injection, eye prophylaxis antibiotic ointment, foot and hand printing, weighing, measurements and bathing.

Occasionally an infant may need to be weighed to determine if he qualifies for hypoglycemia protocols. Glucose testing can be done while the asymptomatic infant is skin to skin with mother, as this will support maximum glucose stability. If the results indicate that intravenous glucose is required, at least the mother and infant have received the benefits of early bonding with increased oxytocin levels, as well as respiratory and temperature stability before separation is necessary for further stabilization of glucose. Any symptomatic infant should, of course, be immediately evaluated and stabilized. While skin-to-skin care is usually not practical for the unstable baby or mother, it should be the default plan of care for all normal newborns and mothers, and postpartum care protocols should be created to support this natural process.

Skin-to-Skin Contact After Cesarean Births

While more hospitals have implemented skin-to-skin care after vaginal births, very few have extended this practice to the operating room (OR) after cesarean births. Yet, stable mothers and babies deserve to experience the same short- and long-term benefits of early skin-to-skin contact after cesarean births, as do those who have vaginal births. Indeed, mothers who have had a cesarean delivery often mourn the loss of a normal vaginal birth they had hoped for and are especially disappointed by not having their baby with them immediately after birth.

One mother whose baby was brought to her in the OR immediately after birth recently stated, "Having my baby skin to skin in the OR after my cesarean birth was the most meaningful experience ever. I couldn't have the vaginal birth I wanted, but at least I got to hold my baby skin to skin right after birth, which is what I had hoped for."

Another mother and father, whose twins were delivered by cesarean birth at 37 weeks gestation, watched in amazement as each boy went through the nine instinctive stages of behaviors at their own individual pace, when they were placed skin to skin on mother's chest in the OR. They were both breastfeeding within the first hour after birth, having each self-attached without assistance. These parents were delighted with how different this experience was from what occurred when their first son was born by cesarean delivery 3 years prior. Breastfeeding had been such a struggle after the customary 2–3 hour separation when their son had been taken to the nursery until after mother's recovery period.

Many other mothers have enthused at how easy breastfeeding was when their baby had an opportunity to go skin to skin immediately after cesarean birth in the OR compared to their struggles with breastfeeding after separation with their previous cesarean delivery. Breastfeeding is not impossible after early separation, but it is very often much harder. Many mothers are not prepared or are unwilling to persist in attempts to breastfeed after cesarean births with separation. This is reflected in lower breastfeeding rates after most cesarean deliveries.^[27]

Because skin to skin in the OR is such a new practice, in order for staff to be comfortable with the process, much preparation must be done prior to the first occurrence. Obstetricians, anesthesiologists and those responsible for newborn care must be educated about the evidence-based rationale for introducing skin-to-skin contact in the OR, including the many benefits for stable mothers and babies. They must also be assured that the safety and well-being of mothers and babies will always be the first priority. Knowing that they will have immediate veto power if any concerns arise goes a long way toward reducing anxiety about beginning the practice of placing babies skin to skin in the OR.

After the practice has begun, anesthesiologists are often amazed by how stable mothers are immediately after cesarean delivery when their babies are skin to skin. Because mothers are so focused on their new baby, their perception of pain is often diminished and their anxiety levels are significantly decreased, resulting in increased stability of heart rates and blood pressures. In addition, mothers and babies keep each other warm, resulting in increased temperature stability for both.

A few practical matters will make the practice go smoothly. First, the nurse who will receive the baby and do the initial drying and placing of baby on mother's chest should check with the obstetrician and anesthesiologist prior to the delivery to verify that there are no concerns for the baby or the mother's stability. Secondly, she should introduce herself to the mother and confirm that she would like to hold her baby skin to skin immediately after birth (if this has not already been done). It is helpful to ask the

anesthesiologist if the mother's arm can be released from the arm board (if it has been secured) in order for her to touch her baby, and let the mother know she will need to straighten her arm every few minutes when a blood pressure must be taken. Be sure the mother's gown is unsnapped so it can be easily lowered to uncover her chest when placing the baby and be sure she is not wearing a bra. Take note of intravenous lines and poles so as to avoid them when placing the baby. Lastly, a diaper should be ready as well as warmed towels or blankets to dry and cover baby.

After the baby is delivered and the cord is clamped and cut, the receiving nurse will dry the baby, noting if he is vigorous and crying (assuring a 1-minute Apgar score of 8 or 9). After quickly drying the baby, if all is well, the nurse can diaper the baby and place the baby on the mother's chest in transverse position with the baby's head on one breast and the abdomen on the other breast, and then cover the baby with a warmed towel.

A diaper is not absolutely necessary but will avoid the possibility of meconium getting on the mother in the OR. It is much more difficult to clean up meconium in the OR than in the delivery room after a vaginal birth. An accepted practice is to diaper babies who go skin to skin in the OR, but forego the diaper after a vaginal delivery. A hat is not required to keep the baby warm when skin to skin and appears to be annoying to many babies, interfering with normal rooting. A hat can be placed when the baby is taken from the mother's chest for cares after breastfeeding. Many babies try to lift away from the hard plastic umbilical clamp if the cord is clamped short in the traditional fashion. This apparent discomfort can be easily avoided if the cord is cut and clamped 8–10 inches long, so that the clamp is not directly between baby and mother. The cord can be re-clamped and trimmed shorter at anytime after breastfeeding or at the time of the first bath.

Routine bulb suctioning should be avoided, as it is often a very negative oral experience for the baby. By far, the majority of babies are able to clear their own secretions with no trouble. If the baby is having difficulty clearing oral secretions, further evaluation is probably needed. Updated 2011 Newborn Resuscitation Program guidelines advise against routine bulb suctioning.^[28]

A nursing caregiver should visually monitor the baby while on the mother's chest until the surgery is complete, being sure the baby's head is positioned so the nares are always visible, the baby's color, perfusion and respirations remain stable, and baby doesn't slide off the mother's chest towards her neck. If this happens, the baby can be gently repositioned without being lifted off the mother's skin. If the baby advances to the crawling stage while in the OR and goes searching (or lurching) for the breast to suckle, the dad can gently grip the baby's leg or thigh to assure the baby stays on the mother's chest.

When the surgery is completed, the sterile drape has been removed and the mother is ready for transfer to the gurney for transport to the recovery room, the baby's legs can be slowly and gently moved to a vertical position so the baby's head is between the mother's breasts. The mother can cross her arms over her baby and the nurse who has been observing can place her hands on top of the mother's hands to be sure the baby is secure as the mother is turned from side to side to remove soiled linen and as she slides over to the gurney. This is a simple process and the baby need never leave the mother's chest during the transfer and en route to the recovery room, but will simply continue going through the nine instinctive stages towards the first breastfeeding.

If the baby is lifted from the mother's chest, he will become distressed and disoriented and when replaced skin to skin must start all over and advance through the stages again. The second time through will be somewhat quicker, but breastfeeding will be delayed. About 1.5–2 hours after birth, newborns fall into a deep sleep and if the nine instinctive behaviors have been interrupted several times, the baby may not be able to complete them to experience suckling until several hours later.

The good news is that when the baby awakens, if he is placed skin to skin, he will go through the stages again to find the breast and self-attach. This instinctive behavior will be present for about the first four months after birth and should be encouraged, especially in the first few days as the mother and the baby grow accustomed to breastfeeding. Babies quickly learn how to latch correctly and then will be able to consistently achieve an effective latch while clothed or wrapped in a blanket, but in the early postpartum period, being fully skin to skin (both the mother and the baby) will activate their instinctive feeding behaviors and help assure successful breastfeeding.

Early Postpartum Skin-to-Skin Contact is Endorsed By Many Organizations

The benefits of skin-to-skin contact immediately after birth for stable mothers and babies is so well documented, it is recommended by all major organizations responsible for the well-being of newly born infants, including The World Health Organization (WHO), the American Academy of Pediatrics (AAP), the Academy of Breastfeeding Medicine (ABM), and the Neonatal Resuscitation Program (NRP).

The WHO advises that, given the importance of thermoregulation, skin-to-skin contact should be promoted and "kangaroo care" encouraged in the first 24 hours after birth. The AAP recommends that healthy infants be placed and remain in direct skin-to-skin contact with their mothers immediately after delivery until the first feeding is accomplished.^[29]

The ABM Protocol #5, Revision 2008 states, "The healthy newborn can be given directly to the mother for skin-to-skin contact until the first feeding is accomplished. The infant may be dried and assigned Apgar scores and the initial physical assessment performed as the infant is with the mother. Such contact provides the infant optimal physiologic stability, warmth, and opportunities for the first feeding. Delaying procedures such as weighing, measuring and administering vitamin K and eye prophylaxis (up to an hour) enhances early parent–infant interaction."^[30] (p 2).

The NRP says that skin-to-skin care can be used to provide routine resuscitation for all normal newborns. The changes included in the updated 2011 NRP indicate that even the vigorous meconium-stained newborn need not receive initial steps at the radiant warmer, but may receive routine care (with appropriate monitoring) with the mother. It clarifies that routine care includes staying with the mother in skin-to-skin contact to ensure warmth. It also specifies that suctioning following birth (including bulb suctioning with a bulb syringe) should be reserved for babies who have obvious obstruction to spontaneous breathing or who require positive pressure ventilation.^[28]

Conclusions

Being skin to skin with the mother is the best way for a stable baby to adjust to life outside the womb. It is endorsed by multiple organizations responsible for the care and well-being of infants. It is, not only safer for both babies and mothers, but provides multiple short- and long-term beneficial effects. Early postpartum skin-to-skin contact increases physiologic stability, promotes optimal psycho-emotional well-being, and supports structural and functional infant brain development.

However, being skin to skin with the mother immediately after birth is much more than simply a nice way to be welcomed into the world. The first hour after birth is a once-in-a-lifetime occasion for both the baby and the parents. It is a "sacred hour," during which a family is formed. This unique experience, once lost, can never be relived. Although not the only time when bonding occurs, something special happens during the first hour after birth. We must not cavalierly deprive parents and babies of this experience unless there is a very good reason. Instead, we must do everything in our power to honor, cherish and protect this special time for new families.