



Supporting the birth that is right for you!

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Kangaroo Care

By Rebecca Pugh

I practiced Kangaroo Care (KC) without realizing it! Just two weeks ago at a birth we helped deliver a healthy baby boy into a home that was a bit too cold for a newborn. The baby was born needing quite a bit of suctioning with a bulb syringe as well as the bulb syringe and had some grunting respirations. The fluid cleared and the lungs dried but we needed to warm this baby up. I called for the human incubator...the father! While the mother was getting comfortable and stopping her bleeding I was able to use Kangaroo Care to warm the baby. This also gave the baby a chance to settle down and get synchronized with the father's breathing as well as gain heat from his father. They were nestled together skin to skin under the father's flannel shirt and some blankets. The baby was incredibly fussy as he suffered from a sizable cephalohematoma that was obviously causing him discomfort. The upright position took pressure off the bruise and the skin-to-skin contact was calming and reassuring for the newborn, his disposition changed immediately. The baby's temperature went from 93.7 to 96.8 in less than 10 minutes. The father felt important and involved, making the young father reassured about parenting. I didn't realize I had used KC at the birth until I was researching my topic for this paper. This is a perfect example of using KC for the term baby, not just the premature one.

This paper re-establishes the overwhelming evidence in support of using KC to treat premature babies, as well as those born at term. With the knowledge of KC you will not only be able to integrate it into your homebirth practice but also advocate for its use with clients and friends who have the challenge of nursing a premie back to health.

Definition and History

KC was developed by Edgar Rey and Hector Martinez in Bogota, Colombia in 1983. They were experiencing a 70% infant mortality rate in their medical clinic. KC was developed as a low cost, low technology way to heat and soothe premature infants. How were they to know that the infants would then experience a host of other benefits? Their method involved allowing a baby to be held skin-to-skin and tummy-to-tummy by their mother or father, wearing only a diaper. The baby is held between the breasts and the head should be turned so the ear is against the chest in order to hear the heartbeat of the parent. Low and behold Rey and Martinez observed a 40% drop in the infant mortality rate after developing and instituting Kangaroo Care as standard practice for premature babies.

Sleep Time and Colic

Kangaroo Care should be practiced in a low light and quiet environment. This facilitates its positive effects on the sleep cycle. Newborns, especially those that are born prematurely, have difficulty soothing themselves and transitioning from an awake state to an asleep state. Transitioning again from light sleep to deep sleep is also difficult. The ability to sleep deeply is particularly important for premies that need to conserve their energy to grow stronger. Crying is a waste of energy, calories should be preserved for growth, digestion, and warmth. Sleep time is increased with KC enabling the newborn to focus on the task of growing stronger. The more energy conserved, the fewer calories that are burned, so more can go to the vital organs necessary for life.

Colic seems to be the inability to transition to and from states of sleep and wakefulness. This inability leads to a baby becoming over tired and frustrated, this leads to crying, which in turn makes the baby even more frustrated, taking in excess air and leading to the gas pain and bloating associated with colic. Colic then leads to more frustration and interrupted sleep. Just as we know to soothe a newborn until they learn to soothe themselves, we do the same for a pre-term with KC. In particular, the parents soothe the baby with skin-to-skin contact and exposure to the natural rhythms of their heart and breathing.



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Thanks to the work of Krisanne Larimer I developed a very clear understanding of Kangaroo Care. She created a web site about the care of premature infants after her own experience with a premature baby. At www.prematurity.org she compiles the latest information about caring for premature infants and empowers parents to have faith and take part in the care of their babies. Holly Richardson, an MCU teacher, had an article published in Midwifery Today in 1997. The article, entitled "Kangaroo Care: Why Does It Work?", points out the importance of longer sleep periods for pre-term babies. In a typical Neonatal Intensive Care Unit the average deep sleep period is less than two hours. However, in the last six weeks of pregnancy the fetus, in utero, sleeps approximately 20-22 hours a day. KC allows for and facilitates deep sleep periods much longer than those provided with out KC. Because many premature babies are born before the last six weeks in utero they must make up for lost time.

Respiration and Heart Rate

The work of Susan Ludington-Hoe in 1998 was published in *Kangaroo Care: The Best You Can Do For Your Pre-term Infant*. This book points out the dramatic improvement in vital statistics that pre-term babies experience when they receive KC. Because the baby is exposed to the rhythmic breathing patterns of the mother or father respiratory distress and apneic episodes, stopped breathing, are reduced. KC allowed mechanically ventilated babies to tolerate transfer and position changes very well, without an increase in oxygen requirements, which is stressful and exhausting for the baby. There was also more spontaneous respiration in these babies. A slow heart rate, or bradycardia, is often a problem with prematurity, however with KC bradycardic episodes did not increase. With effective and consistent respiration oxygen saturation is also increased.

Body Temperature and Lactation

In research conducted by Ludington-Hoe in 1990 it was discovered that mother's were able to regulate their baby's temperature according the needs of the baby and with an amazing degree of accuracy. As she holds her baby, a mother becomes warmer if the baby is cool and then cools her own temperature if the baby is over heating. A mother is able to change her temperature by up to two degrees in about two minutes. It has not been established that the father or other caregivers have the same ability. Again, proper temperature regulation is one of the most effective tools in conserving the energy of the pre-term baby.

In 1998 Papi A. Gomez looked into the connections between breastfeeding and Kangaroo Care. Those infants that experienced KC for more than 50 minutes were eight times more likely to spontaneously breastfeed. The prolonged contact allows for easy access to the breast and an increase in the let down reflex. Even if the baby is unable to nurse on its own the contact facilitates the let down reflex and the production of milk. The milk can then be pumped and tube fed to the infant. It has also been noted that increased exposure to the breasts not only increases the likelihood of a spontaneous breastfeeding but it also increases the frequency of feeding once breastfeeding is established. Good news for a premie that needs more milk more often!

Weight Gain

In her article, Richardson explains the connection between KC and increased weight gain. As I mentioned before, KC facilitates more deep sleep in the premature infant, this results in the conservation of energy, which in turn results in increased weight gain. Left alone on a warming table the infant is not secure or comforted, the baby will cry more and sleep less. The crucial element of skin-to-skin contact is missing, which we now understand to be so important. Crying is seen as a "purposeless activity" which wastes energy, while KC redirects the caloric expenditure toward growth. As crying is reduced periods of wakeful alertness are increased, a prime time for bonding and attachment.

Bonding

When a parent experiences the birth of a premature infant it is a time of uncertainty and stress. Many parents feel guilt and failure, which is exacerbated by immediate and long-term separation. They may feel helpless, faced with the burden of medical decisions and the looming cost of the high technology involved in keeping their baby alive. But KC offers hope amongst the tragedy. KC diffuses these stressors and allows the parents to get involved in the



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care of their baby. It is a low-technology solution that only the parent can provide. While some hospitals require the baby to be without intravenous tubing or breathing independently of a ventilator, some allow the baby to experience Kangaroo Care even during invasive treatments. In many cases the tubing may be taped to the clothing of the parent for easier access to the infant. The parents then become increasingly familiar with the nursery, the care procedures and their baby's care providers. This familiarity is reassuring and a trust is established in the care facility. KC helps to heal the emotional problems associated with premature birth, leaving the parents with the sense that they are doing "all they can" to help their baby. More direct eye contact is allowed during KC giving the parent and child a direct bonding experience that is unavailable during incubator care.

Brain Development

Richardson proposes that brain development is more rapid in the baby who benefits from KC. Her research reveals that alpha waves double in a baby being "kangarooed" versus a baby in an incubator. Alpha waves are the brain wave patterns associated with contentment and bliss. Delta brushes are a pattern formed when tracking brain activity that represents the creation of new neural synapses. Delta brushes are higher during KC than during incubator care. This signifies that an increase in brain development is more profound during Kangaroo Care.

Let's review the positive changes we see when Kangaroo Care is practiced with pre-term infants. Increased oxygen saturation, increased spontaneous respiration and decreased episodes of apnea. Heart rate is regulated and body temperature is maintained at an adequate level. Rates of infection are decreased and immunity to disease rises. Brain development is more rapid, likely because of increased human contact and contentedness. Infants experience longer periods of deep sleep, conserving their energy and leading to a more rapid recovery and shorter hospital stays. What more could a worried parent want? How about benefits for the parent as well? KC offers those benefits. Parents of premature infants are less stressed and more closely bonded to their baby. They are more involved in the baby's care, which leads to better outcomes.

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