

# Breast feeding and kangaroo care

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**Abbreviations:** WHO, world health organization; ACOG, American College of Obstetricians and Gynaecologists; AAP, the American Academy of Paediatrics; AAFP, American Academy of Family Physicians; SIDS, sudden infant death syndrome; KC, kangaroo care; GIRFS, getting it right from the start

## Introduction

Studies have reported maternal milk as the optimal and efficient source of nutrition for babies following birth to early infancy. Clinical researchers have also acknowledged maternal milk as the potent source of energy, growth and developmental factors, and immunological factors. Breast feeding the neonates has been found closely associated with sensory and cognitive development of the neonate. Other than strengthening the emotional bond between mother and her baby, exclusive breast feeding the neonates is also linked with improved immunological response and decreased incidence of infectious disease in neonates and infants.<sup>1</sup> Due to the enriched nutritional profile of the maternal milk, health practitioners across the world recommend exclusive breast feeding during first six months of life.

The practice of breast feeding differ in different part of the world and is largely affected by the cultural and racial beliefs; to establish a consensus among various cultural beliefs, few common breast-feeding guidelines are established by various organization. The World Health Organization (WHO) recommends at least 2 years of breastfeeding for all infants.<sup>2</sup> The American College of Obstetricians and Gynaecologists (ACOG) recommends 6 months of exclusive breastfeeding for all infants.<sup>3</sup> The American Academy of Paediatrics (AAP) and the American Academy of Family Physicians (AAFP) recommend exclusive breastfeeding for the first 6 months of life, continuing at least through till the infant is a year old and as long thereafter as is mutually desired.<sup>4,5</sup>

Other than immediate useful effects, breast feeding also have several long-lasting beneficial health maternal and neonatal outcomes too.<sup>1</sup> The Oligosaccharides present in the maternal milk prevent binding of harmful pathogens like; *Haemophilus influenzae* and *Streptococcus pneumoniae*, to respiratory epithelium, and *Vibrio cholerae*, *Escherichia coli*, and *rotavirus* to the intestinal epithelium, thereby reducing infectious mortality among neonates.<sup>6</sup> Glycosaminoglycans in breast-milk contribute to innate immunity against *Giardia lamblia*, *H influenzae*, group *B streptococci*, *S epidermidis*, *respiratory syncytial virus*, and *herpes simplex virus type 1*.<sup>7</sup>

The other infections which are considerably reduced by breast-feeding include otitis media, atopic dermatitis, asthma, childhood cancer, gastrointestinal infections, necrotizing enterocolitis, and sudden infant death syndrome (SIDS).<sup>8-14</sup> Breast-feeding is also found to be beneficial in minimizing the incidence of obesity and metabolic disorders (diabetes, cardiovascular disease, hypertension, and hyperlipidaemia) later in life.<sup>15</sup> Researches have also accredited that exclusive breast feeding the infant can positively impact the neurodevelopment of the neonates. Infants those are breast fed are found to have better cognitive functioning and higher IQ levels in their school age.<sup>16</sup>

Breast feeding also have some positive maternal outcomes as well. Studies showed that women who breast feed their babies are less likely to develop breast and ovarian malignancies.<sup>17,18</sup> Moreover breastfeeding also boost the metabolism of the mother and help her in postpartum weight-loss.<sup>19</sup> Other than the neonatal and maternal health benefits, breast feeding also have some economic benefits. Exclusive breastfeeding not only cut down the cost of formulation milk, but it also reduces the overall health-care expenditure of mother and her baby owing to less incidence of diseases among them.<sup>20</sup>

Similar to breast-feeding, kangaroo care (KC) of neonate is also an important facet of neonatal care. Initially the concept of kangaroo care was brought-up by the developing countries where this method of neonatal care was used to overcome the expenditure of neonatal healthcare in NICU or hospital set-ups. Later on, even the developed part of world roped in to this neonatal care practice because of its enormous positive outcomes.

As per the recommendations of WHO, an ideal KC involve skin-to-skin positioning of the baby in an upright position on the mother's chest. The baby can be cared for in this way continuously (for more than 20 hours/day) or intermittently (for periods of hours at a time).<sup>21</sup> Though there aren't any clinical evidences suggestive of KC lowering the incidence of neonatal mortality, yet a systemic review study reported that KC considerably lowers the rate of morbidity among neonates and infants.<sup>22</sup> Another independent study reported that skin-to-skin contact, or KC is beneficial in improving clinical outcomes, temperature control, breastfeeding rates and child-parent bondin.<sup>23</sup> In a systemic review done to evaluate effect of KC on neonatal pain it is found that KC is also beneficial in managing procedural pain in neonates.<sup>24</sup>

Though KC is a helpful measure of providing welcoming care to neonates and preterm neonates, but it was found that lack of training for nurses, lack of time, maternal or child physical or mental ill

health, and inappropriate settings act as barrier for optimal KC in various healthcare set-ups.<sup>23</sup> Proper training of NICU nurses and prior education of parents or family members about KC play a vital role in implementing KC. The ‘Getting It Right From the Start’ programme (GIRFS) is one such effort that educate care-providers, parents, and family members about positive outcomes of KC and breast feeding.<sup>25</sup> The GIRFS program also encourage positive parenting, improves parent-child bonding, and boost confidence in first-time parents.<sup>26</sup>

KC is also an important tool in reducing the postpartum hospital stay, thereby cutting down the overall health-care expenditure and providing economic benefit to the parents. Rightly provided KC reduces the neonatal morbidity due to general illnesses, mild-severe infections and respiratory infections. This in turn reduces the hospital stay of the neonate and lowers the health care expenditure.<sup>22,27</sup> As per the statistics provided by the GIRFS program, early and efficient KC generated healthcare cost saving ranging from £668,000 to more than £2 m.<sup>20</sup>

Considering the health outcomes and economic benefits of breast feeding and kangaroo care, it can be concluded that neonatal care is a multifaceted approach and breast feeding and KC helps to maximize the positive outcomes of an ideal neonatal care. Unfortunately, negligence, and lack of awareness and resources devoid a large number of neonates from breast feeding and KC. Hence, spreading the word and educating parents and care provider about breastfeeding and KC hold the potential for making sure that every neonate is benefited from them.

## Acknowledgments

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## Conflicts of Interest

None.

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