

## First, Do No Harm: Why Breastfeeding Matters

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World Breastfeeding Week—celebrated internationally between 1<sup>st</sup> and 7<sup>th</sup> August every year—is an event supported by the United Nations Children’s Fund and the World Health Organization. It aims to promote and support breastfeeding worldwide. This year’s slogan is “Empower Parents, Enable Breastfeeding”.

It has become necessary to advocate breastfeeding because aggressive marketing of infant formula in the 20<sup>th</sup> century has led to widespread perception by physicians and the public alike that infant formula is the preferred choice in infant feeding.<sup>1</sup> Free access to ready-to-feed formula and traditional hospital routines of separating mothers from their newborns have also resulted in a loss of breastfeeding skills and knowledge among women and healthcare professionals.<sup>2</sup> This has made it harder for women who intend to breastfeed to receive the necessary support that they need and has also led to the perception of breasts as purely sexual, rather than nutritive, organs. It is no wonder, then, that the act of breastfeeding in public often draws the ire of the uninformed.

It is not an easy task to change mindsets. Physicians are not immune to prevailing attitudes and advertising tactics, and some may still see breastfeeding as a lifestyle choice rather than an important health decision. Promises of superior intellect and academic abilities packaged in a shiny metal tin means that many parents, too, fall into the same trap. As such, it is helpful to reframe the narrative to one where breastfeeding is emphasised as the physiologic norm and breast milk is held up as the gold standard by which infant formula is compared.

Whether it is due to the disproportionately large human brain, combined with a pelvis narrowed from bipedalism—or the mother who has reached her metabolic constraints, it is a fact that human babies are born far too prematurely.<sup>3</sup> Unlike a calf who can walk within minutes of birthing from its mother, it will take the human baby another year or so to reach the same milestone. This state of high dependency in infancy means that much growth in humans is achieved ex utero. It is a common observation that when infants are placed on their mothers’ naked chests, they will intuitively

find their way to the nipple and suckle it.<sup>4</sup> With early skin-to-skin contact, babies are more likely to maintain their temperature and glucose levels, cry less and breastfeed for a longer duration.<sup>5</sup>

There are significant health risks associated with not breastfeeding. Unlike breast milk, infant formula lacks bioactive components such as lactoferrin, immunoglobulins, enzymes and growth factors that are found in the latter. It also has a much lower concentration of human milk oligosaccharides. Infants who are not breastfed are more likely to experience intestinal colonisation by pathogenic bacteria such as *Escherichia coli* rather than the beneficial microbes of the *Bifidobacteria* and *Lactobacillus* species seen in breastfed infants.<sup>6,7</sup> This altered gut microbiome may confer an increased susceptibility to conditions such as allergies, asthma and inflammatory bowel disease.

Infants who are not fed breast milk are at higher risk of infectious morbidity from gastroenteritis, respiratory tract illnesses and acute and recurrent otitis media. They are also at an increased risk of sudden infant death syndrome.<sup>8,9</sup> Preterm neonates who are not breastfed have higher intestinal permeability and are at higher risk of contracting necrotising enterocolitis.<sup>10</sup> Additionally, powdered formula milk is not sterile and can be contaminated by *Cronobacter sakazakii* which causes meningitis in infants.<sup>11</sup>

In the long term, infants who are not breastfed are at increased risk of obesity, childhood cancers, malocclusion and type 1 diabetes.<sup>9</sup> Their neurocognitive development may also be adversely affected due to lower concentrations and differences in composition of long-chain polyunsaturated fatty acids in infant formula compared to breast milk. The effect on neurocognitive development may persist into adulthood.<sup>12</sup> Mothers who do not breastfeed have a higher risk of developing postpartum depression, diabetes, hypertension, cardiovascular disease and breast and ovarian cancers.<sup>13</sup>

In 2011, the National Breastfeeding Survey in Singapore found that although breastfeeding initiation was high, exclusive breastfeeding rate at 6 months was only 1%.<sup>14</sup> Since then, laudable efforts have been made to address

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and improve the situation. In 2012, the first hospital in the island city-state was accredited as “Baby Friendly”. Eventually, the aim of the authorities is to get all maternity hospitals accredited as such.<sup>15</sup> The Sale of Infant Foods Ethics Committee of Singapore (SIFECs)—the body which regulates the appropriate promotion and distribution of breast milk substitutes—has also updated its code of ethics to align with the national agenda.<sup>16</sup>

Yet, on the ground, many physicians are still uncomfortable dealing with the challenges posed by breastfeeding since lactation training is sorely lacking in most medical schools and residency curricula. They may be hesitant to take a strong stand on breastfeeding because of worries about causing parental guilt. The first step that they must take to address the situation is to educate themselves in order to avoid inappropriate discouragement of breastfeeding through dispensing ill-informed advice.

Many women wean prematurely because of perceived, rather than true, low supply of their breast milk. Doctors must be aware of the physiology of breast milk production and educate women on this in order to manage their expectations. The first milk that is produced is colostrum. Though low in volume, it is dense in nutrients and is sufficient to maintain normal glucose levels in healthy-term infants without overloading their small stomachs. Babies also find it more manageable since they are still learning how to suck, swallow and breathe at the same time. It is therefore normal for women to produce a low volume of milk in the first few days after childbirth.<sup>17</sup>

In full-term infants, it is normal for them to experience weight loss of 5–7% during the first 3–4 days of life. This is due to physiologic diuresis and the passage of meconium, and they should regain their birth weights by 10–14 days of life.<sup>18</sup> Milk production slows when milk accumulates in the breast and speeds up when the breast is emptied.<sup>19</sup> As such, when inappropriate advice is given to supplement the perceived low supply of breast milk with infant formula, it becomes a self-fulfilling prophecy since it reduces the frequency of breast emptying and, consequently, milk production.

With the correct advice and assistance, most mother-infant dyads are successful at establishing breastfeeding. However, some will need extra attention and careful evaluation to ensure adequate infant milk intake. They include infants with hypoglycaemia, dehydration, delayed bowel movements (<4 stools at day 4 of life or meconium stools beyond day 5 of life) or hyperbilirubinaemia. Mothers with postpartum complications such as severe haemorrhage or retained placenta, breast surgery that may have affected nipple innervation (such as periareolar breast incisions) or breast hypoplasia will also require more support. Careful assessment of latch and milk transfer must be conducted

by appropriately trained medical personnel. When supplementation is required, this must be done carefully with the aim of preserving breastfeeding. Cup or syringe feeding or paced bottle feeding using wide, slow-flow teats can help to prevent nipple confusion.<sup>17</sup>

Most medications are safe for ingestion during lactation. Iodinated and gadolinium-based contrast agents—such as those used in computerised tomography scans or magnetic resonance imaging—are not contraindicated.<sup>20</sup> When in doubt, physicians can consult lactation pharmacology resources such as LactMed by the United States National Library of Medicine (<https://toxnet.nlm.nih.gov/newtoxnet/lactmed.htm>) for accurate and evidence-based information.

Most procedures are compatible with breastfeeding. Women who were put through general anaesthesia for surgical procedures can breastfeed their healthy-term infants as soon as they are stable and alert enough to hold their babies.<sup>21</sup> All breast imaging studies are safe for breastfeeding women to undergo. Breastfeeding also does not need to be discontinued prior to breast biopsy since inflammation and stasis from abrupt weaning can increase the risk of fistula formation through the biopsy tract.<sup>22</sup> The Centers for Disease Control and Prevention (<http://www.cdc.gov/breastfeeding/index.htm>) and the Academy of Breastfeeding Medicine (<https://www.bfmed.org/protocols>) have published useful clinical information on breastfeeding issues that may be encountered in daily practice on their websites.

Based on current findings on the immunological, neurological and nutritional inferiority of breastmilk substitutes, we have an ethical obligation to equip ourselves with the knowledge and skills to help mothers make an informed choice and breastfeed successfully. For every mother who does so, her daughters and grand-daughters are likely to succeed too. As medical professionals who profess to “first, do no harm”, anything less just will not do.

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