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American Medical Association Journal of Ethics
September 2013, Volume 15, Number 9: 791-797.

HISTORY OF MEDICINE

Breast Pumping

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The important place of the breast pump in contemporary mothers' experiences with breastfeeding is a relatively new phenomenon. Discussion of the place and meaning of this technology, particularly in the last 5 years, has held an almost constant presence in the media. An article published by American historian Jill Lepore in *The New Yorker* in 2009 [1] prompted an overwhelming onslaught of commentary and inquiry from mothers and media outlets across the nation. Somewhat unexpectedly, perhaps, Lepore touched a nerve when she asked, "If breast is best, why are women bottling their milk?" She received hundreds of e-mails and phone calls in response to her discussion of the rise of breast pumping, and eventually she appeared on the National Public Radio's show *Talk of the Nation* [2]. Mothers called in and shared their exasperation with the modern-day conflation of breast pumping with breastfeeding [1-5]. As many mothers then and since have attested, the experiences of hooking oneself to an electrical milking machine and feeding an infant at the breast are two very different things [6].

As odd as it may seem when pointed out in this way, by the late 1990s, the breast pump had ascended to near ubiquity as part of the breastfeeding process—becoming so integral to feeding a baby breast milk that the technology seemed all but invisible to critique, analysis, or question. By the early 2000s, as breastfeeding activism in the U.S. focused on public breastfeeding and lactation rooms in work places, few seemed to take notice of the subtle takeover of the breast pump. While scholars have attempted to evaluate the technology in terms of what it can do for women, few have taken a longer look at the history of this device to see where it has come from and to ask what, if anything, the breast pump means for the future of breastfeeding in America.

Prior to the 1920s, the most common methods for extracting breast milk were a nursing infant or manual hand expression [7]. Although pumps, borne from the same lineage as bloodletting and cupping devices, did exist, they tended to require the same amount of manual labor as manual expression and produced poorer results [8]. Few mothers or physicians sought to improve upon the process of manual hand expression, which any mother could do herself if the need arose but which was also tedious, time-consuming, and quite frequently unpleasant, particularly when done at the hands of an impatient caregiver. The possibility of improving this process began, therefore, as hospitalized childbirth and postpartum care expanded over the first several decades of the twentieth century, leaving hospitals, and particularly nurses, with more women with uncooperative lactating breasts to care for [8].

The most successful electric breast pump emerged in the 1920s out of the collaborative efforts of an engineer named Edward Lasker, a German immigrant and an international chess champion, and the famous American pediatrician Isaac A. Abt [9]. Working for a cow milking-machine manufacturer, Lasker had what Abt believed to be the perfect background for designing a pump that could be used on human mothers. Abt invited Lasker to build something he could use in his hospital in Chicago “for premature infants who were too weak to nurse” [9]. Lasker accepted his challenge and, in 1923, filed for a patent for an electric breast pump based on his knowledge of cow milking. Within a few short years the pump was being featured in articles in nursing journals and discussed in medical textbooks. Lasker recalled in his memoirs that the famous pediatrician, Joseph B. DeLee wrote to tell him that he “considered the machine indispensable in any hospital in which maternity work was done” [9].

By designing electric breast pumps, inventors like Lasker helped move the age-old device into the modern era, a period characterized by its impressive high-technology hospitals and awe-inspiring scientific medicine. Being embedded in this context of the hospital, however, meant that breast pumps were employed as medical devices only and were not typically designed to optimize the reuse of the milk for feeding to healthy infants. Engineering problems that resulted in the contamination of the extracted milk coupled with the era’s ongoing faith in scientific infant feeding restricted the use of these devices to medical purposes only—cases of engorged, inflamed, or infected breasts—or feeding premature babies [10].

Physicians seemed to balk at sending these electrical milking machines home with mothers. Los Angeles physician Earl Tarr commented that “this electric pump will be found far more useful in the maternity division of the hospital than elsewhere, and I feel reasonably sure that it should be used there rather than sold to the mother for home use” [11]. Such concerns about who would control this device played into larger narratives in early- and mid-twentieth century medicine, as the medical profession and its specialties vied for jurisdiction over how medical technologies should be made available to the public [12, 13]. Soon after Abt’s Pump entered the medical world, physicians like Dr. Tarr seized on the prospect of implementing the technology more widely within the confines of the hospital. Tarr believed there was no such thing as a “new-born infant [who] is physically able, during the first few weeks of life, to empty a breast” and he took it upon himself to prove the superiority of Abt’s Pump over the natural sucking of an infant [11]. In a series of clinical experiments performed at the Anita M. Baldwin Hospital for Babies in California, Tarr used the Abt Pump to reestablish milk supplies in mothers who had “gone dry” and compared the abilities of the pump with that of the infant in establishing milk supply. He pleaded with physicians to “pay decidedly more attention” to breastfeeding than to the “modification of cow’s milk,” arguing that “the electric breast pump can be used by [the doctor] to wonderful advantage” [11].

Despite the enthusiasm that many leading physicians expressed about breast pump technologies, some of those who worked the hardest to support breastfeeding in the

mid-twentieth century believed manual expression was still better. It was free, it could be easily learned by any mother, it carried very little risk of contamination, and, by teaching it, doctors and nurses educated women about how their bodies worked [14]. In spite of the efforts of some to focus on fewer technological interventions, the breast pump became a standard fixture in postpartum care [15]. In the meantime breastfeeding rates amongst American mothers overall continued to decline throughout the post-war years [16].

With Abt's Pump leading the hospital-based milk extraction market, the United States served as the world's primary manufacturer of hospital breast pumps until World War II [17]. When war broke out in Europe in 1939, restrictions on inter-Atlantic trade left many overseas hospitals without a supply of replacement Abt Pumps and parts. It was then that a struggling Swedish engineer named Einar Egnell became intrigued by the prospect of building a better breast pump. He devoted 3 years to learning the mechanics of lactation and experimented with how best to mimic the nursing infant. His eventual success relied greatly upon the assistance of Maja Kindberg, the head nurse of Stockholm's Södersjukhuset hospital. Reportedly, Egnell went through eight prototypes before coming up with a design that earned Kindberg's and his patients' approval [17]. From the earliest days of its introduction, mothers at the Stockholm hospital began to demand what became called the Sister Maja Breast pump (or SMB pump) over the existing Abt Pumps because they found it to be more comfortable (personal correspondence).

In 1965, the Egnell pump caught the attention of American psychologist and maternal health researcher Niles Newton. Newton, a long-time supporter of the breastfeeding advocacy organization La Leche League, asked its secretary, Edwina Froelich, to share news of her recent discovery while in England—"an excellent new breast pump which was superior to any used before. It not only sucks [but] it then lets go with a push. This is more like natural suckling and more comfortable for the mother" [18]. Enclosed in her letter were some promotional materials for "Egnell's Breast Pump," which stressed its utility as a rental unit that the mother "can conveniently use...in her home." The main selling points, however, continued to be its medical utilities, including "in cases of harelip or prematurity," "when the mother's nipples are inverted," and "when breast feeding has to be suspended temporarily" due to illness [19]. Still, the sales literature even in this early period hinted at a much broader user base when it suggested that the pump could be used for mothers who suffered from "hypogalactia" or "too little milk" as well as in cases when the mother "has more milk than the baby can use" [19]. Once league members and others in the breastfeeding community began to learn of these benefits, interest in the pumps slowly expanded [20, 21].

By the 1950s and 1960s, small pockets of women in the U.S. were beginning to build a movement back to the breast, a trend that accelerated in the 1970s and has continued to this day [22-25]. For women at the forefront of the breastfeeding movement, the pump appeared to be less of a medical device, as Lasker and Abt had originally imagined, than a natural breastfeeding aid. La Leche League arguably

maintained a relatively cautious relationship with breast pump technology into the 1990s, with many in the organization remaining wary of the ideological implications of a device that could be used as a substitute for breastfeeding. The league conducted multiple surveys and discussions on the subject over the years, the results of which they often circulated in their newsletters and pamphlets [26]. The dialogue that emerged by the 1970s suggested that many in the breastfeeding advocacy community opposed the widespread use of the pump, preferring to see it remain a medical device used on an as-needed basis rather than a staple of domestic technology [27].

Despite some unease over the expansion of the pump, the technology only grew in popularity as the twentieth century neared its close. Hospital-grade, personal-use breast pumps like the fashionable “Pump In Style,” first released by the Medela Company in 1996, emerged in response to the continuing demand for home breastfeeding technologies. While women could (and still can) rent hospital-grade pumps, the direct-to-consumer sale of personal-use pumps further contributed to the domestication of this formerly medical device. The “Infant Feeding Practices Study II,” the largest study yet on pumping, indicated that, between 2005 and 2006, 85 percent of breastfeeding mothers who had healthy single-born infants had expressed milk from their breasts [28]. No longer envisioned as a medical device alone, the pump has become a standard fixture on baby registries alongside other “necessities” [29].

Mainstream social critics of this relatively new emphasis on breast pumping have begun to emerge in reaction to this change. As Lepore has observed, “pumps put milk into bottles, even though many of breast-feeding’s benefits to the baby...come not from the liquid itself but from the smiling and cuddling” [1]. Feminist-minded mothers and scholars alike have struggled to come up with a position on breast pumps [30]. The technology appears to allow women greater freedom—both to work and provide their children with the same fundamental advantages of breastfeeding. And yet, as editorials and blog posts will attest, it can also restrict women’s abilities to make choices about their maternal experiences by making breastfeeding a “woman’s burden”—something no “good” mom can excusably not do.

Meanwhile, policies that support breastfeeding mothers have not kept pace with the increasing pressure for women to make this choice for their babies. A provision tucked in with the Patient Protection and Affordable Care Act, for example, requires insurance companies to cover the cost of breast pumps and lactation consultation [31]. As a result, the breast pump industry is now booming, and yet the U.S. continues to rank near the bottom in the world for things like paid maternity leave—something that is likely to have far more of an impact on breastfeeding than free breast pumps [32].

It behooves us to remember how recent this whole redefinition in breastfeeding really is. Despite our quest for that singular technological fix for our problems, the breast pump, like most technologies, has simply helped us to refashion them, in many ways by making them less visible and more unevenly distributed. The

expectations of breastfeeding that the breast pump has helped to create have meant greater burdens for mothers who work in low-paying or low-status jobs. Breast pumping may make feeding with breast milk possible for more mothers, but it has done little to change the fundamental inequalities surrounding motherhood and infant care. It remains for us to manage the new landscape of breastfeeding that the breast pump has helped carve out.

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