Breast pumps

Clinical Policy ID: CCP.1051

Recent review date: 1/2024

Next review date: 5/2025

Policy contains: Electric breast pumps, hospital breast pumps, manual breast pumps.

AmeriHealth Caritas Next has developed clinical policies to assist with making coverage determinations. AmeriHealth Caritas Next's clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state- or plan-specific definition of "medically necessary," and the specific facts of the particular situation are considered by AmeriHealth Caritas Next when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. AmeriHealth Caritas Next's clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. AmeriHealth Caritas Next's clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, AmeriHealth Caritas Next will update its clinical policies as necessary. AmeriHealth Caritas Next's clinical policies are not guarantees of payment.

Coverage policy

Breast pumps are clinically proven and, therefore, may be medically necessary when any of the following criteria are met:

- The mother is unable to nurse and provide adequately for her infant(s).
- (Temporarily) while the mother takes medications that can be found in breast milk and would injure her infant(s).
- Personal-use electric pumps or hospital-grade electric pumps may be necessary if manual breast pumps do not adequately meet maternal or infant needs.

A new set of breast pump supplies (i.e., initial tubing, shields, and bottles) are necessary with each subsequent pregnancy (American College of Obstetricians and Gynecologists, 2018, 2023; American Academy of Family Physicians, 2022).

Limitations

No limitations were identified during the writing of this policy.

Alternative covered services

Bright Start® services and lactation specialists as part of hospital delivery.

Background

The World Health Organization has reiterated its strong support for the exclusive nutrition of infants through breast milk for the first six months of life, and up to and exceeding the first year, citing studies that have demonstrated the benefits of breast milk over other sources of nutrition (World Health Organization, 2023). Policy statements from various groups (Institute of Medicine, 2011; American Academy of Pediatrics, 2012; American College of Obstetricians and Gynecologists, 2018, 2023; Meek, 2022) arrive at similar conclusions. Benefits to breast feeding found in the medical literature include:

- Improved health to infants. Benefits include reduced risk of otitis media, urinary tract infection, respiratory tract infection, bronchiolitis, necrotizing enterocolitis, atopic dermatitis, gastroenteritis, inflammatory bowel disease, diabetes, childhood leukemia (acute lymphocytic leukemia and acute myeloid leukemia), sudden infant death syndrome, infant mortality, asthma, allergies, and celiac disease.
- Improved health to mothers. Benefits include reduced risk of postpartum blood loss, postpartum depression, risk of subsequent child abuse and neglect (after adjusting for risk factors), and an increase in rapid uterus involution.

The American Academy of Pediatrics recommendations also include contraindications against breast feeding, including presence of certain infant metabolic disorders, and maternal conditions, such as tuberculosis, brucellosis, human T-cell lymphotrophic virus type I or II, varicella, H1N1 influenza, and presence of particular narcotic drugs. Reductions in smoking, alcohol consumption, and a balanced diet are also recommended for breast feeding mothers (American Academy of Pediatrics, 2012; Meek, 2022).

The U.S. Department of Health and Human Services publication Healthy People 2020 set a target that 81.9% of mothers nurse at least some of the time, with 46.2% continuing exclusive nutritional support for their babies through breast milk until three months, and 25.5% until six months (U.S. Department of Health and Human Services, 2022). National figures for babies born 2019 include 83.2%, 45.3%, and 24.9% (Centers for Disease Control and Prevention, 2022). Disparities between racial and ethnic groups have persisted; among 2019 U.S. births, Asians had the highest proportion of infants initially breast fed (90.3%), followed by Hispanics (87.4%), whites (85.5%), and blacks (73.3%) (Chiang, 2021).

A small minority of mothers are unable to produce adequate milk during breastfeeding. Factors contributing to this inability include waiting too long to start breastfeeding, breastfeeding too infrequently, supplementing breastfeeding, an ineffective latch, use of certain medications, and previous breast surgery. Premature birth, maternal obesity, pregnancy-induced high blood pressure, and poorly controlled insulin-dependent diabetes also contribute to inadequate milk production.

Mastitis and pain may require a woman to temporarily discontinue nursing but use a breast pump to continue stimulation of milk production. Some women may prefer to express milk using a breast pump between nursing episodes to supplement their infant's time directly at the breast. Some employers may not allow a woman to nurse at work, so she may need to pump during those periods. Many women may not be able to nurse if traveling or in public areas, so they may find that the use of a breast pump allows greater flexibility.

Breast pumps are devices that extract milk from lactating women. Pumps can be manual, electric, or the hospital type needed to provide breast milk for premature infants. Manual pumps require repetitive use of pressure generated by hand or foot power. Manual pumps allow the woman to adjust the pressure to generate the adequate expression of milk without causing pain. However, they may cause fatigue and are often less efficient than electric pumps. Personal-use electric pumps are larger than manual pumps and generate greater suction.

As such, the time required for expression of milk is shorter. These pumps are intended for a single user and may require more sterilization of the tubing. Hospital-grade electric pumps are intended for multiple users with accessories for each individual. They may provide greater stimulation to maintain adequate lactation than either the manual or personal electric pump (American Association of Family Practitioners, 2018).

Once collected, milk is stored in a container. This “expressed” breast milk can be donated to milk banks. Milk may be kept at room temperature no longer than six hours, refrigerated no more than eight days, and frozen no more than 12 months.

Findings

The 2013 policy for electric pumps by the United States Breastfeeding Committee and National Breastfeeding Center recommends that one electric pump purchase per birth event should be considered medically necessary. In addition, electric pump rentals every 36 months should be considered medically necessary to support lactation initiation after mothers and infants are separated and when the mother cannot breastfeed due to complications, congenital anomalies, and other conditions. Two kits per pregnancy are considered necessary to allow double pumping i.e., both breasts simultaneously (Carothers, 2013). The 2013 policy was similar to the subsequent Committee Opinion and Practice Advisory issued by the American College of Obstetricians and Gynecologists several years earlier (American College of Obstetricians and Gynecologists, 2018, 2023).

The American Academy of Family Practitioners recommends use of a hand pump when mother and infant are separated briefly, and a hospital-grade electric pump for longer and more frequent separations. When an infant must be bottle fed, not feeding an entire bottle whenever possible is encouraged, to reduce the burden on the mother to produce more milk when breastfeeding resumes (American Academy of Family Physicians, 2022).

The Affordable Care Act mandates that insurance plans cover the cost of breast pumps and breastfeeding counseling (American College of Obstetricians and Gynecologists, undated). Analysis of claims data found use of breast pumps increased by 183.4 per 1,000 live births for women with private insurance but decreased by 99.3 for Medicaid enrollees after the 2012 rollout. However, the 2014 opening of health insurance marketplaces had no effect on claims for women with private insurance (up 8.3), compared to an increase of 119.4 in the Medicaid population (Hawkins, 2022).

A systematic review of 47 studies, 38 of which were randomized controlled trials, assessed ways to address growth failure in infants under six months of age, most of whom were pre-term. Methods analyzed included cup, bottle, nasogastric tube, early progressive, bovine/cow milk, high volume, electric breast pump, Galactagogue feeding, macronutrient fortified formula, cream supplementation, and fortified human milk formula feeding. Only human milk compared to formula intervention had a positive effect on morbidity among preterm infants, while no intervention had any positive effect on mortality (Rana, 2020).

A 2015 Cochrane review of 17 studies (n = 961) comparing pumping methods, hand expression, and pump type generally found no differences in milk contamination, volume, and energy content. Initiating milk pumping within 60 minutes of birth for a very low birth-weight baby obtained greater milk quantity than for those who initiated pumping 1 - 6 hours after birth. Most studies had low risk of bias (Becker, 2015).

A 2016 follow-up to this study included 22 trials with 1,339 mothers of infants in neonatal units to evaluate efficacy of pumps, and 14 trials of 730 mothers with healthy infants at home. Studies were often heterogeneous or not comparable and suffered from small sample sizes. However, authors found that low-cost interventions such as initiating milk expression even before breast feeding, relaxation, massage, warming the breasts, hand

expression, and lower cost pumps may be as or more effective than large electric pumps (Becker, 2016).

A systematic review of 10 studies showed mothers using breast pumps for at least one year significantly increased the average duration of exclusively breastfed cases (8.3 months versus 4.7 months) (Kim, 2018).

Breast pumps may be needed more frequently in special needs populations. In a study of 157,187 mothers (8.8% of which had gestational diabetes mellitus), the percent of mothers with diabetes utilizing breast pumps was significantly greater (odds ratio 1.28) compared to those without diabetes (Oza-Frank, 2017).

A review notes that the majority of new U.S. mothers use breast pumps in the first four months after births to achieve milk-feeding goals. It also notes that there are few guidelines to aid mothers and their providers in choosing the most appropriate type of pump and using it in the most appropriate manner. The review assesses means of selecting pumps and their use by the extent to which the pump replaces the infant for milk removal, and the stage of lactation (Meier, 2016).

Providing free home breast pumps, which the Tennessee Medicaid program does, was one factor in improving breast milk-feeding rates from 22% to 88% over five years, for very low birth-weight infants at an inner-city hospital (Dereddy, 2015).

A study of 1,844 mothers who used breast pumps found 62% reported pump-related problems, the most common of which was the pump did not extract sufficient milk. Another 15% reported an injury, typically sore nipples. Learning from written or video instructions, using a battery-operated pump and intending to breast feed less than 12 months were associated with elevated risk of problems (Qi, 2014).

A 2017 review found that donor high-dose human milk, including milk from breast pumps, does not reduce risks to Neonatal intensive care unit infants as that from the mother. Substandard outcomes for breast pump-dependent mothers can be affected by use of ineffective breast pumps, improperly fitted breast shields, inappropriate suction pressure of pumps, short pumping sessions, and lengthy time periods between breast pump use (Meier, 2017).

A review of 355 inner-city infants given free breast pumps at birth with a visit 1.5-3.5 months after birth showed African Americans, versus other races, had significantly lower rates of any breastfeeding (38.9% versus 93.8%) and exclusive breastfeeding (17.8% versus 50.0%). The African American rate of exclusive breastfeeding was similar with and without a breast pump (19.4% and 16.3%); rates of any breastfeeding were higher for those with no breast pump (46.9% and 31.4%, $P = .004$). Authors concluded available breast pumps were not linked with more exclusive breastfeeding (Bream, 2017).

A systematic review of six studies revealed no significant differences in macronutrient content (fat, protein, and lactose) of expressed breast milk according to method of expression used (Cinar, 2021).

A survey administered to 542 physicians returning to work after maternity leave showed 59% used a wearable pump in the workplace and 41% used a traditional electric breast pump. Use of wearable pumps was associated with shorter lactation breaks ($P < .00001$) and greater likelihood of providing milk for their entire intended duration ($P = .005$). No differences were observed between groups for ability to pump as often as needed while at work ($P = .16$) and frequency of lactation breaks ($P = .223$) (Colbenson, 2022).

In a systematic review assessing nutrients in human milk collected post-partum, most of the 32 studies included

milk obtained through electronic pumps and hand pumps. While most articles described levels of nutrients in milk (carbohydrates, glucose, lactose, and protein), analytical methods of these nutrients need improvement to understand how to make pumped milk more effective (Mohr, 2023).

References

On October 25, 2023, we searched PubMed and the databases of the Cochrane Library, the U.K. National Health Services Centre for Reviews and Dissemination, the Agency for Healthcare Research and Quality, and the Centers for Medicare & Medicaid Services. Search terms were “breast pump” and “electric breast pump.” We included the best available evidence according to established evidence hierarchies (typically systematic reviews, meta-analyses, and full economic analyses, where available) and professional guidelines based on such evidence and clinical expertise.

American Academy of Family Practitioners. Breastfeeding, family physicians supporting (position paper). https://www.aafp.org/about/policies/all/breastfeeding-position-paper.html#:~:text=The%20AAFP's%20policy%20on%20breastfeeding,first%20six%20months%20of%20life.&text=The%20AAFP%20also%20supports%20breastfeeding,as%20long%20as%20mutually%20desired. Published January 2022.

American Academy of Pediatrics, Section on Breast Feeding, Policy Statement — Breastfeeding and the Use of Human Milk (AAP). *Pediatrics* 2012;129(3):e827-841. Doi: 10.1542/peds.2011-3552.

American College of Obstetricians and Gynecologists, Committee on Obstetric Practice. Optimizing support for breastfeeding as part of obstetric practice. ACOG Committee Opinion number 756. https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2018/10/optimizing-support-for-breastfeeding-as-part-of-obstetric-practice. Published September 24, 2018.

American College of Obstetricians and Gynecologists. Practice advisory to update the duration of breastfeeding. https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2023/02/duration-of-breastfeeding-update. Published February 2023.

American College of Obstetricians and Gynecologists. Understanding health care coverage for breastfeeding. https://www.acog.org/programs/breastfeeding/understanding-health-care-coverage-for-breastfeeding. Undated.

Becker GE, Smith HA, Cooney F. Methods of milk expression for lactating women. *Cochrane Database Syst Rev*. 2015;(2):CD006170. Doi 10.1002/14651858.CD006170.pub4.

Becker GE, Smith HA, Cooney F. Methods of milk expression for lactating women. *Cochrane Database Syst Rev*. 2016;9:CD006170. Doi: 10.1002/14651858.CD006170.pub5.

Bream E, Li H, Furman L. The effect of breast pump use on exclusive breastfeeding at 2 months postpartum in an inner-city population. *Breastfeed Med*. 2017;12:149-155. Doi: 10.1089/bfm.2016.0160.

Carothers C. Model payer policy for the United States – steps to make a difference. https://lactationmatters.org/2013/07/23/model-payer-policy-for-the-united-states-steps-to-make-a-difference/. Published July 23, 2013.

Centers for Disease Control and Prevention. Breastfeeding report card – United States, 2022.

https://www.cdc.gov/breastfeeding/data/reportcard.htm. Last updated August 31, 2022.

Chiang KV, Ruowei L, Anstey EH, Perrine CG. Racial and ethnic disparities in breastfeeding initiation – United States, 2019. Morbidity and Mortality Weekly Report. 2019;70(21):769-774. https://www.cdc.gov/mmwr/volumes/70/wr/mm7021a1.htm. Published May 28, 2021.

Cinar N, Suzan OK, Kaya O, Karatas H, Duken ME. Investigation of the effect of human milk expression techniques on milk content: A systematic review. *J Trop Pediatr*. 2021;67(6):fmab108. Doi: 10.1093/tropej/fmab108.

Colbenson GA, Hoff OC, Olson EM, Ducharme-Smith A. The impact of wearable breast pumps on physicians' breastfeeding experience and success. *Breastfeed Med*. 2022;17(6):537-543. Doi: 10.1089/bfm.2021.0266.

Dereddy NR, Talati AJ, Smith A, Kudumula R, Dhanireddy R. A multipronged approach is associated with improved breast milk feeding rates in very low birth weight infants of an inner-city hospital. *J Hum Lact*. 2015;31(1):43-46. Doi: 10.1177/0890334414554619.

Hawkins SS, Horvath K, Noble A, Baum CF. ACA and Medicaid expansion increased breast pump claims and breastfeeding for women with public and private insurance. *Womens Health Issues*. 2022;32(2):114-121. Doi: 10.1016/j.whi.2021.10.005.

Institute of Medicine. Early childhood obesity prevention policies: goals, recommendations, and potential actions. https://www.nap.edu/catalog/13124/early-childhood-obesity-prevention-policies. Published June, 2011.

Kim JH, Shin JC, Donovan SM. Effectiveness of workplace lactation interventions on breastfeeding outcomes in the United States: An updated systematic review. *J Hum Lact*. 2018:890334418765464. Doi: 10.1177/0890334418765464.

Meek JY, Noble L, Section on Breastfeeding. Policy statement: Breastfeeding and the use of human milk. *Pediatrics*. 2022;150(1):1-15. Doi: 10.1542/peds.2022-057988.

Mohr AE, Senkus KE, McDermid JM, Berger PK, Perrin MT, Handu D. Human milk nutrient composition data is critically lacking in the United States and Canada: Results from a systematic scoping review of 2017-2022. *Adv Nutr*. 2023;14(6):1617-1632. Doi: 10.1016/j.advnut.2023.09.007.

Meier PP, Patel AL, Hoban R, Engstrom JL. Which breast pump for which mother: an evidence-based approach to individualizing breast pump technology. *J Perinatol*. 2016;36(7):493-499. Doi: 10.1038/jp.2016.14.

Meier PP, Johnson TJ, Patel AL, Rossman B. Evidence-based methods that promote human milk feeding of preterm infants: an expert review. *Clin Perinatol*. 2017;44(1):1-22. Doi: 10.1016/j.clp.2016.11.005.

Oza-Frank R, Gunderson EP. In-hospital breastfeeding experiences among women with gestational diabetes. *Breastfeed Med*. 2017;12:261-268. Doi: 10.1089/bfm.2016.0197.

Qi Y, Zhang Y, Fain S, Wang C, Loyo-Berrios N. Maternal and breast pump factors associated with breast pump problems and injuries. *J Hum Lact*. 2014;30(1):62-72. Doi: 10.1177/0890334413507499.

Rana R, McGrath M, Gupta P, Thakur E, Kerac M. Feeding interventions for infants with growth failure in the first six months of life: A systematic review. *Nutrients*. 2020;12(7):2044. Doi: 10.3390/nu12072044.

U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Maternal, infant, and child health. Healthy People 2020. https://wayback.archive-it.org/5774/20220414032744/https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives. Published February 6, 2022.

World Health Organization. Breastfeeding. https://www.who.int/health-topics/breastfeeding#tab=tab_1. Published 2023.

Policy updates

9/2013: initial review date and clinical policy effective date: 3/2014

2/2019: References updated. The policy number was changed from CP#12.02.01 to CCP.1051.

1/2020: Policy references updated.

1/2021: Policy references updated.

1/2022: Policy references updated.

1/2023: Policy references updated.

1/2024: Policy references updated.