



Policy Statement: Breastfeeding and the Use of Human Milk

Joan Younger Meek, MD, MS, RD, FAAP, FABM, IBCLC,^a Lawrence Noble, MD, FAAP, FABM, IBCLC,^{b,c} and the Section on Breastfeeding

Breastfeeding and human milk are the normative standards for infant feeding and nutrition. The short- and long-term medical and neurodevelopmental advantages of breastfeeding make breastfeeding, or the provision of human milk, a public health imperative. The American Academy of Pediatrics (AAP) recommends exclusive breastfeeding for approximately 6 months after birth. Furthermore, the AAP supports continued breastfeeding, along with appropriate complementary foods introduced at about 6 months, as long as mutually desired by mother and child for 2 years or beyond. These recommendations are consistent with those of the World Health Organization (WHO). Medical contraindications to breastfeeding are rare. The AAP recommends that birth hospitals or centers implement maternity care practices shown to improve breastfeeding initiation, duration, and exclusivity. The Centers for Disease Control and Prevention (CDC) and The Joint Commission monitor breastfeeding practices in US hospitals. Pediatricians play a critical role in hospitals, their practices, and communities as advocates of breastfeeding and, thus, need to be trained about the benefits of breastfeeding for mothers and children and in managing breastfeeding.

Since the publication of the previous policy statement of the American Academy of Pediatrics on breastfeeding and the use of human milk, research and systematic reviews have continued to reinforce the conclusion that breastfeeding and human milk are the normative standards for infant feeding and nutrition.¹ More than 80% of women initiate breastfeeding in the United States, and both federal and state laws protect a woman's right to breastfeed as well as the right to breastfeed in public and to continue breastfeeding or to express milk in the workplace.² With most women choosing to breastfeed, breastfeeding has been established as the cultural norm in the United States. Furthermore, breastfeeding, or the provision of human milk,

abstract

^aDepartment of Clinical Sciences, Florida State University College of Medicine, Orlando, Florida; ^bDepartment of Pediatrics, Icahn School of Medicine at Mount Sinai, New York City, New York; and ^cNew York City Health+Hospitals/Elmhurst, Elmhurst, New York

This document is copyrighted and is property of the American Academy of Pediatrics (AAP) and its Board of Directors. All authors have filed conflict of interest statements with the American Academy of Pediatrics. Any conflicts have been resolved through a process approved by the Board of Directors. The American Academy of Pediatrics has neither solicited nor accepted any commercial involvement in the development of the content of this publication.

Policy statements from the American Academy of Pediatrics benefit from expertise and resources of liaisons and internal and external reviewers. However, policy statements from the American Academy of Pediatrics may not reflect the views of the liaisons or the organizations or government agencies that they represent. The guidance in this statement does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate. All policy statements from the American Academy of Pediatrics automatically expire 5 years after publication unless reaffirmed, revised, or retired at or before that time.

Accepted for publication April 28, 2022

Drs Meek and Noble were equally responsible for conceptualizing, writing, and revising the manuscript and considering input from all reviewers and the board of directors, and both authors approve the final manuscript as submitted.

DOI: <https://doi.org/10.1542/peds.2022-057988>

Address correspondence to Joan Younger Meek, MD, MS, Florida State University College of Medicine, 250 E. Colonial, Suite 200, Orlando, FL 32801
E-mail: jmeek@fsu.edu

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2022 by the American Academy of Pediatrics

FUNDING: No external funding.

CONFLICT OF INTEREST DISCLOSURES: The authors have indicated

To cite: Meek JY, Noble L; Section on Breastfeeding. Policy Statement: Breastfeeding and the Use of Human Milk. *Pediatrics*. 2022;150(1):e2022057988

should be considered the reference standard to which all forms of infant feeding are compared from a biological, medical, and scientific standpoint. This policy statement updates the recommendations regarding breastfeeding and serves as a reference for other AAP policy and publications that address breastfeeding and infant nutrition. An accompanying technical report³ provides the evidence and basis for the recommendations.

The statement addresses infant feeding from a public health perspective. Feeding decisions go well beyond the provision of nutrition. Breastfeeding itself is about far more than the nutrition provided to the growing child but the relationship between parent and child. The goal of this policy is to support optimal health and nutrition for the child and mother and support parents in meeting their breastfeeding goals. Individual decisions about family feeding should be made by the family with their pediatrician's guidance.

EPIDEMIOLGY

The average national breastfeeding initiation rate for the total US population, based on data from the birth cohort in the 2018 National Immunization Survey of the CDC, is 83.9%.² This figure represents any

breastfeeding, not exclusive breastfeeding. Healthy People 2020 indicators have been met or exceeded for initiation of any breastfeeding (actual 83.9%), exclusive breastfeeding through 3 months (46.3%), exclusive breastfeeding through 6 months (25.8%), and any breastfeeding at 12 months of life (35.0%), but not for 6-month rates of any breastfeeding (56.7%) (most recent data indicated in parentheses; see Table 1). Furthermore, 19.4% of breastfed infants receive supplements of commercial infant formula in the first 48 hours after birth. The Healthy People 2030 goals for breastfeeding are to increase the proportion of infants exclusively breastfed for 6 months to 42.4%⁴ and to increase the proportion of infants who continue to breastfeed for 12 months to 54.1%.⁵

EQUITY

Overall rates of breastfeeding obscure significant sociodemographic and cultural differences. For example, the breastfeeding initiation rate for the non-Hispanic White and Hispanic populations are much higher than for the non-Hispanic Black or African American population, with the non-Hispanic Asian initiation rates being the highest² (Figs 1 and 2).None of the Healthy People 2020 objectives for breastfeeding were

met for non-Hispanic Black mothers and infants among the 2018 birth cohort.² Similar disparities are also seen among mothers with low income (participants in the Special Supplemental Nutrition Program for Women, Infants, and Children [WIC]), younger women (<20 years), and those with a high school education or less.² These disparities represent a significant inequity issue that has disproportionate impact on the non-Hispanic Black population. Implicit bias, structural bias, and structural racism should be addressed to eliminate disparities in breastfeeding and improve the health and well-being of all children and families.⁶

It has been estimated that suboptimal breastfeeding in a non-Hispanic Black population is associated with a 1.7 times excess number of cases of acute otitis media, a 3.3 times excess number of cases of necrotizing enterocolitis, and a 2.2 times excess number of child deaths, compared to a non-Hispanic White population.⁷ A nationally representative sample found that breastfeeding was associated with a 21% reduced risk of postneonatal death for all infants and a 31% reduced risk for Black infants.⁸ A recent analysis linking birth and death certificates for all US births in 2017 found that any breastfeeding of non-Hispanic Black infants is associated with a 17%

TABLE 1 Healthy People 2020 Objectives and Outcomes for Breastfeeding

Maternal Child Health Indicators ^a	Healthy People 2020 Objectives	Target, %	Current Rates, % ^b
MICH-21.1	Increase the proportion of infants who are breastfed: Ever	81.9	83.9
MICH-21.2	Increase the proportion of infants who are breastfed: At 6 mo	60.6	56.7
MICH-21.3	Increase the proportion of infants who are breastfed: At 1 y	34.1	35.0
MICH-21.4	Increase the proportion of infants who are breastfed: Exclusively through 3 mo	46.2	46.3
MICH-21.5	Increase the proportion of infants who are breastfed: Exclusively through 6 mo	25.5	25.8
MICH-23	Reduce the proportion of breastfed newborns who received formula supplementation with the first 2 d of life	14.2	19.4

^a Source: Healthy People 2020 (<https://www.healthypeople.gov/2020/data-search/Search-the-Data#topic-area=3492>).
^b Source: National Immunization Survey, representing infants born in 2018 (https://www.cdc.gov/breastfeeding/data/nis_data/results.html).

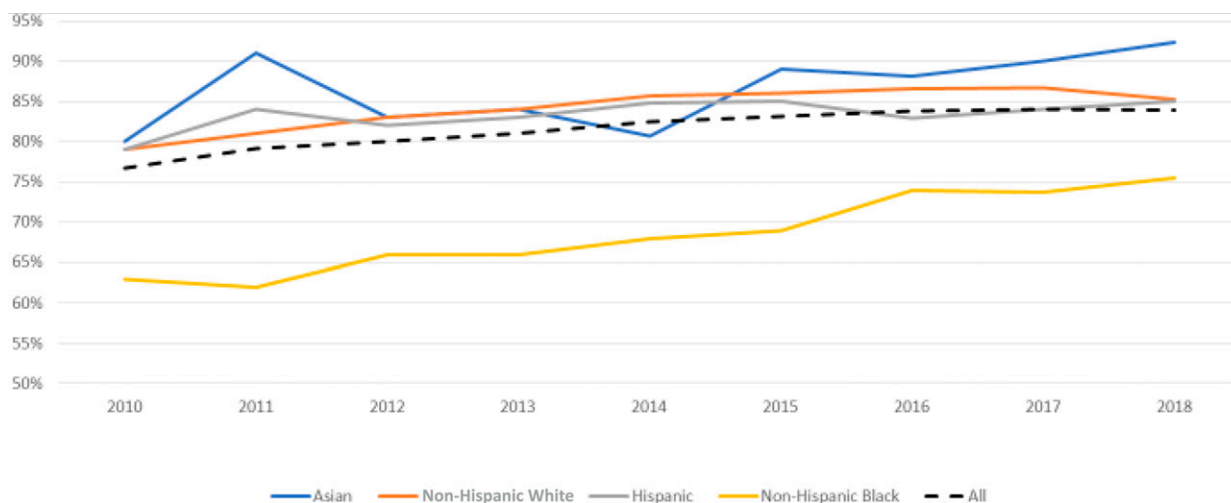


FIGURE 1

Any breastfeeding US by race and ethnicity. Centers for Disease Control and Prevention, Department of Health and Human Services, National Immunization Survey (2021). Available at: https://www.cdc.gov/breastfeeding/data/nis_data/rates-any-exclusive-bf-socio-dem-2018.html. Accessed June 7, 2022

reduction in infant mortality (7–364 days), 29% reduction in neonatal mortality (7–27 days), and 13% reduction in postneonatal mortality (28–364 days).⁹ Targeted interventions have shown improvement in breastfeeding initiation and duration rates among those groups with lower breastfeeding rates. For example, implementation of the Ten Steps to Successful Breastfeeding from the World Health Organization and United Nations Children’s Fund¹⁰ has decreased the disparity in

breastfeeding initiation between Black and White infants by 9.6%.¹¹ In addition, a systematic review by the Agency for Healthcare Research and Quality concluded that, for women enrolled in WIC, peer support interventions offered by WIC agencies improve rates of breastfeeding initiation and duration.¹²

EXCLUSIVE BREASTFEEDING

The AAP recommends exclusive breastfeeding for approximately 6 months. This recommendation is

consistent with guidelines set forth by the World Health Organization, American College of Obstetricians and Gynecologists, American Academy of Family Physicians, and Canadian Pediatric Society.^{13–16} Human milk has a unique composition, with antimicrobial, antiinflammatory, immunoregulatory agents, and living leukocytes, all of which contribute to the developing immune system of the child.¹⁷ Studies and meta-analyses have confirmed the association of 6 months of exclusive breastfeeding

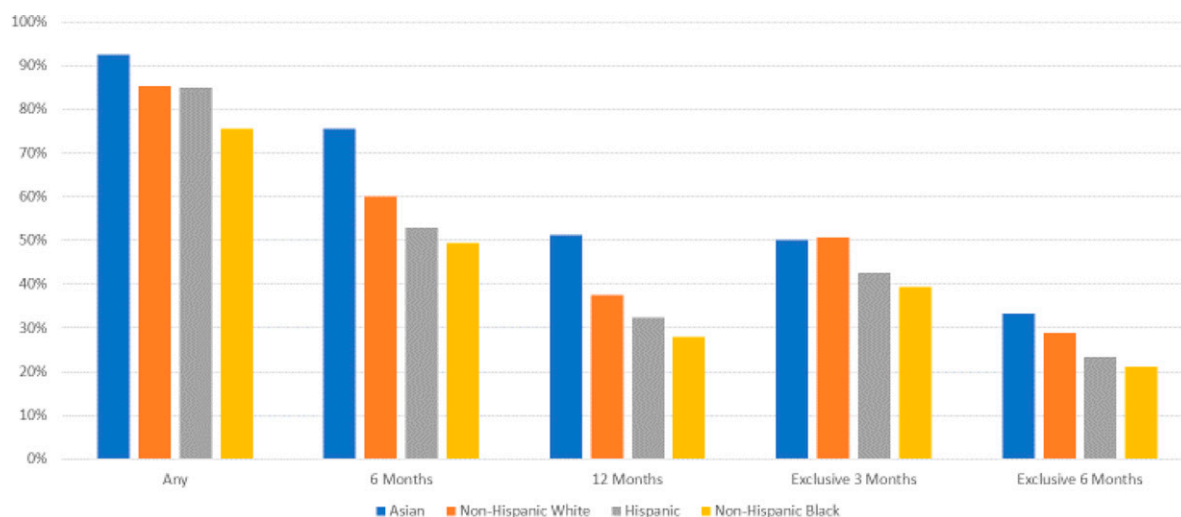


FIGURE 2

Breastfeeding rates by race and ethnicity 2018. Centers for Disease Control and Prevention, Department of Health and Human Services, National Immunization Survey (2021). Available at: https://www.cdc.gov/breastfeeding/data/nis_data/rates-any-exclusive-bf-socio-dem-2018.html. Accessed June 7, 2022

with decreased rates of lower respiratory tract infections, severe diarrhea, otitis media, and obesity (Table 2).

The Pregnancy and Birth to 24 Months Project of the US Department of Agriculture concluded that complementary foods initiated earlier than 6 months offer no benefit to the breastfeeding infant in growth or iron status but may be associated with an increased risk of overweight or obesity, especially if introduced before 4 months.¹⁸ The European Food Safety Authority Panel on Nutrition, Novel Foods, and Food Allergens concluded that most infants do not need complementary feeds for nutritional reasons until around 6 months of age.¹⁹

DURATION OF BREASTFEEDING

The AAP supports continued breastfeeding, along with appropriate complementary foods introduced at about 6 months, as long as mutually desired for 2 years or beyond. Studies and meta-analyses have also confirmed the impact of breastfeeding longer than 12 months on maternal health in decreasing maternal type 2 diabetes mellitus, hypertension, breast cancer, and ovarian cancer rates (Table 2). Mothers who decide to breastfeed beyond the first year need support. They often report feeling ridiculed or alienated in their choice and conceal their breastfeeding behavior to minimize unsolicited judgment and comments.^{20,21} There is evidence that only one-half of mothers who breastfeed past 1 year discuss their decision with their pediatric primary care provider and that 38% of women who reported that their provider was unsupportive of breastfeeding past the first year elected to change their pediatric primary care provider.²²

Breastfeeding exclusively for about 6 months is an evidence-based recommendation. In an individual counseling situation, pediatricians and families can discuss the desires of the family and cultural variations. Pediatricians can review the importance of exclusive breastfeeding and ensure mothers and families are fully informed about their decisions, while at the same time engaging in nonjudgmental conversations about the family's personal goals for breastfeeding. Exclusive or any breastfeeding is not always possible, despite the best of intentions, and these mothers and families need special support to overcome the disappointment that may accompany breastfeeding difficulties.

OUTCOMES

Extensive data confirm that many acute and chronic pediatric disorders, such as otitis media, acute diarrheal disease, lower respiratory illnesses, sudden infant death syndrome (SIDS), inflammatory bowel disease, childhood leukemia, diabetes mellitus, obesity, asthma, and atopic dermatitis, occur less frequently among children who were breastfed as infants.¹⁸ Some of these outcomes may be secondary to the unique biologic composition of human milk. Mothers who breastfeed experience lower risk of type 2 diabetes mellitus; breast, ovarian, and endometrial cancer; and hypertension¹² (Tables 2 and 3).

CONTRAINDICATIONS TO BREASTFEEDING

Classic galactosemia in the infant is an absolute contraindication to breastfeeding.^{23,24} Mothers in the United States should not breastfeed or feed expressed milk to their infants if they have HIV infection, human T-cell lymphotropic virus type I or type II infection, untreated

brucellosis, or suspected or confirmed Ebola virus disease.²⁵

Substances such as illicit opioids, cocaine, and phencyclidine are considered contraindications to breastfeeding because of their potential effect on the infant's long-term neurobehavioral development. In most cases, it is preferable if mothers with prenatal opioid use initiate breastfeeding and practice exclusive breastfeeding to mitigate the impact of potential withdrawal on the newborn infant. Some newborn infants also may require pharmacologic treatment, but maternal rooming-in and continued breastfeeding is desirable.²⁶ Both mothers and infants should be monitored closely throughout the hospitalization and in the outpatient setting for signs and symptoms of withdrawal and for appropriate infant weight gain.²⁷

SPECIAL CONSIDERATIONS

Infectious Diseases

Most maternal infections are compatible with breastfeeding. Current evidence regarding emerging pathogens, such as severe acute respiratory syndrome-2 and breastfeeding, is available from the AAP. In most cases, breast milk provides antibodies and protection, with little to no direct evidence of the virus causing infections to infants.^{28–31} Contact between the mother, other infected family members, and the infant potentially exposes the infant to respiratory secretions, so hand hygiene and covering the nose and mouth with a mask is recommended when the infected mother is breastfeeding directly. Updated guidance from the AAP and the CDC should be consulted.

Mothers who are infected with untreated brucellosis temporarily should not breastfeed and should not feed expressed milk to their

TABLE 2 Breastfeeding and Infant Outcomes^a

Outcome and Reference	% Lower Risk	Breastfeeding ^a	Compared With:	Comments ^b	OR, RR, or HR	95% CI
SIDS ⁸⁷	40	2–4 mo	None	Breastfeed at least 2 mo to reduce SIDS	OR 0.60	0.44–0.82
	60	4–6 mo	None		OR 0.40	0.26–0.63
	64	>6 mo	None		OR 0.36	0.22–0.61
Infant mortality, United States ⁸⁸	19	Ever	Never	US cohort	OR 0.81	0.68–0.97
Neonatal mortality (8–27 d) ⁸⁸	51	Ever	Never	US cohort	OR 0.49	0.34–0.72
Postneonatal mortality ⁸	21	Ever	Never	US nationally representative sample	OR 0.79	0.67–0.93
	38	>3 mo	Never		OR 0.62	0.46–0.82
Infant mortality (7–365 d) ⁹	26	Ever	Never	US national cohort	OR 0.74	0.70–0.79
Neonatal mortality (7–27 d) ⁹	40	Ever	Never	US national cohort	0.60	0.54–0.67
Postneonatal mortality (28–364 d) ⁹	19	Ever	Never	US national cohort	0.81	0.76–0.87
Infant mortality, developing countries ⁸⁹	33	Exclusive	Predominant		RR 0.67	0.52–0.88
	79	Exclusive	Partial		RR 0.21	0.20–0.22
	93	Exclusive	None		RR 0.07	0.03–0.16
Infant mortality, developing countries ⁹⁰	25	Initiated in first hour	>1st hour		RR 0.75	0.64–0.88
Lower respiratory tract infection ⁹¹	19	Exclusive 6 mo	Exclusive <4 mo	Cohort	RR 0.81	0.69–0.95
Severe or persistent diarrhea ⁹¹	30	Exclusive 6 mo	Exclusive <4 mo	Cohort	RR 0.70	0.52–0.94
Otitis media ⁹²	33	Ever	Never		OR 0.67	0.56–0.80
	33	More	Less		OR 0.67	0.59–0.76
	43	Exclusive 6 mo	None		OR 0.57	0.44–0.80
Asthma 5–18 y ⁹³	10	More	Less		OR 0.90	0.84–0.97
	12	Ever	Never		OR 0.88	0.82–0.95
Asthma ever, all ages ⁹⁴	22	Longer	Shorter	Most protective for wheezing in first 2 y	OR 0.78	0.74–0.84
Eczema first, 2 y ⁹³	26	Exclusive 3–4 mo	Shorter		OR 0.74	0.57–0.97
Crohn's disease ⁹⁵	29	Ever	Never		OR 0.71	0.59–0.85
	80	12 mo	3–6 mo		OR 0.20	0.08–0.50
Ulcerative colitis ⁹⁵	22	Ever	Never		OR 0.78	0.67–0.91
	79	12 mo	3–6 mo		OR 0.21	0.10–0.43
Childhood obesity ⁹⁶	22	Ever	Never		OR 0.78	0.74–0.81
	10	<3 mo	Never		OR 0.90	0.84–0.95
	12	3–5 mo	Never		OR 0.88	0.79–0.97
	17	5–7 mo	Never		OR 0.83	0.76–0.90
	21	>7 mo	Never		OR 0.79	0.70–0.88
Childhood and adult obesity ⁹⁷	23	Ever	Never		OR 0.77	0.69–0.86
	26	Greater	Less		OR 0.74	0.68–0.80
	31	Exclusive	Nonexclusive		OR 0.69	0.61–0.79

TABLE 2 Continued

Outcome and Reference	% Lower Risk	Breastfeeding ^a	Compared With:	Comments ^b	OR, RR, or HR	95% CI
Childhood obesity ⁹⁸	18	>6 mo	Never	European pooled analysis	OR 0.82	0.78–0.86
	11	>6 mo	<6 mo		OR 0.89	0.86–0.93
	20	Exclusive 6 mo	Nonexclusive		OR 0.8	0.74–0.85
Type 1 diabetes ⁹⁹	57	Fully breastfeeding	Never	Cohort	HR 0.43	0.21–0.90
		6 mo				
	56	12 mo	Never	Cohort	HR 0.44	0.22–0.88
Type 2 diabetes ¹⁰⁰	33	Ever	Never		OR 0.67	0.56–0.80
Leukemia ¹⁰¹	11	Ever	Never		OR 0.89	0.84–0.94
	19	6 mo	None or Shorter		OR 0.81	0.73–0.89

CI, confidence interval; HR, hazard ratio; OR, odds ratio; RR, relative risk.

^a Not necessarily exclusive breastfeeding unless specifically written.

^b Data are from meta-analyses, unless another type of study is written.

infants.²⁵ Women with active herpetic lesions on the breast should refrain from breastfeeding or using expressed milk from the affected breast until the lesions have resolved but may breastfeed from the unaffected breast when lesions on the affected breast are covered completely.²⁵

Women infected with West Nile virus may breastfeed.³²

Infants born to women known to be hepatitis B surface antigen positive should receive the initial dose of

hepatitis B vaccine and hepatitis B immune globulin within 12 hours of birth.^{25,33} There is no need to delay initiation of breastfeeding until after the infant is immunized. Although hepatitis C virus can be detected in maternal milk, transmission of hepatitis C virus via breast milk has not been documented, so neither the AAP nor the CDC consider maternal hepatitis C virus infection a contraindication to breastfeeding.^{25,34} Mothers with hepatitis C who have cracked or bleeding nipples should refrain from breastfeeding from the affected

breast or feeding expressed milk from that breast until the nipple has healed.

Mastitis occurs in one-third of postpartum women. Mothers with mastitis are encouraged to continue to breastfeed. Regular feeding or expression of milk is an adjunct to other treatment. Antibiotics may be indicated. Approximately 10% of mastitis cases progress to breast abscesses, which require drainage. Breastfeeding can continue on the affected side as long as the infant's mouth does not contact purulent

TABLE 3 Breastfeeding and Maternal Outcomes (From Meta-Analyses)

Condition and Reference	% Lower Risk	Breastfeeding ^a	Compared With	OR or RR	95% CI
Type 2 diabetes mellitus ¹⁰²	32	Longer	Shorter	RR 0.68	0.57–0.82
Diabetes mellitus ¹⁰³	30	>12 mo	Less	RR 0.70	0.62–0.78
Gestational diabetes mellitus and type 2 diabetes mellitus ¹⁰⁴	78	Longer	Shorter	OR 0.22	0.13–0.36
	58	Exclusive	None	OR 0.42	0.22–0.81
Hypertension ¹⁰⁵	8	<6 mo	None	OR 0.92	0.88–0.96
	11	6–12 mo	None	OR 0.89	0.86–0.92
	12	>12 mo	None	OR 0.88	0.84–0.93
Hypertension ¹⁰³	13	>12 mo	Less	RR 0.87	0.78–0.97
Premenopausal breast cancer ¹⁰⁶	14	Any	None	RR 0.86	0.80–0.93
Postmenopausal breast cancer ¹⁰⁶	11	Any	None	RR 0.89	0.83–0.95
Breast cancer ¹⁰⁶	28	Exclusive	None	RR 0.72	0.58–0.90
Breast cancer ¹⁰⁷	22	Any	None	OR 0.78	0.74–0.82
	7	<6 mo	None	OR 0.93	0.88–0.99
	9	6–12 mo	None	OR 0.91	0.87–0.96
	26	>12 mo	None	OR 0.74	0.69–0.79
Ovarian cancer ¹⁰⁷	30	Ever	Never	OR 0.70	0.64–0.77
	17	<6 mo	None	OR 0.83	0.78–0.89
	28	6–12 mo	None	OR 0.72	0.66–0.78
	37	>12 mo	None	OR 0.63	0.56–0.71
Endometrial cancer ¹⁰⁸	11	Ever	Never	OR 0.89	0.81–0.98
Thyroid cancer ¹⁰⁹	9	Ever	Never	RR 0.91	0.83–0.99

^a Not necessarily exclusive breastfeeding unless specifically written.

drainage from the breast. Coordination with the mother's provider is recommended.²⁵

Influenza vaccination is recommended in breastfeeding mothers if they did not receive the influenza vaccine during pregnancy or are breastfeeding into the next influenza season.³⁵

A pediatric infectious disease specialist or the AAP *Red Book: Report of the Committee on Infectious Diseases* should be consulted for current recommendations on breastfeeding and infectious diseases.²⁵

Marijuana Use

Current data are insufficient to assess the effects of exposure of infants to maternal marijuana use during breastfeeding. As a result, maternal marijuana use while breastfeeding is discouraged. Because the potential risks of infant exposure to marijuana metabolites are unknown, women should be informed of the potential risk of exposure during lactation and encouraged to abstain from using any marijuana products and avoid second-hand marijuana smoke exposure.³⁶

Alcohol Use

Breast milk alcohol concentrations closely parallel blood alcohol concentrations, with highest levels in milk occurring 30 to 60 minutes after consuming alcohol. Moderate alcohol consumption by a breastfeeding mother (up to 1 standard drink per day) is not known to be harmful to the infant,

especially if the mother waits at least 2 hours after a single drink before nursing or expressing milk to be fed to the infant. Moderate alcohol intake does not appear to affect breastfeeding duration.³⁷ Consuming more than 2 standard alcoholic drinks daily is discouraged.

Tobacco Use

Breastfeeding mothers should be encouraged strongly to stop smoking and to minimize secondhand exposure. Cigarette smoking, or the use of nicotine products, is associated with reduced production of milk and shorter lactation.³⁸ In addition, exposure to secondhand smoke from either parent is associated with an increase in SIDS, asthma, and other respiratory illnesses.³⁹ If, after counseling, a breastfeeding mother chooses to smoke or vape, she should be advised to minimize her smoking, never smoke while breastfeeding, and never smoke inside the home or car. To minimize the transmission of nicotine and other by-products to the infant, it is preferable that the mother smoke or vape immediately after breastfeeding. Nicotine cessation products may be used while breastfeeding.⁴⁰

MATERNAL MEDICATIONS

Most medications that women who are breastfeeding might take are compatible with breastfeeding. There are a limited number of agents that are contraindicated, and an appropriate substitute usually can be found. The most comprehensive source of information regarding the

safety of maternal medications when the mother is breastfeeding is the Drugs and Lactation Database (LactMed), published by the National Library of Medicine and National Institutes of Health, and is available online (see other medication references in Table 4).⁴¹

RADIOLOGIC PROCEDURES

According to the American College of Radiology, the routine administration of gadolinium or iodinated contrast medium is not a contraindication to breastfeeding.⁴² Very small amounts of contrast enter breast milk, and <1% of that ingested by the infant is absorbed from its gastrointestinal tract, for a net absorption of <0.0004% of the intravenous dose of gadolinium and <0.01% of the intravenous dose of iodinated contrast being absorbed systemically.⁴² Mothers receiving these contrast agents do not need to stop breastfeeding and/or to express and discard their milk.

HOSPITAL SUPPORT

The AAP acknowledges the findings of the Agency for Healthcare Research and Quality that the Baby-Friendly Hospital Initiative⁴³ increases breastfeeding initiation and duration.¹² Although education of health care staff may be important, it is insufficient as a single measure to increase breastfeeding initiation. Practices shown to improve breastfeeding rates include skin-to-skin care of mother and infant immediately

TABLE 4 Medications and Breastfeeding References

Reference	Website
Drugs and Lactation Database (LactMed), National Library of Medicine/National Institutes of Health, available via the internet or through mobile applications	https://www.ncbi.nlm.nih.gov/books/NBK501922/?report=classic
Dr Thomas Hale's Medications and Mother's Milk; Infant Risk Center at Texas Tech University	https://www.infantrisk.com/
MotherToBaby medication fact sheets	https://mothertobaby.org/fact-sheets-parent/
Sachs HC; American Academy of Pediatrics, Committee on Drugs. Clinical report: The transfer of drugs and therapeutics into human breast milk: an update on selected topics. <i>Pediatrics</i> . 2013;132(3):e796-e809. Reaffirmed May 2018	https://pediatrics.aappublications.org/content/132/3/e796

after birth for newborn infants delivered both vaginally and by cesarean delivery. Early skin-to-skin contact decreases the risk of hypoglycemia.⁴⁴ Implementation of breastfeeding-supportive hospital practices, including breastfeeding in the first hour after birth, exclusive breastfeeding, rooming-in, breastfeeding on demand, avoidance of pacifiers, and information on breastfeeding support after discharge, enabled women to be more successful at meeting their prenatal desire for exclusive breastfeeding.⁴⁵ Data compiled by the CDC Maternity Practices in Infant Nutrition and Care survey of infant feeding data and maternity practices at more than 1300 US hospitals revealed that higher scores on implementation of breastfeeding-supportive maternity care practices were associated with higher rates of exclusive breastfeeding at the time of hospital discharge and with any and exclusive breastfeeding at 8 weeks postpartum.^{46,47} In addition, the Agency for Healthcare Research and Quality systematic review of 40 studies concluded that breastfeeding supportive practices were associated with improved rates of breastfeeding initiation and duration.¹²

Frequent feeding on demand, at least 8 to 10 times in 24 hours, decreases newborn weight loss, the need for supplements, and the risk of clinically significant hyperbilirubinemia.⁴⁸ Continuous rooming-in with frequent, exclusive breastfeeding is recommended. Practitioners can avoid recommending breast milk supplements unless breastfeeding technique and frequency has been optimized first or when supplementation is medically necessary. Maternity care practices shown to increase initiation,

duration, and exclusivity of breastfeeding, such as those delineated in the WHO Ten Steps to Successful Breastfeeding, are monitored by the CDC in the Maternity Practices in Infant Nutrition and Care survey.⁴⁹ Statewide and hospital results on the Maternity Practices in Infant Nutrition and Care surveys can be used to develop practices and policies that strengthen support for maternity patients.

Delayed bathing of the newborn until 12 hours after birth allows more uninterrupted skin-to-skin contact and has been shown to improve exclusive in-hospital breastfeeding rates.^{50,51} The AAP does not provide a recommendation on infant bathing, except in cases of maternal HIV infection, hepatitis B or C virus infection, herpes simplex, or other infections transmitted via blood or other bodily fluids. This guidance is based on expert opinion.

Formal hospital staff training should focus on updating knowledge and techniques for breastfeeding support. Emphasis should be placed on the numerous benefits of exclusive breastfeeding and emphasize the role of staff in decreasing disparities and providing culturally competent care.

SAFE SLEEP

The AAP has issued recommendations for SIDS or sudden unexplained infant death prevention, as well as safe sleep and skin-to-skin care.⁵² These recommendations provide detailed guidance to support breastfeeding mothers while preventing the tragic deaths of infants because of unsafe sleep practices.^{52–54} The AAP recommends breastfeeding as one strategy to decrease the risk of SIDS or sudden unexplained infant death.⁵²

ESTABLISHMENT OF BREASTFEEDING

Most mothers experience lactogenesis II, or more copious milk production, by the third to fourth day after delivery. Early skin-to-skin care and frequent feeding facilitate this transition from drops of colostrum to ounces of milk. Risk factors for delayed lactogenesis II include maternal obesity, polycystic ovarian syndrome, maternal diabetes mellitus, hypertensive disorders in pregnancy, preterm labor, cesarean delivery, and intrapartum complications, such as excessive blood loss.^{55,56} In cases of maternal diabetes mellitus complicated by maternal obesity, rates of cesarean deliveries are higher, which may also interfere with the initiation of breastfeeding. Signs of physiologic transition to lactogenesis II, such as breast fullness or tenderness, visible leaking of milk, and more frequent infant swallowing, should be tracked along with the infant elimination patterns and weight trajectory.

At least once every 8 to 12 hours during the hospitalization of the mother and infant, including once within 8 hours before hospital discharge, it is recommended that a health professional trained in formal assessment of breastfeeding perform and document an assessment of breastfeeding effectiveness.⁵⁷

BREASTFEEDING AND HUMAN MILK FOR THE VERY LOW BIRTH WEIGHT INFANT

The AAP has provided clinical guidance to support breastfeeding and the use of human milk among very low birth weight infants (VLBW).⁵⁸ Mother's expressed milk for very low birth weight infants (≤ 1500 g) in the NICU provides short- and long-term health benefits, including reduction of necrotizing enterocolitis, late-onset sepsis, chronic lung disease, retinopathy of prematurity, and improved

neurodevelopment.⁵⁸ Mother's expressed milk should be considered medical therapy, with higher doses associated with maximal health benefits. Pediatricians can emphasize the importance of early and frequent milk expression for mothers of VLBW infants. The AAP recommends pasteurized donor human milk when a mother's milk is not available or is contraindicated.⁵⁹ Fortification of mother's milk or donor milk with bovine or human milk-derived human milk fortifiers should be considered to optimize growth in the VLBW infant.⁶⁰

LATE PRETERM AND EARLY TERM INFANTS

Late preterm infants, born between 34 and 36 weeks' gestational age, and early term infants, born at 37 to 38 weeks' gestation, have decreased breastfeeding rates compared to term newborn infants.^{61,62} There are multiple factors that may lead to breastfeeding difficulties, including maternal delayed onset of lactation, infant immaturity, decreased effective milk emptying, and separation of infants from their mothers. Inadequate human milk intake in the first days after delivery can contribute to longer hospital stays and higher rates of hospital readmissions.⁶³ Infant supplementation, when necessary, should preferably be with expressed maternal milk or pasteurized donor human milk, when available, because formula supplementation has been associated with increased exclusive formula feeding at discharge.^{64,65} Informal milk sharing may be associated with infectious risks as well as contaminants.⁶⁶

HYPERBILIRUBINEMIA

Infants who are breastfeeding tend to have higher mean concentrations of bilirubin. This is believed to be physiologic, and there is some evidence that bilirubin in neonates

is beneficial, because bilirubin is a potent antioxidant.⁶⁷ Poor intake by the exclusively breastfed infant in the first days of life, however, can be associated with pathologic hyperbilirubinemia. A study has documented that decreased frequency of breastfeeding, especially ≤ 7 times a day, is associated with higher bilirubin concentrations, whereas breastfeeding 9 to 10 times a day is associated with lower bilirubin concentrations.⁶⁸ Infant supplementation, when necessary, should preferably be with expressed maternal milk. Colostrum feedings increase stooling in the newborn, which increases bilirubin excretion in the stools. The need for phototherapy in an otherwise healthy infant without signs of dehydration and/or insufficient intake is not an indication for supplementation with formula, unless bilirubin concentrations are approaching exchange transfusion levels. Infants requiring phototherapy benefit from remaining in close proximity to the mother to facilitate cue-based feeding and additional breastfeeding support.

Some breastfed infants experience breast milk jaundice, a benign condition that may persist up to 3 months of age.⁶⁹ The bilirubin is unconjugated and occurs in a healthy, thriving infant who is gaining weight appropriately and stooling frequently. No specific treatment is necessary.

ADOPTION OR SURROGACY

Breastfeeding is possible in cases of adoption or surrogacy, but if this is to occur, it optimally requires advance preparation through hormonal stimulation as well as signaling of the breasts through pumping in advance of delivery.⁷⁰ Mothers may produce at least a partial milk supply. Expressed milk

or pasteurized donor human milk, if readily available and affordable, as well as infant formula, may be provided at the breast through use of supplemental nursing systems. Referral to a breastfeeding medicine specialist should be encouraged.

INFANTS BORN TO GENDER-DIVERSE FAMILIES

Children of gender-diverse parents may have less access to human milk because of both social and biological constraints. Breastfeeding is used throughout this document; however, the word "breastfeeding" itself may be both triggering, and less accurate, for gender-diverse parents, who may prefer the term "chestfeeding," which is more inclusive of lactation in the context of varying physiologic anatomies.⁷¹

VITAMIN AND MINERAL SUPPLEMENTS

Intramuscular vitamin K1 (phytonadione), at a dose of 0.5 to 1.0 mg, should be routinely administered to all infants on the first day of life to reduce the risk of vitamin K deficiency bleeding.^{72,73} The dose may be delayed until after the first feeding at the breast. Oral vitamin K is not recommended, because the oral dose is variably absorbed and may not provide adequate concentrations or stores.⁷²

Vitamin D deficiency or insufficiency and rickets has increased in all infants as a result of decreased sunlight exposure secondary to changes in lifestyle, dress habits, and use of topical sunscreen preparations.⁷⁴ To maintain an adequate serum vitamin D concentration, all infants consuming less than 28 ounces of commercial infant formula per day routinely should receive an oral supplement of vitamin D 400 IU per day, beginning at hospital discharge and throughout breastfeeding.⁷⁴ This recommendation applies to both exclusively and partially breastfed

infants. An alternative strategy to vitamin D supplementation of the infant is to supplement the mother who is breastfeeding with 6400 IU of vitamin D.⁷⁵

The AAP has published recommendations for supplementing iron in infants.⁷⁶ More studies are needed, however, because delayed cord clamping has been shown to increase iron stores in healthy term newborn infants.⁷⁷ Preterm infants should receive both a multivitamin preparation and an oral iron supplement until they are ingesting a completely mixed diet and their growth and hematologic status are normalized.⁷⁸

COMPLEMENTARY FEEDINGS

The AAP recommends exclusive breastfeeding for about 6 months. Complementary solids should be introduced at about 6 months for most infants. Foods rich in protein, iron, and zinc, such as finely ground meats, chicken, or fish, are good choices to complement the infant's diet of breast milk.^{79,80} Breast milk remains the major component of the infant's diet, as foods from the family's diet are gradually introduced with appropriate modification of texture and avoidance of added sugar and fat.^{79,80} An expert panel has advised peanut introduction as early as 4 to 6 months of age for infants at high risk of peanut allergy because of the

presence of severe eczema and/or egg allergy, but not until 6 months for infants at moderate or low risk.⁸¹

ROLE OF THE PEDIATRICIAN

The AAP is cognizant that for women to be successful in achieving the recommended breastfeeding goals, significant societal changes are required. Pediatricians can play an important role in leading and advocating for the societal changes that permit continued exclusive and direct breastfeeding, such as guaranteed paid maternity leave, flexible work schedules, including working from home, and on-site child care.⁸² Additionally, public health interventions such as WIC incentives and environmental policies may provide opportunities to overcome structural barriers to breastfeeding.^{83,84}

The critical role that pediatricians play is highlighted by the recommended health supervision visit within 48 to 72 hours after discharge from the hospital or at 3 to 5 days of age.⁸⁵ Pediatricians should discourage the use of nonmedically indicated supplementation with commercial infant formula. Many breastfeeding problems may arise between 4 and 7 days after birth. The pediatrician needs to be able to assess the effectiveness of breastfeeding, manage common problems, provide

guidance for preservation of the milk supply if supplementation is needed, and provide appropriate referrals.⁴⁸

Pediatricians are ideally positioned to serve as breastfeeding educators and not solely delegate this role to staff or nonmedical or lay volunteers. Pediatricians' direct communication with families that breastfeeding is a medical and health priority can increase initiation, duration, and exclusivity. Collaboration with the maternal health provider can improve the overall care for the infant and mother. Health care providers play a role in providing the most up-to-date information and recommendations so that parents have the information about breastfeeding that they need to make an informed feeding decision.

The AAP has outlined how a pediatrician's own office-based practice can serve as a model for how to support breastfeeding in the workplace (Table 5).⁸⁶ The pediatrician should consider taking the lead in encouraging his or her affiliated hospitals to provide appropriate support and facilities for their breastfeeding employees. In addition, the pediatrician can work collaboratively with all members of the health care team to have maximal impact. Pediatricians can partner with lactation specialists or

TABLE 5 Summary of Breastfeeding-Supportive Office Practices

1. Have a written breastfeeding-friendly office policy
2. Train staff in breastfeeding support skills
3. Discuss breastfeeding during prenatal visits and at each well-child visit
4. Encourage exclusive breastfeeding for ~6 mo
5. Provide appropriate anticipatory guidance that supports the continuation of breastfeeding as long as desired
6. Incorporate breastfeeding observation into routine care
7. Educate mothers on breast milk expression and return to work
8. Provide noncommercial breastfeeding educational resources for parents
9. Encourage breastfeeding in the waiting room, but provide private space on request
10. Eliminate the distribution of free formula
11. Train staff to follow telephone triage protocols to address breastfeeding concerns
12. Collaborate with the local hospital or birthing center and obstetric community regarding breastfeeding-friendly care
13. Link with breastfeeding community resources
14. Monitor breastfeeding rates in your practice

Meek JY, Hatcher AJ; American Academy of Pediatrics, Section on Breastfeeding. Clinical report: The breastfeeding-friendly pediatric office practice. *Pediatrics*. 2017;139(5):e20170647.

train office staff to provide effective breastfeeding counseling.

KEY RECOMMENDATIONS

1. The AAP recommends exclusive breastfeeding for about 6 months, with complementary food introduction at about 6 months, and as mutually desired by mother and child, supports continued breastfeeding until 2 years or beyond.
2. The AAP recommends that birth hospitals or centers implement maternity care practices that improve breastfeeding initiation, duration, and exclusivity, such as those in the WHO Ten Steps to Successful Breastfeeding, as monitored by the CDC.
3. Pediatricians need to provide information so that parents can make an informed feeding decision. The parental feeding decision should be fully supported, without pressure or guilt by any member of the health care team.
4. Parents giving birth should be supported to breastfeed through early initiation of skin-to-skin contact and frequent breastfeeding, with skilled lactation support readily available in maternity care facilities.
5. Pediatricians are encouraged to use current resources, such as LactMed, to provide guidance and avoid disrupting breastfeeding unnecessarily, even temporarily, because most maternal conditions, medications, and vaccinations are compatible with breastfeeding.
6. Pediatricians need to be knowledgeable about the health benefits of breastfeeding and breastfeeding management and skillful in providing culturally congruent breastfeeding care.

Pediatricians can implement breastfeeding supportive policies and practices in their offices and be ready to partner with community resources to improve breastfeeding support. Pediatricians and pediatric practices may consider partnering with lactation specialists to support breastfeeding parents and children.

7. Pediatricians play a role in advocating for socially and culturally sensitive policies that support breastfeeding families and can work to address inequities in the delivery of care in the office, the hospital, and the community to eliminate disparities in breastfeeding.
8. Pediatricians can assist parents who have given birth to preterm and other vulnerable infants to establish a full supply of milk by working with hospital staff to facilitate early, frequent milk expression. Pasteurized donor human milk is recommended for very low birth weight infants when the mother's milk is not available or as a supplement to the mother's milk.
9. Policies that protect breastfeeding, including universal paid maternity leave, the right of a woman to breastfeed in public, insurance coverage for lactation support and breast pumps, on-site child care; universal workplace break time with a clean, private location for expressing milk, the right to feed expressed milk, and the right to breastfeed in child care centers and lactation rooms in schools are all essential to supporting families in sustaining breastfeeding.
10. National breastfeeding rates through the age of 2 years should be tracked and data

should be stratified by known breastfeeding disparities by national public health infrastructure. These data should be stratified by race, ethnicity, and socioeconomic demographics for known breastfeeding disparities by states, local health departments, hospitals, and pediatric practices, because these data will inform areas that need improvement.

Lead Authors

Joan Younger Meek, MD, MS, RD, FAAP, FABM, IBCLC
Lawrence Noble, MD, FAAP, FABM, IBCLC
Section on Breastfeeding Executive Committee
Lori Feldman-Winter, MD, MPH, FAAP, Chairperson
Maya Bunik, MD, MSPH, FAAP
Ann Kellams, MD, FAAP
Lisa Stellwagen, MD, FAAP
Jennifer Peelen Thomas, MD, MPH, IBCLC, FAAP
Julie Ware, MD, FABM, IBCLC, FAAP
Subcommittee Chairpersons
Margaret Parker, MD, FAAP
Rose St. Fleur, MD, FAAP

Staff

Lauren Barone, MPH
Kera Beskin, MPH, MBA
Ngozi Onyema-Melton, MPH, CHES29.

ABBREVIATIONS

AAP: American Academy of Pediatrics
CDC: Centers for Disease Control and Prevention
SIDS: sudden infant death syndrome
WHO: World Health Organization
WIC: woman, infants, and children
VLBW: very low birth weight

REFERENCES

1. Section on Breastfeeding. Breastfeeding and the use of human milk. *Pediatrics*. 2012;129(3):e827–e841
2. Centers for Disease Control and Prevention. National immunization survey. Available at: https://www.cdc.gov/breastfeeding/data/nis_data/index.htm. Accessed January 5, 2022
3. Younger Meek J, Noble L; American Academy of Pediatrics, Section on Breastfeeding. Technical report: Breastfeeding and the use of human milk. *Pediatrics*. 2022, In press.
4. US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2030. Increase the proportion of infants who are breastfed exclusively through age 6 months—MICH-15. Available at: <https://health.gov/healthy-people/objectives-and-data/browse-objectives/infants/increase-proportion-infants-who-are-breastfed-exclusively-through-age-6-months-mich-15>. Accessed January 5, 2022
5. US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2030. Increase the proportion of infants who are breastfed through 1 year—MICH-16. Available at: <https://health.gov/healthy-people/objectives-and-data/browse-objectives/infants/increase-proportion-infants-who-are-breastfed-1-year-mich-16>. Accessed January 5, 2022
6. Trent M, Dooley DG, Dougé J; Section on Adolescent Health; Council on Community Pediatrics; Committee on Adolescence. Policy statement: The impact of racism on child and adolescent health. *Pediatrics*. 2019;144(2):e20191765
7. Bartick MC, Jegier BJ, Green BD, Schwarz EB, Reinhold AG, Stuebe AM. Disparities in breastfeeding: impact on maternal and child health outcomes and costs. *J Pediatr*. 2017;181:49–55.e6
8. Chen A, Rogan WJ. Breastfeeding and the risk of postneonatal death in the United States. *Pediatrics*. 2004;113(5):e435–e439
9. Li R, Ware J, Chen A, et al. Breastfeeding and post-perinatal infant deaths in the United States, a national prospective cohort analysis. *The Lancet Regional Health-Americas*. 2022;5:100094
10. World Health Organization. Ten steps to successful breastfeeding. Available at: <https://www.who.int/teams/nutrition-and-food-safety/food-and-nutrition-actions-in-health-systems/ten-steps-to-successful-breastfeeding>. Accessed January 5, 2022
11. Merewood A, Bugg K, Burnham L, et al. Addressing racial inequities in breastfeeding in the southern United States. *Pediatrics*. 2019;143(2):e20181897
12. Feltner C, Weber RP, Stuebe A, Groden-sky CA, Orr C, Viswanathan M. Breastfeeding programs and policies, breastfeeding uptake, and maternal health outcomes in developed countries. Comparative effectiveness review no. 210. (Prepared by the RTI International—University of North Carolina at Chapel Hill Evidence-Based Practice Center under Contract No. 290-2015-00011-I.) AHRQ Publication No. 18-EHC014-EF. Rockville, MD: Agency for Healthcare Research and Quality; 2018
13. World Health Organization. Breastfeeding recommendations. Available at: https://www.who.int/health-topics/breastfeeding#tab=tab_2. Accessed January 5, 2022
14. American College of Obstetricians and Gynecologists. Optimizing support for breastfeeding as part of obstetric practice. ACOG Committee Opinion No. 756. *Obstet Gynecol*. 2018;132(4):e187–e196
15. American Academy of Family Physicians. Family physicians supporting breastfeeding (position paper). Available at: <https://www.aafp.org/about/policies/all/breastfeeding-position-paper.html>. Accessed January 5, 2022
16. Critch JN; Canadian Paediatric Society, Nutrition and Gastroenterology Committee. Nutrition for healthy term infants, six to 24 months: an overview. *Paediatr Child Health*. 2014;19(10):547–552
17. Goldman AS. Evolution of immune functions of the mammary gland and protection of the infant. *Breastfeed Med*. 2012;7(3):132–142
18. Stoody EE, Spahn JM, Casavale KO. The pregnancy and birth to 24 months project: a series of systematic reviews on diet and health. *Am J Clin Nutr*. 2019;109(Suppl_7):685S–697S
19. Castenmiller J, de Henauw S, Hirsch-Ernst KI, et al; EFSA Panel on Nutrition, Novel Foods and Food Allergens (NDA). Appropriate age range for introduction of complementary feeding into an infant's diet. *EFSA J*. 2019;17(9):e05780
20. Dowling S, Brown A. An exploration of the experiences of mothers who breastfeed long-term: what are the issues and why does it matter? *Breastfeed Med*. 2013;8(1):45–52
21. Brockway M, Venturato L. Breastfeeding beyond infancy: a concept analysis. *J Adv Nurs*. 2016;72(9):2003–2015
22. Tchaconas A, Keim SA, Heffern D, Adesman A. Pediatric care providers, family, and friends as sources of breastfeeding support beyond infancy. *Breastfeed Med*. 2018;13(2):116–122
23. Berry GT. Classic galactosemia and clinical variant galactosemia. *GeneReviews*. 2000. In: Adam MP, Mirzaa GM, Pagon RA, Wallace SE, Bean LH, Gripp KW, Amemiya A, eds. *GeneReviews® [Internet]*. Seattle, WA: University of Washington; 1993–2022
24. Demirbas D, Coelho AI, Rubio-Gozalbo ME, Berry GT. Hereditary galactosemia. *Metabolism*. 2018;83:188–196
25. American Academy of Pediatrics. Breastfeeding and Human Milk. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH, eds. *Red Book: 2021-2024 Report of the Committee on Infectious Diseases*, 32nd ed. Itasca, IL: American Academy of Pediatrics; 2021
26. Meyer MC, Johnston AM, Crocker AM, Heil SH. Methadone and buprenorphine for opioid dependence during pregnancy: a retrospective cohort study. *J Addict Med*. 2015;9(2):81–86
27. Holmes AP, Schmidlin HN, Kurzum EN. Breastfeeding considerations for mothers of infants with neonatal abstinence syndrome. *Pharmacotherapy*. 2017;37(7):861–869
28. Dong Y, Chi X, Hai H, et al. Antibodies in the breast milk of a maternal woman with COVID-19. *Emerg Microbes Infect*. 2020;9(1):1467–1469

29. Fox A, Marino J, Amanat F, et al. Evidence of a significant secretory-IgA dominant SARS-CoV-2 immune response in human milk following recovery from COVID-19. *medRxiv*. 2020.
30. Chambers C, Krogstad P, Bertrand K, et al. Evaluation for SARS-CoV-2 in breast milk from 18 infected women. *JAMA*. 2020;324(13):1347–1348
31. Demers-Mathieu V, Do DM, Mathijssen GB, et al. Difference in levels of SARS-CoV-2 S1 and S2 subunits- and nucleocapsid protein-reactive SIgM/IgM, IgG and SIgA/IgA antibodies in human milk [published correction appears in *J Perinatol*. 2020]. *J Perinatol*. 2021;41(4):850–859
32. Centers for Disease Control and Prevention, National Center on Birth Defects and Developmental Disabilities. West Nile virus. Available at: <https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/maternal-or-infant-illnesses/west-nile-virus.html>. Accessed January 5, 2022
33. American Academy of Pediatrics, Committee on Fetus and Newborn. American College of Obstetricians and Gynecologists, Committee on Obstetric Practice. Perinatal infections. In: Kilpatrick SJ, Papile LA, Macones GA, Waterberg KL, eds. *Guidelines for Perinatal Care*, 8th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2017:491
34. Centers for Disease Control and Prevention. Hepatitis B or C infections. Available at: <https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/maternal-or-infant-illnesses/hepatitis.html>. Accessed January 5, 2022
35. Committee on Infectious Diseases. Policy statement: Recommendations for prevention and control of influenza in children, 2020–2021. *Pediatrics*. 2020;146(4):e2020024588
36. Ryan SA, Ammerman SD, O'Connor ME; Committee on Substance Use and Prevention; Section on Breastfeeding. Marijuana use during pregnancy and breastfeeding: implications for neonatal and childhood outcomes. *Pediatrics*. 2018;142(3):e20181889
37. Haastrup MB, Pottegård A, Damkier P. Alcohol and breastfeeding. *Basic Clin Pharmacol Toxicol*. 2014;114(2):168–173
38. Napierala M, Mazela J, Merritt TA, Flork E. Tobacco smoking and breastfeeding: Effect on the lactation process, breast milk composition and infant development. A critical review. *Environ Res*. 2016;151:321–338
39. Liebrechts-Akkerman G, Lao O, Liu F, et al. Postnatal parental smoking: an important risk factor for SIDS. *Eur J Pediatr*. 2011;170(10):1281–1291
40. Ilett KF, Hale TW, Page-Sharp M, Kristensen JH, Kohan R, Hackett LP. Use of nicotine patches in breast-feeding mothers: transfer of nicotine and cotinine into human milk. *Clin Pharmacol Ther*. 2003;74(6):516–524
41. Drugs and Lactation Database (LactMed). US National Library of Medicine. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK501922/>. Accessed January 5, 2022
42. American College of Radiology. Administration of contrast media to women who are breastfeeding. In: *ACR Manual on Contrast Media*. Reston, VA: American College of Radiology; 2020:99–100. Available at: <https://www.acr.org/Clinical-Resources/Contrast-Manual>. Accessed January 5, 2022
43. Guidance I. Protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services – the revised baby-friendly hospital initiative. Geneva, Switzerland: World Health Organization; 2018. License: CC BY-NC-SA 3.0 IGO. Available at: <https://apps.who.int/iris/bitstream/handle/10665/272943/9789241513807-eng.pdf?ua=1>. Accessed January 5, 2022
44. Moore ER, Bergman N, Anderson GC, Medley N. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database Syst Rev*. 2016;11(11):CD003519
45. Perrine CG, Scanlon KS, Li R, Odom E, Grummer-Strawn LM. Baby-friendly hospital practices and meeting exclusive breastfeeding intention. *Pediatrics*. 2012;130(1):54–60
46. Barrera CM, Beauregard JL, Nelson JM, Perrine CG. Association of maternity care practices and policies with in-hospital exclusive breastfeeding in the United States. *Breastfeed Med*. 2019;14(4):243–248
47. Nelson JM, Perrine CG, Freedman DS, et al. Infant feeding-related maternity care practices and maternal report of breastfeeding outcomes. *Birth*. 2018;45(4):424–431
48. Feldman-Winter L, Kellams A, Peter-Wohl S, et al. Evidence-based updates on the first week of exclusive breastfeeding among infants ≥ 35 weeks. *Pediatrics*. 2020;145(4):e20183696
49. Centers for Disease Control and Prevention. Maternity practices in infant nutrition and care (mPINC) survey. Available at: <https://www.cdc.gov/breastfeeding/data/mpinc/>. Accessed January 6, 2022
50. Preer G, Piseña JM, Cook JT, Henri AM, Philipp BL. Delaying the bath and in-hospital breastfeeding rates. *Breastfeed Med*. 2013;8(6):485–490
51. DiCioccio HC, Ady C, Bena JF, Albert NM. Initiative to improve exclusive breastfeeding by delaying the newborn bath. *J Obstet Gynecol Neonatal Nurs*. 2019;48(2):189–196
52. Task Force on Sudden Infant Death Syndrome. Policy statement: SIDS and other sleep-related infant deaths: updated 2016 recommendations for a safe infant sleeping environment. *Pediatrics*. 2016;138(5):e20162938
53. Moon RY; Task Force on Sudden Infant Death Syndrome. Technical report: SIDS and other sleep-related infant deaths: evidence base for 2016 updated recommendations for a safe infant sleeping environment. *Pediatrics*. 2016;138(5):e20162940
54. Feldman-Winter L, Goldsmith JP; Committee on Fetus and Newborn; Task Force on Sudden Infant Death Syndrome. Clinical report: Safe sleep and skin-to-skin care in the neonatal period for healthy term newborns. *Pediatrics*. 2016;138(3):e20161889
55. Meier P, Patel AL, Wright K, Engstrom JL. Management of breastfeeding during and after the maternity hospitalization for late preterm infants. *Clin Perinatol*. 2013;40(4):689–705
56. Dewey KG, Nommsen-Rivers LA, Heinig MJ, Cohen RJ. Risk factors for

- suboptimal infant breastfeeding behavior, delayed onset of lactation, and excess neonatal weight loss. *Pediatrics*. 2003;112(3 Pt 1):607–619
57. Evans A, Marinelli KA, Taylor JS; Academy of Breastfeeding Medicine. ABM clinical protocol #2: Guidelines for hospital discharge of the breastfeeding term newborn and mother: “The going home protocol,” revised 2014. *Breastfeed Med*. 2014;9(1):3–8
58. Parker MG, Stellwagen LM, Noble L, Kim JH, Poindexter BB, Puopolo KM; Section on Breastfeeding, Committee on Nutrition, Committee on Fetus and Newborn. Promoting human milk and breastfeeding for the very low birth weight infant. *Pediatrics*. 2021;148(5):e2021054272
59. Committee on Nutrition; Section on Breastfeeding; Committee on Fetus and Newborn. Policy statement: Donor human milk for the high-risk infant: preparation, safety, and usage options in the United States. *Pediatrics*. 2017;139(1):e20163440
60. Brown JV, Embleton ND, Harding JE, McGuire W. Multi-nutrient fortification of human milk for preterm infants. *Cochrane Database Syst Rev*. 2016; (5):CD000343
61. Hackman NM, Alligood-Percoco N, Martin A, Zhu J, Kjerulff KH. Reduced breastfeeding rates in firstborn late preterm and early term infants. *Breastfeed Med*. 2016;11(3):119–125
62. Noble A, Eventov-Friedman S, Hand I, Meerkind D, Gorodetsky O, Noble L. Breastfeeding intensity and exclusivity of early term infants at birth and 1 month. *Breastfeed Med*. 2019;14(6):398–403
63. Radtke JV. The paradox of breastfeeding-associated morbidity among late preterm infants. *J Obstet Gynecol Neonatal Nurs*. 2011;40(1):9–24
64. Mannel R, Peck JD. Outcomes associated with type of milk supplementation among late preterm infants. *J Obstet Gynecol Neonatal Nurs*. 2018;47(4):571–582
65. Breastfeeding challenges. ACOG Committee Opinion No. 820. American College of Obstetricians and Gynecologists. *Obstet Gynecol*. 2021;137:e42–e53
66. U.S. Food and Drug Administration. Use of donor human milk. Available at: <https://www.fda.gov/science-research/pediatrics/use-donor-human-milk>. Accessed March 3, 2022
67. Hansen R, Gibson S, De Paiva Alves E, et al. Adaptive response of neonatal sepsis-derived group B Streptococcus to bilirubin. *Sci Rep*. 2018;8(1):6470.
68. Hassan B, Zakerihamidi M. The correlation between frequency and duration of breastfeeding and the severity of neonatal hyperbilirubinemia. *J Matern Fetal Neonatal Med*. 2018;31(4):457–463
69. Maisels MJ, Clune S, Coleman K, et al. The natural history of jaundice in predominantly breastfed infants. *Pediatrics*. 2014;134(2):e340–e345
70. Farhadi R, Philip RK. Induction of lactation in the biological mother after gestational surrogacy of twins: a novel approach and review of literature. *Breastfeed Med*. 2017;12(6):373–376
71. American Academy of Pediatrics. Words matter: AAP guidance on inclusive, anti-biased language. Available at: <https://www.aap.org/en/about-the-aap/american-academy-of-pediatrics-equity-and-inclusion-efforts/words-matter-aap-guidance-on-inclusive-anti-biased-language/>. Accessed January 6, 2022
72. American Academy of Pediatrics, Committee on Fetus and Newborn. American College of Obstetricians and Gynecologists, Committee on Obstetric Practice. Care of the newborn. In: Kilpatrick SJ, Papile LA, Macones GA, Waterberg KL, eds. *Guidelines for Perinatal Care*, 8th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2017:368
73. American Academy of Pediatrics, Committee on Fetus and Newborn. Policy statement: Controversies concerning vitamin K and the newborn. *Pediatrics*. 2003;112(1):191–192
74. Wagner CL, Greer FR; American Academy of Pediatrics Section on Breastfeeding; American Academy of Pediatrics Committee on Nutrition. Prevention of rickets and vitamin D deficiency in infants, children, and adolescents. *Pediatrics*. 2008;122(5):1142–1152
75. Hollis BW, Wagner CL, Howard CR, et al. Maternal versus infant vitamin D supplementation during lactation: a randomized controlled trial. *Pediatrics*. 2015;136(4):625–634
76. Baker RD, Greer FR; Committee on Nutrition American Academy of Pediatrics. Diagnosis and prevention of iron deficiency and iron-deficiency anemia in infants and young children (0–3 years of age). *Pediatrics*. 2010;126(5):1040–1050
77. Kc A, Rana N, Málqvist M, Jarawka Ranneberg L, Subedi K, Andersson O. Effects of delayed umbilical cord clamping vs early clamping on anemia in infants at 8 and 12 months: a randomized clinical trial. *JAMA Pediatr*. 2017;171(3):264–270
78. Abrams SA. The Committee on Nutrition. Calcium and vitamin D requirements of enterally fed preterm infants. *Pediatrics*. 2013;131:e1676–e1683
79. Hagan JF, Shaw JS, Duncan PM, eds. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*, 4th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2017
80. Scientific report of the 2020 dietary guidelines for Americans. Available at: <https://www.dietaryguidelines.gov/2020-advisory-committee-report>. Accessed January 5, 2022
81. Greer FR, Sicherer SH, Burks AW; Committee on Nutrition; Section on Allergy and Immunology. The effects of early nutritional interventions on the development of atopic disease in infants and children: the role of maternal dietary restriction, breastfeeding, hydrolyzed formulas, and timing of introduction of allergenic complementary foods. *Pediatrics*. 2019;143(4):e20190281
82. Office of the Surgeon General (US); Centers for Disease Control and Prevention (US); Office on Women’s Health (US). The Surgeon General’s Call to Action to Support Breastfeeding. Rockville (MD): Office of the Surgeon General (US); 2011
83. Washio Y, Humphreys M, Colchado E, et al. Incentive-based intervention to maintain breastfeeding among low-

- income Puerto Rican mothers. *Pediatrics*. 2017;139(3):e20163119
84. Furman L. Should we pay mothers who receive WIC to breastfeed? *Pediatrics*. 2017;139(3):e20163828
85. Wagner EA, Chantry CJ, Dewey KG, Nommsen-Rivers LA. Breastfeeding concerns at 3 and 7 days postpartum and feeding status at 2 months. *Pediatrics*. 2013;132(4):e865–e875
86. Meek JY, Hatcher AJ; Section on Breastfeeding. Clinical report: The breastfeeding-friendly pediatric office practice. *Pediatrics*. 2017;139(5):e20170647
87. Thompson JMD, Tanabe K, Moon RY, et al. Duration of breastfeeding and risk of SIDS: an individual participant data meta-analysis. *Pediatrics*. 2017;140(5):e20171324
88. Ware JL, Chen A, Morrow AL, Kmet J. Associations between breastfeeding initiation and infant mortality in an urban population. *Breastfeed Med*. 2019;14(7):465–474
89. Sankar MJ, Sinha B, Chowdhury R, et al. Optimal breastfeeding practices and infant and child mortality: a systematic review and meta-analysis. *Acta Paediatr*. 2015;104(467):3–13
90. Smith ER, Hurt L, Chowdhury R, Sinha B, Fawzi W, Edmond KM; Neovita Study Group. Delayed breastfeeding initiation and infant survival: A systematic review and meta-analysis. *PLoS One*. 2017;12(7):e0180722
91. Quigley MA, Carson C, Sacker A, Kelly Y. Exclusive breastfeeding duration and infant infection. *Eur J Clin Nutr*. 2016;70(12):1420–1427
92. Bowatte G, Tham R, Allen KJ, et al. Breastfeeding and childhood acute otitis media: a systematic review and meta-analysis. *Acta Paediatr*. 2015;104(467):85–95
93. Lodge CJ, Tan DJ, Lau MX, et al. Breastfeeding and asthma and allergies: a systematic review and meta-analysis. *Acta Paediatr*. 2015;104(467):38–53
94. Dogaru CM, Nyffenegger D, Pescatore AM, Spycher BD, Kuehni CE. Breastfeeding and childhood asthma: systematic review and meta-analysis. *Am J Epidemiol*. 2014;179(10):1153–1167
95. Xu L, Lochhead P, Ko Y, Claggett B, Leong RW, Ananthakrishnan AN. Systematic review with meta-analysis: breastfeeding and the risk of Crohn's disease and ulcerative colitis. *Aliment Pharmacol Ther*. 2017;46(9):780–789
96. Yan J, Liu L, Zhu Y, Huang G, Wang PP. The association between breastfeeding and childhood obesity: a meta-analysis. *BMC Public Health*. 2014;14(1):1267
97. Horta BL, Loret de Mola C, Victora CG. Long-term consequences of breastfeeding on cholesterol, obesity, systolic blood pressure and type 2 diabetes: a systematic review and meta-analysis. *Acta Paediatr*. 2015;104(467):30–37
98. Rito AI, Buoncristiano M, Spinelli A, et al. Association between characteristics at birth, breastfeeding and obesity in 22 countries: The WHO European Childhood Obesity Surveillance Initiative—COSI 2015/2017. *Obes Facts*. 2019;12(2):226–243
99. Lund-Blix NA, Dydensborg Sander S, Størdal K, et al. Infant feeding and risk of type 1 diabetes in two large Scandinavian birth cohorts. *Diabetes Care*. 2017;40(7):920–927
100. Horta BL, de Lima NP. Breastfeeding and type 2 diabetes: systematic review and meta-analysis. *Curr Diab Rep*. 2019;19(1):1
101. Amitay EL, Keinan-Boker L. Breastfeeding and childhood leukemia incidence: a meta-analysis and systematic review. *JAMA Pediatr*. 2015;169(6):e151025
102. Aune D, Norat T, Romundstad P, Vatten LJ. Breastfeeding and the maternal risk of type 2 diabetes: a systematic review and dose-response meta-analysis of cohort studies. *Nutr Metab Cardiovasc Dis*. 2014;24(2):107–115
103. Rameez RM, Sadana D, Kaur S, et al. Association of maternal lactation with diabetes and hypertension: a systematic review and meta-analysis. *JAMA Netw Open*. 2019;2(10):e1913401
104. Tanase-Nakao K, Arata N, Kawasaki M, et al. Potential protective effect of lactation against incidence of type 2 diabetes mellitus in women with previous gestational diabetes mellitus: A systematic review and meta-analysis. *Diabetes Metab Res Rev*. 2017;33(4):e2875
105. Qu G, Wang L, Tang X, Wu W, Sun Y. Association between duration of breastfeeding and maternal hypertension: a systematic review and meta-analysis. *Breastfeed Med*. 2018;13(5):318–326
106. Unar-Munguía M, Torres-Mejía G, Colchero MA, González de Cosío T. Breastfeeding mode and risk of breast cancer: a dose-response meta-analysis. *J Hum Lact*. 2017;33(2):422–434
107. Chowdhury R, Sinha B, Sankar MJ, et al. Breastfeeding and maternal health outcomes: a systematic review and meta-analysis. *Acta Paediatr*. 2015;104(467):96–113
108. Jordan SJ, Na R, Johnatty SE, et al. Breastfeeding and endometrial cancer risk: an analysis from the epidemiology of endometrial cancer consortium. *Obstet Gynecol*. 2017;129(6):1059–1067
109. Yi X, Zhu J, Zhu X, Liu GJ, Wu L. Breastfeeding and thyroid cancer risk in women: A dose-response meta-analysis of epidemiological studies. *Clin Nutr*. 2016;35(5):1039–1046