POLICY STATEMENT Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of all Children

American Academy of Pediatrics

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Policy Statement: Breastfeeding and the Use of Human Milk

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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

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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 report[3] 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.

EPIDEMIOLOGY

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 highest[2] (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).

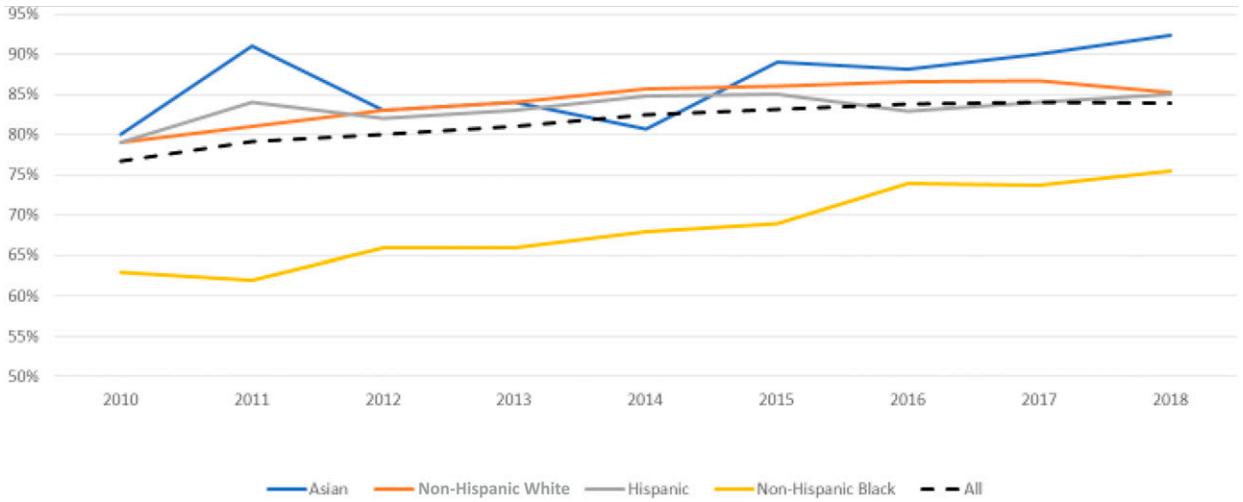

FIGURE 1

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 Fund[10] 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

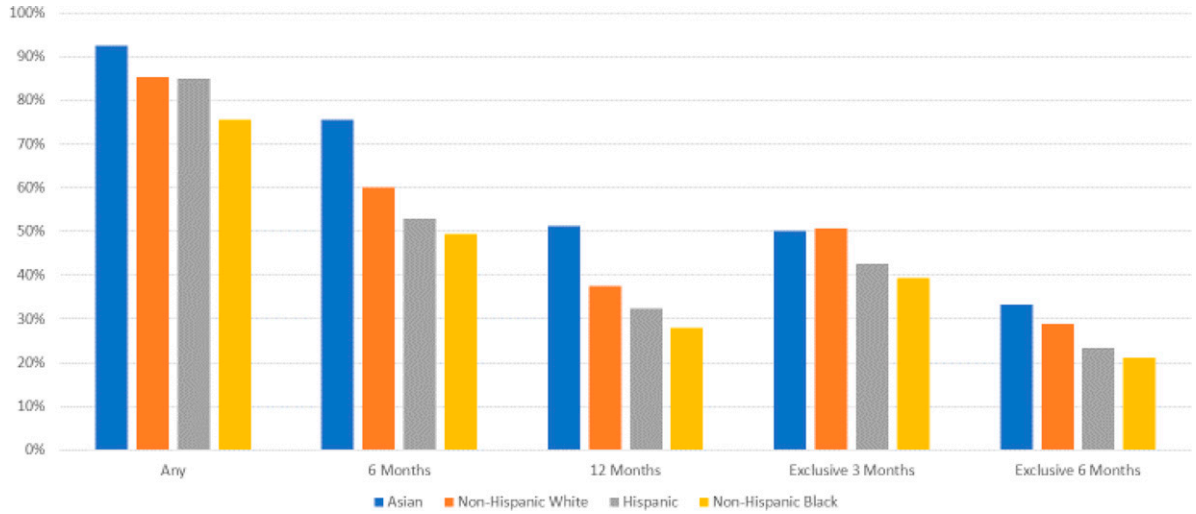

FIGURE 2

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 hypertension[12] (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	0.57–0.0.97
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 6 mo	Never	Cohort	HR 0.43	0.21–0.90
	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 Initiative[43] 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. Pediatrics. 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 Maternal 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 ($\leq$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.

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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

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