

WHO GUIDELINE¹: INFANT FEEDING IN AREAS OF ZIKA VIRUS TRANSMISSION

EXECUTIVE SUMMARY

Purpose of the guideline

The purpose of this guideline is to provide a recommendation to guide governments, ministries of health, policy-makers and health-care workers in regions affected by transmission of Zika virus, in the development of local and national protocols and policies on infant feeding, including breastfeeding practices in areas of Zika virus transmission, and their implementation. It may also be used to inform communication to the general public.

Zika virus is a mosquito-borne virus transmitted by *Aedes* mosquitoes; the same mosquito also transmits other vector-borne diseases – dengue, chikungunya and yellow fever. Currently, there is no treatment or vaccine to protect specifically against Zika virus infection (1).

This guideline is part of a body of work that explores available evidence for possible acceptable medical reasons for temporary or long-term cessation of breastfeeding (2). It updates the interim guidance on breastfeeding in the context of the Zika virus published by WHO on 25 February 2016 (3).

Guideline development methodology

This guideline was produced in response to a Public Health Emergency of International Concern (4) and followed a rapid advice framework in order to produce timely guidance. The process followed all the basic steps for guideline development, as outlined in the [WHO handbook for guideline development](#) (5), but with time modifications to meet the urgent need for advice.

The steps in developing the present evidence-informed recommendation included: (i) identification of priority questions and outcomes; (ii) retrieval of the evidence; (iii) assessment and synthesis of the evidence; (iv) formulation of the recommendation, including research priorities; and planning for (v) dissemination; (vi) implementation, equity and ethical considerations; and (vii) impact evaluation and updating of the guideline. The Grading of Recommendations Assessment, Development and Evaluation ([GRADE](#)) methodology was followed (6), to prepare evidence profiles related to preselected topics, based on up-to-date systematic reviews.

A guideline development group meeting on the Zika virus outbreak was held on 17–19 March, 2016 in Geneva, Switzerland. The guideline development group – Zika virus and infant feeding was established with experts in the areas of infant feeding, nutrition surveillance, nutrition in emergencies, paediatrics and infectious diseases (virology and risk assessment). During the meeting, the group discussed the balance of consequences of breastfeeding or consuming breast milk from a mother infected with Zika virus, and finalized the recommendation. Five experts served as technical peer-reviewers of the draft guideline.

¹ This publication is a World Health Organization (WHO) guideline. A WHO guideline is any document, whatever its title, containing WHO recommendations about health interventions, whether they be clinical, public health or policy interventions. A recommendation provides information about what policy-makers, health-care providers or patients should do. It implies a choice between different interventions that have an impact on health and that have ramifications for the use of resources. This WHO guideline has been approved by the WHO Guidelines Review Committee.

Available evidence

A systematic review following the procedures of the [Cochrane handbook for systematic reviews of interventions](#) (7) was commissioned to determine the risk of transmission of Zika virus through breast milk or other breastfeeding-related bodily fluids (i.e. blood, sweat and saliva), and to assess the presence of Zika virus and Zika-specific antibodies in breast milk and other breastfeeding-related bodily fluids. The search strategy included electronic databases as well as the [Pan American Health Organization \(PAHO\)/WHO Zika research projects](#) list (8) and the WHO-hosted [International Clinical Trials Registry Platform](#) (9).

The review identified two case-reports describing three mother–infant pairs. The three breastfeeding mothers had confirmed Zika virus infection and were symptomatic within 3 days of delivery. Two of the three infants born of these mothers had confirmed Zika virus infection. The Zika virus was detected in the breast milk of all three mothers, and shown to be replicative in cell culture in samples from one mother. However, the current data are not sufficient to conclude transmission via breastfeeding. The systematic review also identified three surveys that confirmed the presence of the Zika virus in serum and saliva of adult women and men. No studies have investigated the presence of Zika virus in sweat.

The overall quality of evidence for suspected, probable or confirmed Zika virus infection among infants or young children breastfeeding from mothers with Zika virus infection, and the presence (detected by positive reverse transcription polymerase chain reaction [RT-PCR]) or culture of Zika virus in breast milk of mothers who are acutely ill with confirmed Zika virus infection was very low.

Recommendation

Infants born to mothers with suspected, probable or confirmed Zika virus infection, or who reside in or have travelled to areas of ongoing Zika virus transmission, should be fed according to normal infant feeding guidelines. They should start breastfeeding within one hour of birth, be exclusively breastfed for six months and have timely introduction of adequate, safe and properly fed complementary foods, while continuing breastfeeding up to two years of age or beyond.¹

Remarks

The remarks in this section are intended to give some considerations for implementation of the recommendation, based on the discussion of the guideline development group.

- The recommendation is consistent with the [Global strategy for infant and young child feeding](#) (10), as endorsed by the Fifty-fifth World Health Assembly, in resolution WHA54.2 in 2002, to promote optimal feeding for all infants and young children.
- Mothers who decide to breastfeed should receive skilled support from health-care workers to initiate and sustain breastfeeding, whether they or their infants have suspected, probable or confirmed Zika virus infection.
- Mothers and families of infants born with congenital anomalies (e.g. microcephaly), or those presenting with feeding difficulties, should be supported to breastfeed their infants. Skilled feeding support from health professionals, including breastfeeding support, should be provided (11).

¹ This is a *strong* recommendation, that is, one for which the guideline development group is confident that the desirable effects of breastfeeding in the context of Zika virus transmission outweigh the undesirable effects. Implications of the recommendation for mothers are that most mothers with suspected, probable or confirmed Zika virus infection, or who reside in or have travelled within 2 week to areas of ongoing Zika virus transmission, would opt to breastfeed, but some would not. With regard to policy-makers, the recommendation means that breastfeeding in the context of Zika virus transmission could be adapted as a policy in most situations.

- Families and communities are central in supporting optimal infant and young child feeding and improving infant health. Community cadres, when properly trained and supported, can serve as resources for counselling, practical support to mothers for breastfeeding and complementary feeding, solving problems, negotiating with caregivers and facilitating interactive peer sessions. Being aware of the complex set of values around breastfeeding better equips health workers to support pregnant and lactating women with their infant-feeding choices, even in the context of an outbreak.
- Multidisciplinary teams may be necessary for infants who need specialist support in infant feeding, especially for infants who have difficulty breastfeeding. This may be the case in particular for infants born with congenital anomalies, including microcephaly, and long-term management may be necessary.

Research priorities

The guideline development group – Zika virus and infant feeding highlighted the limited evidence available on the risk of transmissibility of the Zika virus through breastfeeding. Further research findings may impact on the guidance being given on infant feeding in areas of Zika virus transmission. A number of specific clinical and programmatic research questions were identified as part of the discussions, and merit a strong call for further research in the following areas:

- the frequency and possible persistence of Zika virus in breast milk after symptomatic and asymptomatic infection in lactating women;
- the effects of pasteurization on providing safe donor milk;
- biological, behavioural and contextual factors that influence Zika virus transmissibility through breastfeeding (Zika viral load and the presence of viable Zika virus);
- the incidence of symptomatic and asymptomatic Zika virus infection in neonates from infected mothers;
- the clinical presentation of Zika virus infection in breastfed and non-breastfed infants and young children, including potential short- and long-term effects on neurocognitive development;
- the clinical presentation of Zika virus infection among lactating women and whether this affects their ability to breastfeed;
- management of feeding difficulties among children with Zika virus-related congenital anomalies, e.g. microcephaly;
- factors in the breast milk of women with a history of previous Zika virus infection that may have a protective effect against virus transmission, and how this affects clinical disease progression;
- factors that influence infant-feeding practices in the context of Zika virus outbreaks, including the values and preferences of the mother and others involved in the care of the infant, as well as the prevailing social values and practices in settings suffering from a Zika outbreak.

Plans for updating the guideline

The WHO steering group – Zika virus and infant feeding will continue to follow the research development in the area of infant feeding, especially in the context of the Zika virus outbreak. The steering group will meet at or before 6 months from publication of this guideline, to review any new data and determine whether an update might be indicated. If the guideline merits an update, or if there are concerns about the validity of the guideline, the Department of Nutrition for Health and Development will coordinate the guideline update, following the formal procedures of the [WHO handbook for guideline development](#) (5).