

WHO guidelines for the prevention of sexual transmission of Zika virus: executive summary



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Introduction

Zika virus is an arthropod-borne flavivirus, which is transmitted primarily by mosquitoes of the *Aedes* genus, but can also be transmitted through sexual intercourse. In 2016, the World Health Organization (WHO) concluded that Zika virus infection during pregnancy is a cause of congenital abnormalities, including microcephaly. The proportion of affected neonates born to mothers infected with Zika virus during pregnancy has not been established with certainty. Published estimates range from 6% of infants born to women with and without symptoms of possible Zika virus infection in the United States of America (USA) to 42% of infants born to women with symptoms of skin rash in pregnancy in Brazil. WHO also concluded that Zika virus can trigger Guillain-Barré syndrome (GBS), an immune-mediated neurological condition. A multi-country assessment estimated that two of 10 000 Zika virus infections result in GBS (95% credible Interval: 0.5–4.5/10 000). Prevention of the sexual transmission of Zika virus can therefore prevent acute infection and neurological complications in a sexual partner, and prevention of transmission to a pregnant woman would prevent congenital Zika virus infection.

As of February 2018, 86 countries and territories have had evidence of Zika virus transmission and, as of January 2018, over 500 000 suspected cases had been reported in Latin America and the Caribbean. In the USA, as of 15 April 2018, 52 of 5 672 reported cases of Zika virus disease were presumed to have been acquired through sexual transmission. In the European Union and European Economic Area, as of 13 March 2017, 20 of 1737 cases with a known route of transmission were acquired through sexual transmission.

Sexual transmission of Zika virus is much more likely from men to women than from women to men, and same-sex transmission, from man to man, has only been documented once. Where documented, the longest time period between the onset of symptoms in one sexual partner and the other is 44 days, with half of the sexual partners developing symptoms by 12 days. The longest time period for which infectious Zika virus has been detected by viral culture in semen is 69 days. However, Zika virus genetic material in semen has cleared within 50 days in most cases; it is not known whether genetic material detected for longer durations represents infectious virus.

Recommendations for the prevention of sexual transmission of Zika virus need to take into account the risk of ongoing mosquito-borne transmission of Zika virus in geographic areas. In areas with ongoing transmission, people are much more likely to become infected by Zika virus through bites from infected mosquitoes and the contribution of condom use to overall prevention of infection will be low. In areas with no autochthonous mosquito-borne Zika virus transmission, sexual transmission from returning travellers is one of the main routes of transmission. Travellers returning from areas with ongoing Zika virus transmission can therefore substantially reduce the risk of subsequent infections through the correct and consistent use of condoms. Areas with ongoing transmission are

defined as regions with active circulation of mosquito-borne Zika virus. These are areas where disease surveillance detects circulation of Zika virus, in accordance with periodic epidemiological updates from WHO. In the absence of adequate disease surveillance, the definition of areas of ongoing transmission depends on the availability of local risk assessments. Adoption of the precautionary principle could result in designation of areas with known previous transmission as areas with ongoing transmission. Areas without ongoing transmission have no active circulation or suspected active circulation of Zika virus.

Rationale for the guidelines

WHO published interim guidelines on the prevention of sexual transmission of Zika virus in September 2016 (1), based on a limited amount of evidence under an emergency process during a public health emergency of international concern. The body of evidence has grown considerably since then and WHO experts concluded, at a meeting in March 2017, that the guidelines should be developed under the formal WHO guideline process (2).

These guidelines contain updated recommendations on the prevention of sexual transmission of Zika virus, based on the best available evidence as of June 2018.

Rationale for the update of interim guidelines

At the time of issuance of the interim guidance, very few data on sexual transmission of Zika virus were available and recommendations were developed under emergency response procedures. In March 2017, WHO convened an expert meeting to review the evidence and identify the research gaps surrounding sexual transmission of Zika virus. At this meeting, participants discussed a conceptual framework. The sexual transmission framework describes key events in sexual transmission of Zika virus between humans, based on variables and time periods that apply to all infectious diseases.

What is new in this guideline?

- For the new recommended duration for correct and consistent use of condoms or abstinence to prevent sexual transmission of Zika virus, a distinction is made between men and women, and the recommended duration has been reduced from 6 to 3 months for men, 2 months for women.
- The risk groups women or couples planning to conceive or having sex that could result in conception and pregnant women, are more explicitly targeted in these new recommendations.
- For this guideline, systematic reviews were conducted to assess available evidence on the sexual transmission of Zika virus and all evidence on effectiveness of condom use to prevent sexual transmission of Zika virus.

Goal and objectives

The overall goal of these guidelines is to provide guidance and evidence-based recommendations about the prevention of sexual transmission of Zika virus. The absolute risks of different clinical complications of Zika virus are not fully known and the prevention measures may differ.

Nevertheless, it is essential for individuals to have information about the risks of sexual intercourse as a mode of transmission in itself. These guidelines are informed by an update of the evidence underpinning the interim guidance and follow the requirements of the formal WHO guideline development process. The specific objectives are:

- to provide recommendations about the prevention of sexual transmission of Zika virus, rather than about the prevention of specific complications or about the prevention of mosquito-borne transmission;
- to update the interim guidelines in accordance with the formal WHO guidelines development process;
- to offer safe and effective options for the prevention of sexual transmission of Zika virus; and
- to provide evidence summaries about the risks of sexual transmission of Zika virus and the effectiveness of condoms for the prevention of sexual transmission of Zika virus.

Target audience

These guidelines aim to inform national and subnational policy-makers, health care providers, other health care stakeholders and the general public.

Methods

These guidelines were developed as outlined in the second edition of the *WHO handbook for guideline development* (3). Members of the guideline development group, which included experts in sexually transmitted infections, virology, epidemiology, gynaecology, condoms and sexual behaviour, developed key questions to guide the guideline development process. All members declared conflict of interests according to WHO procedures. For each key question, an evidence team from the University of Bern conducted systematic reviews, synthesized the retrieved evidence and assessed its certainty using the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) framework. The guideline development group, based on an evidence-to-decision framework, developed and finalized the recommendations and justifications during a web conference in May 2018 and through subsequent communication by email. Recommendations were formulated as “strong” or “conditional” using the evidence-to-decision framework. The strength of individual recommendations is indicated after the recommendation in parentheses. The quality of the body of evidence was assessed using the GRADE framework. After external review, these guidelines were published.

Recommendations

1. Recommendations for individuals living in areas with ongoing transmission of Zika virus

1.1 Recommendations for all sexually active women and men

- All **women and men** with Zika virus infection and their sexual partners, particularly pregnant women (4), should receive information about the risks of sexual transmission of Zika virus (strong recommendation, very low certainty of evidence).
- All **women and men** should be offered a full range of contraceptives and be counselled to be able to make an informed choice about whether and when to prevent pregnancy in order to avoid possible adverse outcomes of Zika virus infection during pregnancy (strong recommendation, best practice recommendation).

- (c) **Men** should be informed about the possible risk of sexual transmission of Zika virus during the **3 months** after known or presumptive infection.¹ Men should be informed about the correct and consistent use of condoms or abstinence during that time period to prevent Zika virus infection through sexual transmission (conditional recommendation, low certainty of evidence).
- (d) **Women** should be informed about the possible risk of sexual transmission of Zika virus during the **2 months** after known or presumptive infection.¹ Women should be informed about the correct and consistent use of condoms or abstinence during that time period to prevent Zika virus infection through sexual transmission (conditional recommendation, very low certainty of evidence).

1.2 Recommendations for women or couples planning to conceive or having sex that could result in conception

- (a) **Women** who have had sex that could result in conception and do not wish to become pregnant due to concerns about Zika virus infection should have ready access to emergency contraceptive services and counselling (best practice).
- (b) **Women** should receive information about the possible risk of vertical transmission of Zika virus to the foetus. Women should avoid sex that could result in conception for **2 months** after known or presumptive infection,¹ to ensure that a possible Zika virus infection has cleared before becoming pregnant (strong recommendation, very low certainty of evidence).
- (c) **Male** sexual partners should receive information about the possible risk of sexual transmission of Zika virus during the **3 months** after known or presumptive infection.¹ Men should use condoms correctly and consistently or abstain from having sex for that time period to prevent Zika virus infection through sexual transmission (strong recommendation, low certainty of evidence).
- (d) Taking into account current and projected local transmission rates² of Zika virus, **women or couples** planning to conceive should be informed about the option to delay conception until the risk of Zika virus infection in the local area has substantially decreased, in accordance with local risk assessment (conditional recommendation, very low certainty of evidence).

1.3 Recommendations for pregnant women (4) and their sexual partners

- (a) **Pregnant women** and their sexual partners should use condoms correctly and consistently or abstain from sex for **the whole duration of the pregnancy** to prevent Zika virus infection through sexual transmission and possible adverse outcomes of Zika virus infection during pregnancy (strong recommendation, very low certainty of evidence).

¹ After known or presumptive infection: after onset of symptoms compatible with Zika virus infection or, if asymptomatic, a positive test result for Zika virus. Most Zika virus infections are asymptomatic. Sexual transmission from a partner with asymptomatic Zika virus infection has been reported. Whether a person is infected or not may be hard to establish, given the low diagnostic accuracy of some available tests and the absence of resources for testing in some areas. Further guidance on the diagnosis of Zika virus infection can be found in reference 5.

² Local or projected transmission rates: in areas with high levels of current ongoing Zika virus transmission, delaying conception until the transmission rate decreases can reduce the risk of Zika virus infection during pregnancy.

2. Recommendations for individuals living in areas without ongoing transmission of Zika virus travelling to or from areas with ongoing Zika virus transmission

2.1 Recommendations for all sexually active women and men returning from areas with ongoing Zika virus transmission

- (a) All **women and men** travelling to or returning from areas with ongoing Zika virus transmission, and their sexual partners, particularly pregnant women (4), should receive information about the risks of sexual transmission of Zika virus (strong recommendation, very low certainty of evidence).
- (b) All **women and men** travelling to or returning from areas with ongoing transmission of Zika virus should be offered a full range of contraceptives and be counselled to be able to make an informed choice about whether and when to prevent pregnancy in order to avoid possible adverse outcomes of Zika virus infection during pregnancy (strong recommendation, very low certainty of evidence).
- (c) **Men** returning from areas with ongoing Zika virus transmission and their sexual partners should use condoms correctly and consistently or abstain from sex for at least **3 months** after the last possible exposure¹ to prevent Zika virus infection through sexual transmission (strong recommendation, low certainty of evidence).
- (d) **Women** returning from areas with ongoing Zika virus transmission and their sexual partners should use condoms correctly and consistently or abstain from sex for at least **2 months** after the last possible exposure¹ to prevent Zika virus infection through sexual transmission (strong recommendation, very low certainty of evidence).

2.2 Recommendations for women or couples planning to conceive or having sex that could result in conception and returning from areas with ongoing Zika virus transmission

- (a) **Women** returning from areas with ongoing Zika virus transmission should avoid sex that could result in conception for at least **2 months** after the last possible exposure¹ (strong recommendation, very low certainty of evidence).
- (b) **Male** sexual partners returning from areas with ongoing Zika virus transmission should use condoms correctly and consistently or abstain from sex for at least **3 months** after the last possible exposure¹ to prevent Zika virus infection through sexual transmission and reduce the risk of conception (strong recommendation, low certainty of evidence).

2.3 Recommendations for pregnant women (4) and their sexual partners travelling to or returning from areas with ongoing Zika virus transmission

- (a) **Pregnant women** and their sexual partners should use condoms correctly and consistently or abstain from sex for the **whole duration of the pregnancy** if the sexual partner is returning from areas with ongoing Zika virus transmission. This recommendation aims to prevent Zika virus

¹ After the last possible exposure: after the last day of stay in an area with ongoing Zika virus transmission or the last day of sexual contact with a possibly Zika virus-infected person.

infection through sexual transmission and possible adverse pregnancy and foetal outcomes (strong recommendation, very low certainty of evidence).

- (b) **Pregnant women** should consider delaying non-essential travel to areas with ongoing Zika virus transmission (conditional recommendation, very low certainty of evidence).

3. Recommendations about safer sex

WHO always recommends the use of safer sexual practices. Safer sex is a behavioural concept that promotes the reduction of sexual risk-taking behaviour. It emphasizes measures to reduce the risk of contracting or spreading sexually transmitted infections (STIs), including postponing sexual debut, non-penetrative sex, correct and consistent use of male or female condoms, and reducing the number of sexual partners.

Men and women should receive counselling, and be informed, about safer sex. Health authorities should ensure affordable and equitable access to condoms and other contraception methods, especially in the context of Zika virus transmission and other STIs. The correct and consistent use of condoms reduces the risk of an unintended pregnancy as well as STIs, including the human immunodeficiency virus (HIV).

References

1. Prevention of sexual transmission of Zika virus: interim guidance update. Geneva: World Health Organization; 2016 (WHO/ZIKV/MOC/16.1 Rev.3; <https://apps.who.int/iris/handle/10665/204421>).
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