



# Information on medically assisted reproduction in patients with a viral infection/disease

## Patient leaflet

based on the ESHRE Guideline on MAR in patients with a viral  
infection/disease

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[www.eshre.eu](http://www.eshre.eu)

## Introduction

This booklet is for you if:

- You and/or your partner are testing positive for Hepatitis B Virus (HBV)
- You and/or your partner have tested positive for Hepatitis C Virus (HCV)
- You and/or your partner have tested positive for Human Immunodeficiency Virus (HIV)
- You and/or your partner have tested positive for Human Papilloma Virus (HPV)
- You and/or your partner have tested positive for Human T-lymphotropic virus (HTLV) I/II
- You and/or your partner have tested positive for Zika Virus (ZIKV)

This booklet aims to

- Increase awareness of options for family creation for patients with a viral infection/disease and their partners
- Provide women and their partners with information on appropriate interventions for medically assisted reproduction (MAR) when testing positive for a viral infection/disease
- Provide women and their partners with tools to discuss their options with their doctor.

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This booklet and the information presented are entirely-based on the ESHRE Guideline on MAR in patients with a viral infection/disease. All the information and recommendations in the guideline are built upon the best available evidence from research. Where there is insufficient evidence from research, a group of experts has formulated recommendations based on their clinical expertise. The experts also formulated areas of research to improve research in the field of MAR in patients with a viral infection/disease.

We have added the following symbols to explain the strength of the recommendations and whether or not they are based on results from studies.



Recommendation based on research evidence



Recommendation based on considered opinion of the guideline development group



Conclusion of the evidence, where it was not possible to make a recommendation

More information is available in the last pages of this booklet, including a list of medical and research terms and their meanings. The full guideline is available on the website of ESHRE ([www.eshre.eu/guidelines](http://www.eshre.eu/guidelines)).

## What is Medically Assisted Reproduction (MAR)?

Medically assisted reproduction or MAR is a term used for interventions and procedures aiming at treating fertility impairment and infertility, ultimately increasing the chance of having a baby.

MAR is a very broad term. However, in this guideline the term is used as an overarching term to indicate intra-uterine insemination (IUI), in vitro fertilisation (IVF) and intracytoplasmic sperm injection (ICSI).

IUI is a technique where sperm is placed into a woman's womb through the cervix.

IVF is a technique by which eggs are collected from a woman and fertilised with a man's sperm outside the body. Usually one or two resulting embryos are then transferred to the womb. If one of them attaches successfully, it results in a pregnancy.

ICSI is a more specialised form of IVF, where one sperm is injected into the egg.

## What is horizontal/vertical transmission

Horizontal transmission of a virus is the transmission of this virus from one person to another person, usually through contact with bodily fluids, such as blood.

Vertical transmission of a virus is the transmission of this virus from mother to baby during pregnancy or at birth. Transmission might occur across the placenta, in the breast milk, or through direct contact during or after birth.

## Why this leaflet/ guideline?

Patients living with a viral infection/ disease nowadays have a longer life expectancy and improved quality of life than before, which allows them to think about family creation. In some cases you and your partner can get pregnant naturally and safely without assistance, while in other circumstances MAR treatments are required. When embarking on MAR, together with your doctor, you have to explore the best treatment options that reduce the risk of transmission of the virus and results in the highest chances of getting pregnant.

This leaflet focusses on assisted reproduction. Natural conception and how this can be achieved in the safest possible manner in patients with a viral infection/disease is not covered.

## Information for patients testing positive for Hepatitis B Virus (HBV)

### What is Hepatitis B Virus (HBV)?

Hepatitis B is a contagious disease, caused by the Hepatitis B Virus (HBV). HBV induces acute inflammation of the liver, which usually resolves on its own. However, in 5-10% of patients, the body is not able to clear the infection, resulting in a chronic infection. Chronic Hepatitis B infection can damage the liver. Hepatitis B can be transmitted via blood, sexual contact and from mother to child during pregnancy. Children infected by Hepatitis B through mother-to-child-transmission have a very high risk (90%) of the infection becoming chronic.

Hepatitis B Virus (HBV) is a very contagious virus, that can be easily transmitted to the uninfected partner via sexual contact. There are highly effective vaccines available that can prevent the transmission of HBV. Therefore, your uninfected partner should be vaccinated and you should use barrier contraception until the vaccination protocol has been completed.

### Male partner is testing HBV positive

When the man is testing positive for HBV, and the woman is vaccinated, there is no risk of transmission of HBV to the baby during medically assisted reproduction (MAR).

To reduce the risk of HBV-infection in the baby, all babies with a father testing positive for HBV should be vaccinated.

### Female partner is testing positive

When the woman is testing positive for HBV, the virus can be transmitted to the baby during pregnancy or at birth. Using IUI, IVF, or ICSI to get pregnant cannot eliminate the risk of transmission to the baby. There are preventive measures available, such as vaccination of the baby at birth and treatment with hepatitis B immunoglobulin (HBIG), also referred to as 'prophylaxis'. HBIG is the antibody your immune system produces to fight off a hepatitis B infection. When given shortly after birth to the baby, it can provide short-term protection against HBV-infection, until the immune system of the baby can produce its own antibodies in response to the HBV vaccination. However, a small risk of transmission remains even with these preventive measures. Your infectious disease/ liver specialist can explain this in further detail.

When to start with MAR should be a joint decision between you as the patient, your partner, your fertility doctor and the infectious disease/ liver specialist.

According to current evidence, there is not one technique for MAR that is safer than the others in terms of risk of virus transmission. Therefore, the fertility doctor will choose the MAR technique best suited for you.

The risk of HBV transmission to the baby is equal after vaginal delivery and caesarean section. Caesarean section does not reduce the risk of HBV transmission to the baby.

There is no association between breastfeeding and the risk of HBV transmission from mother to child. In addition, breastfeeding has significant health benefits for the baby.

## Recommendations

### Before MAR

The non-infected partner should be vaccinated against Hepatitis B Virus (HBV)  
You should use barrier contraception until the vaccination protocol has been completed 

You should be referred to an infectious disease/ liver specialist  
1) to discuss the risk of vertical transmission to the baby, in case the woman is infected  
2) to discuss prophylaxis for the baby  
3) to receive clearance to start with medically assisted reproduction (MAR) 

### During MAR

The technique that is used for MAR (IUI, IVF or ICSI) should be indicated by your fertility needs. 

HBV-infection in the woman does not lower the chance of pregnancy after MAR. It is currently unclear if HBV-infection in the man influences the chance of pregnancy after MAR. 

### Pregnancy and newborn care

Caesarean section does not reduce the risk of HBV transmission to the baby.  
Breastfeeding probably does not increase the risk of HBV transmission to the baby. 

All babies with a parent testing positive for HBV should be vaccinated.  
Babies born to mothers testing positive for HBV should receive Hepatitis B Immunoglobulin (HBIG) at birth.

| HBV        |  Male testing positive |  Female testing positive |  Couple testing positive |
|------------|---|---|---|
| Before MAR | Vaccinate non-infected partner  |   |   |
|            | Consult with infectious disease / liver disease specialist  |   |   |
|            |   | Discuss:<br>- Risk of viral vertical transmission (not eliminated by MAR)<br>- Newborn prophylaxis          |   |
| During MAR | IUI, IVF or ICSI depending on infertility work-up   |   |   |
|            | Routine semen processing  |   |   |
| After MAR  | Caesarean section not recommended   |   |   |
|            | Breastfeeding not contra-indicated  |   |   |
|            | Vaccination of the neonate  |   | Vaccination of the neonate + HBIG administration  |

**Figure 1:** Summary of management of medically assisted reproduction in patients testing positive for Hepatitis B virus.

## Information for patients testing positive for Hepatitis C Virus (HCV)

### What is Hepatitis C Virus (HCV)

Hepatitis C is a disease of the liver, caused by the Hepatitis C Virus (HCV), often with no or very mild symptoms. HCV induces acute inflammation of the liver, which resolves on its own in 10-40% of patients. However, in 60-90% of patients, the body is not able to clear the infection, resulting in a chronic infection. Chronic Hepatitis C infection can damage the liver, causing scarring, cirrhosis and liver failure. Hepatitis C is mainly transmitted via blood, and from mother to child during pregnancy.

Hepatitis C Virus (HCV) shows a very low transmission between sexual partners. The major transmission route of HCV is via blood or sharing of needles. Sexual contact is not an important route of transmission if you are not testing positive for other sexually transmitted diseases or other medical conditions such as HIV or liver disease.

There is not vaccine for Hepatitis C virus

### Male partner is testing HCV positive

When a man has tested positive for HCV, virus particles can be detected in his sperm. There is a risk that the woman could get infected through the sperm during MAR. However, the sperm can be treated in the laboratory before MAR (with density gradient centrifugation followed by washing and swim-up), to minimize the number of virus particles in the sample and hence reduce the risk of infection of the female partner.

### Female partner is testing HCV positive

When the woman is testing positive for HCV, the virus can be transmitted to the baby during pregnancy or at birth. Using IUI, IVF, or ICSI to get pregnant cannot eliminate the risk of transmission to the baby. The risk of HCV transmission to the baby is influenced by several factors and should be discussed with an infectious disease/ liver specialist.

When to start with MAR should be a joint decision between you as the patient, your partner, your fertility doctor and the infectious disease/ liver specialist.

According to current evidence, there is not one technique for MAR that is safer than the others in terms of risk of virus transmission. Therefore, the fertility doctor will choose the MAR technique best suited for you.

The risk of HCV transmission to the baby is equal after vaginal delivery and caesarean section. Caesarean section does not reduce the risk of HCV transmission to the baby.

There is no association between breastfeeding and the risk of HCV transmission from mother to child. In addition, breastfeeding has significant health benefits. However, you should be careful when experiencing bleeding nipples during breastfeeding.

## Recommendations

### Before MAR

In a monogamous heterosexual relationship of more than 12 months, there is no need for the use of barrier contraceptives to reduce the risk of Hepatitis C virus (HCV) transmission from the infected to the non-infected partner.



You should be referred to an infectious disease/ liver specialist

- 1) to discuss the risk of transmission to the uninfected partner
- 2) the risk of transmission to the baby
- 3) to receive clearance to start with medically assisted reproduction (MAR)



### During MAR

The technique that is used for MAR (IUI, IVF or ICSI) should be indicated by your fertility needs.



It is currently unclear if HCV-infection in either the man or woman influences the chance of pregnancy after MAR.



### Pregnancy and newborn care

Caesarean section does not reduce the risk of HCV transmission to the baby.  
Breastfeeding probably does not increase the risk of HCV transmission to the baby.



| HCV        | <br>Male testing positive                                 | <br>Female testing positive | <br>Couple testing positive |
|------------|--|--|--|
| Before MAR | Consult with infectious disease / liver disease specialist   |  |  |
|            | Discuss:<br>- Risk of viral horizontal transmission (not eliminated by MAR)<br>- Risk of viral vertical transmission (not eliminated by MAR) |  |  |
| During MAR | IUI, IVF or ICSI depending on infertility work-up  |  |  |
|            | Specific semen processing*   | Standard oocyte processing   | Specific semen processing*   |
| After MAR  | Caesarean section not recommended  |  |  |
|            | Breastfeeding not contra-indicated   |  |  |

\*Density gradient centrifugation followed by washing and swim-up

**Figure 2:** Summary of management of medically assisted reproduction in patients testing positive for Hepatitis C virus.

## Information for patients testing positive for Human Immunodeficiency Virus (HIV)

### What is Human Immunodeficiency Virus (HIV)?

Human Immunodeficiency Virus (HIV) is the virus which causes AIDS. HIV causes weakening of the immune system by infecting the white blood cells, causing them to break down. The final stage of HIV infection is AIDS, when the immune system has become so weak that it is unable to fight off infections like the common cold. HIV cannot be cured. However, the infection can be suppressed efficiently by antiretroviral medication. HIV can be transmitted via blood, sexual contact and from mother to child during pregnancy.

HIV can be transmitted to the uninfected partner via sexual contact. Therefore, barrier contraception should be used during sexual contact. Antiretroviral therapy can suppress the viral HIV replication, and with good adherence, patients can achieve undetectable viral loads in blood, minimizing the risk of transmission to the uninfected partner.

There is no vaccine for HIV.

### Male partner is testing positive

When a man has tested positive for HIV, virus particles can be detected in his sperm. There is a risk that the woman could get infected through the sperm during MAR. However, the sperm can be treated in the laboratory before MAR (with density gradient centrifugation followed by 2 washing steps and swim-up), to minimize the number of virus particles in the sample and hence reduce the risk of infection of the female partner.

### Female partner is testing positive

When the woman is testing positive for HIV, even with undetectable viral loads, the virus can be transmitted to the baby during pregnancy or at birth. Using IUI, IVF, or ICSI to get pregnant cannot eliminate the risk of transmission to the baby. There are preventive measures available, consisting of one or a combination of antiretroviral medications, also referred to as 'combined neonatal prophylaxis' (CNP), which can reduce the risk of HIV-infection for the baby. However, a small risk of transmission remains even with these preventive measures, and this should be discussed with an infectious disease specialist.

When to start with MAR should be a joint decision between you as the patient, your partner, your fertility doctor and the infectious disease specialist.

According to current evidence, there is not one technique for MAR that is safer than the others in terms of risk of virus transmission. Therefore, the fertility doctor will choose the MAR technique best suited for you.

When the woman is testing positive for HIV and HIV virus particles can be found in the blood, caesarean section can reduce the risk of HIV transmission to the baby.

Even though the risk of transmission of HIV by breastfeeding is small when the woman is adhering to the antiretroviral medication and has achieved undetectable viral loads in blood, it is advised to refrain from breastfeeding.

## Recommendations

### Before MAR

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Human immunodeficiency virus (HIV)-1-serodiscordant couples should be informed that there is a risk of sexual transmission of the virus to the uninfected partner. To reduce this risk, couples should use barrier contraception and seek active therapy to reduce the number of viruses in the blood.

In individuals testing positive for HIV-1, antiretroviral therapy can suppress viral replication. These patients should remain on antiretroviral therapy. When no viruses can be found in blood, the risk of transmission to the partner through unprotected sexual contact is minimal.

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You should be referred to an infectious disease specialist

- 1) to discuss the risk of transmission to the uninfected partner
  - 2) to discuss the risk of transmission to the baby in case the woman is infected
  - 3) to receive clearance to start with medically assisted reproduction (MAR)
- 



### During MAR

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HIV infection status is not a reason to be denied MAR treatment.

The technique that is used for MAR (IUI, IVF or ICSI) should be indicated by your fertility needs.

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When the man is testing positive for HIV, the chances for pregnancy are expected to be similar as for non-infected couples.

When the woman is testing positive for HIV, the chance of pregnancy after IVF/ICSI could be lower than compared to non-infected couples.

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### Pregnancy and newborn care

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Caesarean section is recommended in women with detectable HIV viral loads.

A woman testing positive for HIV should refrain from breastfeeding when and where she has safe alternatives to feed the child.

Combined neonatal prophylaxis (CNP) is recommended for neonates born to mothers testing positive for HIV.

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| HIV        |  Male testing positive |                       |  Female testing positive |                       |  Couple testing positive |                       |
|------------|---|-----------------------|---|-----------------------|---|-----------------------|
|            | Consult with infectious disease specialist  |                       |   |                       |   |                       |
| Before MAR | Undetectable viral load   | HIV detected in blood | Undetectable viral load   | HIV detected in blood | Undetectable viral load (female)  | HIV detected in blood |
|            |   | Risk of HT            | Risk of VT  | Risk of VT + HT       | Risk of VT  | Risk of VT + HT       |
| During MAR | IUI, IVF or ICSI depending on infertility work-up   |                       |   |                       |   |                       |
|            | Specific semen processing* and semen HIV PCR testing recommended  |                       | Standard oocyte processing  |                       | Specific semen processing* and semen HIV PCR testing recommended  |                       |
| After MAR  | Caesarean section recommended if detectable HIV viral load  |                       |   |                       |   |                       |
|            | Breastfeeding = option  |                       | Breastfeeding not recommended   |                       |   |                       |
|            | CNP   |                       |   |                       |   |                       |

\*Density gradient centrifugation followed by 2 semen washing steps, followed by swim-up

**Figure 3:** Summary of management of medically assisted reproduction in patients testing positive for Human immunodeficiency virus.

## Information for patients testing positive for Human Papilloma Virus (HPV)

### What is Human Papilloma Virus (HPV)?

Human Papilloma Virus (HPV) is a family of viruses that infect the skin and mucosa. There are more than 200 types that are present in men and women on the genitals, skin and in the mouth. Most people will test positive for a HPV type at some point during life. HPV infections are cleared spontaneously, very often without symptoms. However, the high-risk HPV types can cause cancer in men and women. In recent years, HPV has also been associated with infertility, but more research is necessary to identify the responsible types of HPV.

Human Papilloma Virus (HPV) can easily be transmitted during sexual contact. The use of a condom during sexual contact can significantly reduce the risk of HPV transmission. However, it cannot completely prevent it because the HPV viral particles can also be present on the skin of the genitalia.

### Male partner testing positive

The involvement of HPV in infertility is a rather new topic, with limited evidence available. It is currently not clear which types of HPV are associated with infertility, making it impossible to recommend routine testing of HPV outside a research project. From current evidence, there seems to be an association with HPV-infection in the male partner and reduced sperm quality. Therefore, you should discuss with your fertility doctor if postponing MAR until the infection has cleared, is an option.

According to current evidence, there is not one technique for MAR that is safer than the others in terms of risk of virus transmission. Therefore, the fertility doctor will choose the MAR technique best suited for you.

### Female partner testing positive

It is important to have a PAP-smear done within 3 years of conceiving, to allow timely detection of HPV-related lesions and prevent HPV-induced cancer.

According to current evidence, there is not one technique for MAR that is safer than the others in terms of risk of virus transmission. Therefore, the fertility doctor will choose the MAR technique best suited for you.

The risk of HPV transmission to the baby is equal after vaginal delivery and caesarean section. Caesarean section does not reduce the risk of HPV transmission to the baby.

There is no association between breastfeeding and the risk of HPV transmission from mother to child. In addition, breastfeeding has significant health benefits for the baby.

## Recommendations

### Before MAR

The use of barrier contraception during sexual contact is advised to lower the risk of Human Papilloma virus (HPV) transmission.

All women starting medically assisted reproduction (MAR) should undergo testing to detect HPV-related cervical lesions.



You should discuss with your fertility doctor the option of postponing MAR.

### During MAR

The technique that is used for MAR (IUI, IVF or ICSI) should be indicated by your fertility needs.



### Pregnancy and newborn care

Caesarean delivery is not recommended on the basis of maternal HPV-positivity alone.

Breastfeeding is allowed in HPV-positive women.



| HPV        |  Male testing positive                              |  Female testing positive |  Couple testing positive |
|------------|--|---|---|
| Before MAR | Discuss:<br>- Possibility of postponing MAR (transient infection)<br>- Risk of viral horizontal transmission (not eliminated by MAR) |   |   |
| During MAR | IUI, IVF or ICSI depending on infertility work-up  |   |   |
|            | Routine semen processing   |   |   |
| After MAR  | Caesarean section not recommended  |   |   |
|            | Breastfeeding not contra-indicated   |   |   |

**Figure 4:** Summary of management of medically assisted reproduction in patients testing positive for Human Papilloma virus.

## Information for patients testing positive for Human T-lymphotropic virus (HTLV) I/II

### What is Human T-lymphotropic virus (HTLV) I/II

Human T-lymphotropic virus (HTLV)-I/II is a virus that attacks the immune system by infecting the T-cell population of white blood cells. HTLV causes a specific form of cancer, T-cell lymphoma or leukaemia (ATL/L) and can also cause inflammation of the spinal cord. Most of people infected with HTLV I/II never develop symptoms, only 10-20% becomes ill. Just like HIV, there is no cure for HTLV I/II and the body cannot clear the infection on its own. The HTLV I/II can be transmitted via blood, sexual contact and from mother to child during pregnancy.

Human T-cell lymphotropic virus (HTLV) I/II can be transmitted to the uninfected partner via sexual contact. Therefore, barrier contraception should be used during sexual contact.

There is no vaccine for HTLV I/II

### Male partner testing positive

When a man has tested positive for HTLV I/II, virus particles can be detected in his sperm. There is a risk that the woman could get infected through the sperm during MAR and this should be discussed with your infectious disease specialist.

### Female partner testing positive

When the woman is testing positive for HTLV, the virus can be transmitted to the baby during pregnancy or at birth, and this should be discussed with an infectious disease specialist. Using IUI, IVF, or ICSI to achieve pregnancy cannot eliminate the risk of transmission to the baby.

When to start with MAR should be a joint decision between you as the patient, your partner, your fertility doctor and the infectious disease specialist.

According to current evidence, there is no technique for MAR that is safer than the others in terms of risk of virus transmission. Therefore, the fertility doctor will choose the MAR technique best suited for you.

There is currently too little evidence that caesarean delivery can reduce the risk of HTLV I/II transmission to the baby. In addition, caesarean section is a major surgery with a higher chance of complications and a longer recovery compared to a vaginal delivery. Therefore, a caesarean section solely to reduce the risk of HTLV I/II transmission to the baby is currently not recommended.

HTLV I/II can be transmitted to the baby by breastfeeding and there are currently no medications to lower the viral load. Therefore, when possible, women testing positive for HTLV I/II should refrain from breastfeeding.

## Recommendations

### Before MAR

It is suggested to inform Human T-cell lymphotropic virus (HTLV I/II)-serodiscordant couples that there is a risk of sexual transmission of the virus to the uninfected partner. To reduce this risk, couples could be advised to use barrier contraception.



You should be referred to an infectious disease specialist

- 1) to discuss the risk of transmission to the uninfected partner
- 2) to discuss the risk of transmission to the baby in case the woman is infected
- 3) to receive clearance to start with medically assisted reproduction (MAR)



### During MAR

The technique that is used for MAR (IUI, IVF or ICSI) should be indicated by your fertility needs.



Whether HTLV I-infection influences the chance of pregnancy after MAR remains unknown.



### Pregnancy and newborn care

Caesarean delivery is not recommended on the basis of maternal HTLV I/II-positivity alone. A woman testing positive for HTLV I/II should refrain from breastfeeding when and where she has safe nutritional alternatives.



| HTLV I/II  |  Male testing positive |  Female testing positive                                  |  Couple testing positive |
|------------|---|--|---|
| Before MAR | Consult with infectious disease specialist  |  |   |
|            |   | Discuss:<br>- Risk of viral horizontal transmission (not eliminated by MAR)<br>- Risk of viral vertical transmission (not eliminated by MAR) |   |
| During MAR | IUI, IVF or ICSI depending on infertility work-up   |  |   |
|            | Routine semen processing  |  |   |
| After MAR  | Caesarean section not recommended   |  |   |
|            |   | Breastfeeding not recommended  |   |

**Figure 5:** Summary of management of medically assisted reproduction in patients testing positive for Human T-lymphotropic virus.

## Information for patients testing positive for Zika virus (ZIKV)

### What is Zika Virus (ZIKV)?

Zika virus (ZIKV) is a virus which causes Zika fever. ZIKV causes flu-like symptoms in adults. When infected during pregnancy, the virus can cause a condition referred to as 'microencephaly' in the foetus. Microencephaly is a condition where the baby's head is much smaller than expected. Microencephaly can result because the baby's brain has not developed properly during pregnancy, or the brain started to develop correctly and then was damaged at some point during pregnancy. The virus is transmitted via mosquito bites and very likely also via sexual contact.

### Male partner testing positive

ZIKV has been shown to have cleared from blood and semen by 3 months after exposure. To avoid transmission to the baby during pregnancy, it is important to wait 3 months after ZIKV exposure to pursue pregnancy.

To avoid transmission to the baby during pregnancy, it is important to stop the MAR cycle when ZIKV has been detected and wait 3 months after ZIKV exposure to pursue pregnancy.

### Female partner testing positive

To avoid transmission to the baby during pregnancy, it is important to stop the MAR cycle when ZIKV has been detected and wait 2 months after ZIKV exposure to pursue pregnancy.

There are a number of reports where ZIKV particles have been found in breastmilk of women testing positive for ZIKV. However, their babies either tested negative or did not show any symptoms of ZIKV-infection.

## Recommendations

### Before MAR

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If a patient or partner has been diagnosed with ZIKV-infection or returning from a ZIKV endemic region in the last 3 months, medically assisted reproduction (MAR) treatment should be postponed.



### During MAR

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If ZIKV-infection is diagnosed in man or woman during MAR treatment, the cycle should be stopped, and the couple should be advised to use barrier contraception for 3 months.



### Pregnancy and newborn care

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ZIKV has been found in breast milk of women with ZIKV-infection.

The possibility of transmission of ZIKV through breastfeeding has only been assessed in 12 mother-child pairs. This provides insufficient evidence to establish a recommendation.



| ZIKV                   |  Male testing positive |  Female testing positive |  Couple testing positive |
|------------------------|---|---|---|
| If detected before MAR | Postpone MAR treatment  |   |   |
|                        | For 3 months  | For 2 months  | For 3 months  |
| If detected during MAR | Cancel cycle  |   |   |
| If detected after MAR  | Caesarean section not recommended   |   |   |
|                        | Breastfeeding not contra-indicated  |   |   |

**Figure 6:** Summary of management of medically assisted reproduction in patients testing positive for Zika virus.

## Where can I find more information or support?

More detailed information on each of the topics in this booklet can be found in the clinicians' edition of the guideline on the ESHRE website ([www.eshre.eu/guidelines](http://www.eshre.eu/guidelines)).

For more detailed information or support, you can contact your doctor or a patient organisation.

For contact details of national patient organisations for infertility, you can ask your doctor, or contact **Fertility Europe** ([www.fertilityeurope.eu](http://www.fertilityeurope.eu))

## About this booklet

This booklet aims to involve patients in healthcare improvement by informing them about current standards of care, and by enabling them to make informed decisions on their health, supported by the best available evidence.

### How this booklet was developed

This booklet was written by Dr Nathalie Le Clef (methodological expert) and revised by the members of the guideline group. All the information provided is based on the recommendations in the ESHRE guideline on MAR in patients with a viral infection/disease.

### Who developed the ESHRE guideline?

The ESHRE guideline on MAR in patients with a viral infection/disease, was developed by a multidisciplinary guideline development group including gynaecologists, embryologists, a virologist, an ethicist and a research specialist.

|                                |   |
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## Glossary (explanation of medical or research terms)

**Barrier contraceptives:** Methods of birth control which block the sperm from entering the uterus. Types of barrier methods include condoms, diaphragms, cervical caps, and the contraceptive sponge.

**Combined neonatal prophylaxis:** Preventive measures available, consisting of one or a combination of antiretroviral medications, which can reduce the risk of HIV-infection for the baby.

**Hepatitis B immunoantigen (HBIG):** an antibody your immune system produces to fight off a hepatitis B infection. When given shortly after birth to the baby, it can provide short-term protection against HBV-infection, until the immune system of the baby can produce its own antibodies in response to the HBV vaccination

**Infertility:** The state of being not fertile and unable to become pregnant, usually defined as not becoming pregnant after 12 months or more of regular unprotected sexual contact.

**Intracytoplasmic sperm injection (ICSI):** a more specialised form of IVF, where one sperm is injected into the egg.

**Intra-uterine insemination (IUI):** A technique where sperm is placed into a woman's womb through the cervix.

**In vitro fertilization (IVF):** A technique by which eggs are collected from a woman and fertilised with a man's sperm outside the body. Usually one or two resulting embryos are then transferred to the womb. If one of them attaches successfully, it results in a pregnancy.

**Medically assisted reproduction (MAR):** An overarching term for all forms of assisted reproduction. In this guideline and this patient leaflet, this term is used as the collective term for IUI, IVF and ICSI.

**Microencephaly:** A condition where the baby's head is much smaller than expected. Microencephaly can result because the baby's brain has not developed properly during pregnancy, or the brain started to develop correctly and then was damaged at some point during pregnancy.

**Prophylaxis:** Measures to prevent/ reduce the risk of transmission of a virus, such as vaccination or treatment with antiviral medications.

**Seroconcordant:** both partners have the same infection-status, both infected or both non-infected.

**Serodiscordant:** one partner is infected with a viral infection, and one is not infected with that virus.

**Ultrasound:** High frequency sound waves used to provide images of the body, tissues and internal organs.

## Disclaimer

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This booklet is in no way intended to replace, dictate or fully define evaluation and treatment by a qualified physician. It is intended solely as an aid for patients seeking general information on issues in reproductive medicine.

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