

GUIDELINES FOR PREVENTION OF TRANSMISSION OF INFECTIOUS DISEASES FROM ORGAN DONORS TO RECIPIENTS

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INTRODUCTION

This publication describes the guidelines for prevention of transmission of infectious diseases from organ donors to recipients within the institutions collaborating within Scandiatransplant.

Published by: Scandiatransplant

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Discussed by Scandiatransplant Infectious Diseases Group: 13 March 2026

Circulated to Scandiatransplant Organ Groups: 17 April 2026

Approved by Scandiatransplant Infectious Diseases Group: 1 October 2026

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OVERVIEW OF CHANGES

The 2026 guidelines are a revision of previous recommendations approved by the Scandiatransplant Infectious Diseases Group on 21 October 2025.

Major changes include:

- The responsibility of retrieving the donor history is specified as the responsibility of the transplant coordinator.
- Indications for HBV NAT, anti-HDV and HDV NAT tests were updated. Interpretation of hepatitis B/D test results are provided in a new flow chart and hepatitis B section.
- Lung transplantation from Covid-19 positive donors may now be allowed if the risk is assumed to be low
- Malaria-endemic countries were updated based on latest malaria incidence rates. Malaria PCR and LAMP listed as acceptable test methods for active malaria. “Long-term stay” in Sub-Saharan Africa was defined.

Minor changes include:

- For clarity, it is clarified that recipient serum must be stored
- Positive/negative tests are now designated positive/negative rather than +/-.
- An interpretation of positive HCV tests has been added.
- HIV antibody/antigen replaces anti-HIV as recommended HIV test.
- Statement that influenza viraemia in influenza A/B positive donors is changed to state that data are limited.
- Clarification that any prior residence in a TB-endemic country is a risk factor for TB infection (latent TB) and clarifying headline of subsection
- Specified “originating from” in the section on geographically restricted infections and that any long-term stay in a Chagas-endemic country confers increased risk of Chagas disease.
- Strongyloides prevalence map layout harmonised with the other maps.
- Editorial changes to accommodate the above major and minor changes

1. RESPONSIBILITIES

The transplantation coordinator is responsible for

- adequate tests being requested and performed according to the protocol
- the results being forwarded to the surgeon in charge of grafting.
- retrieving the donor's travel history and country of origin from the intensive care unit

The surgeon in charge of grafting is responsible for

- the acceptance and the use of the organ, and thus for knowing the results of the performed tests
- judging if a test can be postponed until after grafting
- judging if a mismatch can be accepted for the specific recipient.

Storing of serum: Adequate serum must be stored for 10 years for retrospective testing:

- Recipient centres must store pre-transplant recipient serum.
- Responsible donor testing centre* must store adequate donor serum when one or more organs are used for transplantation. This also applies if all organs are exported to other transplant centres.

Storing of bacterial or fungal species: In case of a donor with an infection with a multidrug-resistant bacterium or fungus, bacterial or fungal species should be stored at the responsible donor testing centre* (often at the local department of clinical microbiology) for potential further susceptibility testing.

*Responsible donor testing centre is defined as the centre performing the donor screening.

2. OVERVIEW OF BASIC SCREENING FOR INFECTIONS IN ORGAN DONORS

Category 1: Before organ procurement and/or transplant:

HIV antibody/antigen, (HIV NAT), HBsAg, anti-HBc, (HBV NAT) anti-HCV, (HCV NAT), SARS-CoV-2 PCR

Category 2: As soon as possible (not necessarily before organ procurement and/or transplant):

Anti-CMV, anti-EBV, anti-HSV-1/2, anti-Treponema pallidum (syphilis), anti-Toxoplasma

Category 3: In special situations / in certain risk groups:

Anti-HTLV-I/II, Plasmodium (malaria) PCR/LAMP, anti-Strongyloides, anti-Trypanosoma cruzi (Chagas disease), Tuberculosis (TB) interferon-gamma release-assay

3. BASIC SCREENING OF THE DONOR

3.1 Category 1: Screening before organ procurement and/or transplant

The following tests should be run before offering organs: **HIV antibody/antigen, HBsAg, anti-HBc, anti-HCV, SARS-CoV-2 PCR.**

Additionally, strongly consider **HIV NAT, HBV NAT, and HCV NAT** tests before offering organs from donors at increased risk of HIV, HBV, and HCV infections. Donors are considered at increased risk of HIV, HBV, and HCV if one of the following risk criteria exists during the 30 days before organ procurement:

- Sex with a person known or suspected to have HIV, HBV, or HCV infection (i.e., any method of sexual contact, including vaginal, anal, or oral)
- Man who has had sex with another man (MSM)
- Sex in exchange for money or drugs
- Sex with a person who had sex in exchange for money or drugs
- Drug injection for nonmedical reasons
- Sex with a person who injected drugs for nonmedical reasons
- Incarceration (confinement in jail, prison, or juvenile correction facility) for ≥ 72 consecutive hours
- Child breastfed by a mother with HIV infection
- Child born to a mother with HIV, HBV or HCV infection
- Unknown medical or social history.

The decision to accept or reject an organ from a donor with a positive test must be taken by the responsible surgeon.

Test	Interpretation of positive reaction
HBsAg pos.	For any positive reaction to either HBsAg, anti-HBc, and/or HBV NAT, see 4.1 Hepatitis B virus infection*.
Anti-HBc pos.	
HBV NAT pos.	
Anti-HCV pos.	Signifies either active or previous HCV infection. All organs can be used*. Priority should be given to recipients who are HCV NAT positive. HCV NAT test of donor should be performed; antiviral treatment against HCV should be initiated soon after transplantation if the donor is HCV NAT positive.
HCV NAT pos.	Signifies active HCV infection. All organs can be used*. Priority should be given to recipients who are HCV NAT positive. Antiviral treatment against HCV should be initiated soon after transplantation.
HIV antibody/antigen pos. HIV NAT pos.	Organs cannot be used, except for urgent organ need in HIV antibody/antigen positive and/or HIV NAT positive recipients*.
SARS-CoV-2 PCR pos.	See section 4.2 Covid-19 in deceased organ donors.

* It is recommended that recipients give an informed consent to the use of organs from donors with signs of chronic viral infections.

3.2 Category 2: Samples taken before donation, analysed as soon as possible (not necessarily before organ procurement and/or transplant)

Test	Interpretation of positive reaction	Comment
Anti-CMV pos.	Increased risk for infection and severe complications in anti-CMV-negative recipients.	Organs can be accepted regardless of the anti-CMV IgG status of the donor. Suitable prophylaxis or virological monitoring with pre-emptive treatment should be adopted in recipients, particularly in anti-CMV negative recipients receiving organs from anti-CMV positive donors.
Anti-EBV pos.	Increased risk for EBV complications in anti-EBV-negative recipients.	Organs can be accepted regardless of the anti-EBV IgG status of the donor. Particularly important for paediatric recipients. All anti-EBV-negative recipients are at risk of post-transplant lymphoproliferative disease (PTLD). Suitable monitoring should be adopted in anti-EBV negative recipients receiving organs from anti-EBV positive donors.
Anti-HSV-1/2 pos.	Consider HSV-specific prophylaxis for all anti-HSV-1/2 negative recipients who are not receiving antiviral medication for CMV prevention that has activity against HSV.	Organs can be accepted regardless of the anti-HSV-1/2 status of the donor. Suitable prophylaxis should be adopted in anti-HSV-1/2 negative recipients receiving organs from anti-HSV-1/2 positive donors.
Anti-Treponema pallidum pos. (syphilis)	Indication for treatment and/or special follow-up.	Organs can be accepted regardless of test result.
Anti-Toxoplasma pos.	Prophylaxis should be given to heart recipients that are anti-Toxoplasma negative (high risk of infection). Consider prophylaxis for other organ recipients that are anti-Toxoplasma negative.	Organs can be accepted regardless of donor and recipient serostatus. Trimethoprim-sulfamethoxazole is effective against Toxoplasma.

3.3 Category 3: Tests taken in special situations / in certain risk groups

Test	Comment
Anti-HTLV-I/II	Only in donors born in areas with high prevalence of HTLV infection. See section 4.6 Geographically restricted infections.
Plasmodium (malaria) PCR/LAMP	Only in donors with any long-term stay, or recent travel history to highly endemic areas. See section 4.6 Geographically restricted infections.
Anti-Strongyloides	Only in donors with prior residence in or frequently visiting areas with >5% prevalence. See section 4.6 Geographically restricted infections.
Anti-Trypanosoma cruzi	Only in donors born in or with prior residence in Latin America. See section 4.6 Geographically restricted infections.
TB interferon-gamma release-assay	Only in donors with risk factors for TB, and no signs of active TB and with no history of treatment for TB. See section 4.5.3 Donors with risk factors* for TB, no signs of active TB and with no history of treatment for active TB

4. SPECIFIC CONDITIONS

4.1 Hepatitis B virus infection

Decisions on accepting organs should be based on the interpretation of donor **HBsAg** and **anti-HBc** using Figure 1.

Organ donors that are HBsAg positive should be tested for **anti-HDV** or with **HDV NAT** prior to use of the organs, if possible. If unavailable, anti-HDV and/or HDV NAT already recorded in patient records may be used to document HDV status. A positive anti-HDV and/or HDV NAT should be interpreted as an active HDV infection.

Strongly consider HBV NAT test of donors at increased risk of recently acquired HBV infections according to section 3.1 Category 1: Screening before organ procurement and/or transplant. HBV NAT is not mandatory in standard risk donors.

Analysing **anti-HBs** in donors is not mandatory.

If the results of HBV NAT and/or anti-HBs in donors are available, they should be interpreted as follows:

- **HBV NAT positive and**
 - HBsAg negative, anti-HBc negative: donor has a recently acquired HBV infection
 - HBsAg positive, anti-HBc negative: donor has a recently acquired HBV infection
 - HBsAg positive, anti-HBc positive: donor has HBV infection
➔ **Follow the flow chart in Figure 1 for active HBV infection**
 - HBsAg negative, anti-HBc positive: donor has occult HBV infection
➔ **Follow the flow chart in Figure 1 for probable occult HBV infection**
- **Anti-HBs positive:** The result of anti-HBs does not impact the clinical management.
➔ **Follow Figure 1 regardless of the result of anti-HBs.**

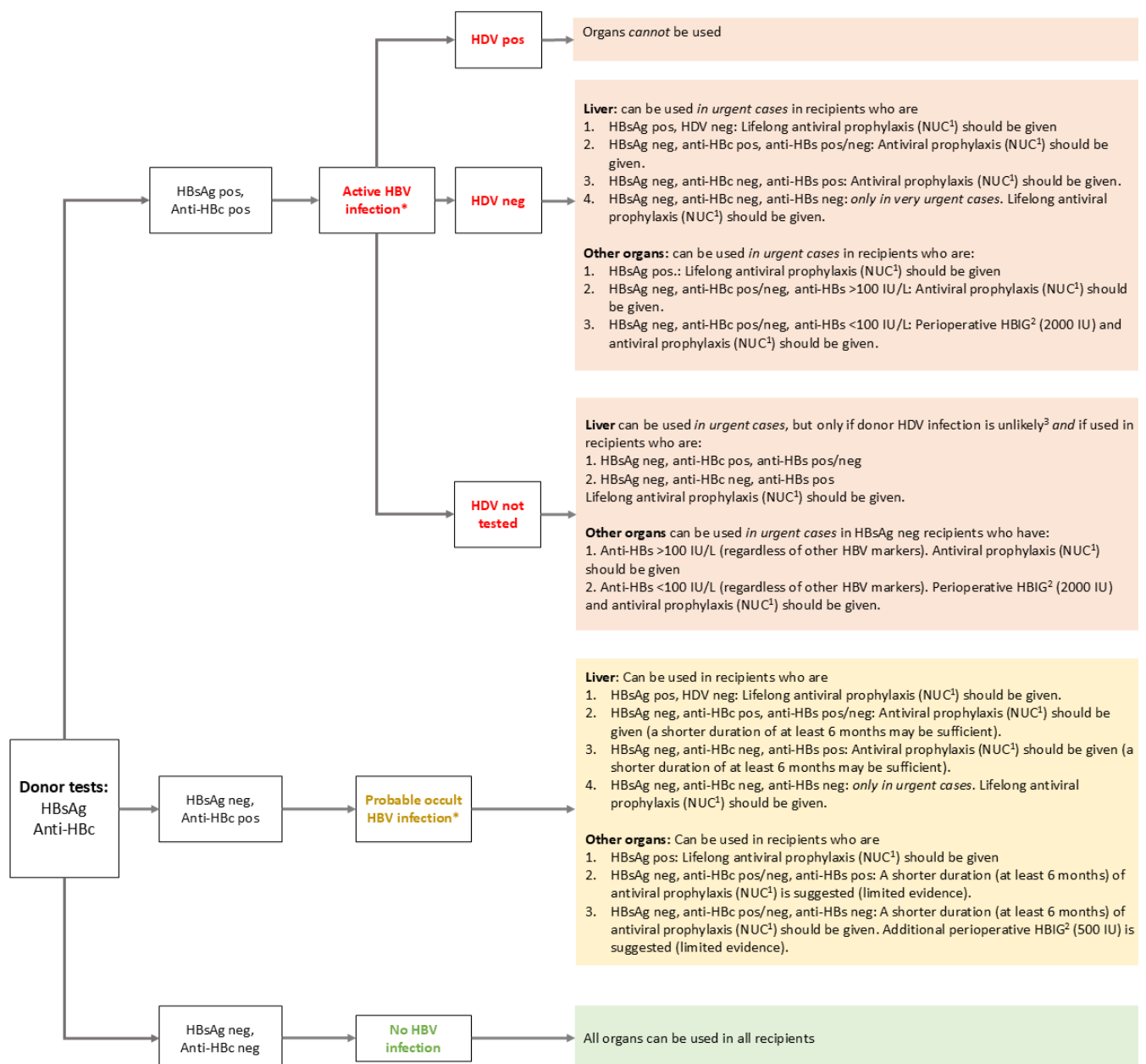


Figure 1. Interpretation and consequences of donor hepatitis B virus serology test results.

HBV, hepatitis B virus. HBIG, hepatitis B immunoglobulin. HDV, hepatitis D virus. IU, international units. NAT, nucleic acid amplification test. Neg, negative. NUC, nucleos(t)ide analogue active against hepatitis B virus. Pos, positive.

¹Entecavir, tenofovir alafenamide, or tenofovir disoproxil. Consult infectious diseases specialist after transplantation to determine duration of antiviral prophylaxis and monitoring strategy.

²Consult infectious diseases specialist after transplantation regarding follow-up treatment with HBIG and monitoring strategy.

³HDV is unlikely in donors that *do not* originate from regions with a high HDV prevalence (i.e. Mongolia, Romania and West Africa).

*It is recommended that recipients provide informed consent to the use of organs from donors with signs of chronic viral infections.

4.2 Covid-19 in deceased organ donors

All donors should be tested with SARS-CoV-2 PCR in upper respiratory airways at time of procurement. Lung donors should be tested with PCR from BAL at least within 72 hours but ideally as close to organ recovery as possible.

For donors previously known to have had a positive Covid-19 test and with negative PCR at time of procurement:

1. If no end-organ failure or thrombosis due to Covid-19 AND Covid-19 is not a contributory cause of death, transmission of infection is unlikely: consider accepting the organs.

For donors with positive PCR at time of procurement:

1. No end-organ failure or thrombosis due to Covid-19 AND Covid-19 is not a contributory cause of death:
 - a. Transmission of infection is unlikely: consider accepting non-lung and non-intestinal organs
 - b. Intestinal transplantation should be assessed on a case-by-case basis (limited data)
 - c. Lungs may be considered after consultation with infectious diseases specialist if:
 - i. There is no evidence of Covid-19 typical opacities on chest computed tomography
 - ii. Covid-19 is assessed to be a historic rather than acute infection (assessed by PCR Ct values and clinical history)
2. End-organ failure or thrombosis due to Covid-19 OR Covid-19 is a contributory cause of death:
 - a. Organ donation not suitable.

4.3. Viral respiratory tract infections other than Covid-19

4.3.1 Donors without signs or symptoms of respiratory tract infections

Routine screening of asymptomatic donors for viral respiratory tract infections is not recommended, with SARS-CoV-2 as the only exception (see 4.2 Covid-19 in deceased organ donors).

4.3.2 Donors with signs or symptoms of respiratory tract infections

Consider PCR for influenza A/B on a swab sample from the nasopharynx/throat or on endotracheal aspirate. Testing for other respiratory viruses than SARS-CoV-2 is not mandatory (see 4.2 Covid-19 in deceased organ donors). In some settings, although not requested by the clinician, tests for other respiratory viruses, including RSV, may be performed as clinical routine when testing for influenza and/or SARS-CoV-2. In case of a positive PCR for Influenza, RSV or other respiratory viruses, see below.

4.3.3 Interpretation of test results for all donors

- **SARS-CoV-2 PCR positive:** Covered by 4.2 Covid-19 in deceased organ donors.
- **Influenza A/B PCR positive:** Lungs and small bowel should not be offered. Other organs can be offered, but the data are limited. Consider prophylactic oseltamivir or other antiviral prophylaxis in the recipient. For living donors, postpone organ donation for 7-10 days from diagnosis. If >10 days from diagnosis, transmission is very unlikely.
- **RSV PCR positive:** Lungs should not be offered. Other organs can be offered. For living donors, postpone organ donation for 7-10 days from symptom onset. If >10 days from symptom onset, transmission is very unlikely.
- **PCR positive for other respiratory viruses:** As for RSV PCR positive (see above).

4.4 Active infections in the donor

4.4.1 Bacteraemia/Fungaemia

Individual assessment – organs may be accepted if the causing agent and its antibiotic/antifungal resistance is known and reveals a normal resistance pattern.

Adequate antimicrobial treatment must be initiated. The necessary length of treatment of the donor, and of the recipient after transplantation, will in each case depend on the causative agent and the clinical conditions. If possible, we recommend storing the infecting bacterial or fungal species for potential further susceptibility testing.

4.4.2 Multidrug-resistant (MDR) bacteria

Individual assessment – organs may be accepted if antibiotic resistance is known, and adequate antimicrobial treatment has been given. We recommend storing the infecting bacterial or fungal species for potential further susceptibility testing.

We recommend classification following Magiorakos A-P et al. (Clin Microbiol Infect 2012; 18:268-28) since the organisms will be increasingly difficult to treat with increasing grading.

If only colonisation with methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococci* (VRE) and MDR gram-negative bacteria, transplantation can be performed if the colonised site is sealed off from the donor organ, and the donor is without signs of systemic infection.

- If lungs are colonised with MDR bacteria, lungs should not be used.
- If urine is colonised with MDR bacteria, kidneys should not be used.
- If donor is infected with MDR organisms, there must be clear infection control and still a number of antibiotic alternatives in case of allergies, toxicities, interactions, etc.

4.4.3 Multi-system organ failure due to overwhelming sepsis, gangrenous bowel or similar condition

Not accepted

4.4.4 Disseminated mould infection

Not accepted

4.4.5 Active disseminated viral infection due to Herpesviruses (HSV, VZV, CMV, EBV) or measles

Not accepted

4.4.6 Unknown CNS infection or non-treatable encephalitis

Not accepted

4.5 Tuberculosis (TB) in deceased organ donors

4.5.1 Donors with active TB

Organs are generally not accepted. If isolated pulmonary TB in donor, consider other organs than lungs in very urgent cases and if not multidrug-resistant TB. Chemoprophylaxis or treatment for active TB in recipient is recommended.

4.5.2 Donors without signs of active TB with a history of treatment for active TB

4.5.2.a If available documented information that assure a completed treatment course:

All organs can be accepted.

4.5.2.b If no documented information that can assure a completed treatment course:

The organ previously affected by TB should not be accepted. Other organs can be accepted.

Infectious disease specialist should be consulted about indication for chemoprophylaxis to the recipients. See Table 6 in Morris et al. (Am J Transpl 2012; 12:2288-2300) for details.

4.5.3 Donors with risk factors* for TB, no signs of active TB and with no history of treatment for active TB

All organs can be accepted. TB interferon-gamma release-assay test is recommended. Results are normally available after transplantation and may help in the decision of whether to give chemoprophylaxis to the recipient.

*Risk factors for TB:

- Prior residence in country with high TB incidence (>100/100,000 inhabitants) according to WHO Global TB report 2024. This includes Ukraine, Greenland and some countries in Latin America, Africa and Asia (see Figure 2).
- Homelessness
- Known TB exposure
- History of latent TB without assured completed treatment course
- Chest radiograph showing apical scarring/fibrotic lesion in a donor with other risk factors for TB

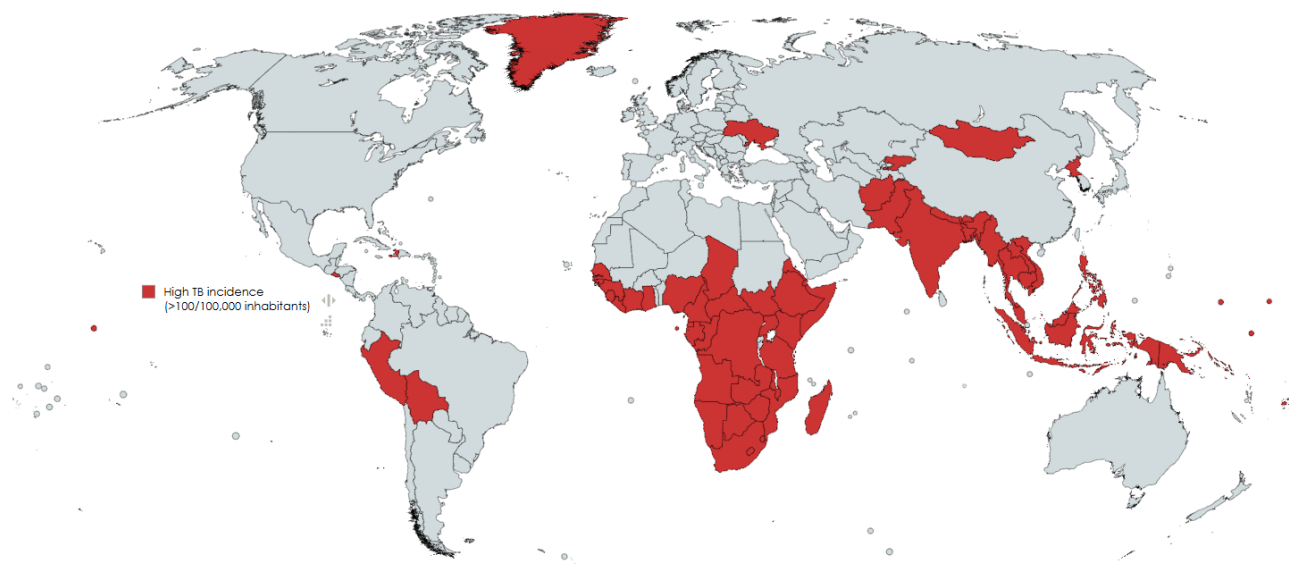


Figure 2. Map of countries with high TB incidence (>100/100 000 inhabitants) according to WHO Global TB report 2024. Drawn using MapChart.net.

4.6 Geographically restricted infections

Certain geographically restricted infections pose risks for complications after transplantation. This issue has become more relevant in the last decades due to immigration from and travels to regions where these infections are endemic. The travel history of the donor will guide the risk assessment.

4.6.1 General recommendation

In the case of a donor with a recent travel history and signs of acute infection, a transplant infectious disease expert should be consulted. More exhaustive information on geographically restricted infections with potential implications in organ transplantation is found in the European *Guide to the Quality and Safety of Organs for Transplantation* (9th edition, Table 8.8) by EDQM.

4.6.2 Specific recommendations

Ebola virus	Travelers or residents returning from an area with an ongoing outbreak* should be deferred from donation of any organ for two months after return. *See ECDC Outbreak reports, www.ecdc.europa.eu/en/ebola-and-marburg-fevers/surveillance-and-disease-data .
HTLV-I/II	Anti-HTLV-I/II testing of donors born in areas with a high prevalence of HTLV-I/II infections (<i>Romania, Japan, Taiwan, South America, Panama, Haiti, Dominican Republic, Melanesian islands, Iran, and western, central, and southern Africa</i>) is recommended. If anti-HTLV-I/II is positive, organs are not accepted.
Malaria	Donors with residence or any long-term (>3 months) stay in malaria-endemic regions in Africa (see Figure 3) during the past five years should be tested for asymptomatic malaria by PCR or LAMP. Febrile donors with recent stay (during the last 6 months) in any malaria-endemic region (see Figure 3) should be tested for active malaria by PCR, LAMP, or malaria microscopy. In the case of any positive malaria test, donor (if possible), and recipient should receive adequate treatment. Organs from donors who died from malaria should not be accepted.

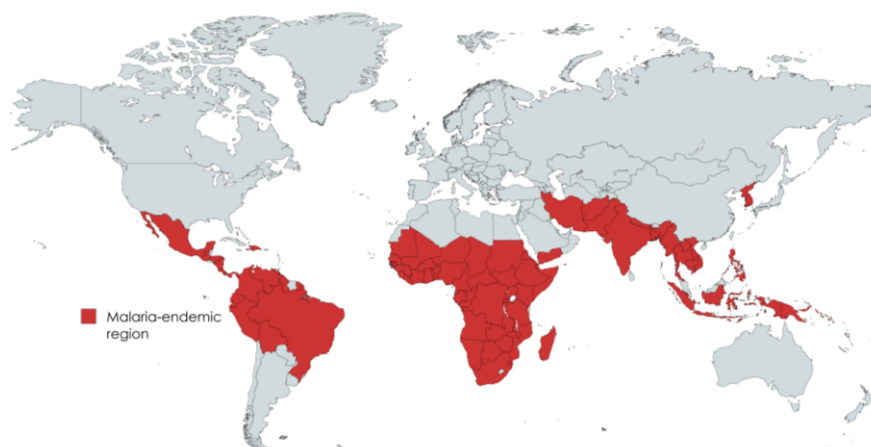


Figure 3. Map of malaria-endemic regions according to World Health Organization World malaria report 2025. Drawn using MapChart.net.

Strongyloides

Donors with prior residence in or frequently visiting areas with >5% prevalence (see Figure 4) should be tested by anti-Strongyloides IgG. If IgG is positive (results will be obtained after transplantation), the recipient should receive treatment to prevent hyperinfection due to donor-derived Strongyloides.



Figure 4. Map of regions with >5% Strongyloides prevalence according to Buonfrate et al. Pathogens 2020;9:468. Drawn using MapChart.net.

Chagas disease

Donors born in or with prior residence in countries with risk for transmission of *Trypanosoma cruzi* (i.e., any country in Latin America) should be tested for anti-*Trypanosoma cruzi* IgG (results will be obtained after transplantation). Positive tests should be confirmed by another serologic method due to sub-optimal specificity of single tests. Recipients receiving organs from a seropositive donor should be monitored by regular PCR for *T. cruzi* post-transplant.

Heart and intestine from donors with previously diagnosed chronic Chagas disease should not be accepted.

Mpox

Donors with confirmed or suspected Mpox infection should be deferred from donation for a minimum of 14 days after resolution of all symptoms.

Close contacts of suspected or confirmed Mpox cases should be deferred from donation for a minimum of 21 days from the last day of exposure.

In donors with travel within the last 21 days to countries with ongoing community transmission of Mpox (see ECDC, Mpox, Surveillance and Updates, <https://www.ecdc.europa.eu/en/mpox-worldwide-overview>), a careful investigation should be done regarding contacts with suspected or confirmed Mpox cases.
