

## COVID-19 recommendation

**Update, 2023-11-09**

Recent data suggest that the risk for donor-derived SARS-CoV-2 infection in organ/tissue transplantation is very low or even absent for transplant procedures other than lung transplantation if organ/tissue donors suffer from mild/asymptomatic COVID-19<sup>1-4</sup>. The Swisstransplant Working Group of Infectious Diseases therefore decided to undertake first steps to simplify the SARS-CoV-2 testing- and consenting procedure. We simplified the testing procedure for tissue donation and the consenting process for transplantation of organs other than lungs from SARS-CoV-2 infected donors. For logistic reasons, uniform SARS-CoV-2 PCR should still be performed in all solid organ donors to ensure that potential lung donors have always been screened before organ donation.

### 1. SARS-CoV-2 testing of potential deceased solid organ donors

SARS-CoV-2 PCR diagnostics must be carried out in all potential deceased organ donors using an oro/nasopharyngeal swab or a deep respiratory tract sample. In case of anticipated lung donation, analysis of a deep respiratory tract sample is mandatory. If deep respiratory tract samples are not available for foreign lung offers, the lungs may be accepted at discretion of the transplant center if upper respiratory tract samples are negative and if there is no radiological evidence for a lower respiratory tract infection. The medical advisor of Swisstransplant can request an additional chest CT-scan for further evaluation of potential COVID-19. SARS-CoV-2 PCR testing must be performed less than 48 hours before organ donation. If the time window exceeds 48 hours, the test has to be repeated.

### 2. Deceased solid organ donors without active COVID-19

Organs of deceased organ donors without evidence for an active SARS-Cov-2 infection can be allocated as usual.

### 3. Deceased SARS-CoV-2 PCR positive solid organ donors

Potential deceased organ donors with active COVID-19 (positive PCR from oro- or nasopharyngeal swab) and suffering from a mild/asymptomatic disease are eligible for liver-, kidney-, pancreas-, Langerhans islets- and heart donation. No donor-derived SARS-CoV-2 infections have been reported so far when transplanting these organs from mild/asymptomatic SARS-CoV-2 infected donors<sup>5-8</sup>.

Potential deceased lung donors with active COVID-19 (positive PCR from oro- or nasopharyngeal swab) and suffering from a mild/asymptomatic disease may be eligible for lung donation if the chest CT scan does not show COVID-19 typical opacities and if the SARS-CoV-2 PCR of lower respiratory tract samples (bronchoalveolar lavage or tracheobronchial secretion) show either absence of SARS-CoV-2 RNA or if the viral load is low. Recent literature suggests that lungs of SARS-CoV-2 infected donors may be used safely if there is no SARS-CoV-2 RNA detected in deep respiratory tract samples or if the ct value of the PCR is high (we recommend to consider lungs for transplantation if the ct value of the is PCR >30 or if the viral load is <10<sup>4</sup> copies/ml, the final decision for accepting SARS-CoV-2 positive lungs is the responsibility of the respective transplant center)<sup>9, 10</sup>.

'Additional aspects such as (i) active versus resolved COVID-19, (ii) urgency of transplantation, and (iii) vaccination history of the donor must be considered.

In contrast to the previous recommendations, only potential lung recipients or his/her next of kin have to be informed about the risks and benefits of accepting a lung from a SARS-CoV-2 positive donor and has to provide written consent. The consent has to be attached in the SOAS prior to transplantation. For liver-, kidney-, pancreas-, Langerhans islets- and heart recipients written consent can be waived. A pre-emptive therapy with antivirals for recipients of a lung from a SARS-CoV-2 positive donor may be considered and should be discussed in the interdisciplinary team on a case-by-case basis.

#### **4. Living SARS-CoV-2 PCR positive solid organ donors**

Safety for living organ donors is a priority, therefore PCR diagnostics must be carried out in all living donors using an oro- or nasopharyngeal swab. The PCR testing has to be performed less than 48 hours before donation. If the time window exceeds 48 hours, the test has to be repeated. Detailed medical history, including prior SARS-CoV-2 vaccination, available SARS-CoV-2 serology titers, exposure to persons with COVID-19 and searching for COVID-specific symptoms is mandatory prior to donation and has to be documented.

Asymptomatic living donors with a positive SARS-CoV-2 PCR may be considered eligible for donation in exceptional cases. However, these cases must be individually assessed with a special focus on the potential risk for the donor. We strongly advise against proceeding with the transplantation if an asymptomatic SARS-CoV-2 infected living donor has risk factors for developing severe COVID-19 (such as being overweight, being a current or former or cigarette smoker, or being  $\geq 65$  years old). Additional aspects such as (i) active versus resolved COVID-19, (ii) urgency of transplantation, and (iii) vaccination history of the donor must be considered.

#### **5. Donation of tissues**

- a. In case of cornea donation, we do not recommend routine SARS-CoV-2 PCR diagnostics of asymptomatic donors. Patients with known symptomatic COVID-19 should be excluded from donation.
- b. In case of amniotic membrane donation for transplantation in human eye, we do not recommend routine SARS-CoV-2 PCR diagnostics of asymptomatic donors. Patients with known symptomatic COVID-19 should be excluded from donation.
- c. In case of bone graft donation, we do not recommend routine SARS-CoV-2 PCR of asymptomatic donors. Patients with known symptomatic COVID-19 should be excluded from donation.
- d. In case of isolated heart valve donation, we do not recommend routine PCR diagnostics. Heart valves of SARS-CoV-2 positive donors with mild/asymptomatic disease can be used.
- e. In case of isolated donation of arterial vessels, we do not recommend routine PCR diagnostics. Arteries of SARS-CoV-2 positive donors with mild/asymptomatic disease can be used.

Recommendation approved by the STAI Swisstransplant Working Group of Infectious Diseases | PD Dr. Cédric Hirzel, President; Dr. Katia Boggian; Prof. Nicolas Müller; Prof. Nina Khanna; Prof. Oriol Manuel; Prof. Christian van Delde; and PD Dr. Franz Immer, Medical Director and CEO Swisstransplant

## References

1. Goldman JD, Pouch SM, Woolley AE, et al. Transplant of organs from donors with positive SARS-CoV-2 nucleic acid testing: A report from the organ procurement and transplantation network ad hoc disease transmission advisory committee. *Transpl Infect Dis.* Feb 2023;25(1):e14013. doi:10.1111/tid.14013
2. Schold JD, Koval CE, Wee A, Eltemamy M, Poggio ED. Utilization and outcomes of deceased donor SARS-CoV-2-positive organs for solid organ transplantation in the United States. *Am J Transplant.* Sep 2022;22(9):2217-2227. doi:10.1111/ajt.17126
3. Casagrande M, Fitzek A, Spitzer MS, et al. Presence of SARS-CoV-2 RNA in the Cornea of Viremic Patients With COVID-19. *JAMA Ophthalmol.* Apr 1 2021;139(4):383-388. doi:10.1001/jamaophthalmol.2020.6339
4. Salz AK, Acharya M, Hofmann N, et al. Risk of SARS-CoV-2 virus transmission from donor corneal tissue: A review. *Indian J Ophthalmol.* Jun 2021;69(6):1592-1597. doi:10.4103/ijo.IJO\_3249\_20
5. La Hoz RM, Mufti AR, Vagefi PA. Short-term liver transplant outcomes from SARS-CoV-2 lower respiratory tract NAT positive donors. *Transpl Infect Dis.* Feb 2022;24(1):e13757. doi:10.1111/tid.13757
6. Saracco M, Romagnoli R, Martini S. Solid non-lung organs from COVID-19 donors in seropositive or naive recipients: Where do we stand? *Transpl Infect Dis.* Feb 2022;24(1):e13761. doi:10.1111/tid.13761
7. Eichenberger EM, Kaul DR, Wolfe CR. The pandemic provides a pathway: What we know and what we need to know about using COVID positive donors. *Transpl Infect Dis.* Oct 2021;23(5):e13727. doi:10.1111/tid.13727
8. Romagnoli R, Gruttadauria S, Tisone G, et al. Liver transplantation from active COVID-19 donors: A lifesaving opportunity worth grasping? *Am J Transplant.* Dec 2021;21(12):3919-3925. doi:10.1111/ajt.16823
9. Eichenberger EM, Coniglio AC, Milano C, et al. Transplanting thoracic COVID-19 positive donors: An institutional protocol and report of the first 14 cases. *J Heart Lung Transplant.* Oct 2022;41(10):1376-1381. doi:10.1016/j.healun.2022.06.018
10. Hwang J, Yuen A, Rhoades J, et al. Real-time transcription polymerase chain reaction cycle threshold values as criteria for utilization of incidental COVID-19 positive lung donors. *J Heart Lung Transplant.* Dec 28 2022;doi:10.1016/j.healun.2022.12.016