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COVID-19 for Liver Transplant Recipients

Frequently Asked Questions

Are liver transplant recipients at higher risk of getting sick from COVID-19 compared to the general population?

It is difficult to know whether liver transplant recipients are at higher risk of severe disease, hospitalization, and death from COVID-19 compared to the general population. Case series and registry studies suggest that liver transplantation and immunosuppression do not lead to worse COVID-19 outcomes. However, the CDC has identified organ transplantation and immunosuppression as conditions that may increase the risk of severe illness from COVID-19, and liver transplant recipients are more likely to have other conditions that increase the risk of severe COVID-19. Transplant recipients are advised to take additional precautions compared to the general population to avoid exposure to SARS-CoV-2, obtain vaccine booster doses, monoclonal antibody prophylaxis (such as [Evusheld](#)), and potentially receive antiviral medications if they contract COVID-19.

What vaccines are recommended for liver transplant recipients?

Recommendations change rapidly and can be confusing. Everyone should get a series of primary vaccines followed by a booster. The primary series ideally provides initial protection against COVID-19. Boosters are given later when immunity normally decreases over time.

Immunosuppressed adults (including liver transplant recipients) should receive 3 shots of an mRNA vaccine (Pfizer, Moderna) or 2 shots of a recombinant protein vaccine (Novavax) for their primary series followed by a booster (Pfizer, Moderna) at least 2 months after the primary series.

Immunosuppressed individuals who received a Janssen / Johnson & Johnson vaccine should receive an mRNA vaccine (Pfizer, Moderna), at least 4 weeks after the primary shot to complete the primary series. This should be followed by at least one booster (Pfizer, Moderna) at least 2 months after the primary series.

It is ok to mix mRNA vaccines (for example, you can get a Pfizer vaccine followed by a Moderna booster and vice versa).

Because the recommendations are changing frequently, visit the [CDC website](#) for up-to-date recommendations regarding vaccines and schedules for immunosuppressed individuals.

Are the COVID-19 vaccines safe for liver transplant recipients?

The available COVID-19 vaccines are very safe. Although the phase 3 clinical trials did not include many patients with solid organ transplants or immunosuppression, several subsequent post-marketing studies demonstrated the safety of available vaccines in these individuals. Common side effects in the general population (injection site pain, fatigue, headaches) are likely to be just as common in transplant recipients. Although rare side effects have been described in the general population, including heart inflammation (myocarditis/pericarditis), clotting problems (thrombosis with thrombocytopenia), neurologic conditions (Guillain-Barré syndrome), and autoimmune reactions, there is no information to suggest that these reactions are more common in transplant recipients. COVID-19 infection is much more likely to cause serious health problems compared to the very rare occurrence of serious side effects of COVID-19 vaccines.

Do the vaccines work in liver transplant recipients?

Transplant recipients are less likely to produce antibodies in response to many common vaccines. This also appears to be true of the COVID-19 vaccines. Several studies have shown that additional shots produce better antibody responses, even in those who did not respond to the first or second shots. Accordingly, the CDC has recommended additional shots for the primary series of vaccines for immunosuppressed individuals (eg, 3 shots for the mRNA vaccines and 2 shots for the Johnson & Johnson vaccine) followed by boosters. It should be noted that antibodies do not tell the full story about how well the vaccines protect against severe COVID-19. Real-world data suggest that outcomes (hospitalizations and deaths) are much less common in transplant recipients who are vaccinated compared to those who are not vaccinated.

Should I decrease or stop my immunosuppression medications before getting the COVID-19 vaccine?

Patients taking mycophenolate (Cellcept, Myfortic) or azathioprine (Imuran) for immunosuppression are less likely to produce antibodies in response to the COVID-19 vaccines. This does not appear to be the case for tacrolimus (Prograf, Envarsus). Due to the potential risk for rejection, decreasing or stopping mycophenolate or azathioprine before getting vaccinated is not recommended. As always, any changes in immunosuppression medications must be discussed with the transplant team.

Do I need to continue wearing a mask after getting vaccinated?

Because transplant recipients may not respond as well to the COVID-19 vaccines as the general population, it is recommended that all transplant recipients continue to take reasonable precautions to avoid exposure to COVID-19. These includes mask wearing, physical distancing, avoiding crowds, hand washing, and monitoring for fever and COVID-19 symptoms. The need for these protections depends on how much SARS-CoV-2 is circulating in your area. Highest risk activities include large, unmasked crowds in crowded, poorly ventilated indoor spaces.

What is Evusheld and should I get it?

Tixagevimab/cilgavimab (Evusheld) is a monoclonal antibody given by intramuscular injection that reduces the risk of getting infected with SARS-CoV-2. It is authorized by the FDA to decrease the likelihood of developing COVID-19 in immunosuppressed individuals before they are exposed to SARS-CoV-2 (also known as “pre-exposure prophylaxis”). It is *not* a treatment for COVID-19 nor is it a substitute for vaccination. COVID-19 vaccination is still the best way to prevent infection and severe disease. Based on the emergence of viral variants, Evusheld may not work as well to protect against COVID-19 with certain variants. Nonetheless, immunosuppressed individuals, including liver transplant recipients, should speak with their physicians about whether they should receive Evusheld for pre-exposure prophylaxis. The dose should be repeated every 6 months.

What should I do if I am exposed to someone with COVID-19?

Current CDC guidelines regarding quarantine, isolation, and testing after an exposure are evolving. The [CDC website](#) has helpful, up-to-date resources to guide you in these circumstances. However, if you develop symptoms get tested immediately and isolate until you receive your test results. Continue to take precautions and watch for symptoms until 10 days after contact with someone with COVID-19.

What should I do if I have symptoms or test positive for COVID-19?

Contact your transplant coordinator *immediately* because treatment is available that can decrease your risk of becoming very sick or needing hospitalization. Most of these medications need to be started within 5-7 days of symptom onset.

What medications are currently authorized by the FDA for treatment of COVID-19?

The medications currently authorized by the FDA include:

- nirmatrelvir plus ritonavir (Paxlovid)
- molnupiravir (Lagevrio)
- remdesivir (Veklury)
- bebtelovimab

Paxlovid and Lagevrio are oral medications while Veklury and bebtelovimab are intravenous infusions. Bebtelovimab is a monoclonal antibody, while the other medications are antivirals that prevent SARS-CoV-2 from making copies of itself.

Paxlovid is difficult to use in transplant recipients because of significant effects on the metabolism of immunosuppressant medications such as tacrolimus, cyclosporine, sirolimus, and everolimus.

Due to the emergence of viral variants, certain medications, such as bebtelovimab, may not continue to work as well.

The [CDC website](#) has up-to-date information on current treatment options that can be discussed with your transplant team.

Where can I get outpatient treatments for COVID-19?

Contact your transplant coordinator or visit the Department of Health and Human Services [COVID-19 test-to-treat locator](#).

Where can I get more information?

Contact your transplant coordinator or transplant physician if you have more questions. The following organizations have information for transplant recipients on their websites:

- [United Network for Organ Sharing \(UNOS\)](#)
- [American Society of Transplantation \(AST\)](#)