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# COVID-19 Vaccine Recommendations for Patients with Liver Disease

## Based on the AASLD Expert Panel Consensus Statement: Vaccines To Prevent COVID-19 Infection in Patients with Liver Disease

Coronavirus disease 2019 (COVID-19) is the illness caused by the SARS-CoV-2 virus. Multiple studies show that older individuals and patients with risk factors such as chronic liver disease, cirrhosis, heart disease, obesity, and weakened immune systems from other diseases or medications may be at higher risk of hospitalization and death from COVID-19. Three vaccines, Pfizer/BioNTech, Moderna and Johnson & Johnson, received Emergency Use Authorization (EUA) from the U.S. Food and Drug Administration (FDA) and one mRNA vaccine, (Pfizer/BioNTech), has now been fully approved for patients 16 years and older. AASLD is committed to providing the latest and accurate information for patients with liver disease and liver transplant recipients.

### COVID-19 Vaccines

The mRNA Pfizer/BioNTech vaccine is FDA approved for patients 16 and over; it has Emergency Use Authorization for patients ages 12-16. The mRNA Moderna vaccine is authorized for patients 18 and over. Both are given in two doses, 3-4 weeks apart. The Johnson & Johnson is a single dose vaccine for patients 18 and older. All are intramuscular injections. Common side effects reported are injection site pain, headache, fatigue, body aches, and fever that are generally mild.

## Pediatric Considerations in COVID-19 Vaccination

There are multiple vaccine trials underway for children under 12. Ask your health care provider about the vaccine for children with liver disease and those post-liver transplant. The Pfizer/BioNTech is approved for children 16 years and over and has received Emergency Use Authorization for children ages 12 to 15.

**Very few people should not get the COVID-19 vaccine.** The overall safety, and benefit of COVID-19 vaccines is very favorable compared to the risk of becoming ill with COVID-19. Few true contraindications to the vaccine have been identified. Even in those who experience so-called “breakthrough” infections after vaccination, the disease appears to be much milder compared to unvaccinated individuals. In addition, vaccinating a large percentage of the population is important to prevent further spread of the infection.

## Preferred COVID-19 vaccines for patients with liver disease

At this time, there is insufficient data to recommend one COVID-19 vaccine (i.e., *Pfizer/BioNTech, Moderna, Johnson & Johnson*) over another. They are all considered safe and effective and AASLD recommends being vaccinated with the first vaccine type that is available to you.

## Pre-vaccination and Post-vaccination serological testing

We do not recommend pre-vaccination or post-vaccination testing for COVID-19 antibodies. Although the presence of antibodies in the blood may indicate prior exposure or vaccine response, it is unclear whether this provides an accurate assessment of the degree of immunity against the virus or how long immunity will last.

## Administration and timing of vaccination

For the two dose vaccines, we recommend completing both mRNA COVID-19 (Pfizer/BioNTech and Moderna) vaccine doses in the timeline recommended by the manufacturer. It is currently recommended that immunocompromised patients, who were vaccinated with a mRNA vaccine receive a 3rd dose of the mRNA vaccine, more than 28 days after their second dose. This includes transplant recipients, and all patients with hepatocellular carcinoma and those with chronic liver disease (CLD) receiving prednisone, anti-metabolite drugs like azathioprine or mycophenolate, or biological therapies. There are no current recommendations for an additional dose of the Johnson & Johnson vaccine. It is quite likely that in the near future, 3rd doses of the mRNA vaccines will be recommended for all patients with liver disease, but we all await formal guidance on this important issue from the FDA and CDC.

## Vaccination in patients with autoimmune hepatitis or other autoimmune diseases

We recommend administration of the vaccine to patients with autoimmune hepatitis and/or chronic liver disease patients with autoimmune diseases including those receiving steroids or other immunosuppressive drugs. You should discuss with your health care provider whether you are sufficiently immunosuppressed to justify a 3rd dose of the mRNA vaccine.

## Use of fever reducers for post-vaccination treatment

We support the use of fever reducers such as low dose acetaminophen post-vaccination to treat reactions as needed.

## Concurrent medication timing or use

We recommend continuing all current medications before or after receiving the vaccine. People who receive monoclonal antibodies or convalescent plasma for the treatment of COVID-19 should wait at least 90 days from the last dose to be vaccinated.

## History of anaphylaxis

We recommend vaccination in all patients unless there is a history of prior anaphylaxis to a COVID-19 vaccine or any of its components. Prior anaphylaxis to any other allergens (including venom, food, and medication) does not preclude the use of a COVID-19 vaccine. The incidence of serious adverse events is low. Vaccine clinics will ask questions about prior anaphylaxis and will ask the persons receiving the vaccine to be observed for 15-30 minutes after the injection.

**Avoiding exposure to COVID-19 post-vaccination** - In patients with chronic liver disease or those post-transplantation, the efficacy of the vaccine is unknown. We recommend that everyone continue behaviors to reduce the risk of COVID-19 exposure (e.g., masking, hand hygiene, social distancing, etc.) regardless of vaccination status. The onset of protective immunity post-vaccination is not clear, and infection has occurred in vaccinated patients even after the second dose.

The CDC guidelines are continually updated and all should monitor these updates, although until more information is available, immunosuppressed patients and those with chronic liver disease should continue to exercise caution while community prevalence of COVID-19 remains high. In particular, given the prevalence of the so-called delta variant of COVID-19, which is more infectious and may lead to more severe disease, we recommend that patients continue to practice social distancing, masking and hand hygiene.

**Side effects of COVID-19 vaccination and symptoms of true infection** - The symptoms of COVID-19 and a COVID-19 vaccine reactions can be similar. However, high fevers, coughing, or shortness of breath are not common after vaccination. Most side effects of vaccination go away within 1-2 days. If they do not, contact your health care provider.

## Conclusion

There are currently three highly effective and generally safe vaccines for COVID-19. The CDC currently recommends that all people over the age of 12 should receive vaccination to prevent future COVID-19. Both mRNA COVID-19 vaccines as well as the Johnson & Johnson vaccine are recommended for all patients with chronic liver disease and immunosuppressed organ transplant recipients. AASLD recommends prioritizing patients with cirrhosis, liver cancer, patients receiving immunosuppression such as liver transplant recipients and living liver donors for COVID-19 vaccination based upon vaccine availability. The clinical impact of COVID-19 variants like the Delta and Mu strain is a rapidly evolving area, and until further studies are available, COVID-19 vaccination should not be withheld or deferred in any patient because of efficacy or safety concerns. All COVID-19 vaccine recipients are recommended to use masking, good hand hygiene, and social distancing and follow the updated CDC guidelines.

## Where to Find More Information

Information continues to evolve about the relationship between COVID-19 and the Liver, and new information is accumulating rapidly. Keep checking back to the AASLD site as well as the Centers for Disease Control and Prevention (CDC) for further updates.

- **COVID-19 and the Liver from AASLD:**

- <https://www.aasld.org/about-aasld/covid-19-and-liver>

- **AASLD EXPERT PANEL Consensus Statement (August 30, 2021):**

- [\*Vaccines to Prevent COVID-19 in Patients with Liver Disease\*](#)

- **CDC's vaccine resource page:**

- <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html>

- **Liver disease and COVID-19 from the CDC:**

- <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/liver-disease.html>