

**1. What is Covid-19 Convalescent Plasma (CCP)?**

COVID-19 Convalescent plasma is plasma (yellow liquid part of blood) collected from a person who has recovered from Covid 19. This is an age-old therapy which was used for treating many other infections before COVID-19 where blood/ plasma from a recovered person is used to treat a sick patient infected by the same agent.

**2. How is plasma collected from blood?**

Convalescent plasma is collected from blood by plasmapheresis procedure. This procedure involve collection using an apheresis machine which collects only plasma component of blood and rest of the blood goes back. It is similar to Plateletpheresis or platelets donation.

**3. How is plasma donation different from whole blood donation?**

Whole blood donation involves donation of whole blood using a sterile blood collection bag whereas plasma donation involves collection of only plasma part of blood using an apheresis machine and rest of the blood (red cells and platelets) are returned back to the donor. One can donate plasma again after 15 days but in case of whole blood donation their needs to be a gap of minimum three months.

**4. How is Covid-19 Convalescent Plasma (CCP) beneficial for another COVID-19 patient?**

A person who recovers from COVID-19 develops antibody against the virus. These antibodies are present in the plasma component of the blood. Antibodies collected (as plasma) from a recovered person are then transfused to provide immunity (passive) against the COVID-19.

**5. Can my antibody against COVID-19 be checked?**

Yes. The presence or absence of antibody against COVID-19 can easily be check by a simple blood test at any lab near you.

**6. Which type of COVID-19 antibody should we get checked?**

The body produces many types of antibodies in response to any infection such as IgA, IgM & IgG. IgM type antibody is produced in early phase of recovery and IgG type is produced later. Prescence of IgG type of antibody indicates recovery in past and should be present for someone to be a plasma donor.

**7. Can my levels or strength of antibody to COVID-19 be checked?**

Yes. Some machines provide semi quantitative/ quantitative value of the level/ titer of antibodies. The higher the value the higher is the amount of antibody present in your body. The values and cutoff of the value may vary from equipment to equipment.

**8. Does all COVID-19 recovered person develop equal levels of antibodies?**

No. Each and everybody responds in a different way against the virus. This has been observed by many studies that as high as 20-30% of individuals do not mount an adequate antibody response against the virus and they may be called as non-responders. Even the level of antibody may not be same in responders.

**9. What is the normal level of COVID-19 antibody in the body?**

There are no normal levels of this antibody. Ideally one does not have these antibodies. They are only made after an infection and they disappear in 3-4 months.

**10. Does presence of antibody indicate protection against infection?**

Presence of an antibody against the COVID-19 indicate recovery against the viral infection. The presence of antibody may provide immune protection against the virus but still the best protection is adopting COVID-19 appropriate behaviors (such as use of mask, social distancing and hand sanitization).

**11. For how many days will my antibodies be present?**

The antibody in our body stays from 3 to 4 months from recovery. They may stay for lesser or longer period depending upon the severity of infection.

**12. Is this Plasma Therapy beneficial?**

The ICMR trial (PLACID Trial) and many other international studies have shown that Covid-19 Convalescent Plasma (CCP) therapy or Plasma Therapy is a very safe therapy for management of COVID-19. The clinical efficiency of this therapy is still being evaluated. As per many treatment protocols, CCP given early (5-7 days of infection) in the disease have shown to be clinically advantageous.

### **13. Who can donate COVID-19 Convalescent Plasma?**

People who have recovered from Covid 19 infection can donate with following basic criteria

- Age 18-60 years
- Weight >55 Kg
- Males and Nulliparous females
- Recovered person whose plasma has good level of COVID 19 antibodies
- The one who is fit for apheresis donation as per rest of donor selection criteria

### **14. Why females who have had a child cannot donate plasma?**

The females who have given birth to a child develop some antibodies (against HLA antigen) in response to the antigens of the child. These antibodies are present in the plasma for these females. The plasma unit with these HLA antibodies when given to a patient may cause a Transfusion Associate Acute Lung Injury (TRALI). Hence plasma is not collected from females who have ever given birth.

### **15. When can a COVID-19 recovered Person can donate plasma?**

A person is eligible to donate plasma after 14 days of RT-PCR negative report or 24 days of Positive RTPCR report (in case negative RT PCR not done).

### **16. What documents/ reports a donor should bring while coming to plasma/blood bank for donation?**

- Donor should bring COVID-19 Positive report to show when he was diagnosed with COVID-19 infection or discharge summary of the hospital
- COVID-19 negative report if donor is coming 14 days after recovery. COVID-19 negative report is not mandatory if he is coming after 24 days of recovery

### **17. Can I donate if I have received my COVID-19 vaccination?**

Yes. One can donate plasma or whole blood after 14 days of COVID-19 vaccination

### **18. Are antibodies developed in my plasma due to vaccination are helpful?**

No. The antibodies produced only due to vaccination may not work as good as antibodies produced by an infection with COVID-19. Hence providing details and proof of COVID-19 infection is a must for any donor to be considered for CCP donation.

**19. If I have Diabetes or Hypertension or Thyroid problem, am I eligible for plasma donation?**

Yes. If your Diabetes or Hypertension or Thyroid issues are controlled on oral medication, then you are eligible for CCP donation. One should not be on insulin or they should not have any organ involvement due to these systemic diseases.

**20. How the plasma bank/ blood bank proceeds, once the donor arrives?**

- Donor is made to understand importance of COVID-19 plasma donation. He is counseled for same. He is informed about plasma apheresis procedure.
- Pre donation questionnaire and plasma donation form are asked to be filled.
- A Mini physical checkup is done, and suitable vein examination is done
- Written consent is taken to donate plasma
- Certain required investigations and antibody levels are done on donor blood sample
- If all investigations are as per criteria required, then donor is taken for apheresis procedure

**21. Why examination of vein is important for plasma donation**

Plasma donation is done on an apheresis machine which require an adequate venous access for connecting the donor. Hence appropriate selection of a vein plays a very important role in selection of a donor for CCP donation.

**22. What blood investigations are done before donation?**

- Blood grouping, Rh typing with screening for rare blood group antibodies
- Complete Blood Counts
- Total Protein levels
- Screening for Transfusion Transmitted Infection: HIV, Hepatitis B, hepatitis C, Malaria and syphilis
- COVID-19 Antibody (IgG) levels testing

**23. How much time it takes for plasma donation?**

There are two phases of plasma donation:

- a. Pre-Donation testing/ Screening - 45-60 minutes
- b. Plasma donation - 45-60 minutes.

Overall, 2-3 hours may take for each plasma donation. There may be more waiting time depending on the rush for donation

**24. How much plasma is collected in plasma donation?**

Depending on the body weight and height the machine may decide on the safe volume for plasma donation. They may range from 200 ml to 500 ml. As per Government regulations one should not donate more than 500 ml of plasma in each sitting.

**25. What precautions a donor should take after plasma donation?**

Donor should take plenty of fluids on the day of donation and avoid gym or vigorous exercise and long drive on day of donation. From next day, donor can resume his routine schedule. Plasma donation does not cause any weakness.

**26. Can a COVID recovered person donate more than once?**

Yes. Plasma donation can be repeated after 15 days. COVID-19 recovered person can start donating 1-1.5 month after recovery and can donate after every 15 days till 4 months. In that way one person can donate 6-8 times.

**27. For how many days after donation this plasma can be stored?**

Donated plasma is stored in -40C degree temperature or below and this can be utilized till one year after donation.

**28. Does blood group matching or testing is required for plasma therapy?**

Yes. There is a need of providing ABO blood group matched cross matched plasma units for transfusion. Following table may explain the blood group compatibility:

Blood Group of Patient	1 <sup>st</sup> Choice for Transfusion	2 <sup>nd</sup> Choice for Transfusion
A	A	AB
B	B	AB
O	O	A, B, AB
AB	AB	-

AB blood group plasma donor is the “Universal Plasma Donor” in case of plasma therapy.

**29. Does my plasma donation cause reduction of my antibody levels?**

No. The plasma donation does not cause reduction in the antibody levels. An apheresis machine collects the IgG type of antibody present in the intravascular space. IgG type of antibody is also present (largely) in the extravascular space. As soon as the intravascular space IgG antibody is collected, the IgG antibody present in the extravascular space equalizes its concentration in the intravascular space very soon. The antibody levels, once they achieve the peak, tends to reduce on their own and disappear in 3-4 months of an infection. Hence if one donates or not their antibody levels are anyways going low.

**30. What do I gain from CCP donation?**

One of the most important things that a donor gains from plasma donation is the ability to provide an opportunity for some patient to fight against COVID-19 infection through the donated immunity/ antibodies. Another thing is that the recovered person gains the confidence that he has won the fight against the virus and he is able to help others to win the fight also.