

# Plasma exchange therapy with the crossflow membrane filtration method for post-COVID-19 conditions

<b>Submission date</b> 07/06/2024	<b>Recruitment status</b> No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 10/06/2024	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 21/05/2026	<b>Condition category</b> Infections and Infestations	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Many patients with COVID-19 infection continue to have non-specific symptoms months after infection, such as persistent fatigue, cognitive issues, dyspnea (breathlessness), headaches, myalgias (muscle pain), sleep disturbances, anosmia/ageusia (loss of smell/taste), and post-exertion malaise (tiredness). These ongoing symptoms are referred to as post-COVID syndrome or long COVID. The rising number of long/post COVID cases poses a challenge to global health systems. The mechanisms behind post-COVID syndromes may include inadequate immune responses, autoimmunity activation, pro-inflammatory biomarkers persistence, endothelial dysfunction, and changes in the gut microbiota. Plasmapheresis, also known as plasma exchange, is a procedure that removes, treats and returns blood plasma to the body's circulation. Plasma exchange has shown moderate to significant clinical improvement in various inflammatory, autoimmune, and neurological diseases associated with autoantibodies by reducing blood levels of pro-inflammatory cytokines and autoimmune markers. The aim of this study is to evaluate the effect of plasmapheresis in long COVID patients compared to patients receiving placebo treatment.

### Who can participate?

Patients aged 18-65 years with long COVID

### What does the study involve?

Participants are randomly allocated to one of two groups. The treatment group undergoes plasmapheresis treatment with reinfusion of the cellular components at five day sessions with almost two days of rest in between. The placebo group undergoes dummy plasmapheresis treatment with the same setup as the treatment group but without the removal of plasma (reinfusion of both cellular and plasma components back to the patient). Clinical and laboratory outcomes will be assessed on day 0, day 5, day 10 day 28 and day 90

### What are the possible benefits and risks of participating?

Participants will not receive financial compensation as the research is conducted without monetary backing. They will, however, earn the profound gratitude of the medical team and

future patients may benefit from the study's findings. Occasionally, drawing blood from the arm may cause bruising, slight pain, or discomfort, and in extremely rare cases, an infection at the infusion site. The researchers will take all preventive measures to minimize these risks. Sometimes patients may feel lightheaded or slightly dizzy, especially during the procedure. This will take only a few minutes and decreases quickly. All information provided and test results will be treated confidentially. The researchers have the responsibility to inform the participants of all blood test results and to advise them on any treatment they think they need.

Where is the study run from?

Academic Hospital Paramaribo (Suriname)

When is the study starting and how long is it expected to run for?

November 2023 to October 2025

Who is funding the study?

Academic Hospital Paramaribo (Suriname)

Who is the main contact?

Dr Rosita Bihariesingh-Sanchit, rbihariesingh@azp.sr

## Contact information

### Type(s)

Public, Scientific, Principal investigator

### Contact name

Dr Rosita Bihariesingh-Sanchit

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## Additional identifiers

### Protocol serial number

CMWO:09/2024

## Study information

### Scientific Title

Sur-Long-Covid Trial: a placebo-controlled, double-blind proof of concept trial on the efficacy and safety of crossflow membrane plasmapheresis on long COVID-19 outcomes

## **Study objectives**

Plasma exchange with Crossflow membrane filtration is a safe and effective treatment for long-COVID conditions.

## **Ethics approval required**

Ethics approval required

## **Ethics approval(s)**

approved 03/06/2024, Medical Ethical Review Committee of the Ministry of Health of Suriname (Henck Arron straat 64, Paramaribo, 0, Suriname; +597 (0)477601; secdir.volksgezondheid@gov.sr), ref: CMWO:09/2024

## **Study design**

Single-centre double-blinded placebo-controlled randomized clinical study

## **Primary study design**

Interventional

## **Study type(s)**

Efficacy, Quality of life, Safety, Treatment

## **Health condition(s) or problem(s) studied**

Long COVID

## **Interventions**

Participants will be randomized 1:1 to one of the following groups:

1. Placebo arm, i.e. patients will receive dummy plasmapheresis treatment with the same setup as the treatment arm but without the removal of plasma (reinfusion of both cellular and plasma components back to patient)
2. Treatment arm, i.e. patients will receive plasmapheresis treatment with reinfusion of the cellular components. Plasmapheresis five day sessions of plasma exchanges with almost two days rest in between.

Clinical and laboratory outcomes will be assessed on day 0, day 5, day 10 day 28, and day 90.

## **Intervention Type**

Device

## **Phase**

Not Applicable

## **Drug/device/biological/vaccine name(s)**

Crossflow membrane filtration with the Hemoclear device

## **Primary outcome(s)**

Long-term COVID symptomatology measured using physical and cognitive questionnaires /parameters (Chalder scale, FAS, Promis) at baseline and 90 days

## **Key secondary outcome(s)**

1. Observation of the evolution of the fatigue measured by the percentage of patients whose fatigue has decreased by 30% on the Chalder scale at 90 days compared to its initial state

measured at baseline

2. Quality of life measured using SF-36 at baseline, day 28 and 90 days
3. Clinical symptoms, functioning, and quality of life evaluated using PROMIS at baseline, day 28 and 90 days
4. Long COVID fatigue symptomology measured by the Fatigue Assessment Scale (FAS) at baseline, day 28 and 90 days
5. Rate and evolution of autoimmune antibody markers within 90 days (posthoc analysis based on funding) analysed with Luminex/ELISA at baseline, day 5, day 10, day 28 and day 90

**Completion date**

10/10/2025

## Eligibility

**Key inclusion criteria**

1. Age  $\geq$ 18 years
2. Have had a confirmed SARS-COV2 infection (RT PCR) for at least 6 months
3. Have had at least three of the following symptoms for more than 6 months: fatigue, post-exercise malaise, shortness of breath, headache, diffuse myalgia/arthritis, neuropathic pain, cognitive impairment, anosmia/ageusia
4. Above symptoms have an impact on daily activities, and/or have been on sick leave for more than 3 months, and/or going to bed for more than 2 hours a day
5. Have given free and informed written consent
6. Affiliated with sickness cost security
7. A score of 6 out of 11 or more on the Chalder fatigue questionnaire and a score of 65 out of 100 or less on the short physical function of 36 subscale 15

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Mixed

**Lower age limit**

18 years

**Upper age limit**

65 years

**Sex**

All

**Total final enrolment**

24

**Key exclusion criteria**

1. With suspicion of COVID-19 but not confirmed by RT-PCR test
2. Known history of any other pathology that could be confused with the diagnosis of long COVID: multiple sclerosis, autoimmune disease (lupus and Gougerot syndrome, inflammatory muscle disease, and myasthenia gravis), untreated hypothyroidism, major depression, regular use of narcotics
3. Unable to travel
4. Congenital or drug-induced coagulation disorders (oral or parenteral anticoagulation)
5. Contraindications to plasmapheresis such as lack of peripheral venous access or unstable cardiac pathology
6. Pregnant or breastfeeding women

**Date of first enrolment**

22/07/2024

**Date of final enrolment**

18/04/2025

## Locations

**Countries of recruitment**

Suriname

**Study participating centre****Academic Hospital Paramaribo**

Flustraaf 1-3

Paramaribo

Suriname

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## Sponsor information

**Organisation**

Academic Hospital Paramaribo

**ROR**

<https://ror.org/01ky0w731>

## Funder(s)

**Funder type**

Hospital/treatment centre

**Funder Name**

Academic Hospital Paramaribo

## **Results and Publications**

**Individual participant data (IPD) sharing plan**

The datasets generated during and/or analyzed during the current study will be available upon request from Rosita Bihariesingh-Sanchit (rbihariesingh@azp.sr or bihariesinghr@gmail.com)

**IPD sharing plan summary**

Available on request