

Plasma Exchange (Plasmapheresis)

Therapeutic plasma exchange, sometimes called “plasmapheresis” (TPE or PLEX), is a procedure that can help treat serious rheumatic diseases such as vasculitis, systemic lupus erythematosus (SLE), antiphospholipid antibody syndrome (APS), and others autoimmune conditions. These conditions are caused by abnormal blood proteins called antibodies and removing these antibodies from the blood can be a helpful treatment. Plasma exchange involves removing a person's blood and putting their blood into a machine where it is separated into red cells, white cells, platelets and plasma. The plasma, which is the liquid content of blood, is disposed of and replaced with another liquid such as albumin or plasma from blood donors. This substitute plasma and the other blood cells (red cells, white cells, and platelets) are given back to the patient. Plasma contains the antibodies that can cause autoimmune diseases so removing it can help with treatment without suppressing the immune system. This procedure is done in the hospital or infusion center.

How Is it Performed?

An IV tube called a central venous catheter, or central line, is placed into a large vein that leads to the heart before plasma exchange is started. When ready to use, the central line is connected to a large machine managed by a trained nurse. This central line is used to remove a person's blood and give them their blood cells and substitute plasma back after their plasma with antibodies has been removed. Each plasma exchange session or “round” lasts a few hours. Plasma exchange is performed every 2–3 days for a total of 5–10 sessions. Blood tests may be done before, during, or after the procedure.

Possible Risks/Side Effects

During the procedure, a patient may feel nauseated, cold, mild tingling of the lips, hands, or feet. Patients can be tired after a plasmapheresis session. If a patient has anemia, plasmapheresis can make them more anemic. Very rarely patients can feel light-headed or faint, have low calcium, vomiting, low blood pressure, or muscle cramps. Because this procedure requires a central line, there is a small risk of infection and bleeding.

Tell Your Rheumatology Provider

Fever, chills, night sweats, chest pain, headache, palpitations, numbness, tingling, muscle cramps are all reasons to contact your medical team. Redness, pain or bleeding from the central line should be reported. Along with antibodies, plasma exchange can remove some medications, including medications you receive through an IV. The medical team should be aware of your medications and be notified of any new prescription medications, supplements or over the counter medicines. Plasma exchange is safe in pregnancy. Let your medical team know if you avoid blood products.

Written March 2023 by Cuoghi Edens, MD, and reviewed by the American College of Rheumatology Communications and Marketing Committee.

This patient information is provided for general education only. Individuals should consult a qualified health care provider for professional medical advice, diagnosis and treatment of a medical or health condition.