What is plasmapheresis?
Plasmapheresis is a method of separating the liquid part of the blood, or plasma, from the blood cells.

Plasma is the liquid component of blood, and is made up of water, electrolytes (salts), proteins and other molecules. During plasmapheresis, blood is withdrawn from the body, the liquid plasma is separated from the blood cells and then the blood cells are returned back into the bloodstream.

Plasmapheresis is also sometimes called plasma exchange.

In myeloma, plasmapheresis can be used to remove paraprotein from the blood.
**Why is plasmapheresis used in myeloma?**

In some myeloma patients, very high levels of paraprotein can build up in the blood, causing it to thicken. This can interfere with blood circulation and is called hyperviscosity. Symptoms of hyperviscosity can include eye problems, dizziness and headaches. Hyperviscosity cannot be treated with blood-thinning drugs as these do not affect paraprotein levels.

The best way of reducing paraprotein levels in the long-term is with effective anti-myeloma treatment. This will reduce the amount of abnormal plasma cells in the bone marrow that are producing the paraprotein. However, anti-myeloma treatment can take time to act and it may sometimes be necessary to reduce the paraprotein level in the blood more rapidly.

Plasmapheresis is an effective method for reducing the thickness of the blood quickly. It may need to be repeated two or three times a week until anti-myeloma treatment takes effect.

As plasmapheresis has no effect on the abnormal plasma cells, anti-myeloma treatment is still also needed.

**How is plasmapheresis performed?**

Plasmapheresis is performed by drawing blood through a small plastic tube (cannula) inserted into a vein in your arm, neck or groin. The blood is then passed through a machine before being returned to you through a second cannula. An anti-coagulant is added to the blood to keep it from clotting during the procedure. The blood is removed and returned at the same rate so that only a small amount of blood is outside the body at any one time.

The procedure generally takes between two and three hours.

Plasma can be separated from the blood cells in two different ways. One way uses a machine called a cell separator, which spins the blood at high speed to separate the cells from the liquid plasma. The other way passes the blood through a membrane (plasma filter), which acts like a sieve through which only the liquid part of the blood passes. The plasma residue containing the paraprotein is discarded.

In both methods, replacement plasma from a donor is added to the separated blood cells before being returned to the bloodstream.
Plasmapheresis is carried out by specialist teams, usually in either the haematology department or kidney unit. It can be performed as an outpatient procedure or you can be admitted; the choice will depend on whether or not you need to be in hospital for other reasons.

**What are the potential risks and complications of plasmapheresis?**

Plasmapheresis can be uncomfortable but is not usually painful. Side-effects are uncommon. You may feel light-headed, dizzy or have a reaction to the replacement donor plasma, but such side-effects are usually easy to deal with.

Plasmapheresis can affect the level of calcium in the body, causing numbness or a tingling sensation. These effects usually pass quite quickly and are simple to treat.

It is common to feel tired after the procedure. If you are being treated as an outpatient, it is a good idea to arrange for someone to help with transport home.

**Future directions**

Ongoing research is investigating the best way to use plasmapheresis to treat hyperviscosity. There is also research investigating other uses for plasmapheresis in myeloma patients, for example in those with kidney failure.

Continued research into these areas will give doctors a greater understanding of how plasmapheresis can help myeloma patients.

**About this Infosheet**

The information in this Infosheet is not meant to replace the advice of your medical team. They are the people to ask if you have questions about your individual situation. All Myeloma UK publications are extensively reviewed by patients and healthcare professionals prior to publication.

For a list of references used to develop our resources, visit [www.myeloma.org.uk/references](http://www.myeloma.org.uk/references)
Other information available from Myeloma UK

Myeloma UK has a range of Essential Guides, Infoguides and Infosheets available covering many areas of myeloma, its treatment and management.

To order your free copies or to talk to one of our Myeloma Information Specialists about any aspect of myeloma, call the **Myeloma Infoline: 0800 980 3332 or 1800 937 773** from Ireland.

The Myeloma Infoline is open from Monday to Friday, 9am to 5pm and is free to phone from anywhere in the UK and Ireland.

Information and support about myeloma is also available around the clock at [www.myeloma.org.uk](http://www.myeloma.org.uk)

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