



1. Questions about directed and autologous donations?

Prescriber questions and requests must be directed through an APL Transfusion Medicine physician.

2. Types of blood donation

There are three basic types of blood donation:

- **Homologous (Allogeneic) Donation** – when blood is voluntarily donated for the community supply.
- **Autologous Donation** – when a patient’s own blood is collected and stored until needed for elective transfusion. This is restricted to circumstances of rare blood types or plasma protein deficiencies in which allogeneic blood components may not meet patient needs. Autologous donation is discouraged in all other situations due to the overall increased risk of requiring a transfusion.
- **Directed (Designated) Donation** – when a donor donates for a specified recipient (i.e. parent to their minor child). This is restricted to circumstances of rare blood types or plasma protein deficiencies in which allogeneic blood components may not meet patient needs. Directed donations are discouraged in all other situations due to the lack of safety benefit over allogeneic transfusion, and the increased risks associated with receiving blood components from a related donor (see risks below).

General recommendations are that autologous and directed donations should be restricted to those requiring uncommon or rare units. See [National Advisory Committee on Blood and Blood Products Statement on Perioperative Autologous Blood Donation](#) for more information.

3. Who can be a directed or autologous donor?

Directed and autologous donors must meet all the same requirements as Canadian Blood Services (CBS) volunteer donors. Donor criteria can be found on the CBS website: [ABCs of Eligibility for Donating Blood, Platelets, and Plasma](#).

If a donor is found to be positive for any of the screening tests performed by Canadian Blood Services, the unit will be discarded and will not be made available for the intended recipient. The donor will be notified of the positive test results.

4. How is a directed or autologous donation arranged?

Contact your local Transfusion Medicine physician to screen the request for autologous or directed donation appropriateness. Required information includes (but is not limited to):

- Patient’s information
- Potential directed donor information and relationship to recipient (if applicable)
- Number of units of blood required (red cells, plasma or both)
- Date and location of planned transfusion
- Hemoglobin, blood group and antibody screen on both patient and directed donor (if applicable)

The APL Transfusion service will then contact Canadian Blood Services (medicalservices@blood.ca) to request directed or autologous donation collection and assist in completing the necessary paperwork. For patients meeting the criteria to proceed, it is critical that the units are collected a minimum of 4 business days before the intended transfusion. This advance notice is always required to accommodate a request for designated donors, as additional processing is almost always required. However, donations cannot be made more than 4 weeks before the planned transfusion to avoid expiration of the unit.



5. What risks are there specific to directed and autologous donations?

Many of the risks associated with allogeneic transfusion also exist for directed and autologous donations, including bacterial contamination, reaction to blood component bags or additives, transfusion associated circulatory overload (TACO), errors related to patient and unit identification.

Blood components from a biologically related donor are associated with an increased risk of:

- Transfusion Related Acute Lung Injury (TRALI). This is usually due to antibodies found in blood donors who have had pregnancies or have had previous transfusions. To reduce the risk of this reaction, female directed donors may only donate red blood cells and not plasma components.
- Transfusion Associated Graft versus Host Disease (TA-GVHD). All directed blood components are irradiated to reduce TA-GVHD risk, but the risk is not eliminated completely.
- Formation of anti-HLA antibodies, which may make it more difficult to find family members who would be compatible as stem cell or organ donors if needed in the future.

Autologous donation increases the overall risk of receiving a transfusion and receiving more blood components in an attempt to avoid discarding pre-donated blood, compared to patients who have not donated blood prior to a procedure. Hemoglobin optimization should be considered as a preferred alternative where possible.