

Biomedical engineering project :Apheresis machine

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1 Introduction

1.1 What is an apheresis machine?

An apheresis machine is a device which receives blood removed from a patient's body or donor's body and separates it into various components :plasma membrane,platelets ,WBC'S RBC's

1.2 What is it used for?

It is used for the process of apheresis which involves collection of donor blood components(such as platelets or plasma) as well as for the treatment of such medical conditions in which a part of the blood containing disease - provoking element is removed.Apheresis is also called pheresis or hemapheresis .

1.3 What are the advantages of apheresis?

The advantages of apheresis are stated as follows-: :With regular apheresis donations ,you can help ensure a stable supply of blood products for patients when they need it . :It allows a much large number of platelets to be collected from a single donor . :It has the advantages of controlled volume or dosage of a component. :It has better quality control due to less manipulation of individual components . :It minimizes a patient's exposure to multiple donors.

1.4 What are the disadvantages of apheresis?

:Patients have a tendency to bleed as platelets which secrete thrombokinas are removed which contribute clotting. :They are not cost effective :Infection and a tendency towards infection (because the immune system is somewhat suppressed when antibody is removed). :low blood pressures as vital fluids are removed.