

# Blood Components Therapy – 2022

## ABO Blood Group System

- Type A: contains A antigens and anti-B antibodies.
- Type B: contains B antigens and anti-A antibodies.
- Type AB: contains both A and B antigens but no antibodies.
- Type O: contains no antigens, but contains both anti-A and anti-B antibodies

## Rh System

- Additional antigen called Rh factor
- Patients either Rh+ or Rh -
- Rh (-) blood cannot receive Rh (+) blood
- Rh(+) blood can receive both Rh (-) and Rh (+) blood

## Blood Compatibility

Blood Type:	Can receive blood from:
O +	
O -	
A +	
A -	
B +	
B -	
AB +	
AB -	

## Transfusion Therapy

- Objectives of Transfusion Therapy
  - o Maintain blood volume
  - o Maintain and replace components of blood
    - RBC's
    - Platelets
    - Plasma
    - Clotting factors

## Transfusion Options

- Where does donated blood come from?
  - o Homologous Blood

- Autologous Blood
- How blood is given:
  - Whole blood
  - RBC's
  - Platelets
  - Fresh Frozen Plasma
  - Cryoprecipitate
  - Other

Blood Product: *Whole Blood*

- Volume expansion by plasma
- Replacement of O<sub>2</sub> carrying capability of RBC's
- Indicated for
  - Treatment of massive blood loss
- Must be ABO & Rh compatible

Blood Product: *Packed Red Blood Cells (PRBCs)*

- Increase O<sub>2</sub> carrying capacity with less risk of fluid overload
- Indicated for
  - Acute blood loss
  - Symptomatic anemia
- 1 unit is approx. 1 g/dl increase in Hgb
- Must be ABO & Rh compatible

Blood Product: *Platelets*

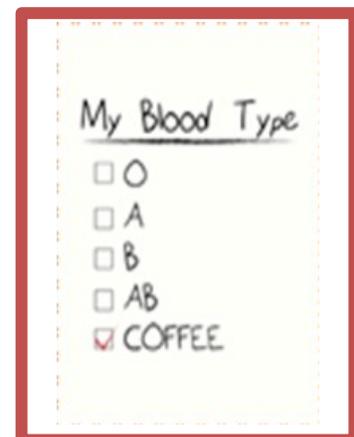
- To control or prevent bleeding caused by thrombocytopenia
- No need to match blood types
- Multiple vs. single donor
  - Plateletpheresis for single donor method

Blood Product: *Fresh Frozen Plasma (FFP)*

- Coagulation factor deficiencies
  - Liver disease, vitamin K deficiency, excess warfarin (Coumadin)
- Rich in clotting factors, but contains no platelets
- Try to match patient's blood type, but Rh compatibility doesn't matter

Blood Product: *Cryoprecipitate*

- Cryoprecipitate is prepared from FFP
  - Contains clotting factors
- Indicated to correct deficiencies of
  - Factor VIII (hemophilia)
  - Von Willebrand factor
  - Fibrinogen
- Try to match patient's blood type, but Rh compatibility doesn't matter



Whatever you do, do it well. – **Walt Disney**