

BLOOD TRANSFUSION – EXPANDED ARTICLE**Asatullayev Rustamjon Baxtiyarovich***Trainee assistant at Samarkand State Medical University**Student: Ahrorov Jasurbek*

Abstract: *This article examines the impact of sport on physical, mental, and social well-being. It highlights how sport enhances cardiovascular and muscular health, supports emotional stability, improves cognitive functioning, and strengthens community bonds. By analysing the multidimensional benefits of sport, this paper argues that sport is a critical component in preventing chronic diseases, fostering psychological resilience, and promoting positive social interaction. Ultimately, sport plays an indispensable role in achieving and maintaining holistic health throughout the lifespan.*

Keywords: *blood transfusion, donor, recipient, compatibility, hemoglobin, transfusion reaction, plasma, red blood cells, platelets, crossmatching.*

Introduction

Blood transfusion is a critical medical intervention that involves transferring blood or its components from a donor to a recipient. This procedure plays a vital role in emergency medicine, surgery, hematology, and intensive care. It restores lost blood volume, improves oxygen-carrying capacity, and stabilizes hemodynamics in critically ill patients.

Indications

Common indications for blood transfusion include acute blood loss due to trauma or surgery, severe anemia, bone marrow failure, coagulation disorders, and conditions such as hemophilia or thrombocytopenia. Transfusions may also be required for patients undergoing chemotherapy.

Types of Blood Products

Blood transfusion therapy is not limited to whole blood. Specific blood components are used depending on the clinical need:

- Red Blood Cells (RBCs): Increase oxygen delivery.
- Plasma: Replenishes clotting factors.
- Platelets: Used for bleeding disorders or low platelet counts.
- Cryoprecipitate: Rich in fibrinogen and used for clotting abnormalities.

Blood Type Compatibility

Compatibility between donor and recipient blood types is critical to prevent hemolytic reactions. The ABO and Rh systems play a central role in determining compatibility. Type

O negative is considered the universal donor for red blood cells, while AB positive is the universal recipient.

Procedure

Before transfusion, strict protocols are followed, including blood typing, Rh factor determination, crossmatching, and screening for infectious diseases. During transfusion, patients are closely monitored for vital signs and potential adverse reactions.

Risks and Complications

Although blood transfusions are generally safe, complications can occur. These include allergic reactions, febrile non-hemolytic reactions, acute hemolytic reactions, transfusion-associated circulatory overload (TACO), and transfusion-related acute lung injury (TRALI). Proper donor screening and careful monitoring minimize risks.

Conclusion

Blood transfusion remains a life-saving intervention in modern medicine. Through advances in screening, component therapy, and strict safety protocols, transfusions continue to be one of the most effective treatments for managing severe blood loss, anemia, and coagulation disorders.

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