

Blood Transfusion — Part 2

Hematology / Pharmacology / Safety

NGN NCLEX 2026

DEFINITION / OVERVIEW

- A blood transfusion introduces donor blood or blood components into a recipient's circulation via IV.
- The #1 nursing priority throughout: monitor for adverse reactions — especially in the first 15 minutes.
- Only 0.9% Normal Saline is compatible with blood products. No medications, no dextrose — ever.

VITAL SIGN MONITORING SCHEDULE

Before starting	Baseline VS + lung sounds
First 15 min	Nurse stays at bedside
Rate (first 15 min)	No faster than 2 mL/min
During transfusion	Every 30–60 minutes
Max infusion time	! 4 hours — no exceptions

HEMOLYTIC REACTION

ABO incompatibility

Most life-threatening

- **!** Low back pain (kidneys)
- Fever, chills
- Hypotension
- Tachycardia, tachypnea
- Flushing, dark urine

FEBRILE REACTION

WBC sensitivity

Most common type

- Rise in temperature
- Chills, headache
- Flushing
- Tachycardia
- Anxiety

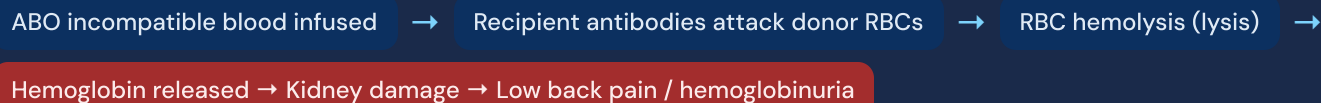
ALLERGIC REACTION

Protein sensitivity

Ranges mild → severe

- Hives (urticaria), itching
- Flushing
- **!** Bronchospasm / SOB
- Anaphylaxis (severe)
- Anxiety

PATHOPHYSIOLOGY — HEMOLYTIC REACTION FLOW



PRIORITY NURSING INTERVENTIONS

PHARMACOLOGY / SPECIAL RULES

- 1 **Stop** the transfusion immediately — this is ALWAYS the first action on NCLEX.
- 2 **Maintain** IV access with 0.9% NS using new tubing — keep the line open.
- 3 **Notify** the physician and the blood bank at once.
- 4 **Assess** vital signs; monitor airway, breathing, circulation.
- 5 **Collect** blood sample + urine sample — send to lab (check for hemoglobinuria).
- 6 **Return** blood bag + tubing to blood bank for analysis.

IV solution: 0.9% Normal Saline only. Dextrose lyses RBCs; LR causes clotting.

Needle gauge: 18-gauge catheter required for blood administration.

Central line transfusion: Blood must be warmed first — prevents cardiac dysrhythmias and hypothermia.

Medications in blood line: NEVER — no piggybacking, no mixing.

2 nurses: Always required to verify blood product compatibility at bedside.

Blood off unit: Must be started within 30 minutes of leaving blood bank.

NCLEX TEST TRAPS

- ✗ Slowing the transfusion is NOT the first action — you must STOP it completely, then start NS with new tubing.
- ✗ Sending urine/blood to the lab comes AFTER stopping the blood and notifying the physician.
- ✗ 4-hour rule: if blood is still hanging at 4 hours, return it to the lab — even if not complete.
- ✗ Circulatory overload = SLOW the rate or give diuretics. NOT the same as a reaction (don't stop it).
- ✗ Low back pain = hemolytic reaction (kidneys). Never confuse with musculoskeletal or febrile symptoms.

CLINICAL JUDGMENT (NCJMM)

- Recognize** Low back pain, fever, hives, tachycardia, hypotension, SOB — any during/after transfusion
- Analyze** Identify reaction type: Hemolytic (back pain, hemoglobinuria) vs Febrile (fever only) vs Allergic (hives, bronchospasm)
- Priority** Stop transfusion → NS with new tubing → call MD + blood bank → collect specimens
- Evaluate** VS stabilize, symptoms resolve, urine clears, no new deterioration → confirm MD follow-up plan

MEMORY BOOSTERS

STOP & SALINE — If reaction suspected: Stop the blood, Start the Saline (with new tubing). This is question #1 on NCLEX every time.

WET = Circulatory Overload — Crackles, neck vein distension, cough, dyspnea. Slow the rate + diuretics. Don't confuse with a reaction.

Low Back Pain = HEMOLYTIC — The kidneys are being damaged by lysed RBCs releasing hemoglobin. Dark urine confirms it.

4-HOUR RULE / 30-MIN RULE — Blood must START within 30 min of leaving bank. Must FINISH within 4 hours. No exceptions.

