

# Medical Terminology

## Flashcard Study Guide

### Chapter 42: Phlebotomy and Blood Collection

47 terms

Each card contains:

**Term** | Syllables | *Pronunciation* | Definition |  *Memory trick*

## Chapter 42 — Phlebotomy and Blood Collection

### Aliquot

al · i · quot *AL-ih-kwot*

A portion of a blood sample that has been removed or separated from the primary specimen tube for testing or storage.

 *An aliquot is a 'little quote' of the whole sample — a smaller portion taken from the original tube.*

### Antecubital

an · te · cu · bi · tal *an-tee-KYOO-bih-tal*

The area of the forearm around the crease of the elbow. This is the most commonly used site for venipuncture because of the accessible veins located there.

 *'Ante' = before + 'cubital' = elbow. The antecubital fossa is the 'dip before the elbow' — the go-to spot for drawing blood.*

### Anticoagulant

an · ti · co · ag · u · lant *an-tee-koh-AG-yoo-lant*


A substance introduced into the blood or a blood specimen to prevent it from clotting. Common anticoagulants include EDTA, heparin, and citrates.

 *'Anti' = against + 'coagulant' = clotting. Anticoagulants are ANTI-CLOTTING agents — they keep blood liquid for testing.*

### Arterial blood gases (ABGs)

ar · te · ri · al blood gas · es *ar-TEER-ee-ul blud GAS-ez*

An analytical test that measures oxygen and carbon dioxide levels in the blood. Provides useful information about respiratory status and the acid-base balance of patients with pulmonary disorders.

 *ABGs = 'A Blood Gas snapshot.' They measure the gases (O<sub>2</sub> and CO<sub>2</sub>) in arterial blood to check how well the lungs are working.*

## Bacteremia

bac · ter · e · mi · a *bak-ter-EE-mee-uh*

The presence of bacteria in the blood; an infection of the blood. Detected through blood culture tests.

 *'Bacter' = bacteria + 'emia' = blood condition. Bacteremia = bacteria swimming in the bloodstream.*

## Basal state

ba · sal state *BAY-sul stayt*

For phlebotomy procedures, this refers to the patient's condition in the early morning, approximately 12 hours after the last ingestion of food. This is the baseline condition for many lab tests.

 *'Basal' = baseline. The basal state is the body's BASE-LINE condition — rested, fasting, and at its most stable for accurate testing.*

## Blood cultures

blood cul · tures *blud KUL-cherz*


Tests that aid in identifying the specific bacterial organism causing infections in the blood. Blood is drawn into special bottles and incubated to allow any bacteria to grow.

 *Blood cultures = growing (CULTURING) whatever bacteria might be hiding in the blood. Like planting seeds to see what grows.*

## Butterfly system

but · ter · fly sys · tem *BUT-er-fly SIS-tem*

Also called a winged infusion system or scalp needle set. Used for difficult venipunctures due to small or fragile veins. Features flexible plastic wings for grip and a thin, short needle.

 *Named for its wing-shaped plastic grips that look like butterfly wings. Used when veins are tiny or tricky — the butterfly lands gently.*

## Capillary blood

cap · il · lar · y blood *KAP-ih-lair-ee blud*


A specimen from a skin puncture that contains a blend of blood from venules, arterioles, and tissue fluid. Collected via fingerstick or heelstick.

 *Capillary blood is a MIX of arterial and venous blood from the body's tiniest vessels — collected by poking the skin, not a vein.*

## Capillary tubes

cap · il · lar · y tubes *KAP-ih-lair-ee toobz*

Disposable narrow-bore pipettes used for pediatric blood collections and/or microhematocrit measures. Blood flows into them by capillary action.

 *Tiny glass tubes that suck up blood like a straw through capillary action — used for small samples from tiny patients.*

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## Centrifugation

cen · tri · fu · ga · tion *sen-trih-fyoo-GAY-shun*

The process of separating cellular elements from the liquid portion of a blood specimen by spinning the specimen in a specially designed centrifuge at high speed.

 *CENTRIfugation = spinning in a CENTRIFUGE. Like a salad spinner — the heavy cells sink to the bottom, leaving plasma or serum on top.*

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## Citrates

ci · trates *SIT-rayts*

A type of anticoagulant additive for blood collection tubes. Prevents the blood clotting sequence by removing calcium and forming calcium salts. Used in light blue top tubes for coagulation studies.

 *Citrates are found in CITRUS fruits and in light blue blood tubes. They grab calcium to stop clotting — no calcium, no clot.*

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## EDTA (Ethylenediamine tetra-acetic acid)

E · D · T · A *ee-dee-tee-AY*

An anticoagulant additive used to prevent the blood-clotting sequence by removing calcium and forming calcium salts. Found in lavender/purple top tubes. The preferred anticoagulant for hematology tests.


 *EDTA = the purple top tube anticoagulant. Think 'Every Day Test Anticoagulant' — it's the most commonly used one for CBC and blood counts.*

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## Evacuated tube system

e · vac · u · at · ed tube *ee-VAK-yoo-ay-ted toob*

The most common method of blood collection using color-coded tubes that contain a vacuum to aspirate blood when a needle enters a patient's vein. Uses a double-sided needle attached to a holder/adapter.


 The tube is **EVACUATED** (empty of air/vacuum inside) so it sucks blood in automatically when the needle enters the vein — like opening a vacuum-sealed jar.

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## Fasting blood tests

fast · ing blood tests *FAST-ing blud tests*

Tests performed on blood taken from a patient who has abstained from eating and drinking (except water) for a particular period of time, usually 8–12 hours.

 **FASTing** = the patient must **FAST** (no food) before the blood draw. Eating can change glucose, cholesterol, and other values.

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## Feathered edge

feath · ered edge *FETH-erd ej*

A term used to describe blood smears on microscopic slides. It is a visible curved edge that thins out smoothly and resembles the tip of a bird's feather. This is where cells are examined under the microscope.

 The feathered edge is where the blood smear thins out like a **FEATHER** tip — this is the sweet spot where cells are spread apart enough to examine.

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## Fistula

fis · tu · la *FIS-tyoo-luh*

An artificial shunt or passage, commonly used in the arm of a patient undergoing kidney dialysis. The vein and artery are fused through a surgical procedure. Never perform venipuncture on an arm with a fistula.

 A fistula is a surgically created connection between an artery and vein for dialysis access. **NEVER** draw blood from a fistula arm — it's off-limits.

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## Glucose tolerance test (GTT)

glu · cose tol · er · ance test *GLOO-kose TOL-er-ens test*

A diagnostic test for detecting diabetes. Performed by obtaining blood and urine specimens at timed intervals after fasting, then after ingesting a glucose solution.


 **GTT** = how well can your body **TOLERATE** a big dose of **GLUCOSE**? Blood is drawn at intervals to see if sugar levels return to normal.

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## Heelstick

heel · stick *HEEL-stik*

A pediatric phlebotomy procedure that requires puncturing one of the specified areas of an infant's heel to collect capillary blood. The most common method for collecting blood from newborns.

 *Heelstick = sticking the HEEL of a baby's foot. Infants have tiny veins, so the heel is the safest collection site.*

## Hemoconcentration

he · mo · con · cen · tra · tion *HEE-moh-kon-sen-TRAY-shun*

Increased localized blood concentration of large molecules such as proteins, cells, and coagulation factors. Can be caused by excessive or prolonged application of a tourniquet.

 *'Hemo' = blood + 'concentration' = thickening. Leaving the tourniquet on too long CONCENTRATES the blood — giving falsely elevated results.*

## Hemolysis

he · mol · y · sis *hee-MOL-ih-sis*

Rupture or destruction (lysis) of red blood cells, releasing hemoglobin into the surrounding fluid. In phlebotomy, hemolysis can occur from improper collection technique and can invalidate test results.

 *'Hemo' = blood + 'lysis' = breaking apart. Hemolysis = blood cells BURSTING open. The serum turns pink/red — a phlebotomist's nightmare.*

## Hemostasis

he · mo · sta · sis *hee-moh-STAY-sis*


The maintenance of circulating blood in the liquid state and retention of blood in the vascular system by prevention of blood loss. The body's process of stopping bleeding.

 *'Hemo' = blood + 'stasis' = stopping/standing still. Hemostasis = making the bleeding STOP and STAY stopped.*

## Heparin

hep · a · rin *HEP-ah-rin*


An anticoagulant that prevents blood clotting by inactivating thrombin and thromboplastin. Found in green top collection tubes. Used for chemistry tests and blood gas analysis.

 *Heparin = the GREEN top tube anticoagulant. Think 'HEP-arin HELPS' keep blood liquid by blocking the clotting chemicals.*

## Holder (adapter)

hold · er *HOLD-er*


A plastic apparatus needed in specimen collecting using the evacuated tube method. The needle screws into one end and the tube is inserted into the other.

 *The holder HOLDS the needle and tube together — it's the plastic barrel that connects everything in the evacuated tube system.*

## Iatrogenic anemia

i · at · ro · gen · ic a · ne · mi · a *eye-AT-roh-JEN-ik ah-NEE-mee-uh*


A type of induced blood-loss anemia resulting from too much blood being withdrawn in a short period of time. The patient may require a blood transfusion.

 *'Iatrogenic' = caused by medical treatment + 'anemia' = low blood. The blood draws themselves caused the anemia — too many tubes too fast.*

## Lipemic

li · pe · mic *lih-PEE-mik*

When referring to serum, a cloudy or milky appearance, usually due to a temporarily elevated lipid (fat) level after the ingestion of fatty foods.

 *'Lipemic' = full of LIPIDS (fats). The serum looks like milk because the patient ate a fatty meal — fat particles cloud the sample.*

## Microcontainers

mi · cro · con · tain · ers *MY-kroh-kon-TAY-nerz*

Specialized collection devices designed for small quantities of blood. Some contain anticoagulants. Used for pediatric and geriatric patients with small or fragile veins.

 *MICRO = tiny + containers. Mini tubes for mini samples — when you can only get a little bit of blood.*

## Occluded veins

oc · clud · ed veins *oh-KLOOD-ed vaynz*


Closed or constricted veins that are blocked and cannot be used for venipuncture. May be caused by blood clots, scarring, or IV therapy.

 *Occluded = BLOCKED. An occluded vein is a dead end — no blood can flow through, so you can't draw from it.*

## Oxalates

ox · a · lates *OK-sah-layts*

Anticoagulants that prevent the blood-clotting sequence by removing calcium and forming calcium salts. Found in gray top collection tubes.

 *Oxalates are in GRAY top tubes. They grab calcium just like citrates and EDTA — no calcium, no clotting.*

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## Percutaneous

per · cu · ta · ne · ous *per-kyoo-TAY-nee-us*

Through the skin. In phlebotomy, this refers to any procedure that involves penetrating the skin to access blood, such as venipuncture or capillary puncture.

 *'Per' = through + 'cutaneous' = skin. Percutaneous = going THROUGH the SKIN with a needle to get blood.*

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## Petechiae

pe · te · chi · ae *peh-TEE-kee-eye*

Minute, pinpoint hemorrhagic spots in the skin that may indicate a coagulation abnormality. For phlebotomists, petechiae should be a warning sign that the patient may bleed excessively.

 *Petechiae = tiny red PINPOINT dots under the skin from broken capillaries. If you see them, be extra careful — the patient may not clot well.*

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## Phlebotomist

phle · bot · o · mist *fleh-BOT-oh-mist*

An individual who practices phlebotomy (i.e., a blood collector). 'Phlebo' relates to vein, and 'tomy' relates to cutting or incision.

 *A phlebotomist is a professional vein-poker. 'Phlebo' = vein + 'tomist' = one who cuts. They cut into veins to collect blood.*

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## Phlebotomy

phle · bot · o · my *fleh-BOT-oh-mee*

A cut or incision into the vein for the purpose of drawing blood. The practice of collecting blood specimens for laboratory analysis.

 *'Phlebo' = vein + 'tomy' = cutting. Phlebotomy = cutting into a VEIN. The ancient practice of bloodletting, now a precise medical skill.*

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## Plasma

plas · ma *PLAZ-mah*

The liquid portion of the blood in which blood cells are suspended. Obtained from blood collected in tubes with anticoagulant. Contains clotting factors (unlike serum).

*🌱 Plasma = the yellow liquid part of blood WITH clotting factors still in it. Anticoagulant tube → spin → plasma on top. Remember: PLASma = PLus clotting factors.*

## Point-of-care (POC) testing

point of care test · ing *poynnt ov kair TEST-ing*

Tests and procedures that are performed at the patient's bedside or at the point of care, rather than in a central laboratory. Examples include glucose meters and rapid strep tests.

*🌱 POC = testing right at the POINT where CARE is given — at the bedside, in the exam room, not in a distant lab. Fast results, right there.*

## Postprandial glucose test

post · pran · di · al glu · cose *post-PRAN-dee-ul GLOO-kose*

A glucose test performed after ingestion of a meal. Useful for screening patients for diabetes, because glucose levels in serum specimens drawn 2 hours after a meal are rarely elevated in normal patients.

*🌱 'Post' = after + 'prandial' = meal. Postprandial = AFTER eating. Draw blood 2 hours after a meal to check if glucose returns to normal.*

## Sclerosed veins

scle · rosed veins *skleh-ROHZD vaynz*

Veins that have become hardened due to disease, repeated punctures, or IV drug use. Difficult to palpate and puncture. Should be avoided for venipuncture.

*🌱 'Sclerosed' = hardened. These veins feel like hard cords instead of soft, bouncy tubes. Too tough to stick — find another vein.*

## Septicemia

sep · ti · ce · mi · a *sep-tih-SEE-mee-uh*

Formerly called blood poisoning. The presence of toxins or multiplying bacteria in the blood. A life-threatening condition that requires immediate treatment with antibiotics.

*🌱 'Septic' = infected + 'emia' = blood. Septicemia = SEPTIC blood — the bloodstream itself is infected and spreading poison throughout the body.*

## Serum

se · rum *SEER-um*

The liquid that separates from blood after it is allowed to clot. Contains the same constituents as plasma except the clotting factors, which are trapped in the clot. Collected in tubes without anticoagulant (red or gold top).

 *Serum = plasma MINUS the clotting factors. No anticoagulant tube → blood clots → spin → serum on top. Remember: SERum = SERved without clotting factors.*

## Sodium fluoride

so · di · um flu · o · ride *SOH-dee-um FLOOR-ide*


An additive (antiglycolytic agent) present in specific blood collection tubes (gray top) that is used for glycolytic inhibition tests. It preserves glucose levels by preventing cells from consuming glucose.

 *Sodium fluoride is in GRAY top tubes for GLUCOSE tests. It freezes the glucose level so cells can't eat the sugar before the lab tests it.*

## Specimen rejection

spec · i · men re · jec · tion *SPES-ih-men ree-JEK-shun*

When a specimen is deemed unsuitable for laboratory testing and cannot be analyzed. Common causes include hemolysis, clotting in anticoagulant tubes, incorrect labeling, and insufficient volume.

 *The lab REJECTS the specimen — it's not good enough to test. Hemolyzed, mislabeled, or wrong tube = rejected. Time to redraw.*

## Standard Precautions

stan · dard pre · cau · tions *STAN-derd pree-KAW-shunz*

A set of safeguards designed to reduce the risk of transmission of microorganisms. Treats all blood and body fluids as potentially infectious regardless of the patient's diagnosis.

 *Standard Precautions = the STANDARD safety rules for EVERY patient. Assume ALL blood is potentially infectious — gloves on, always.*

## Syringe method

sy · ringe meth · od *sih-RINJ METH-ud*

A method of venipuncture in which a syringe is used to collect blood, which is then transferred to collection tubes. Used for patients with fragile veins where the vacuum tube's suction may collapse the vein.

🌱 Use a syringe when veins are too fragile for vacuum tubes. You control the suction by pulling the plunger gently — less force, less vein damage.

## Therapeutic drug monitoring (TDM)

ther · a · peu · tic drug mon · i · tor · ing *thair-ah-PYOO-tik drug MON-ih-tor-ing*

Testing procedures to evaluate drug levels in a patient's blood. Valuable for determining proper drug dosage and monitoring for toxicity or clinical effectiveness.

🌱 TDM = checking if the drug level in the blood is in the **THERAPEUTIC** (helpful, not harmful) range. Too little = ineffective, too much = toxic.

## Tourniquet

tour · ni · quet *TUR-nih-ket*

A soft rubber strip typically about 1 inch wide and 15 to 18 inches long used on the arm to help find a site for venipuncture. It restricts venous blood flow, making veins more prominent and easier to palpate.

🌱 A tourniquet **TURNS** off the blood flow temporarily so veins pop up and become visible. Don't leave it on longer than 1 minute!

## Turbid

tur · bid *TUR-bid*

Cloudy or milky in appearance. When describing a blood specimen, turbidity usually indicates the presence of lipids (fats) in the sample.

🌱 Turbid = **DISTURBED** and cloudy. Like turbulent water that's been stirred up — you can't see through it clearly.

## Venipuncture

ven · i · punc · ture *VEN-ih-punk-cher*

The process of puncturing a vein with a needle to collect a blood specimen. The most common method of obtaining blood for laboratory testing.

🌱 'Veni' = vein + 'puncture' = to pierce. Venipuncture = **PUNCTURING** a VEIN. The bread-and-butter skill of phlebotomy.