

# BD Cathena™ Safety IV Catheter with BD Multiguard™ Technology

Blood collection points to practice and tips for success

## Blood collection points to practice

### Collect

- Attach a syringe or a BD Vacutainer® Luer-Lok™ Access Device to the catheter hub
- Holding the catheter hub, firmly push and twist to ensure a tight connection
- Collect blood samples



### Remove, attach and clear

- Remove the syringe or vacuum tube holder
- Attach an extension set with needle-free connector or administration set and flush or begin the infusion to clear the blood



**Fig. 1: Order of draw for multiple tube collections**  
**CLSI-recommended order of draw (GP41-A7)**

Closure color	Collection tube	Mix by inverting
	BD Bacter™ Blood Culture Bottle(s) <sup>^</sup>	
Light blue	BD Vacutainer® Citrate Tube*	3 to 4 times
Red	BD Vacutainer® Serum Tube	5 times
Yellow or Black	BD Vacutainer® SST™ Gel Separator Tube	5 times
Orange	BD Vacutainer® Rapid Serum Tube (RST)	5 to 6 times
Green	BD Vacutainer® Heparin Tube	8 to 10 times
Light green or Black	BD Vacutainer® PST™ Gel Separator Tube with Heparin	
Light green	BD Vacutainer® Barricor™ Plasma Blood Collection Tube with Heparin**	8 to 10 times
Purple or Pink	BD Vacutainer® EDTA Tube	8 to 10 times
White	BD Vacutainer® PPT™ Gel Separator Tube with K <sub>2</sub> EDTA	8 to 10 times
Grey	BD Vacutainer® Fluoride Tube	8 to 10 times

<sup>^</sup>When a winged blood collection set is used, the aerobic blood culture bottle is filed first, followed by the anaerobic bottle.<sup>1</sup>

\*When a winged blood collection set is used for venipuncture and a citrate tube is the first tube needed, a discard tube must first be collection. The discard tube is used to remove air from the tubing of the collection set, to ensure the proper volume of blood is drawn into the tube

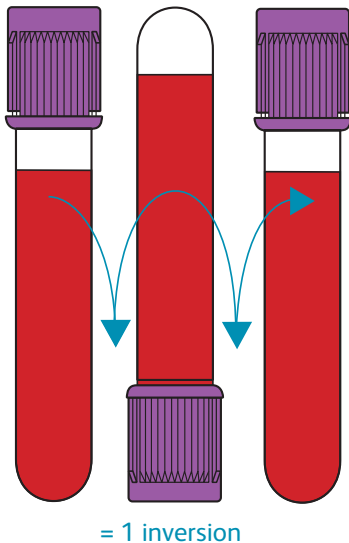
\*\*May not be available in the U.S.

1. CLIS *Principles and Procedures for Blood Cultures; Approved Guideline*. 2nd ed. CLSI document M47-A2. Wayne, PA: Clinical and Laboratory Standards Institute; 2022.

2. CLSI. *Collection of Diagnostic Venous Blood Specimens*. 7th ed. CLSI standard GP41. Wayne, PA: Clinical and laboratory Standards Institute; 2017.

**Note: Always follow your facility's protocol for order of draw**

**Fig. 2: Mix tubes by inverting**  
**the recommended number of times**



## Blood collection tips for success

### Drying time of prepping agent

- Allow the cleansed site to air dry thoroughly.

### Tourniquet time

- Do not leave the tourniquet on for more than one (1) minute.

### Syringe use

- Use BD Vacutainer® Blood Transfer Device to facilitate safe, needleless transfer from syringe to vacuum tubes.
- Forcefully pulling the plunger back during blood collection may create enough pressure to cause hemolysis. Pull back slowly.
- Pushing the plunger when transferring blood from a syringe into a tube may cause hemolysis.
- Do not apply pressure to the syringe plunger to accelerate the rate of transfer. Allow the vacuum of the tube to draw the blood from the syringe to the predetermined level.

### Multiple tube collection

- Collect tubes in the order shown (Fig. 1), from top to bottom, to prevent cross contamination of tube additives.

### Volume per tube

- Fill each tube with the correct blood volume to ensure sufficient specimen is available for testing and to ensure the proper ratio of tube additive to blood.
- Fill volume is especially critical for the light blue citrate tubes used for coagulation studies.

### Mixing tube additive

- Gently invert each tube as they are removed from the holder and before engaging the next tube (Fig. 2).
- Vigorous mixing or shaking of the tubes may cause hemolysis.

### Specimen transport (as applicable)

- Mechanical trauma during transport may occur in a pneumatic tube system, resulting in hemolysis.
- Fill tube to specified volume in order to minimize the risk of damage to the specimen during transport. Tubes not filled with enough blood have more head space within the tube for blood to move back and forth during tube transport.
- Provide adequate inner cushioning for the blood collection tubes during transport to avoid excessive mixing.<sup>1</sup>

Please consult product labels and inserts for instructions for use, indications, contraindications, warnings and precautions.

For further information on BD blood collection accessories, visit [bd.com/en-us/products-and-solutions/products/product-brands/vacutainer](https://bd.com/en-us/products-and-solutions/products/product-brands/vacutainer)

1. Pierre CC, Wiencek Jr. The impact of environmental factors on external and internal specimen transport. *Clinical Biochemistry*. 2023;115:13-21. doi: 10.1016/j.clinbiochem.2022.11.005. Epub 2022 Nov 13. PMID: 36379239.