

Blood Collection for Blood Gas Analysis

Arterial Line Draw Method



1. Ensure that all connections in the arterial line assembly are secure; prevent introduction of any air into the catheter/cannula system. Select a dry electrolyte-balanced lithium heparin aspirating syringe and a disposable waste syringe of appropriate sizes.
2. In order to obtain a representative blood sample, you must remove all flush solution from the catheter/cannula system before sampling.¹ Interrupt the supply of flush solution according to institution protocol. Clean the stopcock with an alcohol swab. Fit the waste syringe to the stopcock Luer, open the stopcock, and aspirate all the flush solution and an amount of blood equivalent to 1–2x the volume of the catheter (**Figure 1**). Close the stopcock and remove and discard the waste syringe.

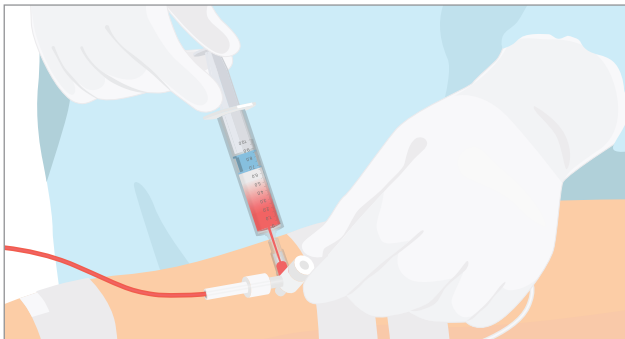


Figure 1.

3. Push the plunger on the heparinized aspirating syringe fully forward and attach the Luer to the stopcock. Open the stopcock, draw the required volume of blood (**Figure 2**), and re-close the stopcock.

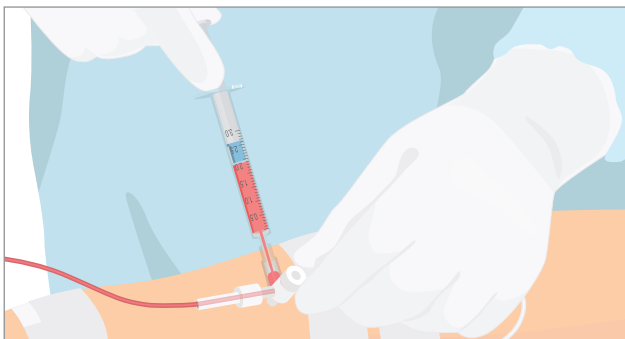


Figure 2.

4. Remove the heparinized aspirating syringe from the stopcock and immediately fit the filter cap to the aspirating syringe Luer. Hold the aspirating syringe with the Luer end up, gently tap the syringe to dislodge any air bubbles, and slowly expel the air bubbles into the filter cap (**Figure 3**).

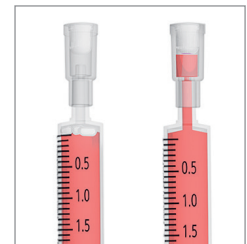


Figure 3.

5. Mix the sample thoroughly to dissolve the heparin in the syringe and minimize clot formation by rotating your wrist back and forth for a minimum of 20 seconds or approximately 8 to 10 times (**Figure 4**). Label the syringe and transport immediately to the blood gas system for analysis. Restart infusion according to institution protocol.

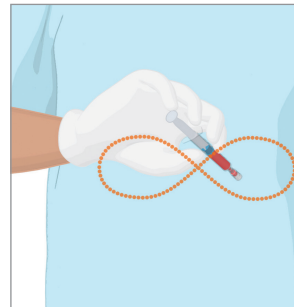


Figure 4.

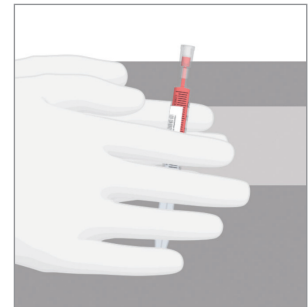


Figure 5.

6. According to the CLSI guidelines,² blood gas testing should be completed within 10 minutes and not longer than 30 minutes of drawing the sample. If testing is delayed longer than 30 minutes, samples should be placed in an ice slurry. Always remix the sample immediately prior to the analysis following a two-step process, first rotating your wrist back and forth and then rolling the sample between your hands approximately 10 times (**Figures 4 and 5**).



For more information, please visit us at [siemens-healthineers.com/bloodgas](https://www.siemens-healthineers.com/bloodgas)

1. Guder WG, Narayanan S, Wisser H, Zawta B. *Samples: from the patient to the laboratory*. Darmstadt: Git Verlag, 1996: p. 21.
2. CLSI Guideline reference C46-A2.

At Siemens Healthineers, our purpose is to enable healthcare providers to increase value by empowering them on their journey toward expanding precision medicine, transforming care delivery, and improving patient experience, all made possible by digitalizing healthcare.

An estimated 5 million patients globally benefit every day from our innovative technologies and services in the areas of diagnostic and therapeutic imaging, laboratory diagnostics, and molecular medicine, as well as digital health and enterprise services.

We are a leading medical technology company with over 120 years of experience and 18,000 patents globally. Through the dedication of more than 50,000 colleagues in 75 countries, we will continue to innovate and shape the future of healthcare.

All associated marks are trademarks of Siemens Healthcare Diagnostics Inc., or its affiliates. All other trademarks and brands are the property of their respective owners.

Product availability may vary from country to country and is subject to varying regulatory requirements. Please contact your local representative for availability.

Siemens Healthineers Headquarters

Siemens Healthcare GmbH
Henkestr. 127
91052 Erlangen, Germany
Phone: +49 9131 84-0
siemens-healthineers.com

Published by

Siemens Healthcare Diagnostics Inc.
Point of Care Diagnostics
2 Edgewater Drive
Norwood, MA 02062-4637
USA
Phone: +1 781-269-3000