

Name:

Medical School:

Year:

**Obtaining Arterial Blood Gas Samples**

Please carry out the procedure for obtaining a radial arterial blood gas sample

Self

Peer

Peer/  
Tutor

Tutor

**Understands clinical indications**

- Explains the need for blood gas sampling
- Understands potential risks and complications associated with ABG's e.g. pain, bleeding, haematoma, thrombosis.

**Understands timing of ABG's**

- States that 15-20 minutes of cardiovascular stability should ideally elapse following a change in O<sub>2</sub> therapy before performing ABG sampling
- ABG's may be taken immediately if it is an emergency situation.

**Anatomical and physiological principles**

- Able to list which arteries are used for sampling (radial, femoral, brachial)
- Performs Allen's test if using radial artery
- Explains the rationale and what constitutes a positive test;
- *Positive modified Allen test* – If the hand flushes within 5-15 seconds it indicates that the ulnar artery has good blood flow; this normal flushing of the hand is considered to be a positive test.
- *Negative modified Allen test* – If the hand does not flush within 5-15 seconds, it indicates that ulnar circulation is inadequate or non-existent; in this situation, the radial artery supplying arterial blood to that hand should not be punctured. WHO (2010)
- Checks other radial and ulnar arteries and then considers femoral or brachial artery with negative test
- Understands the procedure is an aseptic non touch technique

**Cautions and contraindications**

- Avoids any pre-existing lesions or infections at the puncture site
- Presence of a surgical shunt (e.g. dialysis patients)
- History of peripheral vascular disease
- Patient on anticoagulation therapy (relative contraindication)
- Inadequate collateral circulation confirmed by negative Allen's test

**Washes hands**

- Hand wash with water and soap using the Ayliffe technique
- Alcohol gels hands when walking into patient's bed space

**Obtains informed consent following explanation to patient**

- Introduces themselves
- Explains to the patient what the procedure involves; "I need to take a blood sample from your artery so that we can check if your breathing is adequate"
- Gains informed consent

**Communication Skills**

- Establishes patient's expectations or concerns.
- Assessment throughout the procedure and encourages patient to ask questions

<b>Equipment selection/preparation</b>	<ul style="list-style-type: none"> <li>● Blood gas syringe with safety needle, gloves, alcohol hand gel, sterile gauze swabs, 70% alcohol, 2% chlorhexidine skin prep, sharps bin and tray and occlusive dressing</li> <li>● Considers use of local anaesthetic</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Procedure</b>	<ul style="list-style-type: none"> <li>● Checks patient identity by checking armband and verbally confirming patients ID</li> <li>● Checks patient for allergy</li> <li>● Collect equipment</li> <li>● Return to patient's bedside, wash hands and applies apron</li> <li>● Palpates for pulses Performs Allen's test if using radial artery</li> <li>● Considers local anaesthetic</li> <li>● Cleans area for 30 seconds using cross hatch technique and allows to dry</li> <li>● Prepares blood gas syringe</li> <li>● Gels hand, applies gloves.</li> <li>● Re-palpates for pulse at least 1cm above the insertion</li> <li>● Warns patient that the procedure will be painful but that they need to stay as still as possible</li> <li>● Enters radial artery at 30 - 45° angle opposite to the direction of the blood flow</li> <li>● Obtains 1 – 2mls of blood</li> <li>● Removes needle and applies direct pressure for at least 5mins</li> <li>● Disposes of sharps safely (ensuring safety device activated)</li> <li>● Expels any air bubbles from the syringe and applies cap</li> <li>● Ensures bleeding has stopped</li> <li>● Labels syringe at the bedside</li> <li>● Makes note of the oxygen percentage received by patient and the patient's temperature at time of sample.</li> <li>● Transports sample to machine immediately</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Post-procedure management</b>	<ul style="list-style-type: none"> <li>● Washes hands and disposes of waste</li> <li>● Documents results and ensures they are seen in a timely manner.</li> <li>● Thanks patient</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Professionalism</b>	<ul style="list-style-type: none"> <li>● Communicates to team members</li> <li>● Thanks staff</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Overall ability to perform procedure</b>	<ul style="list-style-type: none"> <li>● Assess globally, would you be happy for this student to be supervised to perform ABG Sampling.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Self-assessed as at least borderline:</b>	Signature: _____ Date: _____				
<b>Peer-assessed ready for tutor assessment:</b>	Signature: _____ Date: _____				
<b>Tutor assessed as satisfactory:</b>	Signature: _____ Date: _____				

**Notes:**

F = Fail

B = Borderline

P = Pass

G = Good

E= Excellent