

Blood cultures

- sampling and submission

Blood culture is the single most important procedure to detect systemic infection due to bacteria, yeasts and fungi. Microorganisms isolated from a blood culture are of great clinical significance provided contamination can be excluded. Contamination of blood cultures with normal skin flora is most commonly due to errors in the blood collection procedure. Therefore, proper technique in performing a blood culture is essential.

The use of a two aerobic bottle “set” is recommended for routine culture.^{1,2,3} The routine use of anaerobic blood cultures rarely results in clinically important diagnostic or therapeutic benefits.¹

Materials required:

Blood culture bottles / alcohol / needles / syringe

(Blood culture bottles can be ordered via our online ordering or consumables order form)

Sampling tips:

- Ensure the recommended volume of blood for the size of bottle is placed into the bottles as an incorrect dilution factor can adversely affect results (see 5. below for details).
- Blood culture bottles can also be used to culture joint fluids, but see above regarding sample size. For small volumes of joint fluid, it is recommended that you send the sample directly to the laboratory in a sterile sample container.
- Store blood culture bottles at room temperature until used.

How to:

1. Aseptic collection of the blood sample is critical (wear gloves).
2. Sterile preparation of the site of venepuncture (as for surgical procedures) is required. Just one contaminating bacterium will multiply in the media and produce a false positive result.
3. Remove the plastic protective top on the screw cap on the blood culture bottle. **DO NOT UNSCREW LID.**
4. Disinfect the visible part of the rubber stopper with isopropyl or ethyl alcohol (70%) and let dry.
5. Using a sterile needle and syringe, obtain the appropriate amount of patient’s blood (1-3mL for 20mL and 40mL bottles).
6. Attach a new needle to the syringe and transfer the blood immediately into the culture bottle under aseptic conditions.
7. Mix the culture bottle by gentle inversion.
8. Send the blood culture to the laboratory using standard shipping protocols. If the culture bottles cannot be sent immediately, they should be placed in a warm place (not exceeding 37°C) or at room temperature until they can be transported - **DO NOT refrigerate.**

References:

1. Ortiz E, Sande M. Routine use of anaerobic blood cultures: are they still indicated? *Am. J Med.* 108:445-7, 2000.
2. James P, Al-Shafi K. Clinical value of anaerobic blood culture: a retrospective analysis of positive patient episodes. *J. Clin. Pathol.* 53:231-233, 2000.
3. Morris A, Wilson M, Mirrett S, Reller LB. Rationale for selective use of anaerobic blood cultures. *J. Clin. Microbiol.* 31:2110-2113, 1993.

