Fluids from normally sterile sites

The detection of organisms in fluids that are normally sterile indicates significant infection, which can be life-threatening. Specimens may be taken primarily for culture or this may be incidental to the prime reason for obtaining the specimen.
Blood cultures may be positive with the same infecting organism, and occasionally may be positive when culture of the fluid fails to reveal the organism.
Fluids will be sterile in the absence of infection, as will "sympathetic effusions", and those of immunological or traumatic origin and those due to metabolic disease or heart failure.
Signs of infection may be difficult to detect clinically in patients whose joints are already inflamed due to rheumatological conditions. This is important because these patients are at increased risk of joint sepsis.

General information

Collection container (including preservatives): Use aseptic technique.
Collect specimens in appropriate CE marked leak proof containers and transport specimens in sealed plastic bags.

Specimen type:
Universal container: Amniotic fluid, bursa fluid, pericardial fluid, joint fluid, peritoneal/CAPD fluid (ascites), pleural fluid, dialysis fluid.

Sterile fluids such as **Ascitic Fluids, CAPD fluids, Joint Fluids** can be sent in blood culture bottles - use standard set of BC bottles (Aerobic & Anaerobic bottle). For small volume samples - use Paediatric bottle.

Pleural Fluids (Not Pleural Drains) should be sent in a set of blood culture bottles for culture plus an additional universal container for a Gram stain

Capped Syringes: Vitreous aspirates & other intra ocular fluids should be injected into a Blood Culture bottle set with a small syringe of fluid submitted for a Gram stain. The needle MUST be removed before submission for the laboratory.

Cell differentials are performed in Cytology, separate sample and request required

Collection: Collect specimens before antimicrobial therapy where possible.

Specimen transport: Specimens should be transported and processed as soon as possible

Minimum volume of sample: Ideally, a minimum volume of 1 mL.

Large volume - specimens such as peritoneal fluid and ascitic fluid may contain very low numbers of organisms which are usually received in adequate quantities and require concentration to increase the likelihood of successful culture.

Small volume - fluids such as synovial fluids may be received in inadequate volumes, which may impede the recovery of organisms.

Enrichment culture is performed on all fluids from normally sterile sites to enhance the recovery of bacterial pathogens.

Special precautions: If processing is delayed, refrigeration is preferable to storage at ambient temperature. Delays of over 48hr are undesirable.

Bacteriology performs differentials, therefore one sterile pot is required and one set of blood culture

Laboratory information

Measurement units: X10 6/L for cell count

Biological reference units: Not applicable

Turnaround time for provisional result (working days): 30-60 mins for microscopy & Gram Stain, when telephoned as urgent.
Turnaround time to final result (working days):
2- 3 days for direct culture result
5 days for enriched culture result

Clinical information

Clinical decision points: Positive microscopy and/or Positive Culture results are telephoned to the requesting physician

(Last updated November 2025)