

Bone Marrow Biopsy Specimens

Introduction

Bone marrow aspirates and biopsies are performed in the evaluation of patients with suspected hematologic disease including anemia, other cytopenias, leukemia, lymphoma, or other hematolymphoid disorders. The procedure is requested by the treating physician, usually a hematologist-oncologist, and the samples are evaluated by hematopathologists.

The assessment of bone marrow samples requires detailed microscopic examination in conjunction with other ancillary testing. Commonly used ancillary tests include flow cytometry, cytogenetics, and other molecular studies.

Cleveland Clinic Laboratories clients may request a Comprehensive Bone Marrow Analysis, which includes microscopic examination and cytogenetics in all cases. Additional flow cytometry, immunohistochemistry, and/or molecular testing will be performed as directed by the hematopathologist after microscopic review. Alternatively, each individual diagnostic test may be ordered separately.

The best value for the patient is achieved when the treating physician provides pertinent clinical information, an adequate specimen is obtained, and samples are packed and shipped properly. Details on obtaining and shipping an ideal sample are described below.

Treating Physicians

Prior to requesting a biopsy, the treating physician should obtain a Cleveland Clinic Laboratories Hematopathology Requisition from the local pathology laboratory or online at clevelandcliniclabs.com.

Fill out the requisition completely prior to sample collection. Whenever possible, biopsies should be performed Monday-Friday.

A recent peripheral blood smear and CBC report should be obtained and submitted with the bone marrow sample.

Bone Marrow Sample Requirements

Aspirate

The initial bone marrow aspirate sample should be collected **without** anticoagulant and used to create 5-10 long smears. The leftover aspirate material is allowed to clot in the syringe (see **Clot**). Additional aspirate may be collected into an appropriate anticoagulant for ancillary testing. For Comprehensive Bone Marrow Analysis, the following samples are required:

1. Flow cytometry: 4 mL in a sodium heparin tube
2. Cytogenetics/FISH: 2–3 mL in a sodium heparin tube.
3. Molecular studies: 3–4 ml in an EDTA tube.

Clot

The leftover aspirate without anticoagulant will clot within the syringe. Once clotted, remove from the syringe and place into one of the formalin containers provided.

Biopsy

An optimal trephine core biopsy should be at least 1–2 cm length. Make touch preps by gently tapping the biopsy several times on a slide. Place the biopsy into the other formalin container provided.

Laboratory Handling and Shipping Requirements

For your convenience, we provide shipping kits containing all supplies needed for the following steps:

1. When slides are labeled and dry, place into the slide holders provided.
2. Liquid aspirate can be placed into the EDTA or sodium heparin tubes in the kit as needed.
3. As stated above, place the clot and biopsy specimens into separate formalin containers.
4. Label all specimen parts with two of three patient identifiers (patient name, date of birth, social security number). Include the specific site the bone marrow was taken from.
5. Place all specimens in the foam insert in the cardboard box provided. Place the foam insert into a sealable biohazard bag before placing in box.
6. Place the completed Hematopathology requisition and CBC report in the UPS Laboratory Pak.
7. Seal and place address air bill for Next Day Air with the provided label to:

Cleveland Clinic Laboratories, L15
Cleveland Clinic Path & Lab Medicine
2119 East 93rd Street
Cleveland, OH 44106

Cleveland Clinic Laboratories Contact Information

Manual Hematology Laboratory

216.444.2507

For technical handling and shipping questions.

Hematopathology Secretary

216.636.0186

To speak to a hematopathologist regarding medical pathology questions, including specific tests offered, their indications, and interpretations.