WFH
WORLD FEDERATION OF HEMOPHILIA
FÉDÉRATION MONDIALE DE L'HÉMOPHILIE
FEDERACIÓN MUNDIAL DE HEMOFILIA

Chapter 3
LABORATORY DIAGNOSIS AND MONITORING

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LABORATORY DIAGNOSIS & MONITORING

Different bleeding disorders may have very similar symptoms; therefore, a correct diagnosis is essential to ensure that a patient receives the appropriate treatment.

Diagnosis of hemophilia is based on:

- Understanding the clinical features of hemophilia and the appropriateness of the clinical diagnosis
- **Screening tests** such as prothrombin time (PT) and activated partial thromboplastin time (APTT) or platelet function tests to measure clotting factor activity in the blood and identify abnormalities
- **Factor assays tests** and other specific investigations to determine the specific diagnosis

Screening Tests: Measuring PT, APTT, or FVIII / FIX activity

Blood samples should be:

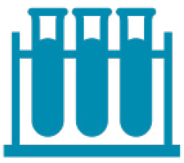
- Collected in citrate tubes containing 0.105-0.109 M aqueous trisodium citrate dihydrate
- Capped during processing
- Kept at 18-25°C during transport and storage
- Centrifuged at RT at 1700 g for at least 10 min
- Analyzed within 8 hours of collection (4 hours for FVIII:C) or stored deep frozen at −35°C or lower

APTT result within the reference range should not be used to rule out the presence of mild hemophilia

APTT is sometimes normal in mild hemophilia A or B

Factor Assay Tests:

- For laboratory investigation of patients being assessed due to clinical suspicion of hemophilia A, the WFH recommends the use of both the one-stage FVIII assay and the chromogenic FVIII:C assay in the initial diagnostic workup
- For laboratory investigation of patients being assessed due to clinical suspicion of hemophilia B, the WFH recommends the use of the one-stage FIX assay in the initial diagnostic workup.



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Monitoring factor level after FVIII / FIX treatment

HEMOPHILIA A

Replacement therapy	The WFH recommends use of
Efmoroctocog alfa	one-stage or chromogenic FVIII assay calibrated with a plasma standard
Turoctocog alfa pegol or Damoctocog alfa pegol	chromogenic FVIII assay or APTT-based one-stage FVIII assay with validated reagents, including some ellagic acid and some silica activator reagents, calibrated with a plasma standard
Rurioctocog alfa pegol	more laboratory assay studies are required to inform recommendations about laboratory monitoring
Lonoctocog alfa	chromogenic FVIII assay calibrated with a plasma standard

HEMOPHILIA B

Replacement therapy	The WFH recommends use of
Eftrenonacog alfa or nonacog beta pegol	chromogenic FIX assay or APTT-based one-stage FIX assay with validated reagents
Albutrepenonacog alfa	APTT-based one-stage FIX assay with validated reagents
Nonacog beta pegol	chromogenic FIX assay or APTT-based one-stage FIX assay with validated reagents

EMICIZUMAB

- For patients receiving emicizumab in whom confirmation of expected emicizumab levels is required, use of a modified one-stage assay including an additional pre-dilution step of test plasma and assay calibration with specific emicizumab calibrators is recommended
- For determination of FVIII activity and FVIII inhibitor levels in patients with hemophilia A receiving emicizumab, use of a chromogenic FVIII assay containing bovine FX is recommended.
- For patients with a suspected neutralizing anti-emicizumab antibody, measuring emicizumab levels using a modified one-stage assay including an additional pre-dilution step of test plasma and assay calibration with specific emicizumab calibrators is recommended

PLEASE CONSULT CHAPTER 3 FOR SPECIFIC INFORMATION ON LABORATORY TESTING.

This educational material was made possible through the support of the Hemophilia Alliance
For more information on the WFH Guidelines for the Management of Hemophilia, visit www.WFH.org/TGResourceHub