

Evaluation of Measurable Residual Disease in B-Lymphoblastic Leukemia

Statements and Strengths of Recommendations

SUMMARY OF RECOMMENDATIONS

Guideline Statement	Strength of Recommendation
1. For adult and pediatric patients with B-cell acute lymphoblastic leukemia (B-ALL) undergoing measurable residual disease (MRD) testing for the purpose of risk stratification, laboratories should use NGS or multiparametric flow cytometry (MFC). Although NGS provides a more sensitive assessment and may be preferred for this reason, a validated MFC protocol with a lower limit of detection (LLoD) of at least 10^{-4} may be used.	Strong Recommendation
2. For a comprehensive assessment of MRD in *adults with Philadelphia positive (Ph+) B-ALL, laboratories should interpret real-time quantitative PCR (RT-qPCR) for BCR::ABL1 fusion transcripts in conjunction with additional data (eg, NGS, MFC). *evidence insufficient to support a pediatric recommendation	Conditional Recommendation
3. For patients with B-ALL undergoing assessment for MRD, laboratories should use bone marrow (BM) aspirates rather than peripheral blood specimens in most circumstances. <i>Note:</i> Peripheral blood may be an acceptable alternative when use of BM aspirate is not feasible.	Strong Recommendation
4. For patients with B-ALL in remission undergoing surveillance, laboratories may use peripheral blood samples.	Conditional Recommendation
5. For patients with B-ALL undergoing MRD assessment from peripheral blood at end of induction or later, laboratories should use high-sensitivity methods (LLoD at least 10^{-5}).	Strong Recommendation

GOOD PRACTICE STATEMENTS

1. For flow cytometry-based MRD testing in patients with B-ALL, laboratories should collect sufficient numbers of intact cells after excluding debris to achieve reported sensitivity.	Good Practice Statement
2. For molecular-based MRD testing in patients with B-ALL, laboratories should analyze sufficient genomic equivalents of nucleic acid to achieve reported sensitivity.	Good Practice Statement
3. For flow cytometry-based MRD testing of bone marrow aspirate from patients with B-ALL, laboratories should assess hemodilution. <i>Note:</i> First pull is strongly preferred.	Good Practice Statement

Disclaimer

The information, data, and draft recommendations provided by the College of American Pathologists are presented for informational and public feedback purposes only. The draft recommendations and supporting documents will be removed on November 5, 2025.

The draft recommendations along with the public comments received and completed evidence review will be reassessed by the expert panel in order to formulate the final recommendations. These draft materials should not be stored, adapted, or redistributed in any manner.



Certainty of Evidence Grades¹

Grade	Definition
High	There is high confidence that available evidence reflects true effect. Further research is very unlikely to change the confidence in the estimate of effect.
Moderate	There is moderate confidence that available evidence reflects true effect. Further research is likely to have an important impact on the confidence in estimate of effect and may change the estimate.
Low	There is limited confidence in the estimate of effect. The true effect may be substantially different from the estimate of the effect.
Very Low	There is very little confidence in the estimate of effect. The true effect is likely to be substantially different from the estimate of effect. Any estimate of effect is very uncertain.

Strength of Recommendations¹

Category	Definition	Rationale
Strong Recommendation	Recommend for or against a particular practice (Can include “must” or “should”)	Supported by high or moderate quality of evidence and clear benefit that outweighs any harms.
Conditional Recommendation	Recommend for or against a particular practice (Can include “should” or “may”)	Some limitations in quality of evidence (moderate to very low), balance of benefits and harms, values, or costs but panel concludes that there is sufficient evidence and/or benefit to inform a recommendation.

References

1. Schuenemann H, Brozek J, Guyatt G, Oxman A, eds; The GRADE Working Group. GRADE Handbook for Grading Quality of Evidence and Strength of Recommendations: Gradepro website. Updated October 2013. Accessed February 29, 2024. <https://gdt.gradeapro.org/app/handbook/handbook.html>

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