## Memorandum – Immunology #35

To: UNC Health Attending Physicians, Faculty Practice Physicians, Housestaff, Clinical Nurse Coordinators, Department Heads and Supervisors

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**SUBJECT: Lyme Disease Antibody Testing**

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Effective April 13, 2026 the Clinical Immunology Laboratory will offer the Modified Two-Tier Test (MTTT) algorithm for Lyme Disease antibody testing. The MTTT algorithm is a CDC-recognized alternative to the Standard Two-Tier Test (STTT) algorithm using IgM and IgG Chemiluminescent immunoassays (CLIA) to confirm the specificity of antibodies detected in the screening antibody test that is currently performed in house. The CLIA assays replace the IgG and IgM Western Blot assays used in the STTT (previously referred to Mayo Medical Laboratories). The MTTT algorithm offers increased sensitivity for antibody detection in early Lyme Disease with similar specificity to the STTT. Screening and confirmatory assays for MTTT testing will be performed in house.

Samples submitted for Lyme Disease antibody testing will be screened for the presence of IgG and IgM antibodies to *Borrelia burgdorferi*. using the Diasorin Liaison® Lyme Total Antibody Plus assay. Positive and Equivocal samples will be reflexed to two confirmatory assays, the Diasorin Liaison® Lyme IgM assay and the Diasorin Liaison® Lyme IgG assay. Results from these assays are determined by an index value (see table). Reported results and interpretive comments are provided in the table below.

**Lyme Disease Antibody Screening Assay Result and Interpretation**

| Index Value | Reported Result | Interpretation |
|---|---|---|
| <0.9 (Negative) | Negative | Antibodies to *B. burgdorferi* are NOT detected. A negative result does not exclude the possibility of infection. If early Lyme Disease is suspected, a second sample should be collected in two to four weeks and tested. |
| ≥0.9 and <1.1 (Equivocal) | See Lyme MTTT Results | Equivocal and positive results are reflexed to the Lyme MTTT assays (IgM and IgG). Final results must be based on the Lyme MTTT in conjunction with clinical findings |
| ≥1.1 (Positive) | See Lyme MTTT Results | Equivocal and positive results are reflexed to the Lyme MTTT assays (IgM and IgG). Final results must be based on the Lyme MTTT in conjunction with clinical findings |

**IgM Confirmatory Lyme Disease Antibody Testing Results**

| Index Value | Reported Result | Interpretation |
|---|---|---|
| <0.9 (Negative) | Negative | IgM-class antibodies to *B. burgdorferi* not detected. A negative IgM result does not exclude early Lyme disease. If symptoms are of short duration and clinical suspicion remains, repeat serologic testing in two to four weeks should be considered. |
| ≥0.9 and <1.1 (Equivocal) | Equivocal | IgM-class antibodies to *B. burgdorferi* equivocal. IgM serologic results are most useful in patients with symptoms of ≤30 days' duration. Equivocal results may represent early infection or nonspecific reactivity. Repeat testing may be considered if clinically indicated. |
| ≥1.1 (Positive) | Positive | IgM antibodies to *B. burgdorferi* detected**. IgM serologic results should be interpreted only in patients with symptoms of ≤30 days' duration. In patients with symptoms lasting >30 days, IgM seroreactivity is not recommended for diagnosis and may represent false-positive reactivity or persistent antibody response.** |

**IgG Confirmatory Lyme Disease Antibody Testing Results**

| Index Value | Reported Result | Interpretation |
|---|---|---|
| <0.9 (Negative) | Negative | IgG-class antibodies to *B. burgdorferi* not detected. A negative IgG result argues against Lyme disease in patients with symptoms lasting >30 days. In early infection, IgG antibodies may not yet be detectable. If clinical suspicion remains, repeat serologic testing in two to four weeks should be considered. |
| ≥0.9 and <1.1 (Equivocal) | Equivocal | IgG-class antibodies to *B. burgdorferi* equivocal. Equivocal IgG results may represent early seroconversion or nonspecific reactivity. Repeat testing may be considered if clinically indicated. |
| ≥1.1 (Positive) | Positive | IgG-class antibodies to *B. burgdorferi* detected. This result is consistent with infection with Borrelia burgdorferi at some time. IgG antibodies may remain detectable for months to years following infection and should not be used to assess disease activity or response to therapy. |

Lyme Disease antibody testing can be ordered as Lyme Serology (LAB5354). This testing is also a component of the Tickborne Illness Panel (test ID O123900000).

Please direct any questions to the Clinical Immunology Laboratory (984-974-1815) or Dr. John Schmitz (984-974-1452)