

REPRESENTATIVE DIAGNOSTIC TESTS FOR DISORDERS OF THE LYMPHATIC SYSTEM AND IMMUNITY

Diagnostic Procedures	Method and Results	Representative Uses
Skin tests Hypersensitivity response	Antigens are extracted and given in a sterile, diluted form; examples include animal dander, pollen, certain foods, medications that cause hypersensitivities (especially penicillin), and insect venom.	Detects specific antigens that may cause hypersensitivity reaction (allergy)
Prick test	A small amount of antigen is applied as a prick to the skin. Positive test: Erythema, hardening, and swelling appear around puncture area; usually the area affected is measured and must be of minimal size to qualify for a positive test.	As above
Intradermal test	Antigen is injected into the skin to form a 1-2mm "bleb." Positive test: Within 15 minutes, a reddened wheal is produced that is larger than 5mm in diameter and larger than those seen in the control group.	As above
Patch test	A patch is impregnated with the antigen and applied to the skin surface. Positive test: The patch provokes an allergic response, usually over several hours to several days.	As above
Exposure test	Positive test: A wheal of a certain diameter appears around the injection site within a specified period of time.	Diagnostic skin tests can be performed to identify prior exposure to fungal and other parasitic organisms; for example, the test for the organism that causes trichinosis can be performed and read in 15 minutes.
Tuberculin skin test	Injection of tuberculin protein into the skin. Positive test: Red, hardened area >10mm wide appears around injection site 48-72 hours later.	Indicates presence of antibodies to the organism that causes tuberculosis (infection may be active or dormant).
Nuclear scan and CT scans of spleen	Scan images provided through energy from radiation emitted from radio-nuclides or through X-ray waves to reveal position, shape, and size of spleen.	Detects abscesses, tumors of the liver or spleen, and infarcts of liver or splenic tissue.
Biopsy of lymphoid tissue	Surgical excision of suspicious lymphoid tissue for pathological examination in the laboratory	Determines potential malignancy and staging of cancers in progress.
Lymphangiography	Dye is injected into a lymphatic vessel in the distal portion of a limb and travels to nodes; X-rays are taken as the dye accumulates in the lymph nodes.	Identifies and determines the staging of Hodgkin's disease and other lymphomas and detects the cause of lymphedema

REPRESENTATIVE LABORATORY TESTS FOR DISORDERS OF LYMPHATIC SYSTEM AND IMMUNITY

Laboratory Test	Significance of Normal Values	Abnormal Values
Complete blood count	See laboratory tests for blood disorders, Table A-27c	
WBC count	Adults: 5,000-10,000/mm ³ (High-risk values: >30,000/mm ³ or <2,500/mm ³)	Increased in chronic and acute infections, tissue death (MI, burns), leukemia, parasitic diseases, and stress; decreased in aplastic and pernicious anemias, systemic lupus erythematosus (SLE), and use of some medications
Differential WBC count	Neutrophils: 50-70% Lymphocytes: 20-30% Monocytes: 2-8% Eosinophils: 2-4% Basophils: 0.5-1%	Increased in acute infection, myelocytic leukemia, and stress; decreased in aplastic and pernicious anemias, viral infections, radiation treatment and use of some medications. Increased in chronic infections, lymphocytic leukemia, infectious mononucleosis, and viral infections; decreased in radiation treatment, AIDS, and corticosteroid therapy Increased in chronic inflammation, viral infections, and tuberculosis; decreased in aplastic anemia and corticosteroid therapy Increased in allergies, parasitic infections, and some autoimmune disorders; decreased in steroid therapy Increased in inflammatory processes and during healing; decreased in hypersensitivity reactions and corticosteroid therapy
Immunoglobulin electrophoresis (IgA, IgG, IgM)	Adults: IgA: 85-330mg/dl IgG: 565-1765mg/dl IgM: 55-145mg/dl IgD and IgE: values should be minimal	Increased levels of IgG occur with infections; IgA levels increase with chronic infections and autoimmune disorders; IgE levels increase with allergic reactions and skin sensitivities; IgM levels are highest early in the immune response.
Antinuclear antibody	No antinuclear antibodies detected.	Positive test occurs in up to 95% of persons diagnosed with SLE; false positive can occur with rheumatoid arthritis and other autoimmune disorders.
Anti-DNA antibody test	Low levels or none	Positive test with high levels of antibodies occurs in 40-80% of persons with SLE.
Total complement assay	Total complement: 41-90 hemolytic units C ₃ : 55-120mg/dl C ₄ : 20-50mg/dl	Total complement and C ₃ are decreased in SLE and glomerulonephritis and increased in rheumatic fever, rheumatoid arthritis and certain types of malignancies.
Rheumatoid factor test	Negative	Positive test in 80% of cases indicates rheumatoid arthritis, but results may also be positive in SLE and myositis, other inflammatory conditions.
AIDS serology Enzyme-linked immunosorbent assay (ELISA)	Negative	Positive test indicates detection of antibodies against HIV. Tests given in the early stages of infection yield a negative result; positive results may not develop for 6 months. HIV-positive status is assigned after two different tests are positive for the antibodies and the Western blot are positive.
Western Blot	Negative	Positive test indicates detection of antibodies to specific viral proteins.