

LAB TESTS EXPLAINED



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LAB TEST	DESCRIPTION	RELEVANCE IN VASCULITIS & AUTOIMMUNE DISEASE	WHEN TO BE CONCERNED
CBC (Complete blood count)	Common blood test that includes white blood cell count and subsets (such as eosinophils), hemoglobin, platelets and other parameters that describe the quality of the red blood cells	Blood test that is used for general health monitoring, not specific to vasculitis.	Refer to individual components of CBC.
WBC (White blood cell count)	Immune cells that protect us from infections and foreign particles. Responsible for generating inflammatory responses.	Can be high during active vasculitis flare.	High WBC + fevers may suggest infection.
	Neutrophils A type of WBC that acts as the “first responder” in most infections.	Can be high during active vasculitis flare. Can also be high when taking prednisone.	High WBC + fevers may suggest infection. Persistently low neutrophils (less than 0.5) may predispose you to infections.
	Eosinophils A type of WBC that contributes to allergic responses and clearance of parasitic infections.	High in EGPA	Persistently high eosinophils + fevers may suggest infection, drug reaction or hematological disorder (or uncontrolled EGPA).
	Hemoglobin Indirect measure of red blood cells and iron supply in the body. Responsible for iron transportation in the body.	Can be low due to blood loss, active vasculitis flare, drug reaction, autoimmune destruction of red blood cells, or chronic kidney disease.	May need a blood transfusion if very low (less than 80).
	Platelets Tiny blood cells in the blood that help your body form clots to stop bleeding.	Can be high during infection or active vasculitis flare.	If very low (less than 50), you may develop easy bruising and prolonged bleeding.
Creatinine	Measure of kidney function – high creatinine indicates low kidney function.	High during active kidney inflammation. Can also be high with dehydration, chronic kidney disease, kidney stones and kidney infections.	Rapidly rising creatinine needs urgent evaluation.
EGFR (Estimated glomerular filtration rate)	Measure of kidney function during a stable period – low EGFR indicates low/poor kidney function. Not as useful or reliable during acute health changes. EGFR is directly related to creatinine (the higher the creatinine, the lower the EGFR)	Low EGFR is seen in chronic kidney disease	EGFR less than 15 indicates advanced and sometimes end-stage kidney disease. Discussion about dialysis may be relevant.
ALT (Alanine aminotransferase)	Liver enzyme that is released during liver (or sometimes muscle) injury.	Can be high during severe systemic inflammation from any cause, or from drug-related toxicity.	If ALT is persistently higher than twice the upper limit of normal (ie. >80), hepatotoxic medications may need to be adjusted or stopped.
CRP (C-reactive protein)	“Inflammation marker” – Protein that is released (by the liver) during inflammation.	High during active vasculitis and normalizes when vasculitis is controlled.	High CRP + fever may suggest infection.

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ESR (Erythrocyte sedimentation rate)	"Inflammation marker" – Indirect measure of inflammation based on the electrostatic forces between red blood cells in the blood.	High during active vasculitis, but can also be slightly elevated in other conditions (anemia, older age, pregnancy...)	High ESR + fevers may suggest infection.
Urinalysis	Urine dip stick that provides information about the content and quality of your urine.	High levels of blood (hematuria) and protein (proteinuria) in the urine indicate kidney inflammation (glomerulonephritis). High levels of protein in the urine without blood more often indicate kidney damage without active inflammation.	Red blood cell casts in the urine indicates active glomerulonephritis. High levels of protein in the urine indicate ongoing kidney damage – performing a urine ACR and/or 24-hour urine analysis next would be helpful to quantify the proteinuria.
Urine albumin-creatinine ratio (ACR)	Easy way to measure & estimate the amount of protein in the urine, on a urine sample.	High ACR indicates large amount of proteinuria.	Progressively increasing ACR indicates kidney damage. Kidney-protective medications can be prescribed to reduce the proteinuria.
24-hour urine protein	More labour intensive method to measure the amount of protein in the urine – requires you to collect your urine over 24 hours.	High 24-hour urine protein indicates ongoing kidney damage.	Progressively increasing 24-hour urine protein indicates ongoing kidney damage. Kidney-protective medications can be prescribed to reduce the proteinuria.
MPO-ANCA	Antibody against myeloperoxidase, which is found in neutrophils.	Used to diagnose ANCA-associated vasculitis, mostly in MPA and EGPA.	Usually high during a flare (may or may not normalize once in remission).
PR3-ANCA	Antibody against proteinase-3, which is found in neutrophils.	Used to diagnose ANCA-associated vasculitis, mostly in GPA.	Usually high during a flare (may or may not normalize once in remission).
IgA, IgM, IgG, IgD, IgE	Types of immunoglobulins (antibodies) in the body.	High levels can be seen in various inflammatory & autoimmune conditions, hematological disorders, infections, and allergies.	Very low immunoglobulin levels can increase your risk of infections.
Cryoglobulins	Circulating proteins consisting of antibodies and other immune proteins that clump together at temperatures <37C, leading to vessel lumen occlusion.	Used to diagnose cryoglobulinemic vasculitis.	Mainly used to help make a diagnosis. Levels are not routinely followed.
Rheumatoid factor (RF)	A special type of immunoglobulin that is typically used to help diagnose rheumatoid arthritis.	Apart from rheumatoid arthritis, high RF can be seen in other inflammatory conditions, including Sjogren's, autoimmune liver disease, chronic lung disease, infections and cancers.	Mainly used to help make a diagnosis. Levels are not routinely followed even when there is a disease flare.
C3, C4 (Complements)	Special proteins in the blood that play a role in immune responses against infections and foreign substances in the body.	Low levels can be seen in certain types of vasculitis.	Levels are not routinely followed.
SPEP (Serum protein electrophoresis)	Special blood test to measure levels of various proteins in the blood.	Abnormal SPEP with elevated "monoclonal proteins" can be seen in blood disorders such as multiple myeloma	Abnormal SPEP demonstrating monoclonal gammopathy ("M spike") should prompt referral to hematology.