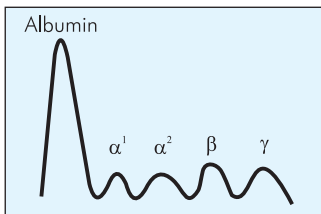


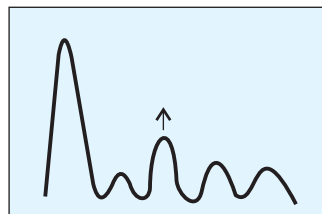
Serum Protein Electrophoresis- Basics

Serum protein electrophoresis (SPEP) is the first line that measures major blood proteins by separating them into five distinct fractions: **albumin, alpha₁, alpha₂, beta and gamma proteins**. This test is quick, comprehensive evaluation that serves as baseline investigation and subsequent studies including identifying patients with multiple myeloma and other disorders. Sometimes, the results of this examination are difficult to interpret. Commonly recognized electrophoretic patterns are summarized in the following table:

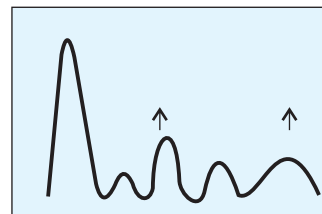
Pattern	Protein Changes	Conditions
Acute Inflammation	Normal or Decreased Albumin Increased α^1 &/or α^2 Fractions	Acute infection and inflammatory disorders
Chronic Inflammation	Normal or Decreased Albumin Increased α^1 Fraction or α^2 Fraction Increased γ Globulin	Autoimmune diseases, chronic liver disease, chronic infection and cancers
Hypogammaglobulinemia	Normal or Decreased Albumin Decreased γ Globulin	Lymphoproliferative disorders, inflammatory bowel disease and congenital immunodeficiencies
Polyclonal gammopathy	Increased γ Globulin	Autoimmune disease, infections and Liver diseases
Monoclonal gammopathy	Normal or Decreased Albumin Increased γ Globulin	Myeloma, macroglobulinemia, CLL, lymphoma etc.
Protein losing disorder	Decreased Albumin Decreased α^1 Fraction Increased α^2 Fraction Increased β Fraction	Nephrotic syndrome, exudative skin disorders & gastroenteropathies



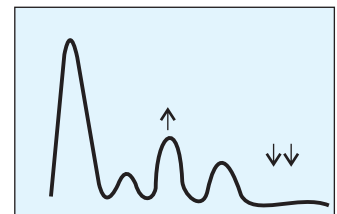
Normal Pattern



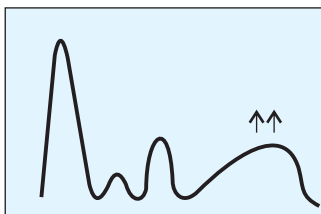
Acute Inflammation



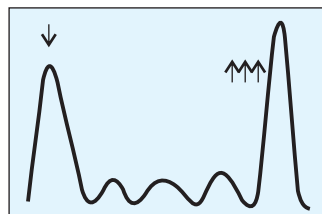
Chronic Inflammation



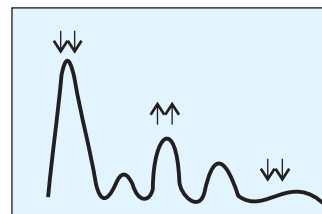
Hypogammaglobulinemia



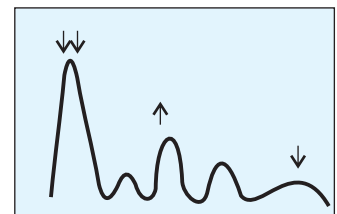
Polyclonal gammopathy



Monoclonal gammopathy



Nephrotic Syndrome



Protein-losing Enteropathy

