

Important message from the Department of Pathology & Laboratory Medicine on requesting serum protein electrophoresis

Serum Protein Electrophoresis – What is it & when should I do it??

Serum protein electrophoresis (SPE) is the method of separating proteins in serum using the principles of electrophoresis. The primary indication for serum protein electrophoresis is to identify/follow a monoclonal gammopathy.

Clinical situations in which serum protein electrophoresis may be indicated:

Unexplained peripheral neuropathy
New onset normocytic anemia associated with renal insufficiency or bone pain
Unexplained pathologic fracture or lytic lesion(s) on radiograph
Back pain in older patient and plasma cell myeloma is suspected
Hypercalcemia attributed to possible malignancy
Renal insufficiency with associated elevated serum protein
Unexplained proteinuria, overflow type

When not to order serum protein electrophoresis:

Although serum protein electrophoresis can show different patterns in many diseases including liver disease, chronic inflammation, acute infections, autoimmune diseases etc. this test modality should not be used to diagnose or follow these.

TIPS- do's & don't's:

- 1.) In a patient with a high pre-test probability of monoclonal gammopathy and SPE is reported as negative, call 473 – 6664 to request immunofixation (a slightly more sensitive method for identifying and typing monoclonal gammopathies).
- 2.) If the pre-test probability for a monoclonal gammopathy is low and the SPE is negative it is highly unlikely that this patient has a monoclonal gammopathy. Repeat SPE is NOT indicated unless the clinical situation changes.
- 3.) In patients with an elevated gamma fraction which SPE characterizes as polyclonal - do NOT repeat SPE unless clinically something changes.
- 4.) Do not follow reactive SPE patterns and/or conditions with repeat SPE. Resolution of reactive conditions is better followed clinically or with other testing modalities.

A note about the dreaded "tiny restriction"

Sometimes the serum protein electrophoresis shows only a very tiny abnormality which we report as a tiny restriction. These often are indicative of reactive plasma cell proliferations seen in infections and other reactive processes. Repeat serum protein electrophoresis is indicated but please allow time for resolution, usually 6-12 months. If repeat serum protein electrophoresis is done too early resolution is not achieved and often the tiny restriction persists.

If you have any queries on the above, please call Dr. Andrea Thoni 902- 4736867