Serum Albumin Test

- Assesses the level of albumin, a protein produced by the liver; low levels may suggest liver dysfunction.

Albumin is produced by the hepatic parenchymal cells, with its synthesis rate influenced by colloidal osmotic pressure and dietary protein consumption. Additionally, the synthesis rate is regulated by feedback mechanisms based on plasma albumin levels. Remarkably, maintaining plasma albumin concentrations can occur with only 10% of the normal hepatocyte mass. The half-life of albumin is approximately 21 days, and traces of it are present in nearly all extracellular body fluids, with minimal loss through excretion.[1] Albumin is catabolized in various tissues, where it is taken up by cells via pinocytosis. The amino acids released through intracellular proteolysis are then returned to the body's amino acid pool. In cases of liver disease, serum albumin levels decrease, indicating reduced synthesis. Conversely, if liver function is intact but serum albumin is low, it may suggest inadequate protein intake (malnutrition) or protein loss due to conditions such as nephrotic syndrome, malabsorption, or protein-losing enteropathy.[2]

References

1. Rozga J, Piątek T, Małkowski P. Human albumin: old, new, and emerging applications. Ann Transplant. 2013 May 10; 18:205-17.
2. Chen CB, Hammo B, Barry J, Radhakrishnan K. Overview of Albumin Physiology and its Role in Pediatric Diseases. Curr Gastroenterol Rep. 2021 Jul 02;23(8):11.