

# Serum Biochemistry Profile

- A serum biochemistry profile is a blood test that provides an overview of many of the body's functions.
- Performing a serum biochemistry profile poses minimal risk for your pet, and in many cases, the information your veterinarian gains from this testing is very valuable.
- Your veterinarian may recommend that your pet not receive any food for 8 to 12 hours before blood is drawn for a serum biochemistry profile. Also, tell your veterinarian about any medications or nutritional supplements your pet may be receiving, as some products can alter the results of this test.

### What Is a Serum Biochemistry Profile?

Blood testing is commonly used to help diagnose illness in animals. It can also help determine the state of your pet's health during regular wellness visits, and it is commonly performed before sedation or anesthesia to help determine if a pet is healthy enough to undergo the procedure.

Your veterinarian may recommend a variety of blood tests to help assess your pet's health. A serum biochemistry profile is a blood test that provides a good overview of many of the body's functions. As with any other diagnostic test, results of a biochemistry profile do not tell the whole story of your pet's health. These results are interpreted in combination with physical exam findings, medical history, and other information to assess your pet's health status and determine if additional testing should be recommended.

Depending on which diagnostic laboratory is used, a serum biochemistry profile can be called different things, including "Superchem" and "Vetscreen," and the profile may differ in the tests it includes.

### How Is a Serum Biochemistry Profile Performed?

To perform a serum biochemistry profile, your veterinary team must obtain a small blood sample from your pet. This procedure is usually very quick; it may take only a few seconds if the patient is well

behaved. For patients that are very frightened or not well behaved, your veterinary team may want to use a muzzle, towel, or other method of gentle restraint. In some cases, such as in patients with very thick fur, it may be necessary to shave the hair from the area where blood will be drawn. The hair will grow back, and this is often a good way to find the vein quickly.

Some veterinary offices have in-house blood analysis equipment, so they can perform a serum biochemistry profile in the office and have results the same day. Other offices send blood samples to an outside laboratory for the test to be performed. If an outside laboratory is used, results are generally available within 1 to 2 days.

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Because a recent meal changes the blood and may affect the results of a serum biochemistry profile, your veterinarian may recommend that your pet not receive any food for 8 to 12 hours before blood is drawn for this test. In most cases, water can still be offered. Please let your veterinarian know if this temporary fast will be a problem for you or your pet.

Also, be sure to tell your veterinarian about any medications or nutritional supplements your pet may be receiving, as some products can alter the results of a serum biochemistry profile.

### What Does a Serum Biochemistry Profile Tell Your Veterinarian?

The serum biochemistry profile measures a variety of chemicals and enzymes (proteins that are involved in the body's chemical reactions) in the blood to provide

very general information about the status of organ (especially the liver, kidneys, and pancreas) health and function. The biochemistry profile also shows the patient's blood sugar level and the quantities of important electrolytes (molecules like sodium, calcium, and potassium) in the blood. Any of the following values may be included in a serum biochemistry profile:

- Serum biochemistry values that help provide information about the liver include the **ALKP** (alkaline phosphatase), **ALT** (alanine aminotransferase), **AST** (aspartate aminotransferase), and **TBIL** (total bilirubin).
- Serum biochemistry values that help evaluate the kidneys include the **BUN** (blood urea nitrogen) and **CREAT** (creatinine).
- **AMYL** (amylase) and **LIP** (lipase) are enzymes produced by the pancreas.
- Electrolytes are checked for quantity and for proportion to other electrolytes. They include **Ca** (calcium), **Cl** (chloride), **K** (potassium), **Na** (sodium), and **PHOS** (phosphorus.) Electrolyte abnormalities can be associated with many types of health issues.

### What Is a Serum Biochemistry Profile Used For?

A serum biochemistry profile is an important component of wellness blood work. Your veterinarian may recommend wellness blood work during your pet's regular exams. Even if your pet is young and healthy, performing this testing periodically can help establish "normal" values for your pet. The next time blood work is performed, your veterinarian can compare the new results with previous results to see if anything has changed. Depending on your pet's age and health history, additional tests (such as thyroid testing or urinalysis) may also be recommended as part of wellness testing. For seniors or chronically ill pets, your veterinarian may recommend blood work more frequently.

A serum biochemistry profile can help screen for many medical conditions, including diabetes and kidney disease. In many cases, early diagnosis and management can improve quality of life and long-term outcomes for pets with chronic illnesses.

When a pet presents with clinical signs indicating an illness, a serum biochemistry profile may be performed very early during the diagnostic process. Even if results of this initial testing are all "normal," this information can rule out a variety of medical conditions. If your pet has abnormal or inconclusive biochemistry profile results, your veterinarian will combine that information with other vital information about your pet to decide if further diagnostic testing is recommended. Additional tests may include a urinalysis, radiographs (x-rays), or additional blood testing. Depending on your pet's overall condition, your veterinarian may recommend medications or other management.

A serum biochemistry profile can also be part of routine blood work that is performed before a pet undergoes sedation or general anesthesia for a surgical procedure. If test results are abnormal, your veterinarian may recommend additional precautions to help ensure your pet's safety during the procedure. Your veterinarian may also recommend postponing the procedure or choosing an alternative treatment option.

### Are There Risks Associated with Performing a Serum Biochemistry Profile?

Very few risks are associated with performing a serum biochemistry profile. Drawing blood takes only a few seconds, and your veterinary team will take precautions to ensure that your pet is not injured during this procedure. Once blood is obtained, all further processing is performed at the veterinarian's office or at a diagnostic laboratory, so there is no risk of harm to your pet.

Performing a serum biochemistry profile poses minimal risk for your pet, and in many cases the information your veterinarian gains from this testing is very valuable.