

What is involved in preparation for anesthesia and surgery?

With modern drugs and sophisticated equipment, the risk associated with general anesthesia and surgery is minimal for the healthy pet.

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However, the potential for complications still exists, and the best way to minimize the risk for your pet is to have a complete pre-surgical evaluation performed before the procedure. This allows the veterinarian to determine if your pet has any underlying problems that might lead to complications, and to make any adjustments necessary to safeguard your pet's health and comfort.

What is involved in preparation for anesthesia and surgery?

The amount of preparation will be dictated by the age and health concerns of your pet, and by the nature of the procedure being undertaken.

In general, terms, preparation can be divided into three stages:

1. physical examination,
2. routine blood testing, and
3. additional testing.

1. The physical examination

The physical examination includes

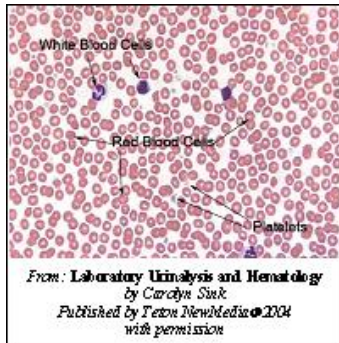
Figure 1

- a systematic visual inspection of the pet's head, neck, limbs, and body,
- palpation (feeling with the hands) of the body's outer surface (skin, fur, muscles etc.), and assessment of internal abdominal organs through the body wall,
- auscultation (listening with a stethoscope) to the heart, lungs, and abdomen.



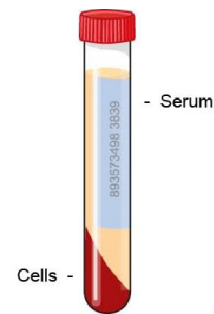
2. Routine Blood testing

Routine blood testing typically includes a complete blood count (CBC) and a serum biochemistry profile; these tests provide a wealth of important information about a pet's health status.



Complete Blood Count - this simple test analyses the cellular components of blood. These include red blood cells, which carry oxygen to the tissues, white blood cells, which fight infection and respond to inflammation, and platelets, which help the blood to clot. The CBC provides details about the number, size, and shape of the various cells types, as well as any abnormalities that may be present. (See handout *Complete Blood Count*). If there are deficiencies in the red cells, white cells or platelets, or if there are abnormal cells present, then anesthesia and surgery should be delayed, if possible, until the underlying problem is corrected.

Serum Biochemistry Profile - this is a series of tests performed on serum, which is the liquid component of blood. These tests provide information about how well the various organs of the body are working. Each test provides details about a specific organ or metabolic disease. For example, there are tests to assess the function of the liver, kidney and pancreas, and tests to identify the presence of diabetes, etc. (See handout *Serum Biochemistry*). Major abnormalities, especially involving the liver or kidney, or evidence of serious metabolic disease would justify delaying anesthesia and surgery until the underlying problem was corrected.



3. Additional Testing - a number of additional tests may be performed, either as part of routine preparations, or in response to some irregularity, deficiency or abnormality identified on physical examination or routine blood testing.



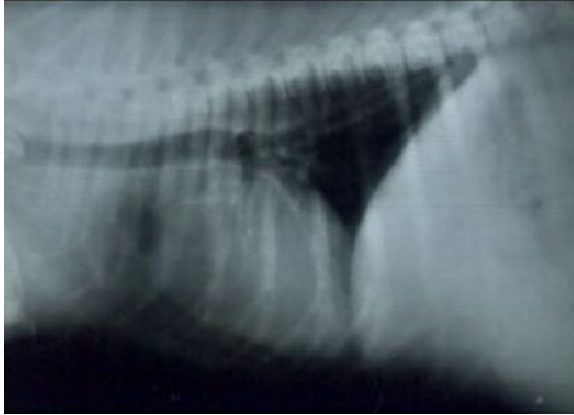
Urinalysis - examination and analysis of urine is necessary for a complete evaluation of the urinary system. Urinalysis provides information about kidney function, inflammation in the kidneys or bladder, some metabolic diseases (e.g. diabetes), and the presence of urinary crystals. Urinalysis is recommended as a part of routine pre-anesthetic testing and is especially important whenever there are signs of problems involving the kidney or bladder.

Thyroid testing - The thyroid gland acts as a "thermostat", setting the metabolic rate of the whole body (See handout *Thyroid Testing*). Thyroid testing prior to surgery is important for both dogs and cats, but for different reasons.

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In the dog, thyroid disease usually involves a poorly functioning gland (*hypothyroidism*), and may result in poor wound healing following surgery. ***In the cat***, thyroid disease usually involves an over active gland (*hyperthyroidism*), which leads to stress on the heart and other organs. Hyperthyroidism should be corrected before proceeding with anesthesia and surgery, due to an increased risk of complications.

Imaging - x-rays, ultrasound, or other imaging techniques may be recommended prior to anesthesia and surgery, especially if abnormalities or irregularities are found on routine testing. If your veterinarian has concerns about your pet's heart function, or needs to know whether a cancer has spread, or wants to evaluate the best approach to the surgery, etc., diagnostic imaging may provide the answers.



Electrocardiogram (EKG) - an electrocardiogram involves attaching painless electrodes to specific points on the pet's body, similar to the procedure in humans. The electrodes

detect tiny electrical signals sent from the heart with each heartbeat. These electrical pulses are recorded on a strip of paper by the EKG machine, giving a graphic printout or "tracing" of the electrical activity within the heart. The veterinarian can examine the tracing to determine if the pet has a normally functioning heart.

Summary

"Once all the test information has been gathered and analyzed, your veterinarian will make recommendations about the advisability to proceed with anesthesia and surgery."

Once all the test information has been gathered and analyzed, your veterinarian will make recommendations about the advisability to proceed with anesthesia and surgery. In some situations, the risk will be too great, and the procedure will be delayed to allow time to treat the underlying problem. In other cases, the decision will be that it is safe to proceed as planned.

Sometimes adjustments will be made to minimize risk even further, such as using a different type of anesthetic, administering pre-surgical antibiotics, giving intravenous fluids prior to the surgery, etc.

It is important to note that there is a small but unavoidable risk whenever a pet undergoes anesthesia and surgery. Pre-surgical preparation does not eliminate this risk, but it greatly reduces the potential for unexpected complications, and goes a long way towards ensuring your pet has a safe procedure, and a smooth and uneventful recovery.