The liver must be extensively damaged before signs of disease are seen by the naked eye.

My next appointment

Pet: ____________________________
Date: __________________________
Doctor: __________________________
Contact Number: __________________________
Reason for Appointment: __________________________

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Liver Disease
A pet owner’s guide to diagnosis & treatment

As one of the most complex and vital organs of the body, the liver performs many functions that contribute to the overall health of your pet. It is extremely important for your pet to maintain healthy liver function. It is also important to diagnose and treat any issues associated with the liver. Sometimes, liver dysfunction may go unnoticed to the naked eye but can be found and treated with the appropriate testing using an in-clinic laboratory.

Testing recommendations

Testing recommendations are made based on your pet’s breed, age or history. These may include:

Level 1*
Chemistry Panel
Complete Blood Count

Level 2*
Chemistry Panel
Complete Blood Count
Urinalysis

Level 3*
Chemistry Panel
Complete Blood Count
Urinalysis
Thyroid Testing
Blood Pressure
Electrocardiogram

3240 Whipple Avenue
Union City, CA 94587
www.abaxis.com

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Important functions performed by the liver are:

1. Creates proteins used by the body, stores sugars and regulates fats.
2. Removes or metabolizes waste (break down) products from the blood.
3. Filters old cells from the blood.
4. Creates bile acid to aid fat digestion in the intestines
5. Alters medications to activate or remove them from the body.

Testing and monitoring your pet’s liver should be performed when there are indications that the liver may not be functioning properly or when your pet is prescribed medications for long term use.

The liver may be affected by such disease states as:

- Hepatitis (liver inflammation)
- Cirrhosis or Fibrosis (normal tissue is replaced with scar tissue)
- Bile duct obstructions/cholestasis
- Gall bladder inflammation or stones
- Cancer
- Circulatory abnormalities/blood shunting

Diagnosis of Liver Disease

Each liver disease is different, but most liver diseases require several tests to completely diagnose the condition. These tests include:

- **Complete Blood Count (CBC)**
  - Evaluates the blood cell counts for anemia, inflammation, infection and platelet counts.
- **Chemistry and Electrolyte Panel**
  - Tests specific to the liver can be evaluated as well as total body function.
- **Bile Acid Study**
  - Elevated Bile Acid levels confirm the presence of liver disease and may help determine the cause.
  - They also help evaluate liver function.
- **Blood Coagulation Tests**
  - The liver produces many of the factors involved in the blood clotting system. These tests evaluate the ability of blood to clot if the liver is ill.
- **Radiology (X-Ray)**
  - Helps determine the size, shape and location of the liver to assist with diagnosis and evaluate the entire abdomen for other potential causes of the symptoms your pet is experiencing.
- **Ultrasound**
  - Real time images of the liver can greatly assist diagnosis through evaluation of liver texture and circulation.
- **Biopsy**
  - Obtaining a piece of tissue for evaluation microscopically often is necessary for a full diagnosis.

Monitoring Liver Disease and response to treatment

Once liver disease has been diagnosed, it is vitally important to monitor the progression of the disease to see how the liver is responding to the treatment being provided. This may involve regularly scheduled blood tests such as a complete blood count (CBC), chemistry profile, regular bile acid tests and possibly radiographs or ultrasound tests. Your veterinarian will discuss those options with you in the best interest of your pet. However, it is very important that you follow recommendations closely and remember that monitoring your pet’s health is most effective when performed in a comprehensive manner and on a regular basis. This is often every 3 months.

Use of medications

Many medications are metabolized or detoxified in the liver. The liver needs to be in healthy condition to perform this function as it often changes the medication to its active form. In many cases, the liver may be ill, but there are no outward signs of the disease. This is called sub-clinical disease and often occurs early in the course of the disease or with mild disease. If there is pre-existing liver disease, many medications will worsen the function of the liver. It is also possible that any medication may have adverse affects on the liver due to what is called an idiosyncratic reaction.

Liver health must be ensured prior to beginning long term medications and monitored while taking these medications. Poor liver function may cause a medication to be less effective, more effective or increase its side effects. Veterinary organizations such as the American Animal Hospital Association (AAHA) strongly recommend understanding the medications your pet takes, regular examinations, and monitoring while taking these medications.

Non-steroidal Anti-inflammatory Medications (NSAIDs)

NSAIDs are commonly used medications for conditions such as arthritis. Veterinary medications for such conditions include medications such as carprofen, deracoxib, firocoxib, and meloxicam just to name a few. Veterinary medications are designed to be safe and effective in animals. Many human NSAIDs are unsafe and dangerous for your pet. Please consult your veterinarian before giving your pet any human medicine.

Most NSAIDs are broken down and cleared from the blood by the liver and then removed from the body through the kidneys (urine) or stool. Liver toxicity, when it occurs, is often caused by breakdown of the medication in the liver. Kidney toxicity is also possible, but is caused by a more direct effect of the medication on that organ. The potential effects on the kidney should also be monitored and precautions, such as ensuring your pet drinks sufficient amounts of water, should be taken.

Your veterinarian will determine the optimal testing and re-evaluation for your individual pet, but there are some routine guidelines to follow:

- Notify your veterinarian if your pet has any of the following signs:
  - Vomiting, diarrhea or evidence of blood in the stool (dark or red color)
  - Change in appetite
  - Change in behavior (agression, depression, reduced activity, in-coordination)
  - Lethargy
  - Increase or decrease in drinking or urinating (also watch for changes in the character of the urine)
  - Changes in the skin such as redness or scabs
  - Jaundice - yellowing of the gums, eyes and ears

Schedule twice yearly physical examinations. Have regular complete blood counts (CBC), chemistry panels and urinalysis performed (this may be as often as every 3 months for some tests).

Liver Disease
Processing anything that enters the body, the liver is very prone to injury and disease. With two completely separate blood supplies, the liver connects to the body through the general systemic circulation, and it’s also directly connected to the intestinal tract through a system called the hepatic-portal circulation. This exposes the liver to many factors not encountered by other organs in the body.