

FACT SHEET

Liver Conditions

The liver

The liver is a large reddish-brown organ situated in the abdominal cavity and lying just behind the diaphragm. In some ways it can be described as the chemical factory of the body, this is because it is involved in numerous processes, all of which are essential for health and general well being. These functions can be summarised as follows.

Metabolism of carbohydrates, fats and proteins

With carbohydrates, the liver cells extract the excess carbohydrate that occurs after feeding and converts it to glycogen for a stored energy reserve. If the glucose level in the blood stream then falls, the glycogen can be converted back to glucose and used within the body for energy. However, if there is an excess stored that is not required, the liver will convert this to fat.

Digested protein material, containing its amino acids, is selected when it reaches the liver. Some amino acids are passed directly to other cells for their synthetic processes. Others will be converted into glucose for energy, or used by the liver to produce other proteins such as albumen and fibrinogen, which are essential for the blood clotting mechanism. During the production of glucose from protein, a substance called ammonia is produced, and the liver cells have to convert this substance to urea as it can then be excreted out of the body through the kidneys.

The liver is also important for the metabolism of fats. The liver converts fats into substances such as cholesterol and phospholipids, which are major components of cell membranes and structures within cells.

Storage

The liver stores carbohydrate in the form of glycogen, fat and the fat soluble vitamins A, D, E, K and Iron.

Production of bile

Bile is a greenish yellow fluid produced by the liver cells. It is an alkaline substance and is needed by the body to aid digestion, it neutralises the acid chyme (stomach digested food), as it enters the alkaline environment of the small intestine.

Detoxification

Any harmful foreign substances such as drugs, poisons, chemicals and other unusable substances are inactivated by the liver cells, being converted into less harmful substances and later excreted. The liver is also involved in the body's defence system, it contains scavenging cells that help trap and destroy invading organisms such as viruses and bacteria preventing them from reaching the rest of the body.

Causes of liver disease

As the liver performs so many vitally important functions, any disturbance of its mechanisms is likely to be serious. Disturbances can be caused by many conditions. Common factors are viral infections such as Infectious Canine Hepatitis and bacterial infections such as Leptospirosis. Other common causes are the swallowing of poisonous substances, which may damage the liver as it attempts to detoxify and eliminate the poison.

In many cases it is difficult to tell just what initiated a liver problem, as an animal gets older and starts to suffer from other problems it can put an added strain on the liver's ability to cope. Unfortunately it is not uncommon to see cancer of the liver which will start to destroy the liver cells affecting their ability to carry out their vital functions.

Signs & symptoms

Symptoms will vary considerably according to the severity of the condition and the cause. However, common symptoms can include vomiting, loss of appetite and lethargy. In more severe cases you may notice jaundice, this being yellowing of tissues (in dogs best seen in the whites of the eyes and gums) and perhaps the passing of diarrhoea or light-coloured fatty-looking motions, possibly from insufficient bile or poor digestion. In some cases where liver disease is advanced you will also see swelling of the abdomen due to an accumulation of fluid, and the animal will appear pot-bellied.

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The main difficulty in spotting a liver problem is that as an organ, it has tremendous capability of regeneration and some symptoms may not become evident until the organ is in late stages of disease and damage: you may lose up to 80% of your liver function but it can still recover and rejuvenate with treatment and preventative measures.

Management

In many cases, where problems have been caused by poisonings and infections, the liver has the ability to repair itself, providing the damage is not too advanced. Antibiotics will often help fight against bacterial infections, whilst other causes can only be helped by good management. There are a number of herbal remedies that are available, which help stimulate the liver's functions. Common remedies are Dandelion and Barberry, which help the flow of bile, improving digestion and helping the body eliminate toxins. Anything that reduces the workload on the liver will help to aid repair.

Toxic or foreign chemical substances not required by the body should obviously be avoided. This includes certain drugs and artificial additives, preservatives, colourings and flavourings used within many of today's pet foods. All these substances have to be processed by the liver before being expelled from the body.

Small easily digestible meals should be fed, little and often as your dogs slowly recovers his appetite. The protein level should be low but contain protein of high biological value such as fresh chicken, eggs and fish. Easily digestible carbohydrate should be provided as an energy source, with salt and phosphorus levels reduced.

How can Naturediet help?

Naturediet Senior/Lite or Naturediet Sensitive may be suitable for a dog with a liver condition as like all of the Naturediet products they are free from all chemical additives, therefore not putting extra strain on the liver to detoxify the food during digestion.

Naturediet Senior/Lite is easily digestible, lower in protein and contains a good quality protein and carbohydrate source. Naturediet Sensitive has been specifically developed to aid the treatment of dogs that may have sensitivity or digestive problems. The diet contains no added salt and a low phosphorus level. All Naturediet products use a container that is suitable for use within microwave ovens and this is useful for encouraging a dog with a poor appetite due to a liver condition.

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