

# Phenobarbital - Owner information sheet

**Seizures are caused by abnormal electrical discharges from nerve cells in the brain. Phenobarbital suppresses seizure activity by reducing the electrical charge within these cells.**

## **How much phenobarbital should my dog have?**

The starting dose is normally 2-3 milligrams (mg) for every kilogram (kg) body weight twice daily. Most dogs will require 3mg/kg twice daily to control seizure i.e. a 30kg Golden Retriever will receive 90mg twice daily. In some cases your vet will build up slowly to this dose.

The dose required to control seizures varies greatly between individuals. What is important for seizure control is the concentration of drug in your pet's blood (see below). Every dog breaks down and gets rid of the drug at a different rate. Phenobarbital must be given every 12 hours otherwise the concentration of drug in the blood may dip making your pet more prone to seizures.

It does not matter whether phenobarbital is given with food or between meals. What is important is that it is given at a regular time each day so that doses are never forgotten.

Phenobarbital therapy should not cease suddenly otherwise your pet may have 'withdrawal seizures'.

## **Why does my vet need to take blood samples?**

The concentration of phenobarbital in the blood is normally measured by taking a blood sample 10-14 days after starting treatment. Blood levels should also be assessed every 6-12 months or 2 weeks after a change in dose, and at other times where seizure control is poor, for example, if there is an unexpected seizure. Some vets like to measure the lowest blood levels of phenobarbital (usually just before a dose is due) but these "trough" concentrations are not essential. However, it is good practice to always

- 1) use the same laboratory to test the samples
- 2) obtain the blood samples at the same time after medication
- 3) fast your dog for at least 12 hours before collection of a blood sample. Lipaemia (fat in the blood) can affect results.

Blood concentrations should be at least 100 mol/l or 20 mg/l to control seizures in most dogs. If the seizures are still not adequately controlled (clusters of >3 seizures or seizures occurring more frequently than every 6 weeks) when the phenobarbital serum concentration is 25-28mg/l (120 -140µmol/l) then your vet may want to consider adding or changing to another drug.

### What side effects can phenobarbital cause?

#### *Sedation and poor co-ordination*

This is normally seen at the start of therapy, after increases in doses, or with the addition of another drug e.g. bromide. This effect typically wears off within two weeks. If it doesn't or is excessive then your vet may advise that you reduce the dose of phenobarbital or switch to another drug.

#### *Increased urination and drinking*

Phenobarbital acts like a diuretic. Your pet must always have access to water when on phenobarbital treatment otherwise they can get dehydrated. Some animals on high doses may have wet in the house overnight or when left for extended periods.

#### *Increased appetite*

Phenobarbital therapy can increase your pet's appetite however they often do not require more food. Weight gain can be a difficult problem to avoid. It may help to feed a lower calorie food so that your pet can eat more without gaining weight. Extending mealtimes for example by using a Bustercube™ (<http://www.bustercube.com>) can also be helpful.

#### *Liver damage*

This is a frequently talked about problem in animals on anti-epileptic medication, but in reality it is rare. Phenobarbital is processed in the liver which can be damaged as it breaks down phenobarbital. This may happen in two circumstances:

- 1) The animal is unusually sensitive to the drug (so called idiosyncratic reaction)  
- unfortunately this is impossible to predict
- 2) There is pre-existing liver disease. - for this reason blood samples are normally taken to check liver function prior to starting therapy and periodically (usually every 6-12m) whilst on therapy.
- 3) Excessively high doses of drug are given over the prolonged period.  
The author advises against maintaining a serum concentration greater than 30mg/l or 145µmol/l or a dose greater than 12mg/kg/day

#### *Pancreatitis*

Epileptic dogs are at greater risk of pancreatitis – i.e. inflammation of the pancreas. Pancreatitis may result in clinical signs such as vomiting and anorexia and in severe cases can be life-threatening. It is likely that there are multiple risk factors for this disease which may include obesity, persistently high resting triglyceride, a high fat diet, a tendency to scavenge and high doses of phenobarbital combined with bromide.

#### *Blood cell abnormalities*

Extremely rarely phenobarbital may induce problems with blood cell production / destruction. If you are concerned about your pet in any way after they have been prescribed phenobarbital then contact your veterinary surgeon.