

Intravenous fluids for horses

WHY GIVE INTRAVENOUS FLUIDS TO HORSES?

Intravenous fluids are given to horses when they have lost fluids, have become dehydrated, or cannot drink. They are used to ensure the horse has good circulation. Without enough fluids, the heart cannot distribute oxygen throughout the body and damage to vital organs occurs rapidly. As well as carrying oxygen, blood also contains minerals (electrolytes).

Electrolytes are necessary for muscles to function, including the heart. When body fluids are lost, levels of electrolytes often become low or unbalanced, so fluid therapy plays an important role in correcting these disturbances. In diseases such as diarrhoea or colic, fluid therapy is often the most important treatment to save a horse's life.



HOW DOES A HORSE LOSE FLUID?

There are 300 litres of water in the body of a 500 kg horse and most of this is held in cells in the body tissues. A 500 kg horse has about 40 litres of this fluid as blood in circulation.

A certain amount of fluid is lost naturally through urine, sweat and as water vapour through breathing. An adult horse should take in around 24 litres of fluid a day - in food and drink - to replace these normal losses. If, for one reason or another, a horse cannot consume this quantity, it will need to receive it directly into the circulation by means of intravenous fluids.

See Figure 1 overleaf for 'Reasons for loss of fluid'.

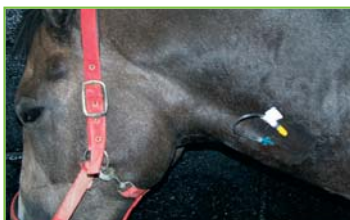


HOW ARE INTRAVENOUS FLUIDS GIVEN TO A HORSE?

To give intravenous fluids, a vet has to 'place' a catheter - a hollow tube made from fluorinated ethylene propylene or polyurethane - in a vein. The catheter is stitched securely in place under local anaesthesia.

Often a clear plastic 'extension tube' is added to the catheter and also attached to the horse's skin. This allows fluids to be connected and disconnected from the catheter without disturbing it where it passes through the skin, and for injections to be given without disconnecting the fluids.

Most catheters are placed in one of the jugular veins, which run down the hollow on each side of the neck. Occasionally, it is not possible - or desirable - to place a catheter in the jugular vein, so alternatives used include: the cephalic veins, on the inside of each foreleg; the lateral thoracic veins, which run low down and towards the front of either side of the chest; and rarely, in foals, the saphenous veins, on the inside of each hind leg.



Typical catheter placement - in the jugular vein



Placement in the cephalic vein



Placment in the lateral thoracic vein



THINGS TO WATCH OUT FOR

There are risks associated with the placement of a catheter into a vein. Because of these risks it is important that the catheter is checked and flushed with a solution of heparin saline to prevent clotting at least twice a day. Any signs that it is becoming dislodged, kinked or is not working should be reported to your vet.

Always ensure that the catheter is securely in place and sealed when not giving fluids. To prevent infection, have clean hands or gloves and avoid touching the area of the catheter that enters the vein. Any pus, heat or hardness in this area – even after the catheter has been removed – should be reported.



HOW ARE FLUIDS SUPPLIED?

Intravenous fluids come in sterile bags typically containing 1, 3 or 5 litres.

The bags are connected to a sterile plastic fluid 'giving set', which consists of plastic tubing, a drip chamber and a dial or slider to control the rate of flow. The drip chamber allows the vet to check that fluids are going into the horse at the correct speed.

Fluids are best given continuously as a 'drip', but in some circumstances vets may have to give the fluids in larger single doses throughout the day. In some circumstances a fluid pump may be used. No matter how the fluids are given, it is important that the horse receives enough to cover not only its daily requirement (60 ml/kg/day) but also all the losses through sweat, urine, or diarrhoea.

Because of the large quantities of fluids very sick horses require and the careful nursing needed for a catheter, horses on a continuous drip are usually hospitalised.



FIGURE 1. REASONS FOR LOSS OF FLUID.

- **Sweating**

Endurance horses, racing in warm and humid conditions, can lose as much as 10 litres per hour of fluid in sweat.

- **Unable or unwilling to drink**

- Transported horses, those with choke, colic, severe injuries to the jaw or teeth, or simply ill or in pain, will not drink properly.
- In winter, field water sources may freeze and prevent drinking.
- Young foals that are not nursing become dehydrated very quickly.

- **Colic**

Horses with colic can go into a state of shock and, therefore, urgently need large volumes of fluid to keep them alive.

- **Diarrhoea**

Severe diarrhoea is a life-threatening condition in horses and can result in the loss of as much as 100 litres of fluid per day.

- **Haemorrhage**

- **Urination**

Horses with some types of kidney damage are unable to concentrate their urine and therefore lose the water that the kidneys would normally retain.

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