

## Ileus (Gut Stasis)

### About ileus

Ileus or gut stasis is the term used to describe a condition where part of or all of the gastrointestinal tract ceases to move. It is very common in rabbits and guinea-pigs, both as a primary and a secondary condition. Peristalsis is the term for the wave-like contractions that are required to pass food along the gastrointestinal tract during digestion, but this is lost when a patient is suffering from ileus. Cessation of peristalsis can cause the cecum to empty too slowly and can lead to harmful bacteria proliferating within the gut. These harmful bacteria emit gas, causing bloating and distension of the gastrointestinal tract and severe pain as a result of this. Some of these bacteria can also release deadly toxins, potentially leading to liver failure. Ileus can also cause severe dehydration and anorexia.

### Rabbit digestion explained

Rabbit diets consist of mainly fibrous or grass-like material, which passes through the small intestine mostly unchanged. It is the small intestine that is responsible for absorbing the nutrients. As the rabbit's diet is high in fibre, and this cannot be broken down by enzymes in the small intestine, the fibrous parts of the food travel on through the colon. In many animals, this is usually eliminated as waste. Rabbits however, have a colon which is able to separate the fibre into two types: digestible and indigestible. The indigestible fibres are eliminated as hard round pellets, which are the type of faeces that rabbit owners will usually see lots of. These indigestible fibres are important in the rabbit's diet because they help with gastrointestinal mobility (they keep peristalsis going) and also provide constant wear for the teeth.

The digestible fibres are pushed backwards from the colon into the rabbit's caecum. The caecum contains lots of bacteria capable of breaking down these fibres. A portion of the digestion products are absorbed straight away, whereas other partially digested fibres are eliminated as caecotrophs. Caecotrophs are small, soft droppings that you may not always see, but are crucial for the health of the rabbit's digestive system. The rabbit then eats these droppings so that they can pass through the digestive tract again. The caecotrophs contain lots of important nutrients, including vitamins B and K and essential amino acids, made available by the partial digestion of the bacteria in the caecum. The bacteria themselves can also be digested for added nutritional value! These nutrients are absorbed during their second passage through the small intestine, and the remaining undigested fibres are passed as hard faecal pellets.

### Digestion in guinea-pigs and other hind gut fermenters

Guinea-pigs are known as 'hind-gut fermenters' like rabbits, but their digestive system varies slightly. Guinea-pigs and some other small mammals such as chinchillas that live primarily on hay and tough grasses also produce caecotrophs like rabbits do, and their digestion occurs in a similar manner. These species also rely on bacteria present within the colon to break down the tough fibres of their food so that the nutritional contents can be absorbed. They also employ a system of retropulsion (food being pushed backwards) to increase absorption of nutrients in a similar manner to rabbits.

### Causes of ileus

Ileus can be caused by a vast array of conditions! It is commonly associated with:

- ❖ Pain
- ❖ Poor diet – diets lacking in tough fibres or another nutritional deficiency
- ❖ Stress
- ❖ Lack of exercise
- ❖ Dental disease

- ❖ Obstruction of the gastrointestinal tract
- ❖ Other underlying diseases related to any of the organs (including respiratory disease, liver disease, kidney disease and cardiac disease)
- ❖ Anorexia
- ❖ Surgery

### **Clinical signs (symptoms)**

Patients with ileus typically display clinical signs such as anorexia, depression, and a lack of or reduced faecal output. Droppings may be smaller and drier than usual initially then cease to be produced at all. Prey animals such as rabbits do not tend to show early signs of illness but wait until they are no longer able to cope with a condition before changing their behaviour. *Always assume that even a minor change in demeanour or loss of appetite could be very serious.*

Patients suffering with ileus may grind their teeth together or vocalise when picked up. They may have a change in body shape or outline, with the abdomen either appearing much larger on one side than the other, or appearing as generally enlarged if gas is present on both sides. The patient may have very sunken eyes within the sockets and may be collapsed.

### **Diagnosis**

Diagnosis of ileus is based on radiographs (x-rays), blood tests and clinical signs. Ileus is most frequently secondary to another condition, so it is essential that the primary cause is found and treated to prevent ileus from recurring at a later date. The patient may require further diagnostics such as ultrasound scans of the abdominal cavity or heart, urine tests, or repeated blood tests and radiography.

### **Treatment**

Ileus is a life-threatening condition because the blood flow from the body back to the heart can be cut off. Patients suffering from this condition need intensive medical care if recovery is to be successful, and this cannot be guaranteed. Treatment usually involves fluid therapy and nutritional support, as well as medications such as pain relief and gut stimulants to try to increase peristalsis. The underlying cause of the gut stasis must be treated. In some cases, the affected patient may require more invasive treatments such as dentistry or abdominal surgery, often as emergency procedures.

### **Recovering patients**

Once discharged from hospital, affected patients will require on-going care at home to prevent the recurrence of ileus. They may have medications such as pain relief or gut motility stimulants to continue, which will need to be given orally. Some patients may require supplemental syringe feeding until they are eating normally for themselves. The patient's appetite should be monitored very carefully, as well as monitoring to ensure that normal faeces are being passed. If the patient shows any signs of inappetence or reduction in faecal output, veterinary advice should be sought without delay.

### **Prevention of ileus**

Although ileus can happen under any circumstances (no matter how well looked after the pet may be!) there are a few things that owners can do to minimise the risk of ileus occurring. These include:

- ❖ Providing a hay or grass-based diet – this provides rabbits and other hind gut fermenters with the necessary long fibres which aid in gut motility, as well as helping to reduce dental disease. Hay and grass should form the majority (80-100%) of the patient's diet.



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- ❖ Keeping your pet in a stress-free environment, away from loud noises where there is lots of disruption, and away from predatory animals including dogs and cats.
- ❖ Increasing exercise – ensure that your rabbit or small pet has plenty of space to run and play. These species will travel miles during the wild, so exercise areas should be as large as possible and available at all times.
- ❖ Arrange for regular veterinary check-ups. Your vet will be able to check your pet for any signs of dental disease, or any other underlying conditions that could lead to ileus