

NEWSLETTER MAY

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Dear clients,

We moving into winter, seems that it will be a cold one this year! Hope you enjoy this newsletter with a nice cup of coffee or some hot chocolate ☺ In this edition we talk about running ostriches, and pasteurellosis. This bacterial disease can be highly fatal, and we discuss what it is, and what you can do to prevent it. Lastly, we explain how felines get castrated and spayed. Probably all of us heard about these terms, but what do the vets actually do?

Kind regards, the Wildlife Vets Namibia team

OSTRICH ON THE RUN!

The ostrich holds a couple of records; it is the tallest and heaviest bird on Earth, but also the fastest two-legged animal in the world, being able to reach top speeds of close to 70 km/h! Over thousands of years the ostrich lost its ability to fly, likely because it was simply not needed for their survival. In compensation, they developed an incredible set of legs.

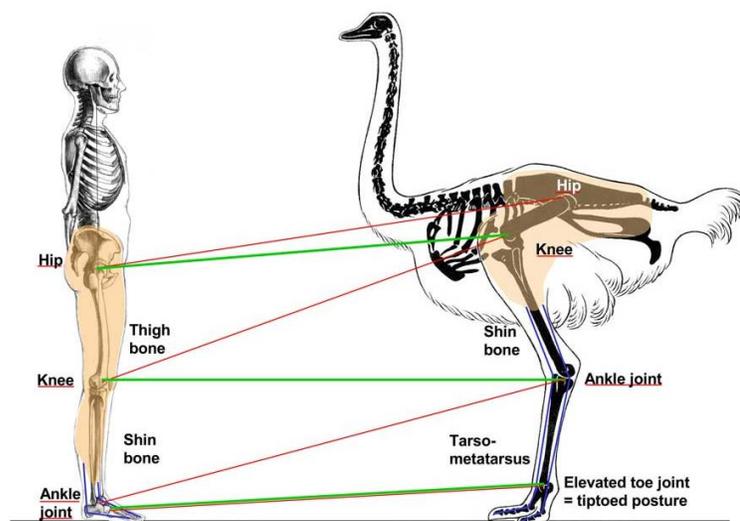
When observing running animals (or humans), we notice that higher speeds are achieved by increasing both the length and/or frequency of the steps. Longer legs swing further, thus covering more ground. Having the leg's muscles located closer to the body, enables the animal to swing the leg faster.

When we take a closer look at the ostrich, we can see that ostrich have very long legs, relatively to its size. In addition, most of the leg muscle mass is located high on the thigh bone and hip (orange part in the picture→), where long tendons help to move the lower parts of the leg (blue lines). This anatomic adaptation gives the ostrich a long step length, and high step frequency.

Another interesting feature are the toes. Most birds have 4 toes, and the majority of flightless birds walk on 3 toes. The ostrich only has 2! The big toe carries most of the weight, while the smaller outer toe assist with balance. At high speeds the soft soles act as a shock absorber. When the ostrich walks, the claw barely touches the ground, but when running, the claw digs in the ground (like spikes in soccer shoes) to allow maximal grip.



The bigger toe supports most of the weight, while the outer smaller toe prevents the ostrich from losing balance, especially when walking slowly. © [K. van Grouw](#)



Here the anatomy of a human and ostrich are compared. The orange shaded areas represent comparative muscle groups in man and ostrich, whereas the red lines point out specific joints (e.g. hip, knee etc.). The green lines show functionally equivalent joints. The comparative joint function has shifted in the ostrich; the knee function of the ostrich has much of the function of the hip joint in humans, while the ankle joint in ostrich functionally does what our human knees are doing. The blue lines show major tendons. ©

[Nina Schaller](#)

PASTEURELLOSIS

You might remember the massive die-off of 220,000 Saiga antelope in Kazakhstan in 2015. The antelopes suddenly died, and the cause of death turned out to be a bacterial disease, called 'Pasteurellosis'. Pasteurellosis is an acute and potentially highly fatal bacterial disease, and has a worldwide distribution. A small trigger can set off an outbreak. In our latest online article we discuss this disease, and what you can do to prevent an outbreak on your farm. Here you can find a summary, the whole article you can find [here](#).

Route of infection

There are several types of Pasteurella bacteria (the most common ones are *Pasteurella multocida* and *Mannheimia haemolytica*), and within these bacteria, there are also different strains. An animal usually gets infected by inhalation (nasal discharge, coughing/sneezing) or ingestion (saliva, urine, faeces, milk) of infective material. It takes 1 to 8 days before animals start to get sick.

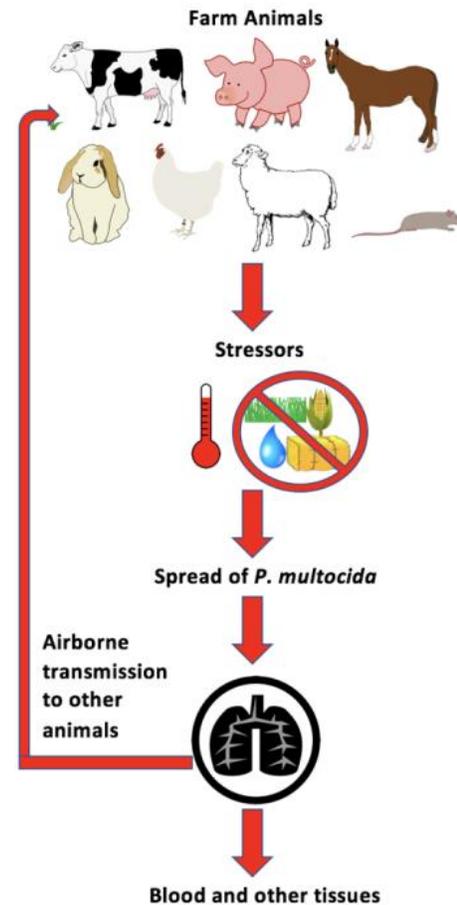
Outbreaks can happen throughout the year, but most outbreaks we see during the early rainy season, when animals have a poorer body condition. Stress is an important factor (e.g. temperature changes/lack of nutrition), the animal's immune system is weakened, and the bacteria take the overhand. The Pasteurella bacteria can only survive a few hours outside the host in the dry season, but in moist soil and animal tissue the bacteria are more persistent and can survive even for several days.

Clinical signs

Certain Pasteurella bacteria naturally occur in small numbers in the bacterial flora of the upper respiratory tract. In normal circumstances the animal can keep these bacteria under control. If the natural immune system gets compromised, animals can get seriously sick, and often death will follow. This is likely the first sign you will notice in your game/livestock; the sudden death of some animals.

Haemorrhagic septicaemia is one of the most economically important pasteurellosis. It has a mortality rate of nearly 100% with animals usually found dead without prior symptoms (sudden death). If sick animals are noted, they may show dyspnoea (shortness of breath), fever, depression, abundant saliva and nasal discharge. The bacteria multiply in the tonsils, where it forms oedema (accumulation of fluid) and necrosis (cell injury and cell death). From there the bacteria spreads through the blood circulation.

Another important disease is *Bronchopneumonia*, which affects the bronchi of the lungs. This type of Pasteurellosis is often a problem in feedlot cattle and/or animals following stressful events (e.g. capture and transport of game in cold winter conditions). The initial signs are vague, and especially in game hardly noticeable. Animals will become lethargic and stop eating. As the disease progresses, dyspnoea (shortness & difficult of breath), fever and coughing follow. Nasal



Certain Pasteurella bacteria, such as *P. multocida*, can become invasive and spread to the lungs when an animal is under stress. These opportunistic bacteria are then able to overwhelm the body's defence mechanism. Phagocytes (a type of white blood cell) cannot kill *P. multocida* since it has a protective capsule. This leads to respiratory diseases, and possible airborne spread.

© [Garofalo & Kalaska](#)

discharge changes from thin and clear to thick yellow pus. Breathing becomes more and more difficult and painful.

Diagnosis

Animals showing the above-mentioned clinical signs, especially in the early rainy season, are an indicator of Pasteurellosis. However, as most animals suddenly die it is always advisable to get a vet in to perform a thorough post-mortem. Samples will be taken, and sent to a laboratory.

Treatment and Control

When animals are diagnosed with a bacterial pneumonia, or pasteurellosis is suspected, animals should, if possible, be immediately placed into quarantine. Stress must be reduced as much as possible. Treatment is based on the veterinarian's recommendation, and usually consists of a high dose of certain types of antibiotics.

For livestock farming, avoid crowding of animals, especially during the rainy season and/or harsh winter climates. Ensure that the animals are in good body condition, and the nutrition is optimal. Avoid other stress factors such as parasites, capture, rearrangement of social hierarchy and early weaning.

Vaccination of susceptible animals is the only option you have to prevent outbreaks of pasteurellosis. In our article we give an overview of the different vaccines available. Game that has been captured and kept in bomas for auction purposes should be vaccinated prophylactically.

Download and read the full article via [our website!](#)

 **Check this out!**



Click [here](#) to watch a video about darting lions in the Kalahari!



Click [here](#) to watch a video about darting brown hyenas in the Sperrgebiet!

FELINE CASTRATION AND SPAY – WHAT IS IT?

According to the Namibian law, captive carnivores should get spayed (sterilized) or castrated. This is to prevent captive breeding, which is forbidden in Namibia. Recently we spayed and castrated some captive leopards. Spay and castration are terms everybody knows, but do you know what is actually being done? Well, that is what we explain here!

Neutering is the removal of an animal’s reproductive organ, this applies to both females and males. The word castration is used for males, while spaying is usually meant for females. If possible, it is important to starve the animal the night before the surgery starts. This reduces the risk of vomiting during the surgery.

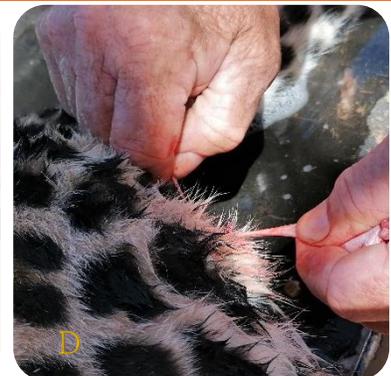
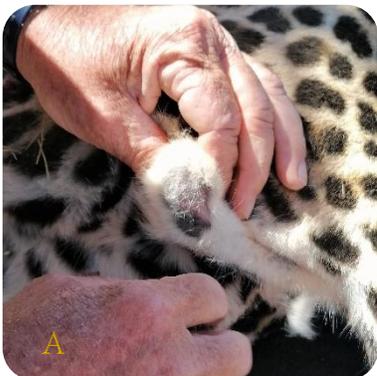
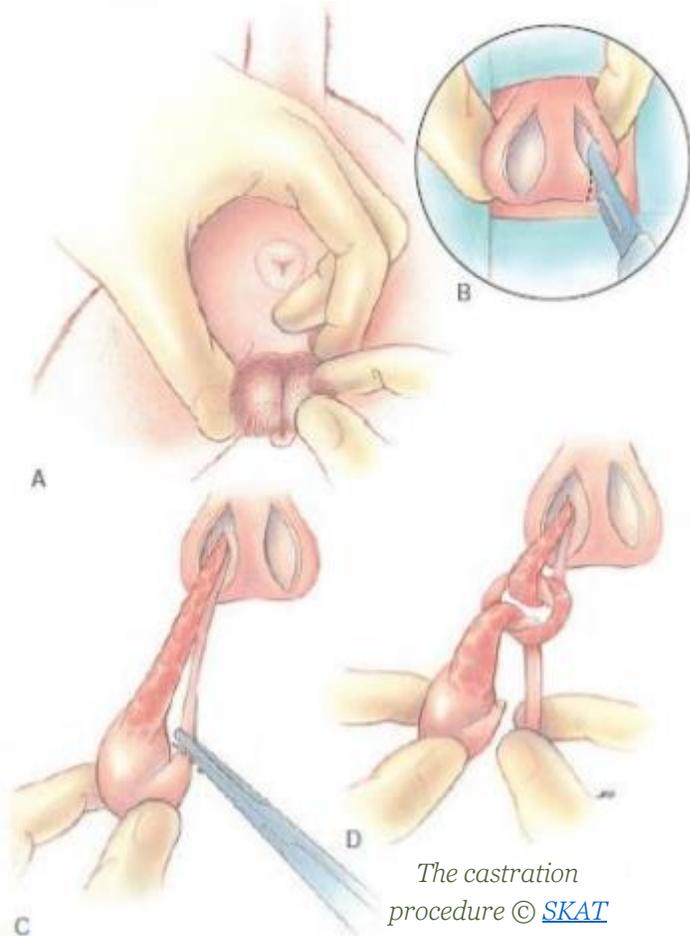
Castration

A castration, in medical terms called an *orchietomy*, is the surgical procedure of removing the testicles. First of all, we place the animal under general anaesthetic (in case of wild animals, we dart immobilize them, otherwise we give them a hand-injection) and the animal’s vital signs (heart rate and breathing) are monitored by an assistant. (A) We pluck the hair from the scrotum, wash the area, and spray it with a disinfectant. (B) Two small incisions on the scrotum are made. (C) The testicles are pulled out, and dissected free from the surrounding tissue. (D) Three or four knots are made to tie the ductus deferens (transports sperm cells from the epididymis) and spermatic vessels off, and the testicles are then cut off. That’s it!

The skin incisions are very small, so it is not needed to place stitches.

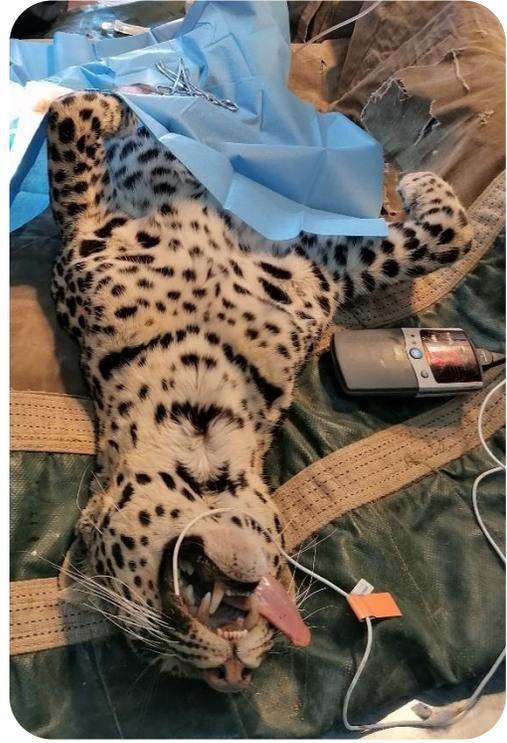
Benefits of castration:

- 🐾 Prevents unwanted kittens
- 🐾 Prevents cancer in the testicles
- 🐾 Reduces fighting
- 🐾 Reduces the urge to find females (less roaming around)
- 🐾 Reduces the smell of urine/ marking
- 🐾 Reduces unwanted behaviour such as aggression
- 🐾 Castrated felines live longer than intact felines (on average)



Ulf castrating a leopard, showing the different steps during the castration © M. Bijsterbosch

The leopard is carefully monitored, and the surgery can begin © M. Bijsterbosch



Spaying

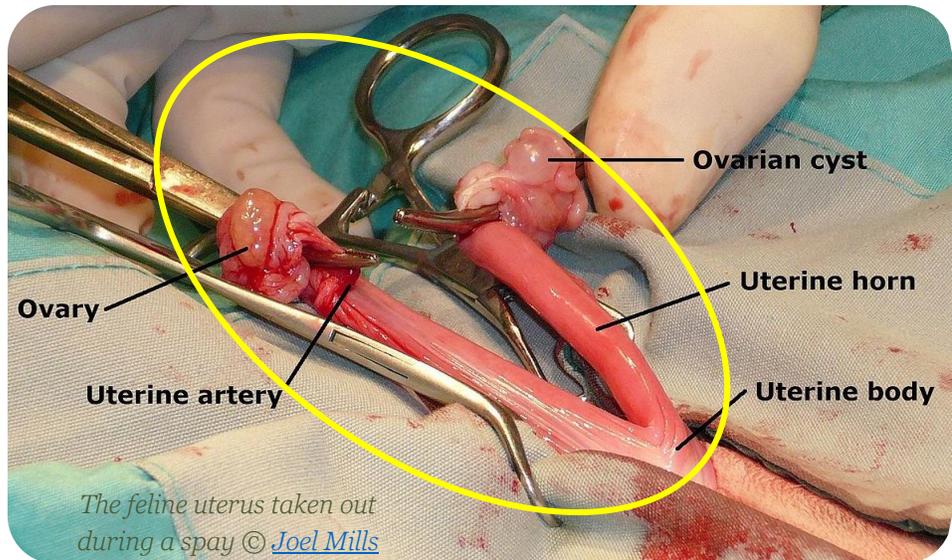
Spaying, in medical terms called 'ovario-hysterectomy', is the surgical procedure for removing the ovaries and the uterus. This is the most common procedure. In some cases, only the ovaries are removed.

The animal is placed under general anaesthetic, and since this surgery takes quite a bit longer than the castration, the animal is placed on a drip (in most cases), and monitored with a pulse oximetry. This little machine measures the oxygen levels in the blood. Besides the machine, the assistant monitors the heart and breathing rate.

The abdomen is shaved and the surgical site is scrubbed and disinfected. A sterile drape is placed over the animal, which limits any further contamination of the surgical site. Then a small incision is made, and with a special 'spay hook', the uterus horn is hooked, and lifted out of the abdominal area.

The ovarian blood vessels are clamped, and tied off with suture material (this tying off is called 'ligating'). The ovarian attachment on the one side is then cut off, and the same procedure happens with the other uterus horn. Now we have the situation as shown in the picture on the right.

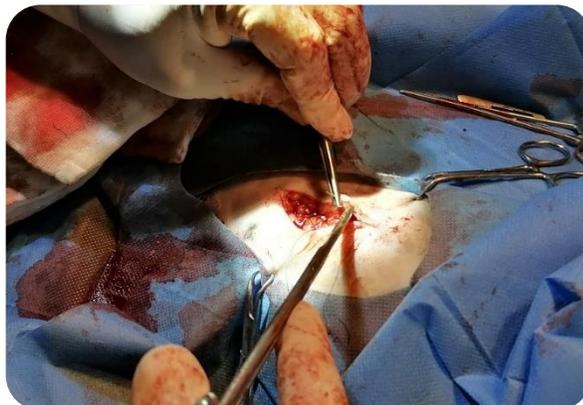
The uterine body (at the bottom) is pulled out a bit further, clamped, and carefully tied off. Then the uterine body is cut off, and the whole uterus is taken out (so everything you see in the yellow circle is taken out).



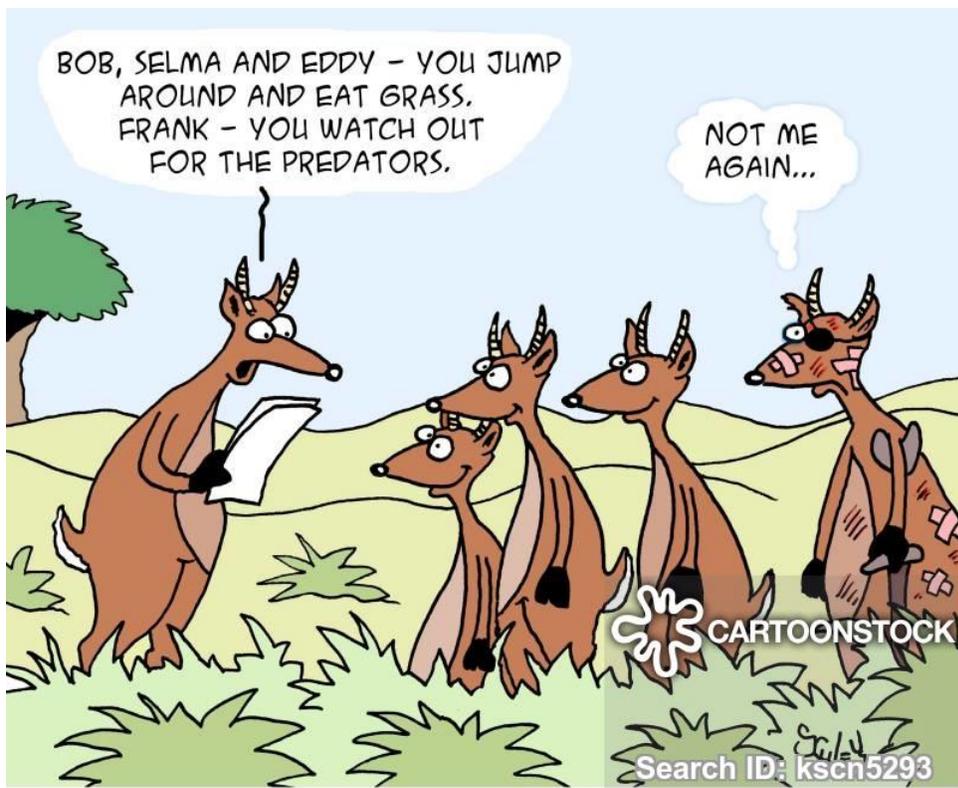
Benefits of spaying:

- 🐾 Prevents unwanted kittens
- 🐾 Prevents mammary gland tumours and ovarian/uterine cancer
- 🐾 Prevents female from coming onto heat
- 🐾 Reduces roaming around
- 🐾 Spayed felines live longer than intact felines (on average)

Then it is time to stitch up! Firstly, the hole in the abdominal wall is closed, then the subcutaneous fat layer is closed, and eventually the skin is closed off with suture material. In wild cats we usually use non-dissolvable suture material (nylon), as it hardly causes any problems and there is less risk of early weakening of the material (e.g. when the cat starts licking it) and thus wound opening.



Stitching up the last skin layer © M. Bijsterbosch



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