

NEWSLETTER JULY

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Dear clients,

In this newsletter you can read more about our WhatsApp groups, and an interesting case (for us, not so much for the animals...) of a parasite infection in a horses' eye. Lastly, we explain how bones heal after a fracture, and what we can do to assist in that healing process. Please be safe during this third Covid-wave, and be advised that we can assist you and can come out to your farm, even during this lockdown period (we take our precautionary measures 😊).

Kind regards, the Wildlife Vets Namibia team

REGIONAL WHATSAPP GROUPS

As you might know, we have created regional WhatsApp groups a few years ago. Some of you are already on these groups. For those who don't know what this is about, here is more info!

Namibia is a vast country... Quite often we have been called out to a certain area, do a job, return to Windhoek, and get called out again to the same area! To drive up and down is not only time-consuming, it is also costly! To save time and kilometre fees, we have therefore created WhatsApp-groups.

When we are called out to a certain area, we notify the group. If you are in the area or on the route, and you have a job that needs to be done, you can contact us, and jump in on the trip! The more farmers join in on one trip, the cheaper the kilometre costs will be for all. Also, if you thinking of future jobs but are not sure yet, contact us, we add the prospective job to the group, and see if more people want to join.

We only allow farmers/farm managers etc. on the group, and to respect your privacy, we don't mention names, only the area we are going to (e.g. *'coming weekend we will be in the Nina area'*).

These groups are only used to notify the farmers in a certain area where we will be working. If you have questions etc., please contact us directly and don't use the group.

The regions are:

-  North of Windhoek (e.g. Okahandja, Otjiwarongo, Outjo, Tsumeb etc.)
-  East of Windhoek (e.g. Omitara, Witvlei, Gobabis etc.)
-  South-east of Windhoek (e.g. Dordabis, Nina etc.)
-  South of Windhoek (e.g. Rehoboth and south)

If you want to be added, send us your name, farm and area, and we will add you 



Wildlife Vets Namibia WhatsApp groups

Join our regional WhatsApp groups!

How does it work?



When we are called out to a farm, or have a prospective job in an area, we notify the group.

If you happen to have a job that needs to be done and you want us to come, call us, or send a message.



Save km, Save \$\$

The more farms that join in on one trip, the cheaper the travel cost for all!

Our regional groups are:

- North of Windhoek
- East of Windhoek
- South-east of Windhoek
- South of Windhoek



Are you a farmer/farm manager, and you want to be added to one of the regional groups? Or you want more info? Feel free to contact us!

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PARASITE INFECTION IN A HORSES' EYE

Recently we were called out to a farm where several horses suffered from badly infected eyes. This is a short summary of what we found, and how it was treated.

History

The horses (all from the same farm) are free to roam in a game camp when not working. Here they were noted to be in relatively close contact with a herd of blue wildebeest. At the same time many flies were found in the area. Literally overnight, multiple horses' eyes developed severe inflammatory lesions. In some horses it affected both eyes, while others only had one eye affected. The severity also varied, with some horses developing more serious lesions, like the white horse below, while others only developed a moderate swollen eye, or had some eye discharge. All horses were clinically well; they ate and their temperature was normal, thus allowing us to eliminate African horse sickness as a possibility. None of the horses' eyes improved on conventional antibiotic (topical and injected) treatment for bacterial eye infections.



One of the horses that was worst affected by the fly strike. The 1st photo was taken on 24 May, the 2nd photo on the 25th, and the 3rd photo on 30 May. © Nichola Reinhard – stable manager Kuzikus Wildlife Reserve

The photos above were taken from the same eye on several days of treatment. In the left photo you can see severe swelling, inflammation and crusting of the conjunctiva (mucous membranes of the eye). It is so severe, that these membranes actually prolapsed, making a detailed examination of the eye globe impossible. After treatment, the eyes quickly improved, as can be seen in the other photos.

Image of one of first stage larvae of the *Geddoelstia cristata* © [Du Toit & Meyer](#)



What is it?

The fact that the horses did not respond to conventional treatment of a bacterial eye infection, combined with a history of close contact with wildebeest and fly burden coinciding with the onset of the eye lesions, strongly suggested a parasitic eye infection transmitted by the flies. The most likely cause would be larvae of the *Geddoelstia* fly spp. The natural hosts of the *Geddoelstia* spp. are the so-called 'noddors', such as the blue and black wildebeest and the hartebeest. The larvae occur normally in the frontal sinuses of these species, without causing any issues. The larvae also infest blesbok, tsessebe, springbuck and impala. Cross species infections have been reported in sable, buffalo and even humans!

Another, but less likely possibility, would be the *Habronema* spp. This is a worm species, who uses the stable or horse fly to transfer its eggs and larvae onto moist spots or open wounds on another animal. Since these usually cause granuloma (tumour) like skin lesions, we considered this a less likely cause.

So, what happens?

The fly species deposit larvae in several spots of the target animal. Common spots are the nasal cavity and the paranasal sinuses (the sinuses along the nose), or on the cornea (transparent part of the eye). The larvae migrate via the optic nerve tract or the artery to get to the inside of the animal's body. They have special mouth hooks and body spines that help them move, and some even crawl as far as the lungs and the heart! The larvae range in size from 0.8 to 5mm in the first stage, to 31mm in length in the third stage.

As mentioned before, in their natural hosts the parasite does minimal damage. But if they infect domesticated animals etc. these larvae can cause quite some problems as you can see! It is not always very bad, but these signs you might encounter:

- 🐾 Eyes are painful
- 🐾 Lots of blinking
- 🐾 Excessive tear production (lacrimation)
- 🐾 Swelling around the eye
- 🐾 White spots on the cornea (these are the larvae)
- 🐾 Bulging/protrusion of the eyeball (exophthalmos)
- 🐾 Secondary infections
- 🐾 Blindness in severe cases
- 🐾 Systemic larval migration may even cause inflammation of the brain and heart, resulting in neurological signs and even heart failure.

Treatment and Prevention

The horses were injected with Ivermectin, which is very effective in killing the larvae. For the horses with the badly swollen and secondarily infected eyes we recommended instilling mastitis ointment in the eye. The severely swollen eyes were covered with a wad of wet cotton wool and a bandage to prevent further drying out of the conjunctiva and to avoid new contamination. Severely affected eyes were kept covered until the swelling subsided sufficiently to allow the horse to open and close the eyelids normally. All the horses showed dramatic clinical improvement within 24 hours and made a full recovery. The farm owners reported similar sporadic outbreaks occurring years before – some of the horses then infected became blind.

Bandage over the badly affected eye © [Nichola Reinhard](#)



The eye in this horse is bulging out, which explains the Afrikaans name of *Uitpeuloog* for this condition.

© [Nichola Reinhard](#)

NOTE: African horse sickness can present with identical signs and is also typically a summer disease. Horses with AHS tend to be sick, have a high fever and usually have difficulty breathing.

As this infection can occur overnight, and one does not always have control over where the horses are walking and/or with which animals they have contact, there is not much other than the usual fly control measures one can take to prevent this condition. When the flies are bad, make sure you have fly traps around the stables/house, apply fly repellents around horses' eyes and possibly give the horses a fly-mask. Should you see similar lesions in your horses and the circumstances fit those described here, an early injection with Ivermectin (or similar preparation) should solve the problem.

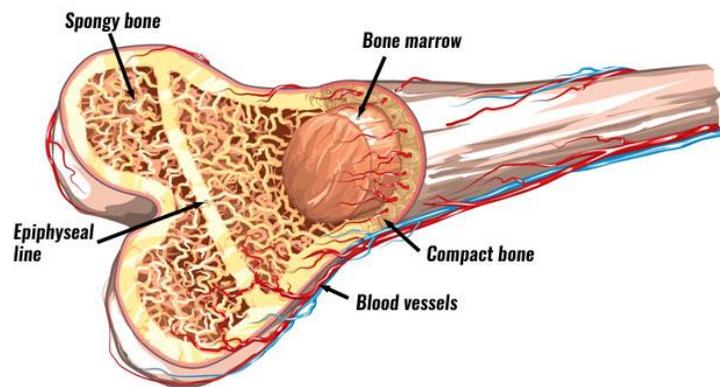
BONE HEALING

The healing powers of the body are quite amazing. When a bone is broken, we don't do much more than stabilize it, the rest is all done by the body itself. How? Read on!

Most people think that a bone is just a solid hard structure. But bone is a living, active tissue that is constantly being remodelled; old bone is constantly being renewed by new bone. Obviously, bones are there to provide structural support to our body, and they protect sensitive structures, such as organs and our brain. The skeleton serves as anchors for muscles and ligaments, enabling us to move. Inside the bone there is bone marrow, which is one of the most important places where blood cells (red and white blood cells, and platelets) are made. Bones also act as a storage room for minerals like calcium and phosphorus.

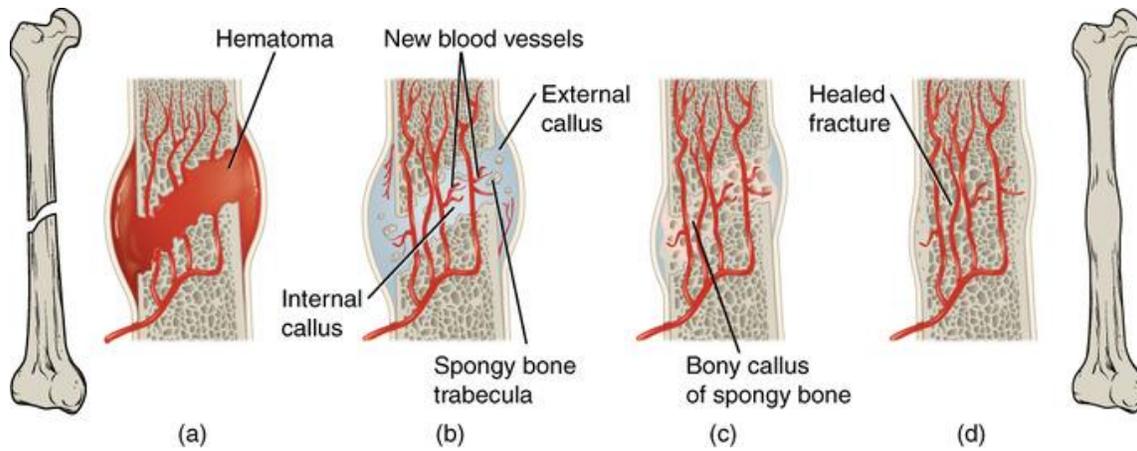
Schematic drawing of the structure of a bone. The outside of a bone we call the 'compact bone'; this is the outside layer and consist of many closely packed layers of bone tissue and provides strength. On the inside is a different kind of bone, called the 'spongy bone'. This is more porous and lightweight. The centre of the bone shaft is hollow, and known as the 'medullary cavity', and this is where the bone marrow is. In the picture you also see the 'epiphyseal line'; when you are young, this is called a growth plate. When you stop growing, the plate is replaced by this epiphyseal line.

© [TeachPE](#)



A break in a bone is called a fracture. Sometimes the break is through the entire bone, or just a part. The fact that bone is active tissue that is constantly being renewed comes in handy when there is a fracture! Following a fracture, the body immediately responds by bleeding from the blood vessels around the fracture. The blood clots and forms a hematoma. This hematoma (blood clot) protects the bone and the gap that was formed by the break, and delivers cells that are needed for the healing process. The immune system sets in, and creates localised inflammation. Several cells from surrounding tissues, bone marrow and blood respond to the immune system's alarm call, and they migrate to the fracture. These cells will help with bone and cartilage formation.

With the help of the cells, a few days after the fracture the repairing phase sets in. New bone is created at the edges of the fracture. To fill the gap caused by the fracture, certain cells produce soft callus, which joins the broken bones together. This soft callus is only temporary and not strong enough to survive the pressure of everyday life. The soft callus is then replaced with a hard, bone-like callus. This is already a lot stronger, but not as strong as bone itself. After 3 to 4 weeks new bone starts to form. This process can take months, and the bone may remain uneven.



Stages of a fracture repair. (a) a hematoma forms. (b) internal and external callus form (c) cartilage is replaced by porous bone (trabecular bone) (d) the bone remodels, and new bone sets in © [Lumen Candela](#)

As you know by now, the healing of a fracture is not a quick process. To help the body, we have several ways that assist in the healing process. The first step is obviously assessing the fracture; how bad is it, where is it located exactly etc. An X-ray is the ideal tool for this. However, due to prohibitive cost of a mobile digital X-ray unit, this is rarely an option in wildlife medicine (should you know of someone with some left-over money, we are open for donations since such a unit has been on our wish list for many years 😊). Depending on the species and the type and location of the fracture, we can often feel it from the outside.

Once we assessed the fracture, we decide on a plan of action. One option is to place a **cast or a splint** over the affected area, with the aim of preventing fragments from moving while it is healing. This is done when the fracture is nicely aligned, in a position away from a joint, and when we can set the bones without having to perform a surgery. This is not easy in wildlife, and for it to be successful, the animal should be confined in a small paddock.



Springbuck with a broken leg that was casted. © M. Bijsterbosch

We usually first stabilise the leg with a splint bandage to minimise leg- and fragment movement. This will reduce pain to the animal and allows the initial swelling to go down. Once the animal is stabilised, the swelling has gone down, and wounds seem to be healing without infection, we often use a very strong fibreglass cast to achieve a stable and long-lasting fixation of the fracture. This type of cast needs to be removed with a grinder and is usually left in place for at least 4-6 weeks.

Another option is to do a surgery, this is usually done when the fracture is complicated, and for fractures that we cannot realign otherwise. In these cases, we have to manually reset the fracture, by placing screws, plates or metal wire to fix the bone. The medical term for this is to perform a '*reduction*' (setting the bone). Before we can plan the surgery, we first need to evaluate proper X-rays.

When we need to operate, the animal is given an anaesthetic, and the vet makes an incision to get to the fracture. Care is taken not to damage muscles, nerves and blood vessels while dissecting down to the fracture and moving muscles aside, so the fracture is completely exposed. This is not always as easy as it sounds... Once the fracture is nicely aligned, either a pin or plate can be inserted.



On the first 3 photos you can see the fractured wing of a white-backed vulture. On the 1st photo you can see the fractured radius and ulnae. On the 2nd photo you can see the exposed bones, and Ulf realigning the fractures together. Once the bones are aligned, the pin or plate can be inserted (3rd photo). In the 4th photo you can see Ulf placing a pin in a broken leg of a cheetah. © M. Bijsterbosch

The most common options we do:

- 🐾 **Plate.** A bone plate is like an internal splint being screwed directly to the bone, to hold the broken pieces of bone together. The bone is completely exposed, and the fracture aligned. A metal plate shaped to the contours of the bone is then positioned to the bone, and is attached to the bone with screws.
- 🐾 **Pin.** Compared to plating, this tends to be a much cheaper option of fracture repair, but it tends to be less stable requiring good post-operative restraint. It is well suited for fractures of long straight bones or with thin, brittle bones. A long pin is drilled into the hollow centre of the bone to bridge both fragments. The pin provides stabilization to the fracture. Sometimes we also place steel wire over the fracture, to give to give it extra support.



This cat was bitten by a dog. On the X-ray you can see a bilateral (both sides) ilium (hip) fracture, which resulted in major fragment displacement, hip instability and narrowing of the pelvic canal. Such severe fractures respond best to internal fixations with contoured plates (plates bend to fit the natural shape of the hip bone) and screws, which gives a stable reduction and restores the integrity of the pelvic canal. Ulf plated both iliac wings and strict cage rest was needed for quite a while. The cat recovered well. © Rhino Park Veterinary Clinic



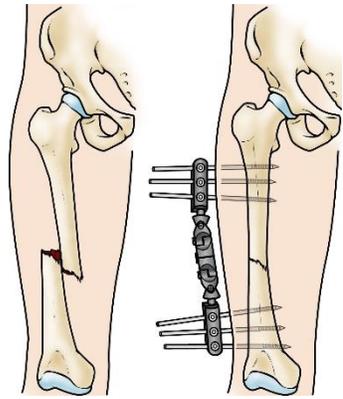
These are the X-rays of the fractured wing of the white-backed vulture that you saw above. On the 1st photo you can see the fractures. The 2nd photo is the follow-up X-ray, to check of the pins are positioned right. Once they are correct, the top of the pins are cut off, and pushed completely into the bone. The vulture went to [Namibia Animal Rehabilitation Research and Education Centre \(NARREC\)](http://www.narrec.org).

After 4 weeks a follow-up X-ray was made (photo on the right). Where the fractures were, callus has formed (denser white). This is an indication that the fracture has healed, and the callus will get smaller with time. Eventually, when it is strong enough, the vulture will be released again © Rhino Park Veterinary Clinic



🐾 **External fixator.** In some cases, one needs an external fixator. This is an external frame that supports the bone and holds it in the correct position. Metal pins or screws are placed into the bone and attached to a bar outside the skin. This type of fracture repair needs intensive post-operative care which usually makes it unsuitable in wild animals.

The external fixator is often used when the skin and/or muscles around the fracture have been injured. © [OrthoInfo](#)



All surgical implants are made of titanium and stainless steel. Depending on the situation, they stay in forever, or need to be removed at a later stage. Essential for proper healing is strict rest, which can be a major challenge in wildlife medicine. With wildlife it is always difficult to strike an optimal balance between strict confinement but at the same time minimize stress to the animal.



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