

NEWSLETTER APRIL

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Dear clients,

Don't know if its just us, but somehow this month flew by! In this newsletter you can read about the amazing feature of geckos and some lizards to detach their tails. We explain what we do when an immobilized animal does not breathe properly, and we remind you about the upcoming Klawerberg & Friends Game Auction. Lastly, we are proud to tell you that we have renewed our website, we hope you will have a look! If you do, let us know what you think, we would love to hear your feedback!

Kind regards, the Wildlife Vets Namibia team

THE LIZARD'S TAIL

You probably all have some geckos around the house. Welcome little reptiles that keep your house clean from flies and other crawly creepies. You probably also have seen that some geckos have a tail, and others not. To get out of a hairy situation, geckos and some other lizard species can detach their tail from their body. This behaviour is called 'Autotomy' or 'self-amputation'. Autotomy comes from the Greek language, whereby 'auto' means 'self', and 'tome' means 'severing'.

Autotomy is usually a self-defence mechanism, to evade a predator. When detached, the tail (for example) keeps wiggling, confusing the predator, and giving the lizard enough time to escape. It's been a long-time mystery how the bones and muscles in the tail and detach when needed, but at the same time can firmly stay in place when there is no emergency situation.

In 2022 scientists did a [new study](#), trying to understand this phenomenon. With a high-speed camera they filmed the 'tail-detaching' process, and checked the tails under an electron microscope. On the 'fracture' of the tail the scientists expected a sort of lock and key mechanism, something like how fingers fit into a glove. Instead, they only found small indents. On top of each dent are holes, called nanopores. They tried to reconstruct this mechanism by a computer model, but with just a pull, the tail would not let go. With the high-speed camera the scientist saw that all the lizards bend and twist their tail in a certain way. So, when the lizard is caught by the tail, they bend their tails at an angle, and the tail and the body are cut apart. Understanding this mechanism might help scientist to come up with better prosthetics, skin grafts or bandages. We still have a lot to learn from nature!

Have a look at this [YouTube video](#) from Science Magazine to learn more about this research, and see for yourself how the tails come of under a high-speed camera.

Interesting sidenote, the African Kemp's (*Acomys kempî*) and Percival's (*Acomys percivali*) spiny mice and are able to release part of their skin upon capture by a predator! The skin, with all its functions, regenerates completely after the narrow escape!

Forest alligator lizard in north America with a detached tail © [G. Nafis](#)

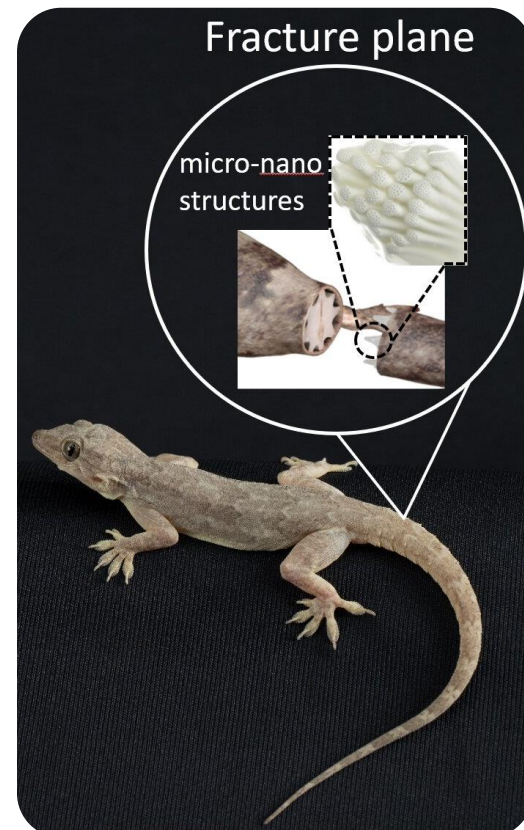


Image of the fracture, showing the nanopores © [Shiji Ulleri/Wise Monkeys Photography](#)

‘EVERY BREATH YOU TAKE...’

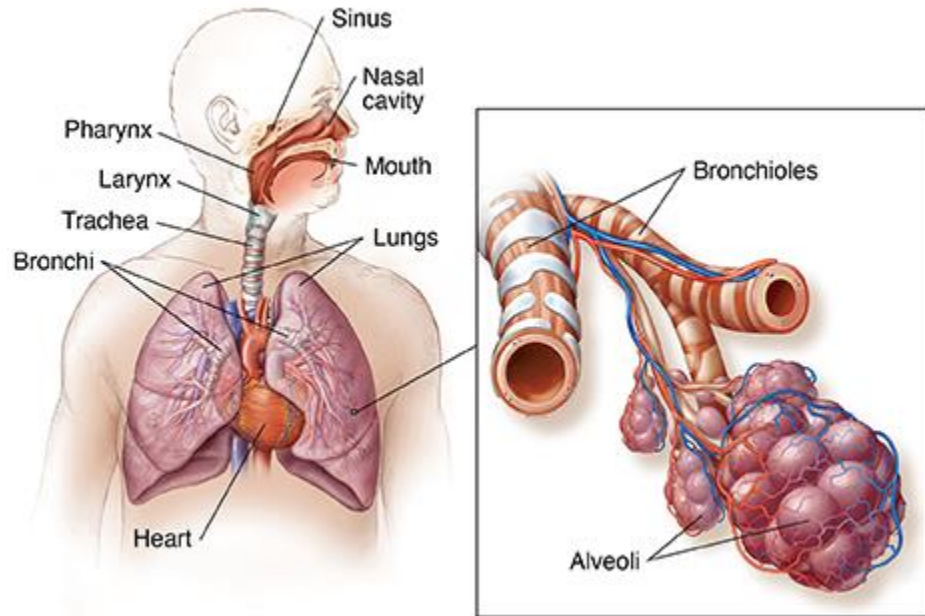
Breathing is something we do without even thinking about it. Did you know that a human on average takes about 17.000 to 24.000 breaths a day?

Via the mouth or nose we get air into our system. The air goes via the trachea (windpipe) to the bronchus into the lungs. The bronchus is like an upside-down Y. The ‘arms’ of the Y are called the bronchi. The bronchi branch off into smaller and smaller tubes. The very small tubes are called the bronchioles. At the end of these bronchioles are little sacs; called alveoli. Tiny blood vessels, called capillaries, cover the alveoli like a net. These capillaries allow for the exchange of oxygen and carbon dioxide (CO₂).

When we immobilize an animal (anesthetize), the drugs might make breathing more difficult for several reasons. It is therefore important that the body is in a good condition before anesthesia. The problem we face with wildlife is that we cannot check the animal beforehand. When your pet goes to the vet for an anesthetic, they will first do a medical check-up. The vet listens to the heart and lungs, it checks the mucous membranes and the general appearance of your pet. They will ask if you pet is healthy, or if you might have noticed anything different than normal. In old animals, often a blood test is done to see if the kidney and liver values are still up to standard.

When the animal is under anesthesia, depending on the procedure, a tube is inserted into the trachea. Oxygen and isoflurane (an anesthetic gas) flows through the tube straight into the lungs. The animal’s vitals are carefully monitored by the assistant and via a machine. In the field, we unfortunately don’t have these luxuries. We cannot check a wild animal before darting to make sure its healthy, and we don’t have fancy machines, other than our [pulse oximeter](#), in the field.

As you might know, the immobilization drugs we use for wildlife are highly potent. For most species, especially antelope, we use a potent opioid. The opioid will get the animal down quickly, but at the same time it suppresses breathing and lowers the heart rate. Thanks to new drug mixes we can lower the opioid dose, but nonetheless, the immobilization still can have a negative effect on the breathing. Breathing can become shallow, or the animal breaths very slowly, irregular or not at all.



Drawing of the structure of the lungs © [UH Hospitals](#)



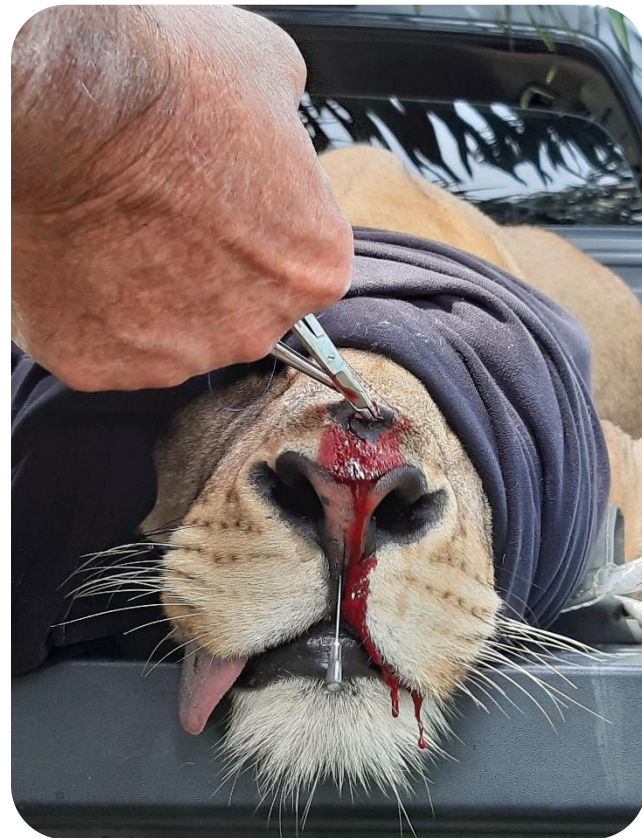
A rhino in the theatre of Onderstepoort Veterinary Academic Hospital © [Susan Scott for STROOP](#)

We monitor the immobilized wild animal by using our eyes, ears and touch, and we rely on our experience. Breathing should be regular, frequent and deep. We check if the abdomen/chest goes up and down, and we feel the nose for airflow coming out. We check the mucous membranes of the eyes and in the mouth, to see that they are nice and pink, and we feel the heart and monitor the visible veins (for example the ear veins), they should not be too flat.

If we see that an animal is not breathing optimal, we have a few tricks up our sleeves to try and improve the breathing.

- 🐾 The first thing we check is if the animal is positioned correctly and that the airway is open.
 - A ruminant must lie on its sternum (on its belly), the head must be up, and the nose down. The nostrils must be open, and the neck in a natural position (not kinked).
 - Sometimes the person holding the antelope closes off the nostrils with his legs, or the head is pushed against the cab of a bakkie while driving, thereby kinking the neck, making it more difficult to breathe.
 - A hindgut fermenter like the zebra and rhino, can lie on their side. Their head should be elevated a bit from the ground (e.g., with a branch) so their bottom nostril is not lying in the sand.
- 🐾 When the animal has not taken a breath for a while, we can put pressure on the chest behind the heart, this often causes the animal to take a deep breath.
- 🐾 We can do acupressure or acupuncture, whereby we either pinch hard with our nails in the midline of the nose, or insert a needle in the lower level of the philtrum (vertical groove between the nose and upper lip). This point is called the Jen Chung (GV-26) in acupuncture terms. It stimulates the central nervous system.
 - This acupuncture point can also be useful in newborns that don't breathe (from cats to calves).
- 🐾 We have certain drugs that we can inject that improve/stimulate breathing.
- 🐾 We can inject a small amount of a reversal drug which partially reverses the animal.
- 🐾 We can give mouth-to-nose resuscitation, sometimes after one good blow the system gets stimulated to breathe by itself again.

If all this fails and the animal is still not breathing, we will decide to wake the animal up, even though the procedure is not done, or the animal is not yet at its destination. Our main concern is the welfare and health of the animal.



This lioness had a tumour on her nose which needed to be removed. Her breathing was not optimal, and we inserted a needle into the nose. This stimulated her breathing, so we could finish the small surgery. © M. Bijsterbosch

KLAWERBERG & VRIENDE VEILING 2023

Don't forget to get ready for the upcoming Klawerberg & Vriende Veiling, held on 29 April 2023 at Midgard! The catalogue is now available on the Klawerberg website, click [here](#) to view it.

This game auction is your chance to acquire exceptional genetics from Namibia's top breeders! If you can't be at the auction in person, you can follow and bid online via the AGRA Marketplace. You can register via [this link](#).



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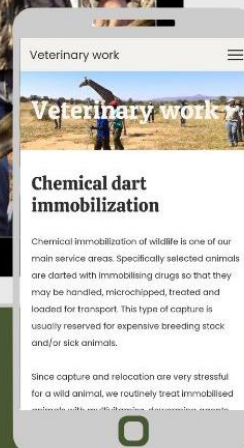
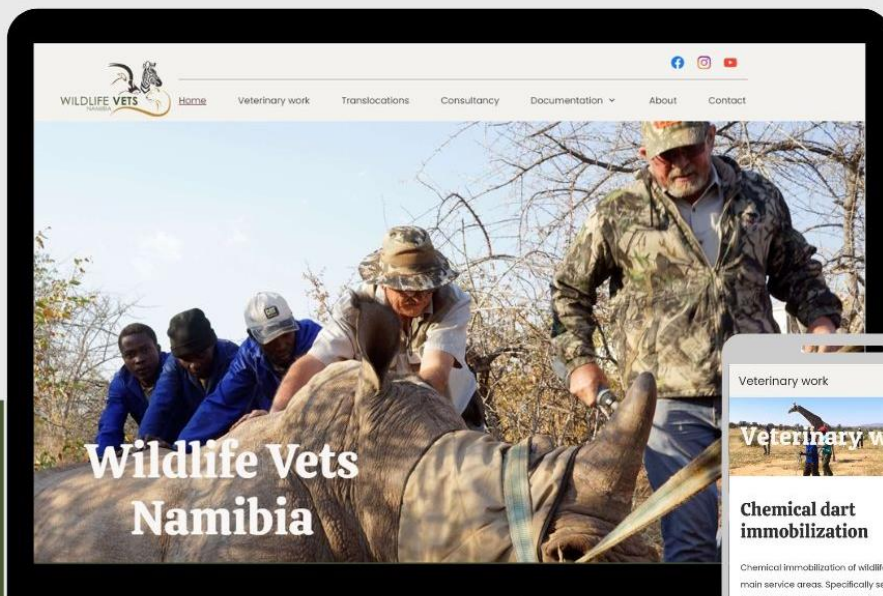
Bergzicht
Game Lodge

WEBSITE REVAMP

Our [website](#) has been completely revamped! A new lay-out, new photos, and hopefully a better experience for you! You can read about our veterinary work, game translocations, consultancy and training, and we have a large section with documentation. Here you can find our old newsletters, articles and other documentation, such as labels and forms from MEFT and Veterinary Services – all free to download!

We would love to hear what you think of the new website! Does everything work correctly? Can you easily find what you are looking for? Does it load quickly enough? If you have any feedback let us know 😊

We are live!



[Click here to visit the website!](#)



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