

# NEWSLETTER NOVEMBER

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Dear clients,

The year is now really nearing its end, we hope Namibia will be cooled down with lots of rain soon! In this newsletter you can read about nosey dik-diks, and the upcoming visit of Dr Morné de la Rey in January. Should you want to make use of his services, please contact us so we can plan all the farm visits accordingly. Lastly, we have a short article on wound healing – what does this process involve? We hope you enjoy reading it, and if you have a question or a topic you want us to write about, do let us know! Kind regards, the Wildlife Vets Namibia team.

## NOSEY DIK-DIKS

Dik-diks are fascinating little antelopes. In Namibia we have the Kirk's dik-dik, better known as Damara dik-dik. While many antelope species find their safety in numbers, dik-diks are monogamous and live in pairs. Nothing complicated about their name, they are named after the sound they make! Besides the fact they are very cute, they have some amazing adaptations to cope in difficult arid environments.

Dik-diks have a funny looking nose, which is actually called a 'proboscis'. A proboscis is an elongated nose or snout, other mammals that have one are for example the elephant, aardvark, saiga antelope and elephant shrews. Many insects also have a proboscis, which is usually then an elongated feeding tube attached to the head of the insect; think about the feeding tubes of butterflies for example.

This proboscis is one of the dik-diks' important adaptations to live in arid environments, as its enlarged nasal chamber is full of blood vessels. When they pant, the airflow and evaporation cool the blood in the vessels before it gets pumped back into the body. At the same time, this results in a minimal loss of water in the exhaled air.

Besides the nose, dik-diks have more ways to conserve water and energy. While most mammals keep their body temperature more or less the same, dik-diks can fluctuate their body temperature. During the heat of the day, they can raise their body temperature, and they can store heat. Furthermore, they have a lowered metabolic rate (the amount of energy expended while at rest), concentrated urine (they can reach the highest urine concentration of all antelopes), dry faeces, and they are most active during the night when its cooler.



*This dik-dik was immobilized and moved to another farm. Not an easy species to immobilize, they are fast, agile and masters in hiding! Since they are quite sensitive for the immobilizing drugs we use, we wake them up immediately when we get to them. Then they are restrained, and placed in a small transport box. From there they can be loaded to a bigger wooden box. © M. Bijsterbosch*



*Little dik-dik ewe in the rain.  
© M. Bijsterbosch*

## VISIT DR MORNÉ DE LA REY

Last July, animal reproduction expert Dr Morné de la Rey from [Embryo Plus](#) and [Rhino Repro](#) visited Namibia to examine rhinos with a history of not having calved for a long time (in some cases never). We are happy to let you know that he will be coming again for some follow ups, and for some new cases!

Sometimes it happens that a rhino cow reaches the reproductive age, but does not get calves. There can be several possibilities why a rhino cow does not get pregnant:

- 🐾 There might be a medical issue with either the bull or the cow.
- 🐾 When a bull and a cow walk alone (without other rhinos), the bull sometimes just becomes too lazy to breed.
- 🐾 Sometimes it happens that rhinos don't come into a proper cycle. The hormones don't reach adequate blood levels, and the body does not get prepared to release an egg, or to become pregnant.
  - This can happen to any animal, and any human.
  - This phenomenon is sometimes seen in poaching survivors, that went through a traumatic experience. Their system basically down regulates.
  - It is also seen in rhino orphans that grow up together. They see their mates as siblings, and don't get into the reproduction cycle.

Due to the ongoing poaching pressure every rhino counts, and this is where Rhino Repro comes to the rescue! Depending on the situation, Dr de la Rey can do several things, such as:

- 🐾 Check the cow for pregnancy, he has a sophisticated ultrasound machine with a prolonged probe.
- 🐾 If the cow is not pregnant, he can do a procedure called an ovum pick-up (OPU). The goal is to basically 'reset' the ovaries and the hormones they produce. The follicles are emptied, the ovaries are downregulated, and their response is to create a flush or hormones. In 14 to 28 days the cow should come on heat.
- 🐾 Sperm collection and check for fertility of the bull in the field.

The aimed data that he will be in Namibia are **18-20/21 January 2024**. So far, we have planned to visit farms in the airport-, Otjiwarongo- and Outjo area. If you would like to make use of Dr de la Rey's services, please contact us directly asap. Since his time is limited, we need to make confirmed bookings early in advance.



*Ovum pick-up procedure: an ultrasound probe with needles is inserted, and the ovaries and follicles are identified. A needle is then inserted into the follicle (remember, throughout the ovaries are several follicles, and in the follicle is the egg), and all the material inside (egg and fluid) is sucked out, and deposited into a bottle. The needle is connected to two tubes, the one sucks everything out, the other one flushes saline into the follicle. The follicle is emptied, flushed, and emptied again several times. © M. Bijsterbosch*

Have a look at our [July 2023 newsletter](#) for more information about the procedures Dr de la Rey can do.

# WOUND HEALING

The body is an amazing machine, and has a tremendous self-healing capacity and regeneration abilities after injuries. A wound is a break or opening in the skin (e.g., cut, scrape, puncture, burn), and when the skin is broken, germs can enter and cause infection. Without you knowing it, your body will react and start the wound healing process. Wound healing is a complex and dynamic process where damaged tissue gets repaired and replaced. In this article we delve a bit deeper in the process of wound healing.

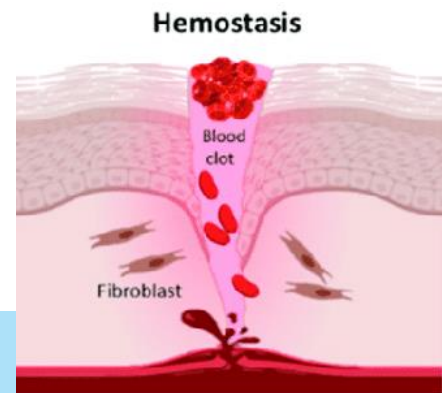
There are several factors that can influence wound healing, such as:

- 🐾 Wound infection vs host immune response
- 🐾 Movement and tension on wound edges
- 🐾 Foreign material
- 🐾 Necrotic tissue
- 🐾 Poor nutrition / malnutrition
- 🐾 Some drugs
- 🐾 Certain diseases
- 🐾 Stress
- 🐾 Age

Wound healing is the process that the body initiates to replace and restore damaged tissue, and happens in four phases. It is quite a complex process, but we try to keep it simple!

## 1) Hemostasis phase

Hemostasis is the first phase of the healing process, and starts right at the beginning of the injury. The first step is when the blood vessels constrict (=vasoconstriction) to limit the blood flow to the wound. At the same time, blood platelets come rushing in and start sticking together to seal the break(s) in the blood vessel wall. This platelet plug is reinforced with a mesh of fibrin and together it forms a stable clot.

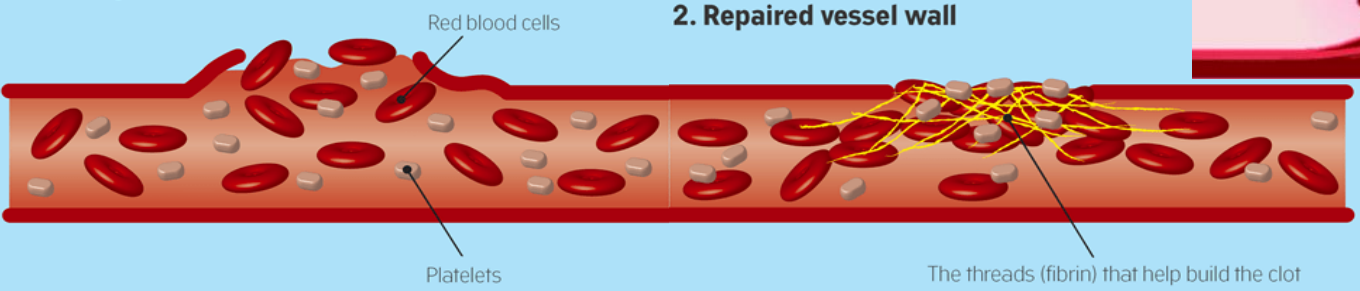


**Hemostasis**

*Hemostasis phase, the objective of this phase is to stop the bleeding © L.M. Cucci*

### 1. Damaged blood vessel wall

### 2. Repaired vessel wall

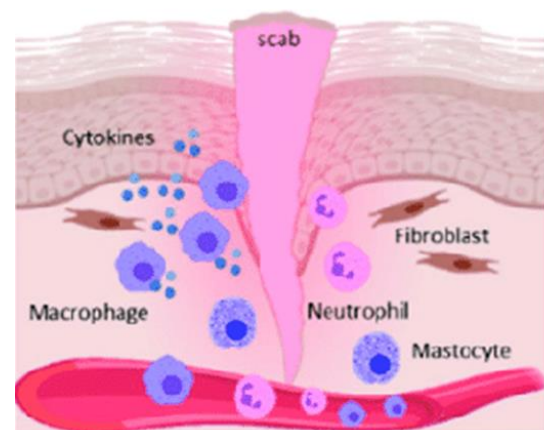


*Formation of blood clots © Jovis*

## 2) Inflammatory phase

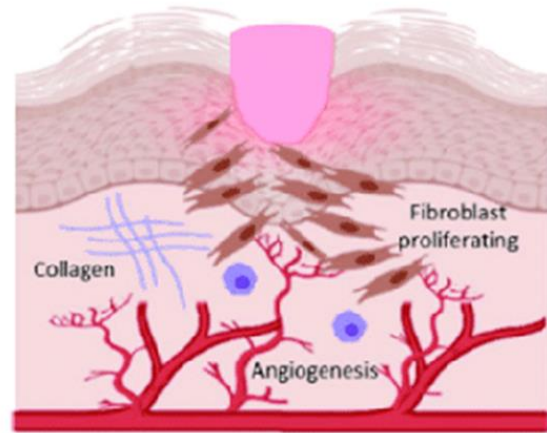
The second phase in wound healing is the inflammatory phase, also called the defensive phase. It starts at the beginning of the injury. Certain white blood cells, called neutrophils, come to the scene and will destroy bacteria that might have gotten into the wound. This will happen in 24-48 hours. When the neutrophils are done, they are replaced by another type of white blood cells, called macrophages. These specialized cells continue to defend the wound area, and clean up. They also send out a signal (special proteins) to attract immune system cells to help with the tissue repair. This phase usually lasts 4 to 6 days, and can be associated with redness, oedema, heat and pain.

*Inflammatory phase, the objective is to destroy bacteria, remove debris and prepare wound bed for new tissue growth © L.M. Cucci*



### 3) Proliferative phase

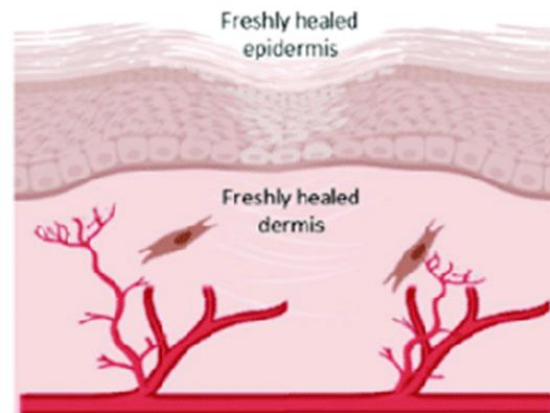
In this phase the rebuilding starts; cells that the body needs to repair the wound are multiplying and spreading. It basically covers up the wound with new tissues, this happens in three stages. First, the wound is filled up with new connective tissue (also called granulation tissue) and new blood vessels. Then the wound margins are contracted – the wound edges are pulled together. The last stage is about covering the wound with epithelial cells (epithelialization), these cells cover the surface of the skin. This phase usually takes 4 to 28 days.



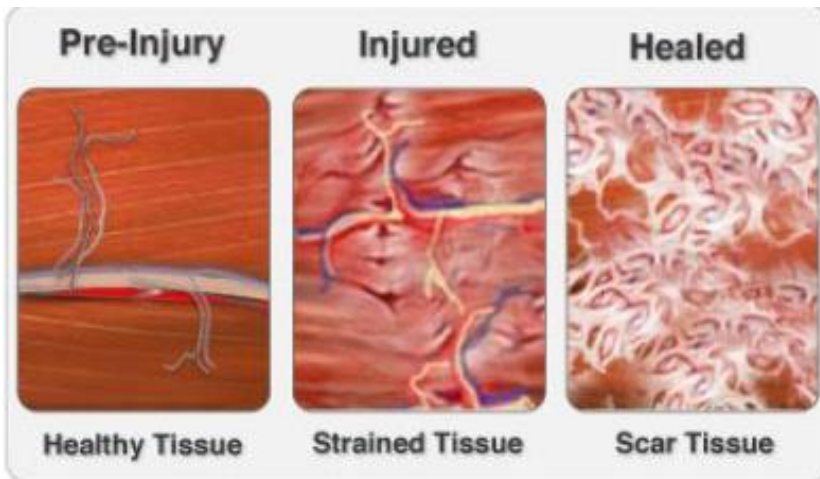
*Proliferative phase, the objective is to fill and cover wound once its cleaned © [L.M. Cucci](#)*

### 4) Maturation (remodeling) phase

In the last phase the repairs that took place already are strengthened. Even though the wound looks closed, the body is still busy with making the skin stronger and more flexible. Cells that are no longer needed are removed and collagen fibers reorganize, creating scar tissue. Scar tissue is about 20% weaker than normal tissue, and less elastic. This phase might take days, months or even years! It depends on the severity, location, treatment etc.



*Maturation phase, the objective is to form scar tissue © [L.M. Cucci](#)*



*Scar tissue is made of collagen cells that will form on and around the injured area to try to protect it © [Structura body therapies](#)*

$$\text{SCAR TISSUE} = \uparrow \text{RISK OF RE-INJURY} + \downarrow \text{RANGE OF MOTION}$$

Via this [YouTube link](#) you can find a video that explains the wound healing phases in more detail. On the next page we have some photos of an injured African wild dog. If you don't like blood/wounds, then don't scroll further 😊

This African wild dog was badly injured in the face. We came on 05 May, cleaned the wound, and cut away the dead tissue. What we could stitch we stitched (if you look closely, you can see that small holes were made around the big wound, these are tension-relieving holes, so that there is not so much pressure on the wound and stitches). Since the wound was so big, a graft was placed over it. Knowing wild animals, and especially wild dogs, the chances were good it would not hold for long, but anything was better than nothing. On the 08<sup>th</sup> of May, the wound already looked much better, and a month later the wound was almost closed. A nice example of how incredible the body is when it comes to healing!



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