



# NEWSLETTER OCTOBER

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Dear clients,

Slowly but surely we are moving towards the end of the year, time flies! In this newsletter you can read about porcupine quills, do you know what they actually are? We also give a summary on our latest article 'Animal burn victims & First aid'. The full article can be downloaded for free from the [Document-section](#) on our website. We hope you enjoy this newsletter!

Kind regards, the Wildlife Vets Namibia team

## PORCUPINE QUILLS

This animal is one in the category 'strange animals'... the porcupine! The word porcupine means 'quill pig' in Latin, however, the porcupine is in no way related to pigs. They are rodents; the largest and heaviest ones of Africa.

A quill is actually a modified hair. Over time, the hairs have become enlarged and were strengthened with layers of keratin, which makes the quills tough and rigid. When you look more closely to the photo on the right, you can actually see that the quills are modified hairs – check the 'quills' near the head, they are long and fine. Towards the back of the animal, the quills get more robust and hollow. As they are hollow on the inside, they are lighter, and it gives the porcupine the opportunity to rattle them, which makes an intimidating - don't come closer! - sound!

Porcupines cannot 'shoot out' their quills, but they can and will attack an animal (or human!) when threatened. They will first give a couple of warnings, and when that does not work, they will rapidly move backwards, and the quills can end up in the attacker's face and legs... The quills are not poisonous, but they are often dirty, and they have very small spikes (like fish hooks). This makes them difficult to get out. What often happens is that when the animal (and owner...) try to pull the quills out, they break off. This can lead to very nasty infections.

The embedded quill can stay in the body, and they frequently migrate! Because of tiny barbs on the quills and their triangular shape, they actually tend to move deeper into the tissues, rather than working themselves out. As the muscles move, the quill moves deeper. Ulf once had a dog with a swollen eye in the clinic; eventually the eye had to be removed, and behind the eye was a quill! He also found quills in the chest of dogs.

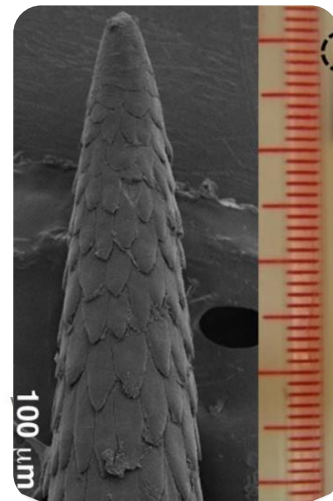
If your pet is unlucky enough to have an encounter with a porcupine, try to prevent your pet from taking the quills him/herself. To remove the quills is very painful, so it's best to take your animal to a vet and have the quills removed under a sedation. Do NOT cut the quills, the chances that the remains of the quill migrate are even bigger!

*This unfortunate duiker got herself into a spiny situation....*  
© Unknown

*Close-up of a North American porcupine quill* © [Woo Kyung Cho et al. \(2012\)](#)



*African porcupine that was rehabilitated and released back into the wild. © M. Bijsterbosch*



## ANIMAL BURN VICTIMS & FIRST AID

In our latest online article we write about animal burn victims and first aid. We focus on thermal burns in mammals (game/livestock and pets), caused by external heat sources such as fire or boiling water. We explain what happens to the body when it gets burned, and how you can assess and treat burn wounds. Below you can find a summary, the full article you can read and download [here](#). It is important to understand that burn wounds are very serious and challenging to treat.

### How does the body react to a burn injury?

When an animal or human sustains burn injuries from for example a fire, it has several consequences to the body. The heat will cause (severe) skin damage, which, depending on severity, will lead to the skin cells to die. Damage to the protective skin cover has the following serious consequences:

- 🐾 Fluids and electrolytes are lost. This can lead to a drop in blood pressure and shock.
- 🐾 A severe inflammatory reaction (both locally and systemic) results in increased permeability of blood vessels. This increases/causes fluid leakage out of blood vessels, leading to swelling (oedema).
- 🐾 Increased susceptibility to burn wound infection. This together with a weakened immune system often leads to septicaemia (systemic, often fatal, spread of infection via blood to the body)

The visible burn wounds are not the only health concerns. Smoke inhalation is another major concern in burn victims. Smoke and heat can damage the respiratory tract, causing the airway to swell up.

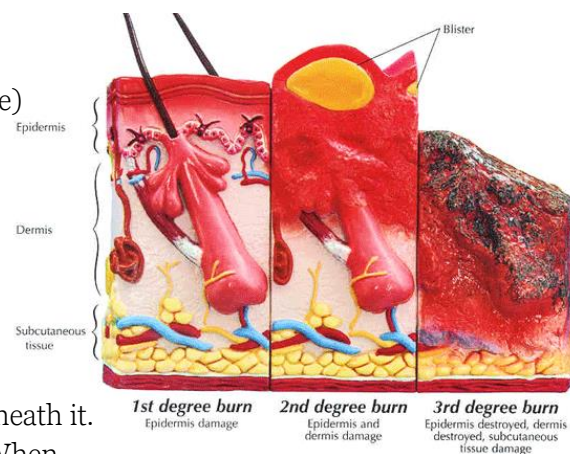
### Assessing burn wounds

When an animal has suffered from burn wounds, one must assess the following things:

#### 1) Depth of the burn wounds

The depth and extent of the burn wounds are major determinants regarding the long-term outlook (prognosis) of an injured animal. Superficial burn wounds usually don't require veterinary care, deep burn wounds heal slowly and are more difficult to treat, while very deep burn wounds are life-threatening (especially if extensive). Burn wounds are classified into 1<sup>st</sup> to 3<sup>rd</sup> degree burns:

- 🐾 Superficial burn - First degree burn
  - Superficial burns, affects the outer layer of the skin (epidermis)
  - Red, painful, non-blistered skin (example is a sunburn in people)
  - Usually does not require veterinary care
- 🐾 Partial-thickness burn – Second degree burn
  - Affects the skin's outer and inner layer (dermis)
  - Pain, swelling, redness, blistering
  - These burn wounds are painful, take long to heal and create a real risk of infection → veterinary care is advised.
- 🐾 Full thickness burn - Third degree burn
  - Very deep, affecting all the layers of the skin and fatty tissue beneath it.
  - Leather-like skin, white/red/black colour. Often very painful. When there is no pain, it's a sign of nerve damage. Charring can be seen.
  - These burns are dangerous and life-threatening! The animal is highly susceptible to infection, and its circulation and immune system are compromised → Requires immediate and extensive veterinary care.

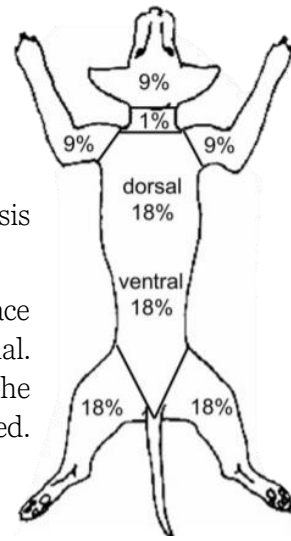


Schematic overview of the different degrees of burns © TGP

## 2) Extent of the burn wounds

The amount of skin that has been burned is often more important in determining the prognosis than the degree of burn wounds sustained.

In human medicine the surface of the palm is equivalent to about 1% of the total body surface area. The 'rule of 9' is a quick way to estimate the burnt body surface area in both man and animal. As a general rule, when 25-30% or more of the body has sustained severe burn wounds, the prognosis is grave, and, in animals, contrary to human medicine, euthanasia must be considered. One must be aware that the true extent of the burn wounds might increase with time.



## 3) Location of the burn wounds

Especially in animals (livestock and wildlife) a functional body is of utmost importance. Certain locations of burn wounds will have a great impact on the locomotion, and thus on rehabilitation success of an animal. Burn wounds near joints might lead to scar tissue, which will restrict the movement of that joint. Damage to the hooves also carries a poor prognosis. Burn wounds around the eyelids and mouth might impair movement of surrounding muscles. Severe burns around the udder, penis and scrotum may affect performance of milk cows and/or breeding animals.

*A way of estimating the extent of the burn areas, according to the 'rule of 9', in animals. © [Wohlsein et al \(2016\)](#)*



*Eland calf that sustained severe burn injuries during a veld fire. Note the hooves that are severely damaged and dropped off. This would require long term treatment with the prognosis for full functional recovery is not good. © Dr J. van der Westhuizen*

## 4) Species (tame or wild)

Whether an animal is a pet or wild, small or big, are some important considerations to evaluate the long-term outlook for the animal. The tamer and smaller and animal, the easier and cheaper treatment will be. A burnt pet which can be kept in a clinic and treated over the long-term, obviously has a better chance of survival than a burnt sable bull.

Never underestimate the detrimental effects stress has on an animal's wellbeing. Tame animals will be easier to treat and regular human contact will be less stressful than for wild animals. Especially in wild animals the question is whether we make the animal suffer more by treating it.



## 5) Value of the animal and the financial situation of the owner

Other considerations would include the inherent value (monetary and emotional) an animal owner attaches to an animal. A 3-legged dog may be perfectly acceptable, but amputating a leg on a horse would be cruel and unacceptable.

Finances are an important consideration. Burn wounds require expensive, long-term treatment and dedication, and the question will arise whether it is worth it to save the animal. The owner might be more inclined to put more effort in saving an endangered species like a rhino than a common springbuck.

### Livestock & wild animals

For the below information you must always consider the species – is it a wild or tame animal? Can it be handled or must you get a specialist person in?

1. **Assess the situation and check for danger – own safety first!**
2. **General assessment of farm and wild animals after a bushfire**

Areas that must be closely examined on each animal include: face, ears, lips, anus, vulva, teats, penis, prepuce, scrotum, axilla, inguinal areas, legs and feet. Animals, no matter what species, should be examined for the following lesions. Those having sustained these injuries should immediately be euthanized.

- 🐾 Severe injuries to limbs, muscles or face that limit eating, drinking or breathing.
  - 🐾 Smoke or flame inhalation showing difficult breathing, coughing, frothing at the nose and mouth.
  - 🐾 Animals that are down and unable to rise due to burn (or other) injuries.
  - 🐾 Animals with severe burns destroying skin on more than 10-15% of the body and/or to vital parts (feet, face, inguinal areas). Apparent “mild burns” to vital areas can result in rapid deterioration, suffering and death.
  - 🐾 Animals with major limb swelling.
  - 🐾 Where daily reassessment of animals is not possible, consider euthanasia of animals with less severe burns but having hooves missing and/or separation between hooves and coronary band. Hoof regrowth is possible but slow. These animals will be in severe pain and need intensive foot care. Proper functional recovery is in no way guaranteed.
3. **Species-specific issues**

In the full article we discuss species-specific issues on sheep, goats, cattle, horses, pigs, poultry and wildlife.

4. **First aid and what should a farmer have in stock?**

If the animal has a fair chance of survival and you are able to get it into a kraal/boma, take it to this small area where you can monitor the animal. Following burn injury, the skin traps the heat resulting in continued damage. To stop this ‘microwave’ effect, immediately cool down the wound with ideally cool (12-18°C) slow-running water. This will minimize the progression of the burns and thus tissue damage, it decreases pain and partly cleans the wound. Ideally, let the water run for at least 20 minutes. To avoid hypothermia (under-cooling) don’t immerse the animal in water but only rinse the burned areas. For the same reason, don’t use ice or very cold water, this not only causes hypothermia, it also causes vasoconstriction (tightening of the blood vessels) and worsens the injury by reducing the blood supply to that area. In the absence of available running water, place wet clean towels or compresses on the burned areas for at least 20 minutes.

Following the wound cooling, the wounds should be covered to help prevent bacteria from entering the body. It also relieves pain. Whether it is possible to bandage, will depend on the animal and the extent of the burns. Again, consult your vet!

Jelonet is a paraffin gauze which can be used to cover the wound. This prevents the bandage from sticking to the wound. On top of the Jelonet, one can put an antibacterial ointment on. We like to use Silbecor, which gives a soothing feeling, and it has a good antibacterial action to prevent wound infection. DON'T apply butter, egg white etc. to a burn wound since these may promote bacterial growth and infection. Honey, on the other hand, is a good emergency remedy to be used.

So you put first the Jelonet on the wound, then the Silbecor cream on top of the Jelonet, and then you can bandage it with cotton wool and a crepe-type bandage material. To secure it even more, one can place a Flexus bandage over it.

Septic (infected) wounds should be bandaged on a daily basis, clean wounds every 2-4 days, depending on how the bandage looks. When wet/dirty, it needs to be changed. The animal should get painkillers and antibiotics, contact your veterinarian for this.

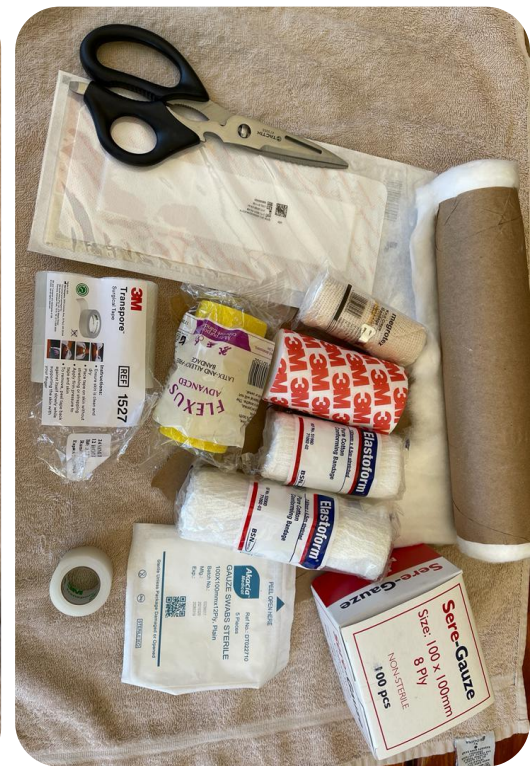
## 5. Post-bushfire care

For optimal animal care and comfort, all animals that were selected for treatment should be put in a 'hospital camp' where they can be regularly inspected, treated and nursed. Make sure that:

- 🐾 They are on the softest, most level ground available, especially if their feet are burnt.
- 🐾 They have ready access to good-quality feed and water. Burnt animals are reluctant to move and usually do not feed for a few days. They should be given high-protein feeds such as good quality lucerne and/or camel thorn pods.
- 🐾 They can move to water and can drink. Those unable to drink must be euthanised.
- 🐾 They have ready access to existing – or makeshift – shade.
- 🐾 They are treated for worms, especially after rain.

Check all animals regularly for signs of deterioration, in particular check for flystrike on burnt areas and feet and treat as necessary. Affected animals may benefit from long-acting antibiotics for secondary infections.

More info on pets and burn wounds can be found in the full article.



*Bandage material which should be in any first aid kit (for humans and animals) © U. Tubbesing*

Some important last notes:

Do's
✓ Assess the situation, <b>own safety first</b>
✓ If you can't handle an animal, rather call in a vet
✓ When needed, restrain the animal (e.g. muzzle your dog as it might bite due to the pain)
✓ Cool the burn wounds with cool water or wet towels/compresses, then bandage it
✓ Give the animal water if it wants to drink (not too much)
✓ Always get veterinary advice – 2 <sup>nd</sup> /3 <sup>rd</sup> degree burn wounds are serious

Don'ts
☒ Don't apply ice on the burns
☒ Don't apply any ointments or butter-like substances just after the burn happened
☒ Don't break blisters
☒ Don't touch the burn wounds
☒ Don't cool the entire animal → risk of undercooling (hypothermia)

To read the full article, visit the Documentation-section on our website, or click [here](#).

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JOEDATOR

*"You weren't supposed to see this."*

