

Care of ears  
and skin in dogs  
and cats with  
**Biodexin** cleansing solution  
**Biodexin** shampoo  
**OTOFIN** cleansing solution



[www.biovetapets.cz](http://www.biovetapets.cz)





## TO HEAR OUR MASTERS BETTER ...

The external ear and the ear canal, the visible and relatively easily accessible external parts of the ear, only represent part of the ear structure of dogs and cats. For the dog or the cat to hear well and to keep correct head and body posture they also need middle and internal ear to function correctly. These parts of the ear are hidden in the skull and are invisible without appropriate medical aids. However, without proper care of the external ear and the ear canal changes in the middle and in the internal ear may subsequently occur.

The targets of home care of animal ears include the external ear skin and the vertical parts of the ear canal. The external ear is supported with a pair of cartilages whose shape slightly differs between breeds. The structure of the external ear consists of a large cartilage which bends in the place of transfer to the horizontal canal. This bend may cause slight resistance to the inserted device for examination of the ear canal and the tympanum – otoscope. Another smaller cartilage forms the transition between the cartilage of the external ear and the ear canal and is located in the place where the external ear transfers to the bony ear canal. The diameter of the external part of the ear canal in this place is about one centimetre.

The ear canal is a bony tunnel about five to ten centimetres long whose skin is covered by a special epithelium. The skin of the ear canal is naturally light and thin and contains glands and hair follicles. There are more glands and follicles in the vertical ear canal and their density depends on the, which may be considered a most common cause of some dog's breed sensitivity to ear canal inflammations.

The horizontal ear canal ends with a transfer to a transparent epithelial structure – the tympanum or eardrum – consisting of two parts, the bigger pars tensa (tense) and the pars flaccida (thinner, looser). Before the eardrum there is a bunch of hairs in some breed of dogs. The ear canal continually produces wax (cerumen), playing protective role thanks to contents of very important antibodies.

auricular  
cartilage

vertical  
canal

horizontal  
canal

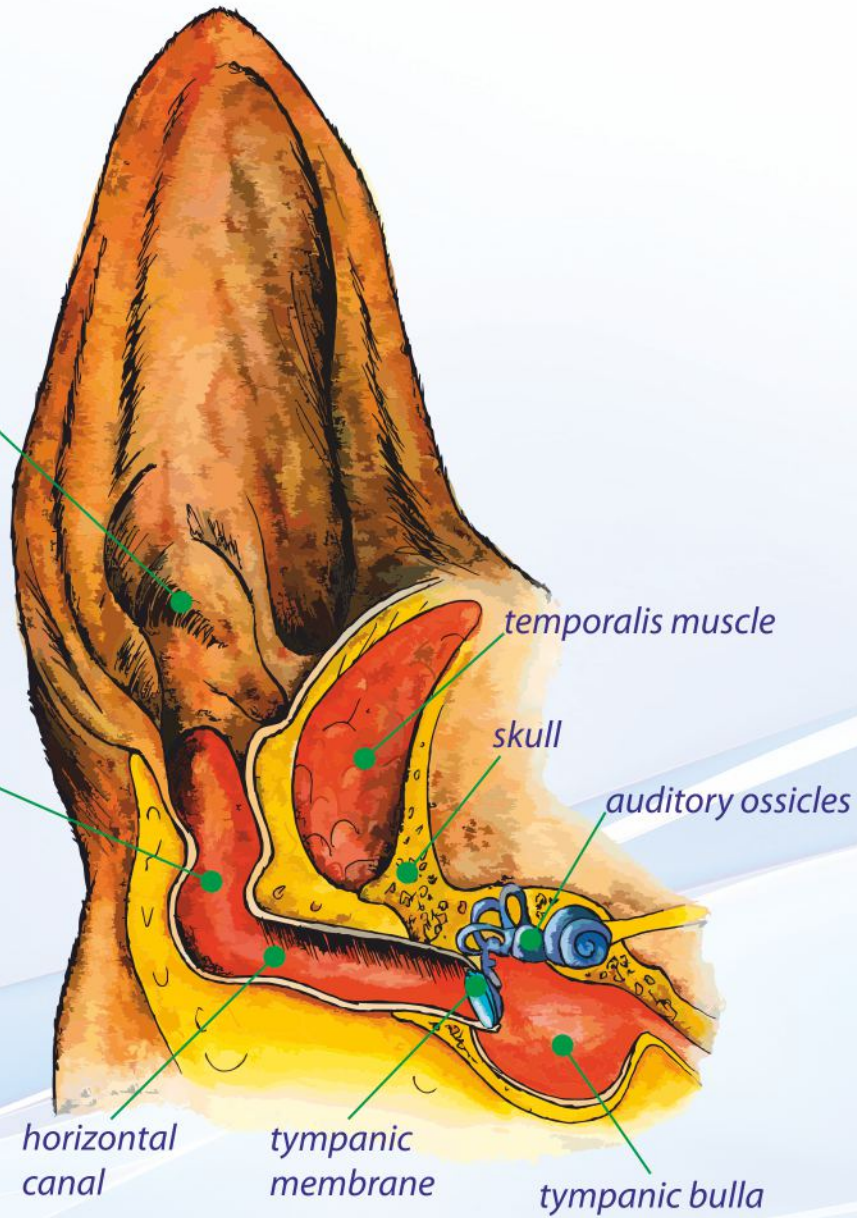
tympanic  
membrane

temporalis muscle

skull

auditory ossicles

tympanic bulla





The middle ear consists of a hollow bony structure of egg shape (bulla tympanica) separating the middle ear with the tympanum, protecting the middle ear from infections from the external environment. The middle ear consists of three parts, the smallest (dorsal) one being filled with ear bones (the malleus, the incus and the stapes). As the tympanic bulla contains numerous nerves controlling face and head muscles and glands, patients with middle ear inflammations often show severe neurological symptoms. As the middle ear communicated with the pharynx via the Eustachian tube levelling the pressure between the exterior and the middle ear, in rare cases pharyngeal infections may migrate to the middle ear.

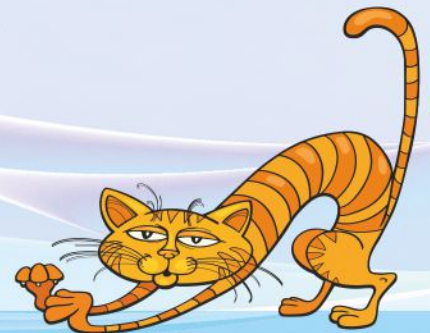
The internal ear contains the actual hearing organ (the cochlea) and the ear nerve, connecting the internal ear and the hearing centre in the brain and well protected deep in the bones of the skull – in the bony labyrinth. The internal ear is responsible for sound transfer and for keeping correct body posture (balance organ). Patients with inflammation in this part of the ear find it difficult to stand straight and keep body balance.

## **WHY DO EAR CANAL INFLAMMATIONS OCCUR SO FREQUENTLY?**

### **Frequent causes:**

- **LONG AND NARROWED EAR CANAL**
- **HANGING AND HEAVY AURICLE**
- **NARROWED CANAL**
- **EXCESSIVE HUMIDITY – dog swimmers or those who frequently bathe in water**
- **RICH HAIRS IN THE EAR CANAL**
- **OVERPRODUCTION OF THE WAX**
- **TUMOURS, POLYPS**

### **INCORRECT CARE – FREQUENT PROBLEM**



## Why does the ear need to be cleaned?

To clear excessive WAX and DETRITUS, to remove bacteria, yeasts and inflammatory agents

Wax, secretion and tissue debris prevent penetration of medicaments to the damaged skin. Secretion caused by inflammation protects bacteria and yeasts against the effects of medicaments, often acting directly against them. That is why the inflammation may regress in a short time.

Application of quality cleansers will remove the wax and the inflammatory secretion also from the deeper structures of the ear, which allows the medicine to get as far as the ear drum, which may be damaged by a poorly managed inflammation.

If the inflammation-produced secretion is removed from the ear, the external ear and canal skin swell, pruritus and reddening reduce.

The skin of the external ear and the canal remains wrinkled after chronic inflammations. Regular care removes the wax and detritus accumulated in the folds and acting again as substrate for proliferation of bacteria and yeasts. Lavage of the ear canal reduces concentration of allergens causing allergic reactions such as pruritus, reddening and pain with subsequent scratching and bruising the skin of the external ear and the canal.

## What must be noticed by the breeder?

### When should the ear be cleaned?

#### Symptoms of ear structure disease:

- a. Odour
- b. Excessive wax accumulating in the ear folds
- c. Ear reddening
- d. Frequent head shaking
- e. Painful to the touch – contact a veterinarian
- f. Increased intensity of scratching the ears - contact a veterinarian
- g. Change of secretion colour – yellow, whitish, with blood - contact a veterinarian
- h. Head tilt, balance disorder – contact a veterinarian



## Each ear deserves an individual schedule of care



### CORRECT CLEANING TECHNIQUE!!

Warm OTOFIN and BIODEXIN up to the body temperature before application. A couple of minutes in the hand or in the pocket should be enough. If the solution is cold, the patient will react to the lavage. Distract the dog or the cat, play with it, reward it with a treat. Apply the solution gently, without force, ideally with the help of another person.

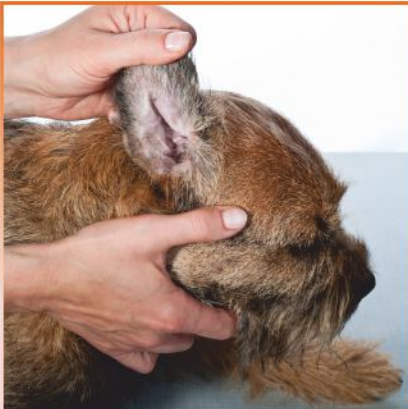
Notice any potential irritation after the first application. This is very important especially in the case of allergic or sensitive individuals. If irritation in the form of reddening or pruritus appears, inform your veterinarian.

Carefully turn the ear and pull upwards, then fill the ear canal with the solution. The volume of the applied solution should be enough to fill the ear canal and nearly overrun the canal orifice. Do not touch the wall of the ear and the canal with the applicator to avoid contamination of the applicator and transfer of detritus with bacteria to the cleansing solution. In the case of detritus sticking to the applicator remove them and disinfect the applicator surface.

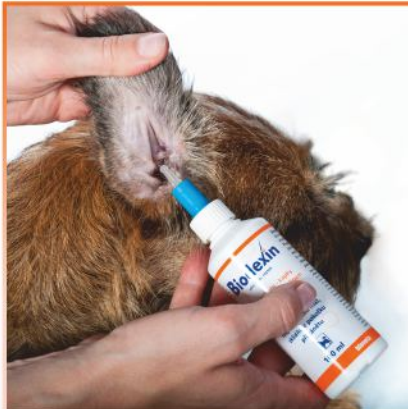
With slightly pulled ear and closed entry to the ear canal massage the ear for the solution to get via the horizontal canal to the ear drum. The massage, which should take several minutes, should produce squelching sound.

After a couple of minutes of the massaging let the dog shake its head. The centrifugal force will release the solution together with the secretion and the wax towards the orifice of the ear canal and to the external ear skin where the solution may be wiped off.

Use paper napkins or round makeup removal swabs or unwoven compression pads and your fingers to carefully wipe the ear canal and the external ear, especially carefully between the folds. As the ear canal is long, you need not be afraid of damaging the tympanum. Do not use cotton wool swab sticks (except for removal of the wax and the secretion from the external ear folds in small dog and cat) as they rather press the secretion in the ear canal and may injure the sensitive skin of the canal.



**1.** Restrain the dog before cleaning. The earflap gently pulls upward.



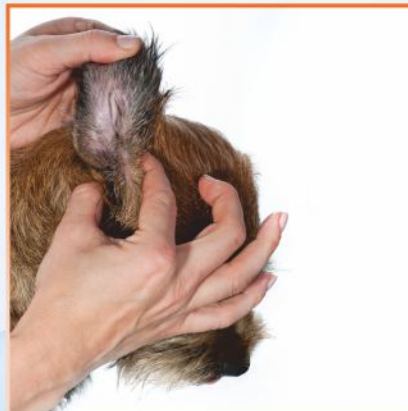
**2.** The tip of applicators attach to the orifice of the ears canal. The flexible applicator doesn't wound the sensitive skin.



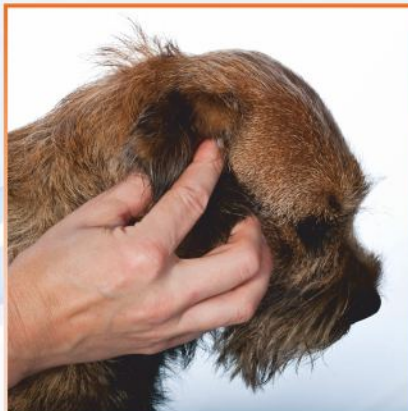
**3.** The bottle with the cleansing solution turn upside down and with slight squeeze on the walls of the bottle can applicate solution to canal.



**4.** The canal should be filled with the solution to the orifice



**5.** Close to the orifice of the canal with the slightly pressure to stop the leakage of solution. Massage gently.



**6.** Lobe earflap back and continue with gentle massage, preferably several minutes.





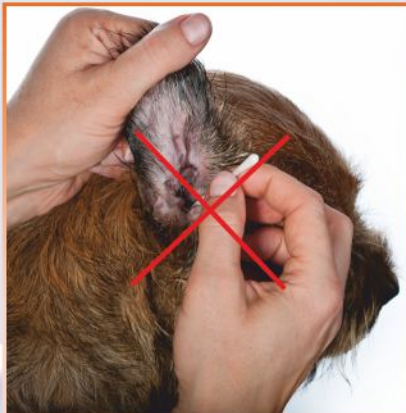
**7.** Let your dog shake out excessive solution after the massage.



**8.** The residue of the solution, debris and wax remove with the gaze squares, preferably fine, non-woven.



**9.** You can use a cosmetic pads, which can be moistened with Biodexin solution.



**10.** The cotton swabs aren't recommended for cleaning of the ears canal.



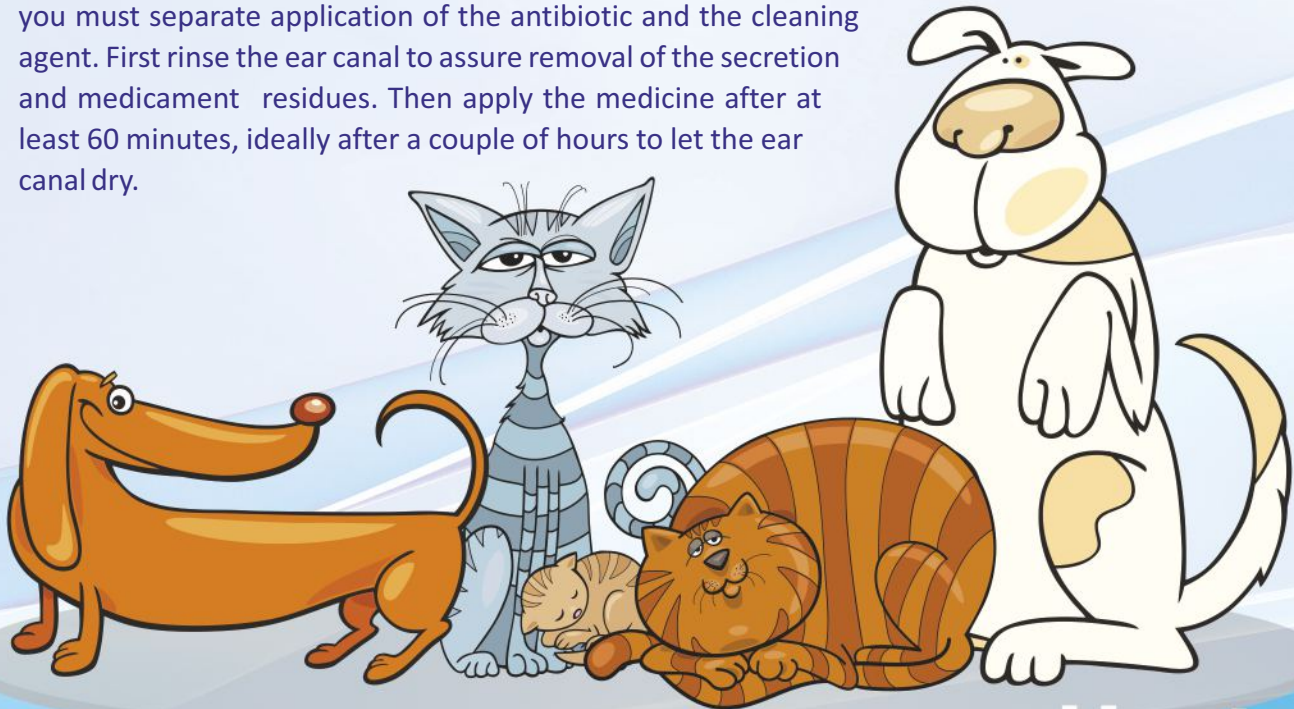


## How to find out correct length of the interval between ear cleaning?

The veterinarian should check intactness of the tympanum before beginning of the regular therapeutic or preventive ear and canal cleaning by the owner. Some substances contained in the cleansers may be toxic for the nerves of the middle ear.

Correct intervals between individual ear canal lavages can be specified by the owner in consultation with the veterinarian on the basis of occurrence of accumulated wax and/or odour of the ear. **Example** – the owner cleans both ear canals once a week, the dog does not shake its head, the ear and the canal are clean, without odour. In this case you should visit the veterinarian in about ten to fourteen days after the last cleaning. If no accumulated wax appears in the ear after this interval, the odour isn't intensive and the dog does not show signs of discomfort (head shaking, or ear scratching), the interval between the cleaning may be extended to three weeks.

If you clean the ears in combination with application of antibiotics, you must separate application of the antibiotic and the cleaning agent. First rinse the ear canal to assure removal of the secretion and medicament residues. Then apply the medicine after at least 60 minutes, ideally after a couple of hours to let the ear canal dry.





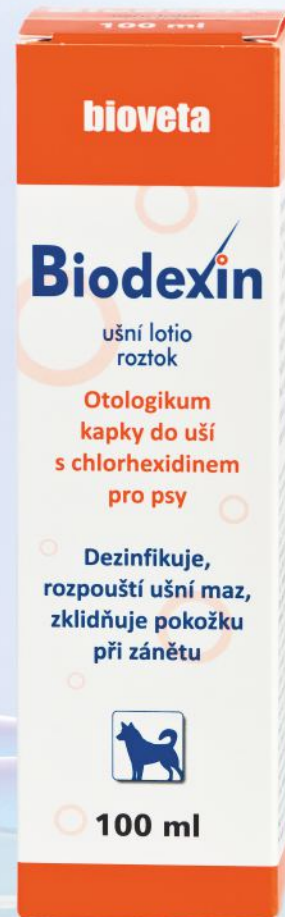
## BIODEXIN ear lotion, solution

### The product contains:

- Antibacterial and antimycotic active agent **chlorhexidin** digluconate solution 0.1 %,
- **Essence of Melaleuca alternifolia**, acting against bacteria and yeasts *Malassezia pachydermatis*
- Healing and anti-inflammatory **dexpanthenol**, transforming to pantothenic acid characterised by moisturising effect
- Softening **propylenglycole**, effectively releasing the wax
- Solubiliser **Cremophor RH 40** increasing effects of propylenglycole and reliably diluting the wax
- Modern preservative **Euxyl PE 9010** providing microbial safety of the preparation during the period of use
- **Acetic acid** for keeping optimum acid pH

### Benefits of application of chlorhexidine

- Antibacterial and partly antifungal effect
- Reducing intensity of bacterial colonisation
- Not inactivated by organic material
- Non-irritant, well tolerated
- Not drying out





## OTOFIN ear lotion, solution

### The product contains:

- **Lavender and basil essence and extract of marigold** providing sufficient antibacterial and antifungal effect
- Softening **propylenglycole**, effectively releasing the wax
- **Alfa bisabolol** (extract of camomile) acting against inflammation and calming the inflamed ear and canal skin
- **Glyceromacrogol-7-cocoate** reduces irritation by the other substances used in the product, preventing skin irritation
- **Citric acid** for maintenance of the optimum pH within the natural range of healthy skin

### Benefits of application of Otofina

- Excellent antiseptic effect of natural essences
- Substances reducing numbers of bacteria and yeasts on skin
- Careful elimination of excessive humidity from the canal
- Very good dissolution of accumulated wax
- No skin irritation and anti-inflammatory effect
- Reduction of odour accompanying with otitis externa



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## WHEN THE SKIN CANNOT DEFEND ITSELF

Pyoderma, bacterial infection of the skin, is one of the most common skin diseases of dogs and cats. The disease affects animals of all ages, sexes and breeds, with some breeds being more susceptible to the infection. Problematic breeds include those with multiple skin folds and/or increased sebum production. Under certain circumstances, such as skin injury, for example in patients with atopies, allergies to flea bites or hormonal disease, bacteria may populate the skin in increased numbers able to cause serious skin disorder.

The most frequent pathogen causing symptoms of skin infection is *Staphylococcus intermedius*, a usual part of the skin microflora. This only confirms the fact that the primary cause of bacterial skin infection is disturbed balance of the skin microflora.

A typical example is allergic skin disease affecting a relatively large part of the dog population. Bacterial infection may be subsequently complicated with yeasts or fungal infection further worsening the symptoms. Only a small percentage of dogs and cats develop bacterial skin infection as the primary disease, without any other cause.

**Typical symptoms of pyoderma include: reddening, pruritus, pustules, crusts, little ulcers, scales, hair loss, skin thickening and darkening, odour and development of exudate on the skin.**

### Why is shampooing so important?

- Bath reduces pruritus
- Removes detritus, necrotic tissue, exudate and blood
- Reduces numbers of bacteria populating the skin
- Hydrates the skin and helps restore its natural ecosystem
- Bath gets the active substance in contact with bacteria and destroys them

## Why bath with Biodexin?

The product on shampoo basis contains **four percent** of the very active antiseptic agent called chlorhexidine.

Thanks to its strong antibacterial effect the product may also be used in cases when therapy of bacterial skin inflammation (pyoderma) is needed. Biodexin shampoo can at the same time be used as prevention in patients with proven allergy, atopy of hormonal disease with recurrent skin inflammations.

Bacteriostatic effect of the product is combined with excellent washing and odour removal effect. Regular use reduces microbial burden of the skin and limits skin colonisation with bacteria and yeasts. The package size of the shampoo 250 and 500 ml allows long and proper application to large and long-haired breeds.

Frequency of baths should be decided by veterinarian on the basis of the dermatological diagnosis. In the case of need up to three baths a week are recommended. Preventive bath should be taken once a week. The medicated shampoos are good quality and do not irritate or excessively dry the skin even after frequent use in patients with skin inflammations.



## Is there the optimum way of bathing with Biodexin?

Choose a suitable environment not stressing the dog before the bath. Remove the collar, carefully comb the hair and remove all visible impurities.

Properly wet the skin and the hair; the shampoo is then easy to apply and properly distributes across the skin. Sufficient moistening helps the active substances penetrate to the skin.

Do not forget head, lips, the jaw line, ears and eyes surroundings as these are a significant source of bacteria. These sensitive areas should be shampooed carefully with a sponge

Special attention should be paid to the skin lesions, where the therapeutic effect of chlorhexidine may be applied.

Form a sufficient layer of the foam on the skin and let the shampoo act for at least ten minutes. Distract the dog's attention during this period with treats, toys etc.

Rinse the shampoo off for a sufficient period of time until only clean water runs off the skin and the hair.

This is especially important for sensitive areas around the tail, the genitals, the mouth and the ears.

Usual interval between baths in medicated shampoo is 2–4 days. Frequency of bathing with Biodexin depends on the type and intensity of the skin disease and should therefore be consulted with the veterinarian.





## OTOFIN AND BIODEXIN – PREVENTION AND THERAPY

- ◆ These products perfectly control odour and carefully dry up the ear canal after bathing
- ◆ They reduce bacterial colonisation and concentration of the allergens on the skin, which is extremely important for allergic dogs
- ◆ The price is comparable to antibiotics but these disinfecting products do not cause resistance sometimes caused by antibiotics



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