

A GUIDE TO YOUR DOG'S EAR HEALTH

The Comprehensive Resource for Dog Owners



A MISTER BEN'S ORIGINAL PUBLICATION

A GUIDE TO YOUR DOG'S EAR HEALTH

The Comprehensive Resource for Dog Owners

**For The Most Effective Dog Ear Care Products
available, visit www.MisterBens.com**

A GUIDE TO YOUR DOG'S EAR HEALTH:

The Comprehensive Resource for Dog Owners

by Mister Ben's Amazing Products, LLC

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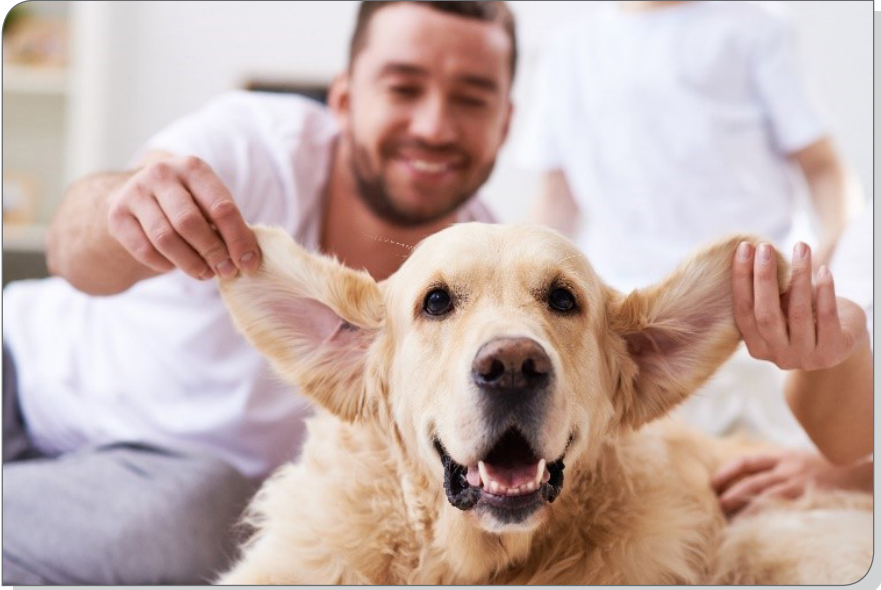
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01

ABOUT THIS GUIDE



Congratulations on your purchase of a Mister Ben's Ear Care Product for Dogs! You have taken a positive step in caring for your dog's health and long-term ear maintenance. A dedicated owner like yourself only wants the best for your pet.

Your dog's ear is a complex structure that not only facilitates hearing, but also plays a major role in the control of balance and coordination. Inflammation of the ear is known as otitis. Otitis can be acute or chronic, and affect one or both ears. Canine otitis is a prevalent issue, and is one of the most common reasons for owners to seek veterinary treatment for their dogs^{1,2}.

Otitis is usually a multifactorial problem. This means there are several underlying issues which, in combination, cause

the disease. In dogs, otitis has been linked to many different underlying causes³. It is a disease process which can be challenging to treat and manage successfully. Unfortunately, otitis also has a high rate of recurrence, which can be frustrating for you the owner, and painful for your dog⁴.

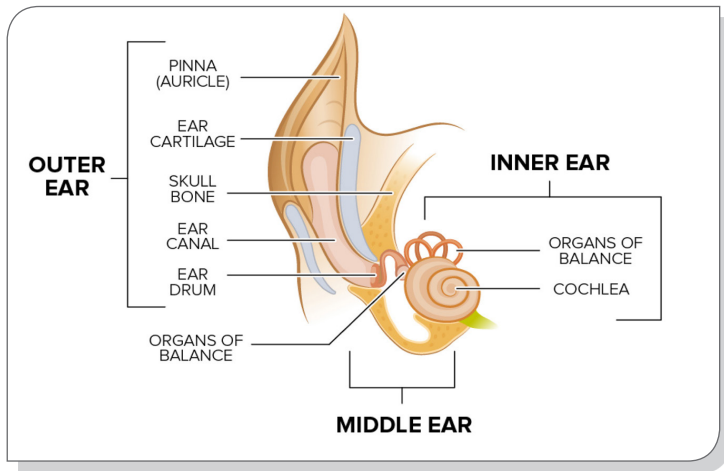
Chronic otitis requires an accurate workup by a veterinarian to get to the root of the problem, combined with a multi-tiered approach to treatment. Long-term follow-up is usually necessary. When chronic ear infections are inadequately treated, or treated too late, the consequence can be lifelong pain and loss of hearing for your dog. Through a proactive approach to your dog's care and treatment, such consequences can be prevented.

The purpose of this guide is to provide you a wealth of information regarding ear problems in dogs so that you can better understand the complicated nature of ear diseases. This guide was written to help empower you so that you can make informed decisions regarding the necessary treatment choices for your dog's ears.

02

THE STRUCTURE OF YOUR DOG'S EAR

Dog ears come in all shapes and sizes and are an individual characteristic of specific breeds. In some breeds, the position of the ears can give us an understanding of the dog's current mood. The movement of the ears can be an important part of their body language. Additionally, an abnormal position of the ears may be an important indication of disease or nerve damage.



The three main sections of the ear: Outer ear, middle ear and internal (or inner) ear.

The canine ear can be divided into three sections: the external ear (also known as the outer ear), the middle ear and the internal (or inner) ear⁵.

The external ear is composed of the pinna, commonly known as the ear flap, and the external ear canal. The ear flap is a sheet of cartilage covered by skin. The mobility of the ears

varies for each breed, but they are usually highly mobile with each side controlled independently. Numerous muscles and nerves intricately control the movement of the ears and the area has a rich supply of blood vessels. The shape of the pinna helps collect and transfer sound waves into the ear canal and towards the middle ear. The external canal is an L-shaped structure which can be divided into a vertical canal, followed by a turn to the horizontal canal which extends towards the eardrum.

The external ear canal lining contains sparsely located hair follicles and associated sebaceous and ceruminous glands³. These glands produce a thin layer of ear wax, also known as cerumen, which acts as a protective barrier for the canal. There is a continual outward movement of wax, which is necessary for the excretion of pathogens, debris and foreign bodies from the ear canal^{6,7}. The ear wax is composed mainly of lipids and dead canal cells that have sloughed off³.

The middle ear is a small chamber which contains three small bones, commonly known as the hammer, anvil and stirrup⁵. These bones transmit and amplify sound waves from the tympanic membrane to the inner ear. The tympanic membrane, also known as the ear drum, is a translucent membrane which forms a physical division between the external canal and middle ear.

The internal ear is an important and complex structure which contains the cochlea, the vestibule and the semi-circular canals⁸. The cochlea is the organ for hearing. There are specialized hair cells within the cochlea that absorb sound vibrations, transmitting them as electrical impulses directly to the auditory nerve, which passes them to the brain for interpretation⁹. The vestibule and semi-circular canals are responsible for helping to maintain balance and coordination. They detect rotation and acceleration, and transmit electrical signals to the brain via tiny hair cells in the semi-circular canals in order to help the body maintain balance⁹.

03

CLINICAL SIGNS OF OTITIS

Normally, your dog's ear should not be painful to touch, and clean and dry with no signs of discharge. Some dogs may produce a little bit of excessive wax, which would be a brown, oily substance in the outer canal and ear flap. An infected ear will usually produce an abnormal ear discharge, which may or may not be observably present on the outer ear. The discharge can appear in a range of colors from dark brown to green to white. The color of this discharge can be very helpful in determining the cause of the otitis.



It is important to regularly check your dog's ears for signs of infection such as inflammation and discharge.

OTITIS EXTERNA

Otitis externa is inflammation of the external ear. Common clinical signs of otitis externa include scratching the head and ears, head shaking, a head tilt and varying degrees of pain associated with the area^{3,4}. The external ear can appear red and swollen, with abnormal smell and discharge.

OTITIS MEDIA

Otitis media is inflammation of the middle ear, and may be commonly referred to as a middle ear infection. It is usually due to the extension of infection from the external ear across the eardrum¹¹. Otitis media usually has similar clinical signs to otitis externa but can also include problems with coordination, a head tilt and signs of facial nerve paralysis¹².

OTITIS INTERNA

Otitis interna is inflammation of the inner ear. This is a rare occurrence, usually resulting from the movement of an infection of the middle ear to the inner ear section. Clinical signs of otitis interna usually include deafness, a head-tilt, circling, un-coordination and irregular movement of the eyes known as nystagmus^{13,14}.

04 SECONDARY PROBLEMS ASSOCIATED WITH OTITIS

An infection anywhere in the body naturally causes an inflammatory process to be triggered in the affected area. This inflammatory process causes a rush of pathogen-fighting white blood cells to be delivered to the area, and tries to flush any pathogens or damaged cells away¹⁵. However, inflammation is a double-edged sword and has some disadvantages, mainly swelling and pain.

When the sensitive lining of the ear canal begins to swell, it can be very painful and cause a dog distress. The swelling can cause the dog's hearing to be diminished, along with a tilt to its head and imbalance. Chronic inflammation can lead to ulceration, scarring, calcification and even rupture of the eardrum³.



While headshaking is a normal dog behavior, excessive shaking resulting from otitis can cause secondary problems.

Sometimes your dog can traumatize itself due to the discomfort. It may scratch its ears, face or eyes and cause further problems. Another common secondary problem caused by excessive scratching and headshaking is an aural hematoma. An aural hematoma is a large blood-filled swelling in the ear flap caused by a burst blood vessel¹⁶. It is a very painful condition and requires immediate veterinary attention.

Chronic ear pain can also cause dogs to develop behavioral issues. They may grow increasingly irritable and specifically defensive about being touched on the head. The changes in behavior can be dramatic. Due to pain, a normally calm and friendly dog can become aggressive when having its ears touched.

05

WHAT CAUSES CANINE OTITIS?

Otitis externa usually results from a combination of different underlying causes rather than just one simple problem. The causes can be primary or secondary, with additional factors that can contribute to the disease process⁴⁰.

PRIMARY CAUSES

Primary causes are responsible for the beginning of inflammation within the ear canal, which starts the whole process of otitis. Primary causes can include allergic skin disease (e.g., atopic dermatitis and food hypersensitivity), parasites (e.g., ear mites), foreign bodies (e.g., grass awn or burr), glandular disorders (e.g., seborrhea), abnormal hormone levels (e.g., hypothyroidism) and immune-mediated (e.g., drug reactions) and auto-immune diseases (e.g., pemphigus).

SECONDARY CAUSES

Primary factors cause inflammation, which alter the ear canal environment and cause a loss of some of the natural protective mechanisms. This altered environment allows secondary infections to develop. Secondary causes of otitis externa include bacterial, viral, yeast and fungal infections.

PERPETUATING AND PREDISPOSING FACTORS

Additional factors are officially known as either perpetuating or predisposing. Perpetuating and predisposing factors can contribute to or encourage ear disease, but do not directly cause ear disease by themselves. They can prevent the resolution of disease, and lead to recurrence.

Perpetuating factors occur because of inflammation within the ear, and encourage the disease process. The inflammation within the ear stops the normal outward movement of wax, which is both a protective mechanism and self-cleaning process. Without the normal outward movement, a buildup of debris occurs in the ear. Inflammation also causes glandular changes that cause ear wax to have a lower lipid (fat) content and changes the acidity of the canal. This change in environment can cause an increase in the growth of bacteria. Over time, otitis externa will cause other progressive physical changes to the ear such as fibrosis (scarring) of the ear flap, a narrowed ear canal and/or a rupture of the eardrum, all of which facilitate the recurrence of disease.

Predisposing factors can be present before your dog develops any disease of the ear. These factors include physical abnormalities of the ear, such as a very narrow ear canal, drooping ear flaps or excessively hairy ear canals. They can also include excessive moisture (e.g., from regular swimming), ear canal obstruction (e.g., polyp or tumor) or an alteration of the normal ear flora (e.g., from over cleaning).

06

HOW THE STRUCTURE & SHAPE OF A DOG'S EAR CONTRIBUTE TO OTITIS

Years of selective breeding have resulted in a large variation in size and shape of the external ear³. Multiple studies have found that some breeds are more predisposed to ear problems than others, including German Shepherd dogs, Shar-Peis, Labradors, Golden Retrievers, Boxers, Cocker Spaniels and West Highland White Terriers^{22,41}. These breeds are probably more likely to suffer from ear diseases due to a combination of different factors including their ear structure, being prone to abnormal functioning of the ear glands, or a genetic predisposition for underlying allergies.



Basset Hounds are well-known for their long drooping ears that can easily get infected when they get wet.

Many breeds are predisposed to ear disease due to an abnormal structure or function of their external ear. Basset Hounds have long, heavy, drooping ears. German Shepherds and Cocker Spaniels are prone to seborrhea, or excessive discharge

from the sebaceous glands. Shar-Peis tend to have extremely narrow ear canals. Poodles and Cocker Spaniels have a much higher density of hair in their ear canals compared to other breeds. In these examples, the ear canal is more likely to become blocked and have reduced normal air flow, which can encourage abnormal bacterial growth⁴¹.

The natural L-shaped anatomy of the dog's ear canal is thought to be a protective mechanism for the fragile eardrum⁹. But this shape also causes excess liquid to naturally collect in the horizontal ear canal, making it difficult for such liquids to exit the ear. This "pooling" of liquid can become a breeding ground for bacteria³. This is especially important for dogs who regularly enjoy swimming. Dogs that often swim, especially in dirty water, increase their risk of ear disease, as they are introducing new bacteria into their ear canals. A damp ear canal creates a perfect environment for the growth of bacteria.

To help reduce the risk of ear disease in dogs that regularly swim, you can wash your dog's ear canals with a suitable product such as **Mister Ben's Original Ear Wash with Aloe for Dogs**. Following the wash, your dog should be encouraged to shake its ears, expelling the liquid and debris. The external ear should then be thoroughly dried. Once dry, a few drops of **Mister Ben's Original Ear Tonic with Aloe for Dogs** will further help prevent ear disease.



Mister Ben's Original Ear Tonic and Wash are two of the most effective treatments available for dogs with itchy, infected ears. Mister Ben's Ear Products for Dogs are available at www.MisterBens.com.

07

WHAT PATHOGENS ARE INVOLVED?

The normal ear canal naturally contains low levels of both bacteria and yeast. As described previously, bacteria and yeast are not primary factors in otitis and will not cause disease in normal, healthy ears. But, a change in the environment of the ear can cause bacteria and yeast to multiply to levels where they can cause problems.

This table shows the most common pathogens isolated from over 3,200 canine ears with otitis externa. Staphylococci (bacteria) and Malassezia (yeast) were found to be the most commonly isolated pathogens¹⁷.

PATHOGEN NAME	TYPE OF PATHOGEN	PERCENTAGE %
Staphylococci	Bacteria	51.6%
Malassezia pachydermatis	Yeast	41.6%
Streptococci	Bacteria	15.1%
Pseudomonas	Bacteria	13.5%
Proteus	Bacteria	10.9%
Coliforms	Bacteria	8.8%

The results of a study showing the most commonly isolated pathogens from dogs' ears diagnosed with otitis externa. (Harvey, R.G. et al Ear Diseases of the Dog and Cat (2001); 37 Manson Publishing)

A PUBLIC SERVICE ANNOUNCEMENT:

Did you know that millions of pets are unnecessarily euthanized each year in the United States? Sheltered Animals are highly adoptable and die each day because of legislative deficits, lack of resources and limited chances of



local adoption. LCAR rescues these animals regardless of age, breed or general health. They save as many animals from death as they can by underwriting the cost of relocating them to "NO KILL" facilities and foster homes, while finding the adoptive forever families that they all deserve. LCAR networks with other rescue organizations to transfer animals from their shelter partners into adoption programs, to educate shelters on reform, and assist them in achieving a "NO KILL" status. **To date, LCAR has rescued thousands of animals and is growing everyday thanks to the support of their volunteers, fosters, adopters, donors and sponsors.**

What you can do: Continue reading. We have additional pages throughout this book on how you can help Last Chance Animal Rescue and their Compassionate Animal Farm in South Carolina, The St. Francis Animal Farm. Also, you can check them out online via their website, www.LACARescue.org

08

WHAT CAN
YOUR DOG HEAR?

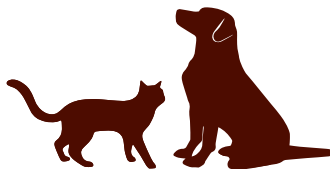
On average, a dog can hear four times better than a human. Dogs also have a very different range of hearing than humans, and can hear sounds at much higher frequencies. Sound frequency is the number of sound waves produced every second and is measured in Hertz (Hz). The higher the frequency, the higher-pitched the sound. The human hearing range is around 20 to 20,000 Hz, while a dog's range is 20 to 45,000 Hz¹⁰. This is why many dogs respond best to high pitch whistles.



Hearing for dogs is quite different than it is for humans.

A PUBLIC SERVICE ANNOUNCEMENT:

The purchase of any Mister Ben's Product results in at least a \$1 donation to Last Chance Animal Rescue! But what else you can do?



Adopt: If you are looking for a new addition to your family, please consider adoption! Please do not breed or buy from a store while shelter pets die everyday!

LAST CHANCE
ANIMAL RESCUE

Foster: If you are not in the market for a new pet, you can still help save a life by fostering an animal who is transitioning to their forever home. Fostering a dog or cat is invaluable to helping the animal and the LCAR mission. Fostering is one of the most rewarding experiences you will ever have!

Volunteer: LCAR always needs help staffing adoption events, local transporting, fundraising and many more opportunities to support their lifesaving mission. There are so many volunteer positions with varying levels of commitment.

Donate: Consider donating towards LCAR's endless expenses including vet bills, food, medications, leashes, collars, etc... Please consider signing up for a monthly donation or sponsoring an animal. Every donation goes toward LCAR's non-stop and much needed rescue efforts!

Please send all donations to:

Last Chance Animal Rescue
PO Box 1661
Southampton NY 11969

For more information, call them at 631-478-6844, or visit their website at www.LCARRescue.org.



09

HEARING
LOSS IN DOGS

Dogs can be deaf at birth or as a result of infections, trauma, loud noise, drugs and old age, to name a few.

In dogs, hearing loss and deafness can be congenital (present at birth) or develop later in life due to a wide range of reasons. There are many different causes of hearing loss including infections, trauma, repeated loud noises, drug reactions, old age changes or inherited conditions.

Breeds that are most commonly affected by congenital deafness include Dalmatians, English Setters, Cocker Spaniels, Bull Terriers, Australian Cattle Dogs, Whippets, Catahoula Leopard Dogs, Border Collies and Jack Russell Terriers¹⁸.

The most common cause of hearing loss is “conductive” hearing loss, and is due to an obstruction of the ear canal. The obstruction can be caused by a foreign body, an excessive buildup of ear wax or scarring, and inflammation from chronic otitis externa. Repeated exposure to loud noises can cause

“sensory” hearing loss, with hearing loss becoming progressively worse the more times the noise exposure continues. An example is when dogs are regularly subjected to very loud music or loud gunshot noise¹⁹.

Unfortunately, there are many drugs that can cause hearing loss (ototoxicity) by directly or indirectly destroying the cochlear hair cells. The most commonly recognized ototoxic drugs are the aminoglycoside antibiotics, such as gentamicin and amikacin. Other drugs which are linked to hearing loss include furosemide (a diuretic) and cisplatin (a chemotherapy drug)²⁰.

As your dog gets older, its hearing will weaken. This is a natural old age process. Owners usually notice a slight hesitation to obey commands or a reluctance to go into new territory. This type of hearing loss can be due to changes in the electrical connections which control hearing, or mechanical changes to the tiny instruments which conduct the sound waves in the middle ear. It is usually a slow, progressive change. Things which may be able to slow the process down include good nutrition, antioxidants and adding ginkgo to the diet^{3,21}.

Unfortunately, hearing loss can create a change in behavior. Some dogs become “snappy” and easily startled when they are surprised. You should adjust their routine and use visual signals to help reduce the likelihood of these problems if your dog has hearing loss.

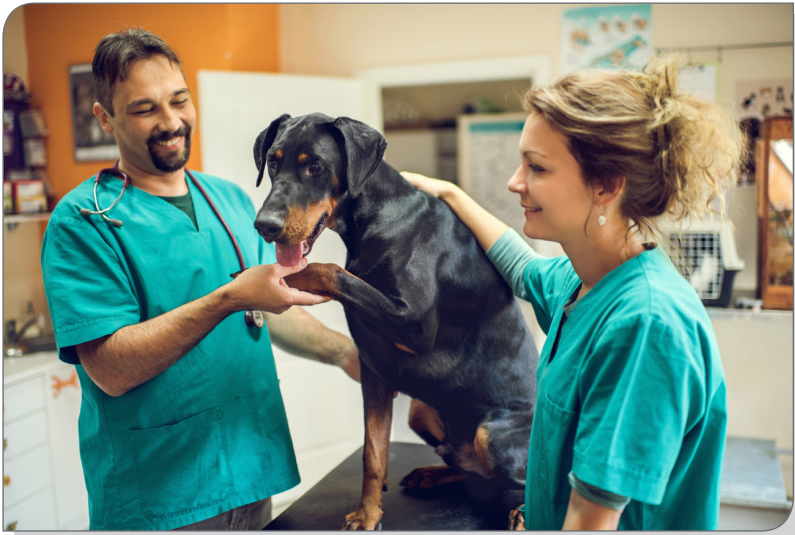
“Neural” hearing loss is the least common form of deafness. It can be caused by head trauma, blood clots, ruptured blood vessels or brain tumors¹⁹.

There is a test available to diagnose hearing loss, including partial loss, unilateral hearing loss and total deafness. This test is called the Brain Auditory Evoked Response (BAER)¹⁹. It can be especially beneficial for testing puppies of breeds known to have a high incidence of deafness. This test is usually only available at your veterinarian’s office.

10

THE ROLE OF THE VETERINARIAN

Getting help from your veterinarian is a necessary step in successfully treating otitis, especially if you have no previous experience with canine ear infections, or a previous ear infection has reoccurred. It is important that during the consultation they rule out obstructions of the ear canal (e.g., foreign bodies, polyps, tumors), check the eardrum and give your dog a complete health check to ensure no other body system is involved in the process.



Vets are an integral and necessary part of health care for your dog.

Your veterinarian will play an important part in the diagnosis and treatment of your dog's ear problem. It is your decision whether you go to a conventional veterinarian or one that offers a more holistic approach.

When you go to your veterinarian for a consultation, it is best not to clean your dog's ears that day as it will be very helpful for the veterinarian to check the amount, color and smell of any discharge.

THE DIAGNOSTIC PROCESS

A good veterinarian will complete a full clinical examination of your dog and not just check its ears. A full clinical examination will allow the veterinarian to know if this is a simple case of otitis, or whether any other body systems are involved as well.

The diagnostic process begins with a minimum of:

- ◆ A detailed clinical history
- ◆ A full physical examination
- ◆ Ear canal cytology

A DETAILED CLINICAL HISTORY

A full clinical history is important to determine if this is the first episode of otitis your dog has suffered or if it is a chronic problem. It will also help identify what clinical signs your dog has shown at home. It is also important to record any recent changes in diet, medications and environment. If this is a case of recurrent or chronic otitis, then the clinical history taken will be more detailed. The clinical history helps the veterinarian understand if there are any patterns, underlying allergic triggers and co-existing problems.

SEVERITY OF PAIN

Normally, the initial step in the physical examination of the ear will be to determine the severity of the pain. This is achieved by gently petting your dog and palpating the external ear. The severity of pain can range from mildly uncomfortable to severely painful. Some dogs may not even let the veterinarian touch the painful area. If a high degree of pain is present, it may be best for your dog to be examined fully under sedation.

EXAMINATION OF THE HEAD, EAR FLAP & EXTERNAL EAR CANAL

It is important for your vet to gently palpate and manipulate each ear flap and external ear canal to check for the presence of swelling, thickening, associated pruritus (itchiness) or calcification. The outside of the ears should be examined to check for redness, swelling, crusting, ulceration, changes in pigmentation or the presence of a discharge from the ear canal. The head area should be checked for any signs of self-trauma, including hair loss, scratches and corneal ulcerations on the eyes.

SIMPLE HEARING EVALUATION

You may be able to let your vet know if there has been a decrease in your dog's hearing ability lately. Your vet should carry out a series of simple tests to check for deafness.

OTOSCOPIC EXAMINATION

An otoscope is a medical device which is used to look in the ear canal. It allows the veterinarian to see the ear canal up to the point of the eardrum.



An otoscope allows a vet to thoroughly inspect your dog's ears.

If the otitis is present in only one ear, it is good practice to examine the “good ear” first. This is to prevent contamination of the unaffected ear with pathogens from the diseased ear. Although ears may appear unaffected from the outside, they may have unseen otitis in the ear canal.

The canine external ear canal is L-shaped, composed of the vertical canal which bends to form the horizontal canal, before ending at the eardrum. Your veterinarian needs to straighten the ear canal by pulling gently on the pinna when the otoscope is inserted into the external ear canal. Most dogs will tolerate this procedure if the pain is mild. However, if it is too painful, your dog will not allow an adequate examination, and sedation may be necessary.

The otoscopic exam allows the veterinarian to check the ear canal for abnormal swelling, discharge, parasites, foreign bodies, growths and changes to the eardrum. Sometimes it is not possible to view the eardrum due to the presence of excessive wax, discharge, a foreign body or severe ear canal swelling. Depending on the severity of the obstruction, the ear canal may require gentle cleaning to visualize the eardrum, while other cases will require a full flush or the removal of the foreign body under sedation.

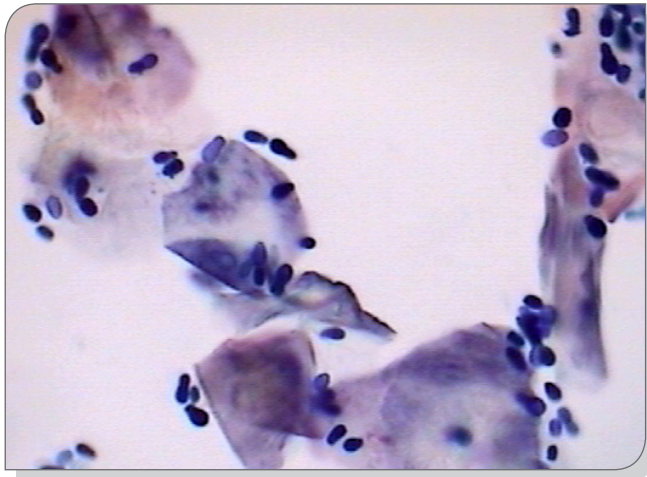
It is imperative that your veterinarian checks that the eardrum is intact using an otoscope before prescribing any topical ear medication. This is due to the fact that some topical ear medications have the potential to cause damage to the middle ear if the eardrum is perforated.

EAR SWAB CYTOLOGY

Taking a cytological swab of an ear canal can provide a lot of information about the ear environment. Some veterinarians will take a swab sample from every case of otitis that is presented to them. Others will only take samples in recurrent or chronic cases.

To gain accurate results, this process should be completed before any cleaning products or medications are applied to the ear.

A swab sample is obtained by gently rubbing a dry cotton-tipped applicator along the horizontal canal and then transferring the wax and exudate captured onto a microscope slide. A special stain is applied to the contents of the microscope slide before being examined under a microscope. Microscopic examination can provide immediate diagnostic information including the presence of white blood cells, bacteria, yeast, fungi, parasites or even cancer cells.



*A microscopic view of an ear cytology sample showing the commonly isolated yeast *Malassezia pachydermatis*.*

EAR MITES

An unstained examination of the ear swab sample should be examined for eggs, larvae, or adults of the common ear mite, *Otodectes cynotis*. Rarely, *Demodex canis* mites can also be

found. The *Otodectes* ear mites usually produce a very dark, characteristic exudate, with intense itchiness.



A microscopic view of an ear mite, otodectes cynotis, found during examination of a dog's ear swab cytology.

SKIN SCRAPE

Skin scrapes of the skin on the head or ear pinna may be necessary to check for *Demodex canis* mites, which normally live deep in the hair follicles of the skin. Demodex infections cause hair loss with varying degrees of itchiness. The hair loss normally begins on the face, mainly around the eyes, but can spread throughout the skin of the body, including the external ear canals.



A microscopic examination of a dog's skin scrape which has revealed a large number of demodex mites.

BACTERIAL CULTURE AND SENSITIVITY

Bacterial culture and sensitivity is the best way to accurately test which bacteria are present and which antibacterial drugs are best to use against them. The appearance of large numbers of unusual bacteria on a microscopic examination of a cytology sample (e.g., *Pseudomonas aeruginosa*, *Escherichia coli* or *Proteus mirabilis*) will prompt your veterinarian to submit a sample for bacterial culture with an antibiotic sensitivity test. This is necessary because these unusual bacteria have known resistance to many antibacterial agents. A culture and sensitivity is also indicated if there is a lack of response to appropriate topical and systemic therapy, and resistant bacteria are suspected, or to treat a middle ear infection.

HAIR PLUCK EXAMINATION

An examination of plucked hairs is known as a hair trichogram. Veterinarians may need to take samples of hair from your dog's head or ear pinna for microscopic examination to check for *Demodex* mites or signs of fungal infections.

WOODS LAMP EXAMINATION

A woods lamp produces a fluorescent light and is used by veterinarians to check for fungal infections, most commonly ringworm infections (*Dermatophytosis*) on the hair of the head, pinna and outer ear canal.

BIOPSIES

If there is an abnormal mass, swelling or proliferation of cells, then a biopsy is necessary to diagnose the type of mass present and rule out cancer.

BLOOD SAMPLES

A blood sample may be necessary if your dog is showing signs of a systemic disease or a lowered immune system. Most commonly, hypothyroidism is linked with otitis externa. However, other hormonal changes linked to ear infections include diabetes, mellitus and hyperadrenocorticism (Cushing's disease).

FURTHER IMAGING

Radiography of the head is indicated when there is excessive swelling of the ear canal or a mass which prevents visualization of the eardrum. It should also be completed in cases of suspected middle ear infections and when a dog with otitis externa is showing neurological signs. Unfortunately, radiographs can sometimes appear totally normal in cases of middle ear infections.

CAT Scans and MRIs are the gold standards in imaging the ear. If available, they should be performed for cases of severe, chronic otitis or a suspected middle ear infection.

11 THE ROLE OF ALLERGIES IN OTITIS

The most commonly recognized primary causes of otitis externa are allergies, mainly allergic skin disease (atopic dermatitis) and, less often, food hypersensitivities^{17, 22}.

ATOPIC DERMATITIS

Atopic dermatitis is a genetically predisposed inflammatory and pruritic (itchy) allergic skin disease. Affected dogs develop “IgE” antibodies to environmental allergens, resulting in disease. Common environmental allergens include house dust mites,



Allergies can cause more than itching for your dog.

storage mites, grasses and pollens. In one study, 3% of dogs with allergic sensitivity showed otitis externa as the only clinical sign²³. The most commonly affected breeds include Shar-Pei, Wirehaired Fox Terrier, Golden Retriever, Dalmatian, Boxer, Boston Terrier,

Labrador Retriever, Lhasa Apso, Shih Tzu and West Highland White Terrier^{23,24}. The diagnosis of allergic dermatitis is challenging and is based on the signalment (age, sex and breed) with compatible clinical signs and history.

Laboratory tests are helpful aids when used appropriately, but should not be taken as diagnostic. Rather, they should be viewed as a reflection of exposure to allergens. Allergy testing, both intradermal (skin tests) and serological (blood sample), is a diagnostic aid that measures increased levels of tissue-bound or circulating IgE antigens. The primary reason to pursue allergy testing is to help identify the offending allergens in your dog and to formulate specific therapy. Test results are significant only if the offending allergens identified are compatible with the history or seasonality of the itching.

FOOD HYPERSENSITIVITY

In food hypersensitivity reactions, the onset of clinical signs can range from minutes to days after eating the allergen. When food allergies develop, the allergen has usually been fed for more than two years. In some cases, dogs will eat the same allergen for years before an allergy develops in later life³. Generally, dogs have the potential to become allergic to any foodstuff they are fed, but proteins are the most common. One study in the United States found the most common allergens were beef, chicken, chicken egg, cow milk, wheat, soy and corn²⁵. Clinical signs vary from dog to dog, but non-seasonal itching, otitis externa and dermatitis are the most common signs.

There is no reliable diagnostic test for food allergies other than a strict food elimination diet. The ideal food elimination diet should be nutritionally complete and not contain any ingredients that have been previously fed. The diet should consist of a novel protein source and a novel carbohydrate source such as venison and rice, or fish and sweet potato. They can be home

cooked or commercially prepared. Another option is the use of commercially available hydrolyzed protein diets in which the protein source is hydrolyzed to small molecular weights that are not allergenic.

The trial diet should be fed exclusively, ideally for at least three months, with no treats, no flavored toys and no table scraps allowed. If a marked or complete resolution occurs during the elimination diet trial, a food allergy can be suspected. If you want to confirm that certain allergens are the cause, your dog must be re-challenged with the previously fed food ingredients and a relapse of clinical signs must occur. Once a food allergy is confirmed, the elimination diet should be reinstated until clinical signs resolve again, which usually takes less than 14 days. Once the offending allergens are identified, control of the food allergy is by strict avoidance.

GETTING TO THE ROOT OF THE PROBLEM

In most cases of chronic and recurrent otitis externa, getting the inflammation and any secondary infection in the ear under control is the first step. However, the goal of long-term control is finding out the primary cause of the ear infection.

Allergies are the most common primary cause of otitis and can be from environmental allergens (e.g., pollen, mold and dust mites) or food allergies²². It is necessary to diagnose the allergy and control it in order to have long-term success and help prevent recurrence of the ear infection. Unfortunately, this process is not always straightforward.

A PUBLIC SERVICE ANNOUNCEMENT:

Founded in 2013, St Francis Farm was created as a SAFE HAVEN FOR ANIMALS with no other place they could call home... Thousands of animals every year SUFFER NEGLECT AND ABUSE at the hands of the ones they love. St. Francis offers them a safe environment to receive all the medical treatment they need to heal

WHERE EVERY LIFE MATTERS:

Many of the animals that go to St. Francis need surgeries, medications, training and special care that can take a long time to resolve.... SOME WILL CALL THIS HOME FOREVER.



DARE TO BE DIFFERENT: St. Francis sanctuary ensures that animals don't have to be euthanized just because they are different.

CONSIDER SPONSORING AN ANIMAL TODAY

ST. FRANCIS FARM IS A 501(C)3 CHARITY THAT RELIES ENTIRELY ON DONATIONS. To fund this work, LCAR is looking for Animal Angels to sponsor a dog for \$50 a month. You can do this by going to their website at www.SaintFrancisFarm.org

From their website, you can pick an animal that you would like to sponsor! Their lives depend on your generosity. You will receive monthly updates and pictures of the animals and an annual gift from the organization for your commitment.

12 TREATMENT OPTIONS: Conventional vs. Holistic

Otitis externa is a multifactorial disease of the ear canal and ear flap that commonly recurs and becomes a chronic problem. A pattern of recurrence is usually due to inadequate control of the primary cause or the presence of perpetuating or predisposing factors.

There are many different treatment options available for treating otitis. It is also your decision whether to choose a conventional or holistic medicine approach, or a combination of both. However, both conventional and holistic medicine methods should have the same general treatment principles and long-term resolution goals.

All primary and secondary causes and additional factors need to be identified, managed and treated. Following the workup and diagnosis stage, veterinarians should discuss with you whether the otitis is curable, and whether lifelong management will be required.

Treatment principles:

- ◆ Identification of infectious organisms through cytology
- ◆ Appropriate treatment for infectious organisms
- ◆ Reducing pain and inflammation
- ◆ Detecting the primary cause and perpetuating factors
- ◆ Appropriate long-term ear care

CONSIDER USING MISTER BEN'S...

Mister Ben's Ear Products for Dogs are currently available for purchase at www.MisterBens.com and with major online retailers such as Amazon, ebay and Etsy. The two amazing solutions available for ear care are **Mister Ben's Ear Tonic with Aloe for Dogs** and **Mister Ben's Ear Wash with Aloe for Dogs**.

Mister Ben's Ear Tonic with Aloe for Dogs is based in isopropyl alcohol, and is primarily an ear drop treatment. **Mister Ben's Ear Wash with Aloe for Dogs** is based in witch hazel and is designed to help flush out the ear. Both are instrumental in clearing up problems and maintaining long-term ear health.

Before using any product, it is important that a veterinarian checks that the eardrums are intact and that there are no obstructions such as polyps, tumors or foreign bodies before proceeding with natural home care.

When your dog has very red, sore and dirty ears, it is best to begin with **Mister Ben's Ear Wash with Aloe for Dogs**. Treat the affected ears with the Wash two times a day for two weeks. Additionally, after the first few days, begin using **Mister Ben's Ear Tonic with Aloe for Dogs** after each treatment with the **Wash**. Once your dog's ears begin to clear up, you can then use both products in the same fashion two to four times a month.

Mister Ben's is available on Amazon, walmart, Ebay, Etsy and many other online retailers such as www.MisterBens.com!



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CONVENTIONAL TREATMENT

In mild cases of otitis externa following examination, the veterinarian will usually clean your dog's ear and dispense a topical ear solution containing antibiotic, antifungal and anti-inflammatory agents. Many of the available veterinary topical ear treatments contain a combination of all three ingredients. The advantage is that no matter what the causative pathogen, this combination will usually solve it. The disadvantage is that this kind of approach can encourage antibacterial resistance. This is typically used by veterinarians for your dog's first presentation of otitis or with infrequent ear infections. Over time, the same treatment, used repeatedly, will become ineffective.

TOPICAL ANTIBIOTICS

Topical antibiotic therapy is used to treat active bacterial infections of the ear canal. The antibacterial agent chosen is based on:

- ◆ Ooscopic evaluation of the ear canal
- ◆ Cytological examination of ear canal fluids

As discussed previously, culture and sensitivity is recommended and may be required if there is persistence of bacteria despite appropriate therapy, and there are unusual bacteria present, or middle ear involvement.

ORAL ANTIBIOTIC THERAPY

Systemic antibiotics may need to be used when unusual bacteria are found on cytology, in cases that fail to respond to

topical solutions, in chronic recurring ear infections, and in all cases of middle ear infections. Unfortunately, antibiotics do not just kill the bad bacteria causing the problem, but also the good bacteria in the body. This may cause some dogs to have vomiting or diarrhea.

There is increasing antibiotic resistance both in veterinary and human medicine, and it is unfortunately a global problem. Antibiotics should be chosen and used judiciously.

TOPICAL ANTIFUNGAL THERAPY

Malassezia pachydermatis is a type of yeast and one of the most common causes found in the ear canals of dogs suffering with otitis externa. The most used topical antifungal agents include nystatin, clotrimazole and miconazole. They can be used alone, but are more commonly found in a topical preparation combined with an antibiotic and corticosteroid.

ORAL ANTIFUNGAL THERAPY

Dogs with severe yeast infections may need to be treated with oral antifungal drugs. Therapy is continued until clinical signs and cytology show improvement. Oral anti-fungal drugs do carry a risk of liver toxicity, anorexia and gastrointestinal problems. As such, the lower range of suggested dosages should be used.

TOPICAL ANTI-INFLAMMATORY THERAPY

Many topical ear formulations contain an anti-inflammatory agent, usually a steroid, which is important to decrease inflammation of the ear canal, making the ear canal less painful and itchy for the dog. Topical use is less likely to result in the adverse clinical signs associated with oral steroid use. However, many commonly used topical steroids such as betamethasone and dexamethasone have shown some systemic absorption.

ORAL STEROIDS

There are many different types of steroids, both naturally occurring within the body and those commercially produced. Steroids are hormones which play an important role in metabolism, reducing inflammation and controlling the immune system.

Prednisolone is the most commonly used oral steroid (glucocorticoid). It is used in cases of otitis externa for its pronounced anti-inflammatory action, and to reduce severe ear canal swelling and inflammation. It is also commonly used to control canine allergies due to its potent immune response reduction.

However, oral steroids also have numerous side effects after prolonged use, including increased drinking and urination, vomiting and diarrhea, immune suppression, increased liver enzymes, Cushing's disease and diabetes. In order to reduce the side effects, it is important that your dog is put on a suitable dose of steroids and that the dose is decreased slowly over time. Dogs that need to stay on this type of medication long term are at higher risks of the drug's side effects.

PAIN RELIEF

If a dog is showing signs of painful otitis, pain management should be included in the treatment protocol. A common group of drugs for first-line pain management are NSAIDs (Non-Steroidal Anti-Inflammatories) which provide good pain relief and anti-inflammatory action. However, NSAIDs should never be used in combination with steroids, as there is a high risk of causing gastritis, vomiting and diarrhea. They should also not be used in dogs suffering from gastrointestinal disorders, impaired liver, heart or kidney function. There is also a concern that long-term use of NSAIDs can increase liver or kidney enzymes in dogs. A

stronger pain reliever, such as Tramadol (opioid-like activity) may sometimes be necessary and can be used in combination with NSAIDs or steroids.

You should never self-medicate your dog at home with medications normally used for humans. A prime example is Acetaminophen (Tylenol, Paracetamol), a pain relief and fever-reducing medicine for people. It is a popular over-the-counter medication and present in most homes. For dogs, acetaminophen can be toxic AND LETHAL in relatively small doses!

SURGERY

Surgery under general anaesthetic may be necessary in cases of polyps, tumors or aural haematomas. In cases of very severe, chronic and recurrent otitis, a TECA (total ear canal ablation) surgery may be recommended by your veterinarian. This surgical procedure removes the entire external ear canal and the bone of the lateral side. This procedure should not be performed in dogs where the primary cause of the otitis externa is due to allergies. Following the procedure, the allergies will continue to target the remaining external tissue and middle ear and not solve the problem.

DURATION OF TREATMENT

Duration of treatment will vary depending on the individual case, but should always continue until the infection is resolved. Resolution is based on re-examination and repeat cytology and bacterial cultures, if necessary. Dogs with bacterial and yeast infections should be physically examined, with cytology evaluated regularly until there is no evidence of infection. Generally, for acute cases, this takes two to four weeks. Chronic cases may take months to resolve and, in some instances, a lifelong care program may need to be put in place.

14

AN HOLISTIC APPROACH

It should be remembered that alternative medicines generally do not always have a rapid response and take some time to work. They focus on good health and prevention rather than a cure. If a disease state is present, then there is a focus on a whole-body approach as well as a combination of specific medicines to alleviate symptoms. Conventional use of antibiotics is usually indicated and necessary in severe cases of otitis or middle ear infections.

DIETARY SUPPLEMENTS

There are many natural ways in which you can keep your dog's ears healthy using natural care methods at home. A holistic practitioner can be of invaluable help, assisting you in selecting appropriate foods and supplements, and calculating dosages for your dog's weight and condition. Most importantly, they can help create a supplement protocol that provides sufficient supplements without creating imbalances or potentially toxic levels of any one supplement.

A GOOD QUALITY DIET

As discussed previously, many ear problems can be associated with allergies. A good, quality diet should be built around this fact. It is important to choose food that does not contain artificial preservatives, flavorings or colorings. You may also consider a home-prepared diet, and it is advised to seek the advice of a professional canine nutritionist when doing this.

If your dog's ear infections are thought to be linked to allergies, a food elimination trial should be carried out for at least 12 weeks. This can be done by feeding a commercially prepared or home-cooked hypoallergenic diet consisting of one novel protein source and one novel carbohydrate source. Speak to your veterinarian for further information.

ANTIOXIDANTS

Antioxidants are necessary for the immune system to function effectively. In the ear, antioxidants specifically aid circulation and improve nerve health. To help aid your dog's ear health, it is suggested to supplement the diet with antioxidants such as vitamins A and E, Coenzyme Q-10, rosemary, thyme, oregano and ginkgo biloba²¹.

VITAMINS AND MINERALS

Like humans, dogs require a balanced diet with a wide range of vitamins and minerals for optimal health. Vitamin C is necessary for good immune function. Vitamin B complex is essential for healing and good intestinal function. Zinc improves the immune response and is necessary for good skin and hair health. Although no studies have been carried out on dogs, manganese deficiency in humans has been linked to ear disorders²⁶.

HYPOTHYROIDISM

Recurrent otitis has been linked to underactive thyroid function in dogs. If your dog is showing signs of hypothyroidism, then your veterinarian can collect a blood sample to check your dog's thyroid levels. If the test results suggest hypothyroidism, there are a number of natural remedies you can try adding to your dog's diet to improve thyroid levels such as one of the seaweed herbs (bladderwrack, dulse, or kelp) or Siberian ginseng^{21,26}.

TRADITIONAL CHINESE VETERINARY MEDICINE

Chronic otitis cases may be helped by a Traditional Chinese Veterinary Medicine (TCVM) approach including acupuncture. Acupuncture can also be used preventatively prior to spring/summer if your dog has seasonal allergies with certain “flare-up” times. Conventional Western medicine views the ears as functional organs of hearing and balance, but Traditional Chinese Medicine also believes that the ears are an important crossroads of energy and are connected to the kidney organ system. Traditional Chinese Medicine believes poor hearing, commonly associated with the elderly patient, is a consequence of weakened kidneys. Therefore, acupuncture practitioners will often treat hearing problems by needling acupuncture points associated with the kidney. An “auricular acupuncture” system is also offered by some practitioners, whereby needles are inserted into specific parts of the ear to treat other anatomical parts of the body. Ask a qualified canine acupuncture therapist for more detailed information.

HOMEOPATHY

Homeopathy, or homeopathic medicine, is a medical philosophy and practice based on the idea that the body has the ability to heal itself. Homeopathy was founded in the late 1700s in Germany and has been widely practiced throughout Europe. Homeopathic medicine views symptoms of illness as normal responses of the body as it attempts to regain health.

Homeopathy is based on the idea that “like cures like.” That is, if a substance causes a symptom in a healthy person, giving the person a very small amount of the same substance may cure the illness. In theory, a homeopathic dose enhances the body’s normal healing and self-regulatory processes.

A homeopathic health practitioner (homeopath) uses pills or liquid mixtures (solutions) containing only a little of an active ingredient (usually a plant or mineral) for treatment of disease. These are known as highly diluted or “potentiated” substances. There is some evidence to show that homeopathic medicines may have helpful effects.

When it comes to homeopathy, you should check with a homeopathic practitioner for specific remedies, suggested potencies and frequency of use. These will depend on the clinical signs and severity of the otitis externa and the age and general condition of your dog. Homeopathic remedies should not be relied upon to work rapidly, but more as a part of a balanced approach to restoring your dog’s health. The effectiveness of homeopathic remedies is often dependent on the skill and experience of the holistic practitioner.

CANINE CHIROPRACTIC

A canine chiropractor may improve your dog’s hearing or improve the success of other therapies aimed at improving ear disease. The principle of success lies in the fact that chiropractors readjust misaligned vertebrae which may enhance blood and nerve supply to the ear and surrounding areas²¹. Ear infections often cause tenderness and tenseness around the neck and jaw. The resulting tension and change in posture may twist the vertebrae out of alignment, causing further pain and discomfort for your dog. If you think your dog would benefit from chiropractic consultations, please ensure the practitioner is qualified and trained.

15

NATURAL HOME CARE: EAR TONICS, DROPS & WASHES

There are many natural remedies that can be used when required to wash, soothe or protect your dog's ears. How often your dog requires its ears to be cleaned depends on its ear condition, type of otitis and cause of otitis. Speak to your veterinarian or holistic practitioner regarding a good ear-cleaning protocol.

It is important that a veterinarian checks to be sure the eardrums are intact and that there are no obstructions such as polyps, tumors or foreign bodies before using natural home care.

Tonics and washes have many positive benefits; some have a calming effect, while others provide a pain-relief effect. Many preparations also have anti-inflammatory and antimicrobial actions. Some are taken orally to enhance the immune system, while others exert more benefits when used as direct solutions in the ear canal²¹.

Here are some common medicinal ingredients in tonics and washes that are related to treating ear problems in dogs:

- ◆ **Aloe vera:** Aloe vera has a wide range of antimicrobial properties being antibacterial, antiviral and antifungal^{27,28,29}. It also promotes the skin's healing process, by moisturizing and hydrating it.
- ◆ **Boric acid:** Boric acid is a powerful astringent, disinfectant and anti-fungal. It works by creating a dry and acidic environment, in which bacteria are unable to grow³⁰.

- ◆ **Povidone-iodine:** This is a powerful germicide and antiseptic, used daily in human medicine and surgical preparation. It works by slowly releasing iodine which kills and prevents the growth of bacteria, fungi and viruses^{31, 32}.
- ◆ **Vinegar:** Vinegar is one of the best natural cleaning agents due to its antimicrobial properties. Vinegar normalizes the ear's pH and helps kill ear mites^{33, 34, 35}.
- ◆ **Witch hazel:** This herb has strong astringent properties, and is also used for its soothing properties on sores, bruises and swelling. It is thus an excellent choice for the inflamed ear canal, and has also been used externally to treat ear flap hematomas⁴².
- ◆ **Isopropyl alcohol:** This is a potent antifungal and antibacterial solution. In addition, rubbing alcohol is also useful in terminating mites and it helps create a dry ear environment to discourage bacterial growth³⁶.

Here are some additional herbal ingredients in tonics and washes that are related to treating ear problems in dogs:

- ◆ **Mullein:** The flowering tops of mullein have great antimicrobial properties, as well as calming and soothing effects. Additionally, the seeds contain rotenone, an insecticidal agent. The best way to use the flowers is in the form of an oil infusion⁴².
- ◆ **Oregon grape root:** This has known microbial activity. For treatment of otitis externa or ear mites, an oil infusion of fresh or dried roots can be prepared.
- ◆ **Marshmallow root:** Marshmallow root contains high levels of soothing and protective compounds and is therefore great for alleviating irritations. It has both antimicrobial and immune-enhancing properties, and animal studies have shown that it is active against bacteria such as *Pseudomonas aeruginosa*, *Proteus vulgaris*, and *Staphylococcus aureus*, all of which are difficult to treat with conventional medical methods²¹.

- ◆ **Ginkgo:** Ginkgo biloba is world-renowned for being used to treat degenerative diseases of the brain and central nervous system. It stimulates circulation and in human medicine is used to help improve hearing and reduce abnormal ringing in the ear (tinnitus)²¹.

Mister Ben's Original Ear Tonic and Ear Wash each contain a unique combination of some of the above-listed ingredients. The ingredients team up to fight infections and provide relief from inflammation. The ear tonic treats ear infections safely and effectively, while the ear wash provides a natural, soothing product for maintenance ear-cleaning care. Further, it is recommended to use the Ear Wash to aid in the removal of debris, wax, dirt and discharge. For the most productive results, use both the Tonic and Wash as directed.

EAR MESSAGES

An ear massage is simple to do, will improve circulation to the ear area, and is, according to acupuncture theory, a great body energizer. A good way to give your dog an ear massage is to hold the base of the ear with one hand and the ear flap between fingers and thumb of the other hand, and then gently rub in a circular manner. Your dog may sigh with enjoyment, and will love you all the more for it!

PREVENTING EXCESS WAX AND OIL BUILD UP

If your dog suffers from excessive wax or oil production in its ear canals, it can lead to obstruction and a secondary infection. One of the goals of ear washes is to prevent this excessive buildup. **Mister Ben's Original Ear Products** contain a safe combination of ingredients to help break down excessive wax and oil. The Wash and Ear Tonic can both be warmed up to a lukewarm temperature and applied to help remove excessive wax and oil buildup in the ear canals. Be careful to never warm

up the formulas too much! Hot fluids in any ear, infected and sore or not, can cause severe pain and damage! Warm up to room temperature by, for example, placing a bottle in a sunny window for a while prior to using.

TREATING YEAST INFECTIONS

One of the most common pathogens isolated from chronic ear infections is *malassezia pachydermatis*. It is yeast which can normally be found in ear canals in very low numbers. Once it proliferates, it can cause disease. An acidic environment discourages the growth of this yeast. **Mister Ben's Original Ear Products** contain vinegar and boric acid. These ingredients create a safe and natural acidity to treat this type of yeast infection.

TREATING EAR MITES

Ear mites are easily diagnosed by ear cytology. Conventional medicine uses pesticides to treat ear mites, either as topical ear drops or a topical "spot on" systemic treatment. However, mites can be treated with natural preparations too. Some herbs have great antiparasitic activity, such as Mullein, which is used in an oil-based treatment to treat mite ear infections. Oils smother the adult mites by covering their breathing apparatus. Mineral oil is better for this job than olive or vegetable oils which can sometimes contain nutrients that in fact feed the parasites!

Apply a few drops of mullein and mineral oil preparation into the ear canals twice a week for a month. It is important to note that the life cycle of the mite is three weeks, so treatments need to be continued for a month. Before each subsequent application, it is good practice to remove any debris and inactive oil by using a good quality ear wash such as **Mister Ben's Original Ear Wash**, and allowing the ear to dry before reapplying the oil preparation.

PELL OTIC OINTMENT FOR EAR INFECTIONS

As described before, if you think your dog has an ear infection, it is best to seek veterinary advice first. Pell Otic ointment, formerly known as Pellitol, contains a combination of zinc oxide, calamine, bismuth subgallate, bismuth subnitrate, resorcinol and juniper tar. This combination of ingredients has antibacterial properties and reduces inflammation²¹. As the ointment gradually dries and shrinks, a process which takes several days, it slowly acidifies the ear and stops bacterial activity. After a week, the hardened ointment will fall out, taking many dried pathogens with it. The ear should then be cleaned to remove any debris, using a product such as **Mister Ben's Original Ear Wash**.

16 OTOTOXICITY

Anything which has the ability to be toxic to the ear, specifically the cochlea, auditory nerve or vestibular system, is known as ototoxic. As explained in the treatment sections, a multitude of medications can be applied into the external ear canal including anti-inflammatory agents, antifungals, antibacterials and herbal preparations. There are also usually additional preservative substances added to conventional medications to improve the penetration and longevity of the product.

Due to the L-shaped anatomy of the canine ear canal, excess ear products naturally congregate in the horizontal canal, providing the perfect point for absorption across the epithelial border. Sometimes this absorption is advantageous, such as the powerful anti-inflammatory effect of steroids on the ear canal which reduces uncomfortable ear canal swelling. However, sometimes the passage of the medication into the middle and inner ear or systemic absorption into the bloodstream can cause serious problems.

It should be noted that cases of true ototoxicity following the medical treatment of otitis with conventional topical ear drops are rare. However, when they do occur, they can have quite severe consequences. Inflammation around the eardrum or a perforated eardrum may allow drugs to enter the middle and inner ear. It is also thought that propylene glycol, a commonly found substance in ear medications to increase penetration, may encourage the passage of medication across the eardrum membrane³.

Therefore, it is imperative that a veterinarian checks that the eardrum is intact using an otoscope before prescribing any ear medication. Almost any chemical, medication and even herbal product will cause irritation within the sensitive middle ear if it passes through a perforated eardrum. Common side effects of the passage of ear medications into the middle ear may include local inflammation (which would cause symptoms of pain), head tilt, problems with coordination or in severe cases, vestibular and cochlear damage leading to deafness.

The main systemic drugs linked with ototoxicity in veterinary medicine are primarily the antibacterial aminoglycoside antibiotics gentamicin and amikacin, the chemotherapy agent cisplatin, and loop diuretics like furosemide³⁹. A combination of diuretics with aminoglycoside antibiotics or cisplatin leads to profound permanent hearing loss²⁰. However, the administration of loop diuretics alone is thought to carry a risk of transient deafness only.

Studies have shown it is very beneficial to administer antioxidants to dogs receiving aminoglycoside antibiotics, and possibly cisplatin, to significantly reduce the risk of deafness²⁰. Unfortunately, all drugs, whether they are conventional or holistic, can carry certain risks. These risks need to be weighed up in a risk-to-benefit ratio, with actions taken to lower the rate of side effects. It is a veterinarian's responsibility to make owners aware of any risks so they can make informed and educated decisions about their dogs' treatment.

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SUCCESSFUL EAR CARE WITH MISTER BEN'S

Learning to identify the earliest stages of otitis is the best way to prevent a more serious infection from developing, and the necessity for veterinary treatment. An ear can suddenly develop redness, inflammation and discharge. You should be vigilant and get into the habit of checking your dog's ears daily. As soon as redness or a little bit of abnormal discharge is noted, a suitable product such as **Mister Ben's Original Ear Tonic with Aloe for Dogs** should be applied to help stop the infection in its tracks. This product has natural soothing properties and microbial fighting actions. If there is a lot of wax or debris present, the ear should first be flushed and cleaned with **Mister Ben's Original Ear Wash with Aloe for Dogs** and then allowed to dry. After the ears are dry, follow up with **Mister Ben's Original Ear Tonic with Aloe for Dogs**.

Ear cleaning is important for successful otitis therapy, so as to remove excessive wax, oil and debris, and help maintain a healthy ear canal environment. When an ear is full of debris, it not only creates a perfect environment for microbial growth but also stops topical medications from working effectively. If you don't clean the ear, then you will be repeatedly applying medication on top of debris, and the medication will not be able to act directly on the inflamed tissue.

A veterinarian will help decide the best cleaning protocol for your dog, and it depends on the primary cause of the otitis, the amount of inflammation and type of exudate present

There are three types of ear care:

1. An **ear flush** which is used to remove a buildup of dark wax and debris from the ear canal.
2. A **maintenance ear wash** which is used to maintain healthy ears, when not much wax or debris is present.
3. A maintenance ear treatment which is used to maintain healthy ears from bacteria, fungus and mites

Ears should not be washed, treated or flushed without first consulting a vet if they are painful, ulcerated, bleeding or have a yellow, green or malodorous exudate present.

HOW OFTEN SHOULD I CARE FOR MY DOG'S EARS?

When starting Mister Ben's, it is recommended to use the TONIC and/or WASH daily for the first 2 weeks. Prior to starting regimen, perform an ear flush with Mister Ben's Ear Wash.

Day 0: Perform an ear flush before starting the following regimen.

First 2 Weeks: Use daily. Be sure to gently massage ears after each use for about a minute each.

Next 2 Weeks: 3 times a week.

By week 5 your pup's ears should be cleaned up and healthy. If not, consider using BOTH our TONIC and WASH. See section "FOR DIFFICULT EARS" for more information.

To maintain healthy and happy ears, use WASH in AM and Tonic in PM, 1 - 2 times a month. Remember, when your pup has fun in the water or gets a bath, be sure to apply TONIC once the ears have completely dried.

Use Both for Difficult Ears:

For difficult ears, use both the ear WASH and the ear TONIC. The Wash flushes out dirt and debris, while the Tonic treats the ear.

Day 0: Perform an ear flush before starting the following regimen.

First 2 Weeks: Use both daily. Apply WASH in AM and TONIC in PM. Be sure to gently massage ears after each use for about a minute each.

Next 2 Weeks: Both, 3 Times a week, Wash in AM and Tonic in PM.

By week 5 your pup's ears should be cleaned up and healthy. To maintain healthy and happy ears, use WASH in AM and Tonic in PM, 2-3 times a month.

Remember, when your pup has fun in the water or gets a bath, be sure to apply Tonic once the ears have completely dried.

How to perform an ear FLUSH with Mister Ben's Ear WASH with Aloe for Dogs:

STEP 1: Any dirty, matted or excess hair should be removed from around the ear canal and the ear flap. If you don't feel confident doing this, then ask a professional groomer.

STEP 2: Have your dog sit and position yourself behind the dog. Gently hold the ear flap with one hand.

STEP 3: Hold the ear flap up and fill the canal with Mister Ben's Original Ear Wash with Aloe for Dogs, and massage the base of the ear for sixty seconds.

STEP 4: Have a bowl of water ready that has been heated to body temperature. Fill a pediatric rubber bulb syringe (available at your local pharmacy) with this warm water.

STEP 5: With someone gently holding the dog's head if necessary, place the tip of the syringe into the ear canal, then slowly squeeze the syringe to release a gentle stream of water. This will encourage any deep placed debris to float to the top of the ear canal which can then be wiped away and removed.

STEP 6: At the end of each application, use the syringe to suck back any remaining water and debris from the ear, before repeating the procedure.

STEP 7: Dispel any remnants in the bulb somewhere other than the source bowl of warm water.

STEP 8: Repeat steps 5 and 6 two further times if necessary.

STEP 9: Allow your dog to shake its head to remove any excess Wash.

STEP 10: Moisten a cotton ball with Mister Ben's Ear Tonic with Aloe for Dogs and wipe away any obvious external dirt.

STEP 11: Dry the external ear with a soft towel and wait 15 minutes.

STEP 12: Place a few drops of the tonic in each ear to ensure that the wet ears do not attract further bacteria.

STEP 13: Give your dog a treat as a reward for good behavior, and be sure to clean and disinfect the bulb syringe thoroughly after use.



A pediatric rubber bulb syringe

How to CLEAN your dog's ears with Mister Ben's Ear WASH with Aloe for Dogs:

STEP 1: Have your dog sit, and position yourself behind the dog.

STEP 2: Gently hold the ear flap with one hand and hold the bottle of WASH with the other.

STEP 3: Hold the ear flap up and fill the canal with Mister Ben's Original Ear WASH with Aloe for Dogs.

STEP 4: Gently massage the base of your dog's ear for sixty seconds. This helps break up any debris and allows it to float to the top. It is normal to hear a squelching noise while you massage the ear.

STEP 5: Allow your dog to shake its head to remove excess WASH.

STEP 6: Moisten a cotton ball with ear WASH and wipe away any obvious external dirt.

STEP 7: Repeat steps 1- 6 on the other ear.

STEP 8: Give your dog a healthy treat as a reward for good behavior.

How to successfully APPLY Mister Ben's Ear TONIC for Dogs with Aloe:

STEP 1: Squeeze dropper in Tonic, release and remove. This will fill the dropper about one-third to one-half full.

STEP 2: Have your dog sit and position yourself comfortably behind your dog.

STEP 3: Gently hold your dog's ear flap with one hand and the dropper with the other.

STEP 4: Place the Tonic dropper at the opening of the canal, pointing downwards.

STEP 5: Squeeze the Tonic dropper to dispense the Tonic.

STEP 6: Repeat 3 - 5 times, not yet letting your dog shake its head.

STEP 7: Gently massage the base of the ear for at least sixty seconds to encourage dispersal of the Tonic.

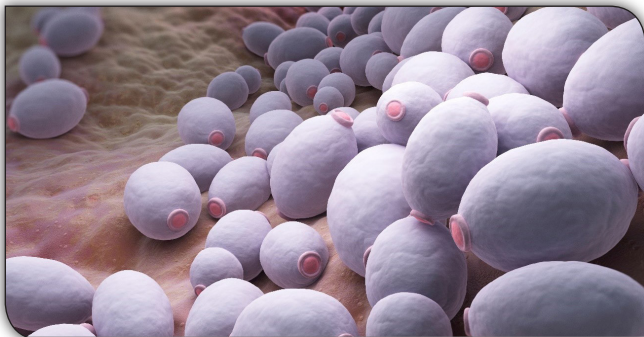
STEP 8: Proceed to allow the dog to shake out the remaining Tonic.

STEP 9: Give your dog a healthy treat as a reward for good behavior.

CONTACTING MISTER BEN'S WITH QUESTIONS

Mister Ben's is always available to answer your questions about their products and how to use them. Simply send an email to amazingproducts@misterbens.com, visit www.MisterBens.com or call them at **844-564-7837**.

18 YEAST OVERGROWTH, AKA CANINE CANDIDA



Yeast overgrowth can cause severe skin problems in dogs, including otitis externa of the ear.

Many holistic practitioners and health-conscious people realize that a multitude of chronic health problems can be traced to a yeast overgrowth. Many sources suggest candidiasis is an underlying cause of many canine skin problems, allergies, fungal infections, otitis externa, digestive problems and food sensitivities^{21, 37}.

There are more than 20 types of candida that can cause infection with *Candida albicans* being the most common. *Candida* is a single celled organism, is classified as a yeast, and is the most common cause of fungal infections worldwide³⁸. *Candida albicans* naturally occurs in small numbers within the digestive and genital tracts. When there is a change in the normal environment or normal gut flora, this allows the candida organisms to overgrow. In dogs, at most risk are those with weakened immune systems due to stress, diet, chemotherapy or disease, or those who have taken a course of antibiotics or steroids.

KEEPING CANDIDA IN CHECK

Like all yeasts, candida thrives in a sugar-rich environment, including those from digested grains, starches and other carbohydrates. Good bacteria metabolize the sugars which keeps candida numbers in line. A shortage or destruction of good bacteria results in a sugar-rich environment and an abundance of *Candida albicans*.

Symptoms of candidiasis are often very similar to symptoms of allergies, appearing as rashes on the skin. Therefore, many candida infections can be easily misdiagnosed as an allergy. Recurring otitis or a hot spot infection, as well as infections of the urinary tract, can all be caused by candida overgrowth, often accompanied by secondary infections.

Conventional veterinarian medicine would normally treat the clinical signs with a combination of antibiotics, steroids and other conventional drugs which may bring temporary relief, but the dog soon returns with another flare-up²¹. If a candida infection is left unchallenged, it changes form and action, and begins to cause low-grade infections, inflammations and allergic responses within your dog's body.

NATURAL REMEDIES FOR CANDIDIASIS

Conventionally, antifungal medications are used to treat chronic yeast and fungal infections. However, many oral antifungal drugs can have serious side effects while only producing temporary results.

Alternative therapies, such as medicinal herbs and a change in diet, have fewer side effects and work by correcting the underlying cause²¹.

DIET

An important and easy step in treating a canine candida infection is moving the dog from grain-based kibble to a grain-free, starch-free, low-carbohydrate diet. This starves the yeast cells without harming the beneficial gut bacteria.

COCONUT OIL

Coconut oil is an effective anti-candida ingredient. It can easily be added to your dog's food. It is thought that the fatty acids in coconut oil, including caprylic acid and lauric acid, kill the candida organisms and promote healing of damaged tissue. Talk to your holistic veterinarian regarding a suitable dose. Too much coconut oil can cause adverse side effects including diarrhea, greasy stools and fatigue.

DEALING WITH DIE-OFF

It is common to suffer from flu-like symptoms such as exhaustion, body aches, diarrhea and nausea during the process of treating candida. This is known as the Herxheimer Reaction and is due to the die-off of many candida organisms. When large numbers of viruses, bacteria, parasites, yeasts or fungi die, their physical remains and the toxins they produce can be overwhelming for your dog's body to clear up. It can take days, weeks, or in some cases, months for the successful elimination of the organisms and their byproducts.

ENZYME SUPPLEMENTATION

There are many enzyme supplements that can help treat and prevent candida overgrowth for your dog. Consult your holistic veterinarian for further information on these supplements.

PROBIOTICS

Probiotics are a popular and effective aid for overcoming candida infections. However, they are only effective if used at the right time, after the candida population has been reduced. The first step is reducing the candida population, through diet change and antifungal supplements and then two weeks later by adding beneficial bacteria to the system to improve recovery. Acidophilus is a well-known probiotic, but there are dozens of others available. Look for live-culture products in health food or pet supply stores, and give frequent doses to provide a high level of beneficial bacteria. Help the bacteria reproduce by maintaining a low-carbohydrate diet and feeding additional enzymes.

ANTI-CANDIDA KITS

Commercial anti-candida kits have recently become available, making it easier for a dog owner to effectively treat canine candidiasis. The kits normally contain antifungal treats or granules, digestive enzymes, probiotics and a combination of antifungal herbal supplements. Consult your holistic veterinarian for further information on these kits.

19 CONCLUSION

Otitis externa is a complicated disease that will usually have a primary cause with secondary microbial infections. In addition, it may also have perpetuating or predisposing factors which prevent the resolution of the disease and encourage recurrence. Ear disease is one of the most common reasons for owners to bring their dogs to a veterinary clinic, highlighting the staggering prevalence of the problem across the country.

Unfortunately, otitis externa has a high rate of recurrence, commonly becoming a frustrating chronic problem for many dogs. This disease needs a step-by-step approach to diagnosis, with effective treatments and sufficient long-term follow-up care. The first step is always to make your dog feel more comfortable by getting the inflammation and secondary infection under control. However, the long-term goal and key to success is finding out the primary cause of the ear disease and trying to control it.

Many studies have shown that allergies play a big role in the cause of otitis externa. Therefore, if your dog is showing a clinical history and signs compatible with allergic otitis externa, it is necessary to take steps to diagnose the allergy and control it in order to have long-term success.

It is your decision as a dog owner whether to use a conventional or holistic approach. Sometimes a combination of both is best. The role of the veterinarian is important, and it is advised that a veterinarian always checks that your dog's tympanic membrane is intact and no obstructions are present

in your dog's ear canal before carrying out natural home care remedies for otitis externa.

Holistic medicine focuses on a whole-body approach, as well as a combination of specific natural remedies to alleviate symptoms. **Mister Ben's Ear Products for Dogs** promotes the use of natural, effective and safe products which can be used on a long-term basis to help maintain your dog's healthy ears. Using a distinct combination of active ingredients with recognized antimicrobial activity, **Mister Ben's Ear Products for Dogs** are unique and effective products.

Unfortunately, if your dog has chronic otitis externa it is not usually going to be a quick and easy fix. Your dog's ears may require a lifetime of care to help prevent disease flare-ups. A superior diet and good ear care can really improve your dog's situation, along with veterinary care when necessary. In reading this guide on your dog's ear health and purchasing **Mister Ben's Ear Products for Dogs**, you have taken one of the most beneficial steps in helping your beloved pet!

Mister Ben wishes you and your dog all the luck in the future.

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BUYING AND USING MISTER BEN'S EAR PRODUCTS FOR DOGS

Mister Ben's Ear Products for Dogs are currently available for purchase at www.MisterBens.com and with major online retailers such as Amazon, ebay and Etsy. The two amazing solutions available for ear care are **Mister Ben's Ear Tonic with Aloe for Dogs** and **Mister Ben's Ear Wash with Aloe for Dogs**.

Mister Ben's Ear Tonic with Aloe for Dogs is based in isopropyl alcohol, and is primarily an ear drop treatment. **Mister Ben's Ear Wash with Aloe for Dogs** is based in witch hazel and is designed to help flush out the ear. Both are instrumental in clearing up problems and maintaining long-term ear health.

Before using any product, it is important that a veterinarian checks that the eardrums are intact and that there are no obstructions such as polyps, tumors or foreign bodies before proceeding with natural home care.

When your dog has very red, sore and dirty ears, it is best to begin with **Mister Ben's Ear Wash with Aloe for Dogs**. Treat the affected ears with the Wash two times a day for two weeks. Additionally, after the first few days, begin using **Mister Ben's Ear Tonic with Aloe for Dogs** after each treatment with the Wash. Once your dog's ears begin to clear up,



you can then use both products in the same fashion two to four times a month.

If you are deciding to use Mister Ben's on your dog to continue to maintain healthy ears, and there is no sign of infection or inflammations, use both products in the same fashion as above one to two times a month.

Mister Ben's is always available to answer your questions, and provide you with valuable information and solutions to help empower you to provide the best care for your dog! Just reach out to us by visiting www.MisterBens.com.

MISTER BEN'S TESTIMONIALS

Here are just a few comments we have received from our many happy dog parents:

"When the bottle arrived, I immediately read the instructions and put in the first treatment. My beagle is almost 16. She has had ear infections her whole life. She keeps them almost constantly no matter what I try. She finally went totally deaf 2 years ago. We are together 24/7. She is my best friend. This time, nothing was even helping a little bit. I treated the ears yesterday and this morning, her ears are looking better than they have in years. It works! I am singing the praises for this one!"

"This tonic and ear wash is the miracle cure to a ten-year battle with my dog's ear infections. I have tried prescription drops, pills, shots and nothing even made a dent until now. As far as customer service, Mister Ben's is an incredible company to work with. Not only do they have a great product, their genuine concern for my pet was second to none. I'm a customer for life!!"

"My dog was turned off from ear cleaning products and usually runs away when I pull out the cotton balls. However, this product

does not make noise when we apply the treatment to her ears and she is less weary now. Her ears are clearing up and I am thrilled!"

"My bichon frise kept getting ear infections after jumping into the swimming pool over the summer. We have tried all kinds of stuff and even stuff prescribed by Vets and nothing gives us positive long term results..."

After a week, I see the difference and two weeks later the odor/fluid build-up completely went away. It's been over a month now, all I do is to put few drops every few days as recommended to maintain its ears odor-free conditions. Very happy with this stuff!!!"

"I purchased this product a few weeks ago and have used it on our 12 year cocker.....We have tried several other products and even prescriptions from the vet. This is a wonderful product I have used this product 4 times in her ear and she seems to responds when spoken to and her ear does not smell any more.....We love this amazing ear tonic... Thank-you every so much!"

"Great product that has really helped my dog with his yeast ear infections. He's a lot calmer, not digging at his ears anymore and he seems to be resting better. I would really recommend this product to anyone who has a dog with ear issues...Delivery was super-fast and there were no issues with this company at all! Thanks for a great product and great buying experience!"

"This works better than the one I used to use for my dog's constant ear problems.. Virbac Epi-Otic Original formula. They no longer makes the original formula. This is the brand that most vets use, and I was using it for a long time until they stopped making it. Now, I highly recommend this. Also, I tried another one that is holistic, but it's not as good as this one. I highly recommend this."

"I purchased Mister Ben's as a recommendation from a friend. I used the product as suggested and it started to clear up very quickly, I also liked how it does not smell like others on the market!"

"So great!!! Cleared up my puppies ears within three days!! Also he doesn't cry like when i would put in the antibiotic from the vet, which makes me feel so much better."

"After one dose there was improvement, his ears were less smelly and there was substantially less wax. I've since given him another dose and there is such a big difference. My dog hates having his ears cleaned but this dries very fast and is not irritating. I'm so happy to have found this!!"

"When the bottle arrived, I immediately read the instructions and put in the first treatment. My beagle is almost 16. She has had ear infections her whole life. She keeps them almost constantly no matter what I try. She finally went totally deaf 2 yrs ago. We are together 24/7. She is my bestest friend. This time, nothing was even helping a little bit so I reached out for Mister Ben's. I treated the ears yesterday and this morning, and her ears are looking better then they have in years. It works! "

"This works better than the one I used to use for my dog's constant ear problems; "Virbac Epi-Otic (original formula/ They no longer makes the original formula.) This is the brand that most vets use, and I was using it for a long time until they stopped making it. I highly recommend this. Also, I tried another one that is holistic, but it's not as good as this one. I highly recommend this."

"This stuff really works. It was easy to apply and got rid of my dogs infection in just a few days. Good stuff!"

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MEET MISTER BEN

Mister Ben's growing-up years were spent in the countryside and shores of Connecticut and then the pristine natural environment of Hilton Head Island, South Carolina. His love for nature and animals was reinforced every step of the way.

As early as high school, Mister Ben began using his skills for experimentation as he competed in the medical field at the International Science and Engineering Fair. He worked for years on his research while consulting with renowned scientists on the cutting edge of his topic. After competing and succeeding on the international stage, winning one of the top prizes for student scientists in the world, he studied at Yale University and subsequently worked for Yale University Health Services..

Because he had dogs with allergies and constant ear infections, which caused pain and itching, Mister Ben's dedication for their care and comfort was the spark that gave birth to Mister Ben's Amazing Products.

The available treatments and common preventatives didn't seem to work or be safe choices. His concern for effective treatment and preventives drove him, so he went to work using his experience in research, experimentation and business. His goal was to produce an effective product at a value to those who used it for their pets.



Mister Ben started developing an amazingly effective Ear Tonic for Dogs, made up of only the best ingredients: isopropyl alcohol or rubbing alcohol, betadine or povidone-iodine, vinegar, aloe vera and boric acid. After spending fifteen years fine-tuning the tonic, Mister Ben's now offers the Tonic along with a wide variety of other exceptional products and solutions with you and your pet in mind.

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