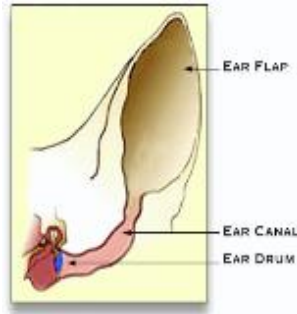
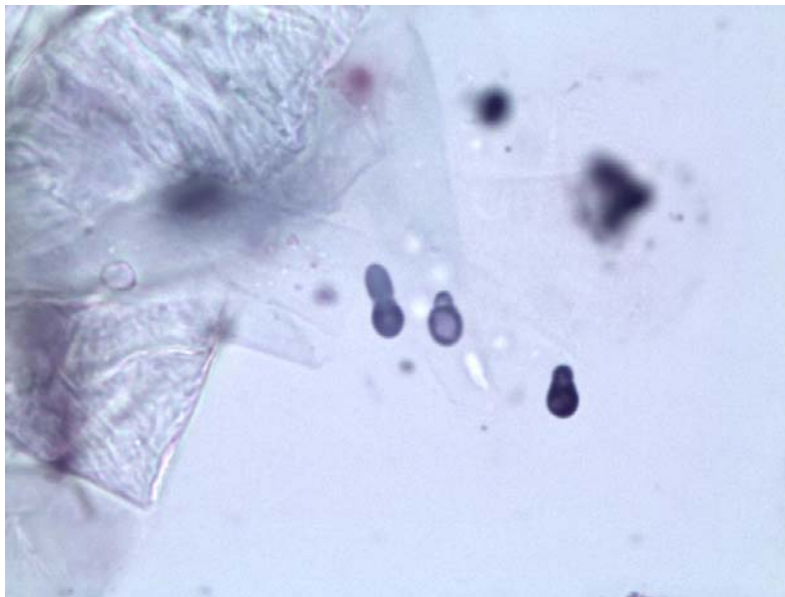


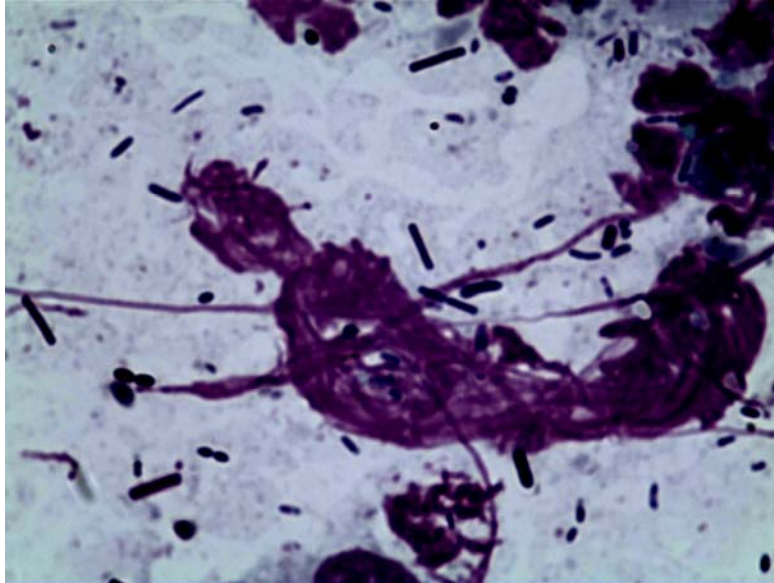
Otitis Externa (Ear infection)

Otitis Externa is the medical term for an ear infection. An ear infection is an inflammation of the epithelial lining of the external auditory canal which is the portion of the ear located between the pinna (ear flap) and the tympanic membrane (ear drum). Otitis is considered a type of skin disease. Otitis is a very common malady of cats and dogs that causes a lot of distress to owners and discomfort to the pet. It is generally described as reactive, inflammatory, and allergic or infectious.



The external canal of the dog is long and narrow and halfway along its length it turns from vertical to horizontal forming an "L" shape. The ear canal is lined by squamous epithelium which contains sebaceous and ceruminous (modified apocrine or sweat) glands. Ceruminous glands secrete a white, odorless fluid. This fluid, combined with sloughed squamous cells forms the normal ear discharge, cerumen (ear wax). A small number of yeast and bacteria are considered normal flora of the skin and ears. When this flora is disturbed or unbalanced, an infection results.





Bacteria that is commonly found in normal canine ears includes *Staphylococcus* spp., *Micrococcus* spp., and occasionally coliforms. *Malassezia pachydermatis* yeast frequently behaves as an opportunistic pathogen whenever alterations in the microclimate of the skin or ears occur. In fact, studies have shown that canine cerumen may enhance the growth of *Malassezia* yeast. Therefore, anything that increases the production of cerumen in the ear predisposes the pet to ear infections.

Primary factors implicated in the cause of otitis include, parasites, foreign bodies, hypersensitivity disorders (allergies), keratinization disorders, auto-immune skin disease, and glandular disorders. Parasites such as otodectes cyanotes, demodex spp, sarcoptes spp, notoedres cati, ticks, flies and fleas have all been associated with otitis externa. It is very important to have you pets ears examined by a veterinarian with an otoscope, to rule out these causes of ear infections before starting treatments. This exam can also rule out foreign bodies such as grass awns, thistle, or burrs. Hypersensitivity disorders (allergies) are a common cause of ear infections. Allergies in pets often manifest themselves in the skin rather than the respiratory tract as happens in humans. As the ears are a part of the skin, they are affected by allergies. Food allergies, in particular, are a common underlying cause of recurrent ear infections. Some breeds are prone to keratinization disorders which increase the turnover of epithelial (skin) cells, and increase the production of cerumen, predisposing these dogs to have ear infections. Glandular disorders, such as hypo- and hyper- thyroidism, can also affect skin which can cause ear infections. And auto-immune diseases, in which the body's own immune system attacks itself, can produce skin disease.

Perpetuating factors are those that are responsible for continuing the inflammatory process even though the primary factors may no longer be present. These are bacteria, yeast, otitis media (infection of the middle ear behind the ear drum) and in cases of chronic ear disease, the pathological changes in the ear canal itself. Traditionally veterinary medicine has treated these factors and not the primary factors causing the disease. This simply causes the infection to re-occur until the primary factor is addressed.

Some other complicating factors of ear infections include conformation of the ear (such as a pendulous ear), narrowed (stenotic) canals, or hair in the canal. Frequently these are cited as predisposing factor, however, this line of thought ignores all the dogs with pendulous ears, and/or hairy, or narrowed ear canals that never have an infection. However, these conditions paired with a primary condition such as allergies, or a glandular condition, can severely complicate treatment of the infection.

When dogs get wet, either through swimming or bathing, it stimulates the ceruminous glands to produce more cerumen. These secretions can block the ear canal and favor yeast and bacterial proliferation. Increasing heat and humidity can alter the micro-environment of the ear canal and make it more suitable for bacterial or yeast colonization. Vigorous plucking of hair from the ear canals in an otherwise healthy ear can cause inflammation and lead to infection. Even overly aggressive ear care with cotton tipped applicators or strong cleansers can have this effect.

The primary target of therapy in otitis externa is to eliminate the underlying cause and treat the secondary infection. Some testing is required to determine the underlying cause. Blood tests are performed to rule out glandular causes, and allergy testing or a food trial may be performed to determine if allergies are the underlying cause of the infection. In conjunction with the testing, topical antibiotics and anti-fungals, and frequently topical anti-inflammatories are used to treat the secondary, or perpetuating, causes of the otitis externa. In cases of severe infection, systemic treatment may be required. Unless the primary inducing factor is uncovered and treated, the infection will likely re-occur.

Otitis externa, if left untreated, can cause rupture of the tympanic membrane (ear drum), infection of the middle ear (which can affect balance), and eventually, calcification (hardening) of the ear canal and deafness.

Please consult your veterinarian anytime you observe your pet performing frequent head-shaking or pawing at an ear, or you notice pain, redness, or discharge from your pet's ear.