

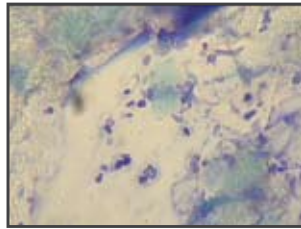
7 Steps to Ear Therapy

Step 1

Using **MalAcetic® Otic**, clean the ear thoroughly (see instructions) daily for 7-14 days (Gotthelf, L. and Young, S.: A New Treatment for Canine Otitis Externa: Vet Forum, August, 1997, Bassett et al, Aus Vet Jour, 2004). In many cases, daily cleansing for one week is all that is necessary. Maintenance cleansing twice weekly should prevent a recurrence. If cutaneous *Malassezia* is not suspected then use **MalAcetic®** products topically (i.e. shampoo, conditioner, or wet wipes – see shampoo therapy) or, for more difficult cases, **Mal-A-Ket Shampoo** or **Wipes**.

How to clean an ear: Apply approximately one (1) teaspoon (5 ml) of the ear skin cleanser into the ear canal and massage thoroughly. Some people occlude the canal with a small amount of cotton during this process to protect against drenching should the pet shake its head. For maximum benefit, allow the solution to remain for at least five minutes before attempting to manually clean.

Clean the ear by stuffing wads or balls of cotton in the ear and massaging so the debris sticks to the cotton. An applicator stick may be of assistance where repetitive cleaning is required. In dry and/or irritated ears with little debris and/or wax, the cotton may become irritating. In these cases, a tiny bulb or a water pick can be helpful. Be sure to wipe the pinna. In problem ears, the frequency of this process may be increased to one (1) to three (3) times daily.



Cytology of *Malassezia*

Should medication be necessary, apply after cleaning. A previously little known fact to remember is that with most acidifying ear cleaners, the ear will be acidified and therefore may inactivate some commonly used drugs like aminoglycosides (amikacin, gentamycin, neomycin). In those cases, either waiting four hours or applying alkalizing agents will be of assistance. One alkalizing agent that the literature reports to have primary antimicrobial properties is **TrizEDTA™** (**TrizEDTA™**, **TrizCHLOR** with .15% chlorhexidine, **TrizULTRA+KETO** with .15% ketoconazole). To use **TrizEDTA™**, one should follow the above instructions in how to clean an ear only substituting the alkalizing **TrizEDTA™** solution. Repeating Steps 3 and 4 should then be more rewarding.

How to clean a very dirty ear: Apply approximately one (1) teaspoon (5 ml) of the **KlearWax™** into the ear canal and massage thoroughly. Add water or a cleansing substance like **MalAcetic®** or **TrizEDTA™** to achieve a foaming effect. Some use a positive pressure apparatus like the Medrx Irrigator. Be sure to clean **KlearWax™** out of the ear after using. It may be best to use this in Step 3.

Step 2

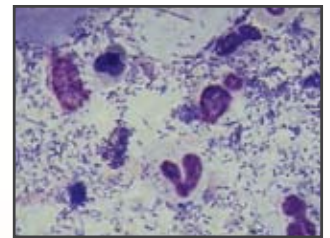
1. Should there be inflammation or irritation due to the ear cleaning process then use **MalAcetic® ULTRA**.
2. This is the logical next step after cleansing and a “topical hydrocortisone” such as the **MalAcetic® ULTRA** fail to cause remission of signs. Follow Step 2 plus add short term and short acting corticosteroids at anti-inflammatory doses. After a couple of days use full strength **MalAcetic® Otic**.

- There is no simple method of diagnosing cutaneous *Malassezia*. Do a topical treatment in cases where *Malassezia* otitis is confirmed by cytology.
- There are reports in the literature of primary microbiocidal properties of **TrizEDTA™**, particularly to *Pseudomonas*. Those reports also indicate the evidence for potentiation with antibiotics which otherwise are inactivated by other acidifying ear cleansers. There are also reports of synergism when using chlorhexidine and **TrizEDTA™** (**TrizCHLOR**) together. **TrizULTRA+KETO** with .15% Ketoconazole is designed for use against *Malassezia* where there is also a bacterial infection.

See **TrizEDTA Technical Bulletin, differentiating TrizEDTA, TrizCHLOR (.15% Chlorhexidine), and TrizULTRA+KETO (.15% Ketoconazole)**.

Step 3 Cleansing Under Anesthesia

Visualization of the ruptured ear drum or swollen tympanum should confirm otitis media. After careful and thorough cleansing of the bulla and removal of “debris”, infuse Baytril or appropriate antibiotic and dexamethasone directly into the tympanum. In the case of a strangulated canal inject approximately 1/2 ml of depomedrol or Vetalog (depending on the size of the pet) as deep as you can between the skin and the cartilage of the ear canal, with a 1 1/2 inch 20 gauge needle. If a corticosteroid injection is not done then, and if there is significant erythema or exudation, then place the dog on short term (7-12 days) short acting high dose corticosteroids (1-2 mg/kg). At this stage, some people do Culture & Sensitivity.



Cytology of *Pseudomonas* ear canal

Step 4

Step 3 plus Culture and Sensitivity. Resistant organisms often are measured by MIC considering microgram/ml, Gemish 2 uses 5-10 milligrams/ml.

Step 5 Protocol for Bacterial Otitis

The following treatment plan is a modification of Step 3:

1. Flouroquinolone or start antibiotic (be specific if cultured) systemically for at least 21 days. Recently experts decreased the importance of systemics vs. topical antibiotics. When using high dose corticosteroids, it may be most prudent to use systemic antibiotics.
2. Clean with **TrizEDTA™** twice daily. Use **TrizULTRA+KETO** when a coexisting gram negative and *Malassezia* infection exist.
3. Instill and FILL the ear canals BID with Baytril and **TrizEDTA™**.
4. For the first 14 days, I would use systemic prednisone at 1-2 mg/kg if OM is diagnosed. The rationale is to decrease the inflammation, mucous secretion from the mucoperiosteum, pain and viscosity of the exudate in the tympanic cavity.
5. If OM is diagnosed, I would anesthetize and with visualization flush the ear using KlearWax followed with a **TrizEDTA™** product and directly instill Baytril and NaDex phosphate into the tympanum. If the tympanum is present and OM is suspected then I would do a myringotomy. The location of the myringotomy should be ventral. Maintenance therapy would include biweekly **TrizEDTA™** cleansing long-term.

Step 6 Maintenance

Clean the ear twice weekly with a **TrizEDTA™** product and twice weekly with **MalAcetic® Otic**. After no recurrence for 45 days then reduce to once weekly for each.

Step 7 Surgery

Use this is if Step 4 fails and/or calcification of the ear canal is evident, i.e., lateral ear canal resection, vertical ablation and total ear canal ablation (TECA) and lateral bulla osteotomy.



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