

The OHSU Tinnitus Clinic, established by The Oregon Hearing Research Center at Oregon Health and Science University. It was the first medical clinic devoted exclusively to the treatment of tinnitus.

The title of the paper is “Reduce Your Risk of Complications During Ear Wax Removal” and the authors are Robert L. Folmer, Ph.D., and Yongbing Shi, M.D., Ph.D.

Believe it or not, ear wax has a purpose. One component of ear wax — cerumen — is produced by specialized glands that line the outer portion of the ear canal. This waxy secretion lubricates the ear canals and also helps to prevent infections. By virtue of its stickiness, it traps tiny bits of debris — hair, bugs, bacteria, and dirt — and keeps contaminants away from the delicate eardrum. Keratin from sloughed skin cells combines with the cerumen, dirt, oil, and sweat in the ear canal to form ear wax. Flakes of ear wax normally become dislodged and fall out of the ears as a result of head and jaw movements. Most people do not need any type of intervention to assist this natural process. However, some people are susceptible to ear wax accumulation and impaction. Risk factors include: 1) greater-than-normal ear wax production; 2) superfluous hairs growing in the ear canals that interfere with the self-cleaning mechanism; 3) hearing aids that prevent ear wax from leaving the ear canal; 4) regular use of cotton-tipped swabs to clean ear canals. Impacted ear wax can cause a variety of problems including conductive hearing loss, pain, dizziness, infection, tinnitus, and a feeling of fullness in the ears. Syringing, or irrigation, of the external ear canal to get wax out is performed on more than 150,000 ears per week in the United States.¹ In a survey of general practitioners, Sharp et al.² reported that complications (such as ear pain, dizziness, vertigo, nausea, hearing loss, tinnitus, and perforation of the eardrum) occur 0.1% of the time, or one out of every 1,000 syringed ears. Even though ear wax removal is usually performed without complications, it is important for clinicians and patients to remember that the potential exists for initiating or worsening hearing loss or tinnitus. Here are some steps you can take to minimize the risks associated with ear wax removal:

1. Before the procedure begins, tell your clinician about your previous ear wax removal experiences and any history of ear infections, discharge, or eardrum perforation.

2. Find out how long your clinician has been doing this procedure. All clinicians should have received adequate training before attempting ear wax removal. Beginners should be supervised by more experienced personnel.

3. Clinicians should evaluate the condition of your eardrums by looking through an otoscope before attempting ear wax removal. If there is any doubt about the integrity of an eardrum, assume that the eardrum is not intact or is at least vulnerable to injury. Clinicians can then decide if they should continue with the procedure.

4. If ear wax is impacted in the ear canal, apply a few drops of hydrogen peroxide or mineral oil daily for two to three days to soften the wax before visiting the doctor for ear wax removal. The clinician can then remove the wax easily with greatly reduced risk of complications.

5. Ask your clinician to use a microscope to look into your ear canal while removing wax. Microscopes provide a three-dimensional magnified view of the eardrum and ear canal, and free up both of the clinician's hands.

6. Ask your clinician to use extreme caution with curettes — small metal instruments that are used to scoop out ear wax. A minimum amount of force should be used with these instruments. If the ear wax is impacted and cannot be removed painlessly, patients should use softening agents at home for a few days before the removal is tried (see number 4 above). Without question, this is the quietest way to have ear wax removed.

7. If your ear is going to be irrigated with water, ask your clinician to control the pressure, temperature, and direction of the water. The lowest effective pressure should be used to prevent trauma. Irrigation water temperature should be maintained between 37-38°C. Water that is too cold or too warm can induce vertigo in patients. The irrigation stream should be aimed at the superior-posterior region of the ear canal, not directly at the eardrum.

8. Vacuum suction should also be used with extreme caution, and with the minimum amount of force needed to dislodge the wax. Because it is the loudest method, suction would not be a good choice for patients who are already hypersensitive to sound.

9. Ear candling? NO! This procedure involves inserting the base of a hollow candle into the ear canal and lighting the candle's wick at the opposite end. The intent is to create negative pressure in the ear canal, which then results in ear wax removal. Unfortunately, this does not work. In fact, Seely et al.³ reported 21 ear injuries that resulted from ear candle use.

10. Regarding all do-it-yourself products, we strongly encourage people to not try to remove their own ear wax. Three of our patients reported that their tinnitus began as a result of their own attempts to clean their ear canals. Good, clear communication between the patient and the clinician is vital. Ear wax removal procedures should never be continued beyond the patient's comfort level. If you experience any pain, dizziness, or discomfort while having this procedure done, tell the clinician to stop immediately.

As for the loudness levels of these ear-cleaning procedures, excessive pressure is more likely to cause problems than sound exposure. Excessive pressure can be applied with irrigation, suction, or with a curette. In some cases, the ear will translate this mechanical pressure into the sensation of loud sound. Excessive mechanical pressure can damage the eardrum or send shock waves into the cochlea causing sensorineural hearing loss and tinnitus. A gentle, careful approach to ear cleaning is the number one rule. Thousands of ear wax removal procedures are performed daily with no problems. However, clinicians and patients should remain aware that complications can occur, and that these procedures should be done with utmost care and caution. By following the recommendations outlined in this article, the complications of infection, dizziness, increased hearing loss, and tinnitus can be avoided.

REFERENCES

1. Dinsdale, R.C., Roland, P.S., Manning, S.C., Meyerhoff, W.L. (1991). Catastrophic otologic injury from oral jet irrigation of the external auditory canal. *Laryngoscope*, 101(1 Pt 1), 75-78.
2. Sharp, J.F., Wilson, J.A., Ross, L., Barr-Hamilton, R.M. (1990). Ear wax removal: a survey of current practice. *British Medical Journal*, 301(6763), 1251-1253.
3. Seely, D.R., Quigley, S.M., Langman, A.W. (1996). Ear candles — efficacy and safety. *Laryngoscope*, 106(10), 1226-1229. Dr. Folmer is Chief of Clinical Services at the Oregon Health & Science University (OHSU) Tinnitus Clinic in Portland. Dr. Shi is an otolaryngologist and Medical Director of the OHSU Tinnitus Clinic.
Visit: www.ohsu.edu/ohrc/tinnitusclinic

Published by the American Tinnitus Association