

# How to Clean Your Ears Without a Cotton Swab

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## STORY AT-A-GLANCE

- › Ears are normally self-cleaning, but if you experience symptoms of excess earwax, including hearing loss, you may safely remove it using oil to soften the wax and a 3% hydrogen peroxide soak for five minutes
- › Cotton swabs are a major cause of eardrum punctures; a sample of emergency room records showed 66% of those treated for a traumatic perforation caused the injury themselves by sticking something in their ear. Nearly half of these were cotton swabs
- › While many perforations will heal without intervention, some experience neurological deficits such as facial nerve paralysis and require surgery to repair the membrane; other mistakes made when cleaning ears include cleaning them regularly, inserting any object, ear candling and using syringes that may increase your risk for swimmer's ear
- › When earwax buildup goes unrecognized in the elderly it may pose significant problems; symptoms of earwax impaction include hearing loss and tinnitus, which may increase the risk of cognitive decline, reduced social engagement and an association with pain disorders, headaches and difficulty sleeping

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Cerumen, also known as earwax, is necessary for the health of your ear. In fact, it's not really wax at all, but made partially of dead skin cells from the ear canal.<sup>1</sup> The area inside the auditory canal consistently revitalizes itself, and as the dead cells are removed, they're pulled into a process producing earwax.

The ear canal is also lined with hairs,<sup>2</sup> which help move the earwax along the canal and out of your body. Earwax is created by secretions from the ceruminous and sebaceous glands, located in the outer ear canal.<sup>3</sup> The ceruminous is a sweat gland, while the sebaceous glands excrete oil to help soften the skin.

The role of earwax is to protect the skin from infection as it is a natural antimicrobial. Another function of earwax is to clean the ear canal as it slowly moves through the canal and out of the ear with jaw movements like chewing.<sup>4</sup> During this motion it carries with it debris and waste that may have made its way into the canal.<sup>5,6</sup>

Like many other things in your body, your ears require a balance. Too little earwax and your ear canal may dry out; too much may cause temporary hearing loss.<sup>7</sup> Ideally your ear canals should not need cleaning. However, if too much wax builds up and causes symptoms, you may consider using a safe method at home to remove it, which does not include cotton swabs.

## **Eardrum Injuries From Cotton Swabs**

The use of cotton swabs to clean your ears is still a major cause of eardrum perforation, according to a study published in the Journal of the American Medical Association.<sup>8</sup> Your eardrum, also called the tympanic membrane, maybe perforated by objects entering your ear canal.

In one study,<sup>9</sup> a sample of emergency department records showed 66% of those treated for a traumatic perforation had caused the injury themselves by sticking things in their ear; nearly half of these were cotton tipped swabs.<sup>10</sup> Lead author Dr. Eric Carniol, an otolaryngologist at the University of Toronto, told Reuters Health:<sup>11</sup>

*"In our experience, cotton tip applicators (Q-tips and similar products) are frequently the instrument that patients will use to clean their ears. Our conjecture is that the majority of these injuries were caused by patients trying to get their own earwax out."*

Carniol's study<sup>12</sup> focused on the evaluation of traumatic perforations, evaluating five years of records from 100 emergency departments and more than 900 visits. The researchers noted that this represented almost 5,000 visits for perforations across the U.S. during the same period.

They concluded<sup>13</sup> that despite warnings regarding the risk of injury, using cotton tipped applicators is still a major cause of traumatic eardrum perforations. In another study<sup>14</sup> evaluating the incidence of self-ear cleaning practices among undergraduate students at KwaZulu-Natal University, researchers found that 98% of the 206 participants engaged in self-ear cleaning and that 79.6% used cotton swabs.

Doctors from Henry Ford Hospital<sup>15</sup> studying this topic found a connection between ruptured tympanic membranes and the use of cotton tipped swabs. The data were presented at a scholarly conference held in Chicago in 2011, where they talked about how more than half of those seen by an otolaryngologist admitted to using cotton swabs to clean their ears.

The study<sup>16</sup> included 1,540 patients who had burst their eardrum at some point during the years 2001 to 2010. Although they found most cases healed successfully without intervention, some experienced neurological deficits such as facial nerve paralysis, and required surgical repair of the eardrum.

Other items people have reported using to clean their ears include hairpins, pens or pencils, paper clips and tweezers.<sup>17</sup> It is important to realize nothing should be put inside your ear because it is dangerous.

While your outer ear can be cleaned with soap and water, the ear canal doesn't need this. Water that gets in during showers or when washing your hair is often enough to loosen the wax and help it move out of your ear.<sup>18</sup>

## **Mistakes You May Be Making Cleaning Your Ears**

Dr. Boris Chernobilsky, clinical assistant professor at NYU Langone Health,<sup>19</sup> spoke to Time magazine about the more common mistakes people make when cleaning their

ears. Aside from using cotton tipped applicators, otolaryngologists recommend against:<sup>20</sup>

- **Cleaning regularly** — Ideally, you don't need to clean your ears at all, and definitely not every day or even every other day. Your earwax is beneficial and provides protection, lubrication and antibacterial properties.
- **Inserting all types of pointy objects** — Bobby pins, long fingernails and sewing needles are used by some people to clean their ears. However, they present the same risks as cotton swabs as they can easily cut or damage the skin or perforate your eardrum.
- **Candling** — Ear candling is the process of using a hollow, cone-shaped device and lighting a fire. Practitioners maintain it removes wax and other impurities from your ear by creating negative pressure and pulling the debris out. But Chernobilsky told Time,<sup>21</sup> "I have seen eardrum perforations and burns from people's hair catching on fire."

In one study<sup>22</sup> researchers used tympanometric measurements on an ear canal model to demonstrate that ear candles do not successfully produce negative pressure. They also showed how wax was deposited in some of the models. The researchers additionally surveyed 122 otolaryngologists and identified 21 ear injuries resulting from candle use.

The FDA<sup>23</sup> warns that candling, also called ear coning or thermal auricular therapy, increases the risk of burns, ears plugged by candle wax and puncturing of the eardrum. Also associated with this practice is the delay in seeking medical attention for other underlying conditions, such as hearing loss, temporomandibular joint disorders and cancer.

- **Using syringes to rinse** — Although rinsing the ear canal with a syringe may be safe,<sup>24</sup> if you forget to dry your ear when you're finished, it may increase your risk for swimmer's ear. This is a painful bacterial infection of the outer ear canal caused by increased moisture.<sup>25</sup>

## Wax Is Healthy, but Buildup May Impact Hearing

In most cases, when left alone, earwax makes its way out of the ear canal and out of your body. Sometimes it may become impacted or blocked against the eardrum. This is a common problem seen by doctors,<sup>26</sup> who find the most common cause is the use of cotton tipped applicators that may remove some of the superficial wax, but often push the rest deeper into the ear canal.

Individuals who wear hearing aids or ear plugs are at a higher risk for blockage from earwax.<sup>27</sup> According to guidelines by the American Academy of Otolaryngology-Head and Neck Surgery Foundation, up to 65% of those residing in nursing homes may experience impaction when wax collects and completely blocks the ear canal.<sup>28</sup>

A buildup of earwax may reduce hearing as sound waves are no longer able to reach the tympanic membrane as efficiently. However, symptoms of earwax impaction may also include:<sup>29,30</sup>

Vertigo – a sense of being unbalanced, leading to dizziness and nausea	Cough caused by pressure stimulating a nerve in the ear
Tinnitus – ringing in the ear	Feeling of fullness in the ear
Earache	Ear infection
Itchiness	Dizziness
Drainage from the ear canal	

## Steer Clear of Loud Noise to Protect Hearing

Hearing loss may result from earwax impaction against the tympanic membrane, as well as other medical and environmental causes. In a study<sup>31</sup> of 170 students between the ages of 11 and 17 years, researchers from McMaster University in Canada found that

certain habits, including regularly being around loud noises at parties or concerts, listening to music with earbuds and using mobile phones, were the norm.<sup>32</sup>

More than half reported experiencing tinnitus, or ringing in the ears, for a day following a loud concert. This is considered a warning sign for hearing loss. Nearly 29% of the students were found to currently have developed chronic tinnitus, as evidenced by a psychoacoustic examination conducted in a sound booth.<sup>33</sup>

According to the American Tinnitus Association,<sup>34</sup> millions of American adults experience the condition, sometimes to a debilitating degree. According to data from the 2007 National Health Interview Survey,<sup>35</sup> 21.4 million adults experienced tinnitus in the past 12 months. Among those, 27% had symptoms longer than 15 years and 36% had near-constant symptoms.

## **Hearing Loss Associated With Other Health Risks**

Tinnitus and hearing loss may result from an eardrum that's impacted with wax; these conditions are associated with other health risks. When earwax buildup goes unrecognized in the elderly, it may pose serious problems such as hearing loss and cognitive decline.

In one study<sup>36</sup> of 1,162 individuals, researchers concluded that hearing loss was independently associated with an increase in cognitive decline in older adults, possibly through the effects of hearing loss on cognitive load and a reduction in social engagement.

The researchers wrote that hearing loss was prevalent in nearly two-thirds of adults 70 years and older and that it is an undertreated condition.<sup>37</sup> On average, those who participated in the study who had hearing loss demonstrated significant mental impairment three years sooner than those who did not have hearing loss.<sup>38</sup>

Scientists contributing to two other studies from Johns Hopkins also reported on the negative effects of hearing loss. In the first study,<sup>39</sup> seniors were found to be more likely

to develop dementia compared to those who retained their hearing. In the second,<sup>40</sup> brain shrinkage appeared to develop faster in older adults who suffered hearing loss.

Tinnitus is also associated with pain disorders<sup>41</sup> and headaches,<sup>42</sup> including migraines. It often leads to sleep difficulties such as delayed sleep, mid-sleep awakenings and chronic fatigue.<sup>43</sup> Tinnitus is also associated with cognitive deficits, including slowed cognitive processing speed and problems with attention.<sup>44</sup>

## **A Safe Way to Keep Your Ears Clean**

If you have cotton-tipped swabs at home, take a moment to read the information printed on the box. You may be surprised to find a warning that reads: "Do not insert swab into the ear canal." So, if you feel you have a buildup of wax in the ear canal causing symptoms, what can you do to safely remove it?

The simplest, most effective and safest way is to first soften the wax with a few drops of olive oil, coconut oil or water in your ear canal. Lie on your side with a towel under your head to catch anything that may spill out. After allowing a few minutes for the oil to soften the wax, add a capful of 3% hydrogen peroxide to the ear canal.

You may hear some bubbling and you might experience a slight stinging sensation. After about five minutes, hold a tissue in your hand, tip your head and allow the solution and excess wax to drain out. Repeat this with the other ear.

While this is a safe method for removing excess earwax, it is important to note that you shouldn't clean your ears every time doing this, as it may dry out your ear canal and increase your risk of an infection.

If you notice that you consistently have excess earwax it may be a sign of an omega-3 deficiency.<sup>45</sup> Consider adding omega-3s to your diet using sardines, anchovies and wild-caught Alaskan salmon. Or, take a high-quality, animal-based omega-3 supplement like krill oil.

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