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SECONDARY BACTERIAL INFECTION IN EAR DUE TO USING OF EARPHONES

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The use of earphones is very common among the youth which has led to the rise of many health concerns about their role in altering the microenvironment of the external auditory canal. The ear canal naturally contains flora such as *Staphylococcus spp.*, *Corynebacterium spp.* and *Streptococcus spp.* But due to prolonged use it can cause changes in the microenvironment such as the humidity, temperature and mechanical irritation which can promote other microbial growth and skin maceration. Moreover these poor hygiene conditions can lead to the risk of infections such as occlusion dermatitis and secondary infections like otitis externa.

The aim of this review is to analyze the types of bacteria associated with the earphone use and their role in promoting ear infections.

The reviewed studies revealed that organisms such as *Staphylococcus epidermidis*, *Staphylococcus aureus*, *Staphylococcus hominis*, alpha hemolytic *Streptococcus spp.*, *Corynebacterium species*, *Pseudomonas aeruginosa* and *Acinetobacter species* can be found in ears. Ear infection can be divided into otitis media and otitis externa and the most common microbe to cause these infections is *Staphylococci auricularis*, *Staphylococci epidermidis* and *Staphylococci capitis*. Factors that promoted bacterial growth was prolonged usage earphones with poor hygiene, moisture retention, reduced ventilation and sharing earphones. Moreover the type of earphone or headphone also contributed greatly to the rate microbial growth. Mostly the earphones with swabs contained more bacterial growth as they tend to retain the bacteria by trapping the ear moisture inside the swab. These circumstances not only encourage the buildup of cerumen but also interfere with the ear's natural defense systems, including its slightly acidic pH and capacity for self-cleaning. Opportunistic bacteria can therefore proliferate more successfully, especially when earbuds are shared or not properly cleaned.

Microbial colonization in the external ear is greatly increased by earphones, which serve as both reservoirs and vectors for bacterial transmission. The risk of occlusion dermatitis and subsequent infections such otitis externa is increased by frequent and extended use, sharing, and poor cleaning.

It's crucial to take preventative steps including frequent cleaning, avoiding sharing, and limiting extended use. To assess long-term clinical effects and create uniform cleanliness standards, more study is required.