

# Waxing lyrical: taking ear wax seriously

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Some medical conditions carry prestige and others do not.<sup>1</sup> Diseases with high prestige attract celebrity patronage and awareness campaigns. Those with lower prestige excite little media interest and doctors may see them as trivial or banal. Among such conditions, ear wax probably lies close to the bottom of the hierarchy of suffering. No-one rattles collection tins in aid of ear wax, and there are no campaigns urging us to pay attention to the well-being of our ear canals. A search for books on the subject elicits quite a few about how to remove ear wax by orthodox or arcane methods, but none at all about its biology or history. A surprising number have jokey titles like 'Ear Wax Max' and 'Why does ear wax taste so gross - and more top trivia.' It is hard to think of any other bodily secretion or affliction that would invite such dismissal.

Our attitude to ear wax is in some ways surprising. A review of impacted ear wax estimates that 2.3 million people a year in the United Kingdom suffer problems with wax needing treatment, with some 4 million ears being syringed annually.<sup>2</sup> This makes it possibly the most common therapeutic procedure carried out on any part of the body. Symptoms of excessive wax or impaction, especially in the elderly, include not only hearing loss but tinnitus, dizziness, infections, social withdrawal, poor work function and mild paranoia. Other problems include general disorientation and loss of an aural sense of direction. With unilateral wax, sounds can appear to be coming from the wrong side, leading to accidents as a driver or especially as a pedestrian. Inappropriate self-treatment (or even treatment by health professionals) can cause perforated eardrums and in very rare cases cochlear damage, leading to nystagmus and sensorineural deafness. In spite of this catalogue of harms, the clinical profile and management of excessive wax are poorly understood. The evidence base is poor and inconsistent, leading to few strong recommendations, even relating to the most commonly used treatments.<sup>3,4</sup>

Low esteem for ear wax is surprising in other ways too. As a substance, it is unique

in the human and mammalian body. This is due to its position in our sole anatomical cul-de-sac. Everywhere else on our body surface, dead and redundant skin cells fall off or are scrubbed away when we wash. In the ear canal – which points forwards and downwards and might otherwise turn into a dermatological garbage dump – ear wax binds these together, along with other assorted detritus that may have entered from the world outside. It is then moved up to the exit by jaw movements and as a result of the skin of the canal slowly moving outwards like an escalator. Wax also prevents multiplication of micro-organisms and infection. It is as essential as sweat and tears, although perhaps not quite as vital as blood. Wax is also fascinating in its own right.

## WHAT IS WAX?

Waxes are common across nature, as organic compounds that can form malleable solids at normal temperatures. Beeswax and lanolin from sheep are probably the best-known non-human waxes. Beef fat was formerly used to manufacture candles, although these are nowadays mainly derived from petroleum. Ironically, one popular folk remedy for impacted ear wax is to light one end of a candle and insert the unlighted end into the ear – possibly because of a belief that 'like cures like'. The practice is ineffective and dangerous.<sup>5</sup> (As an aside, my wife's family name is Wax, indicating that her ancestors were presumably candle-makers or merchants dealing in wax. I hope they did not encourage ear candling.)

Ear wax is a composite material. Skin cells and the keratin sheets they produce make up more than half of it: perhaps our relationship with ear wax might alter if we called it recycled skin instead. The liquid constituents of wax largely come from two different secretions originating in glands within the ear canal: sebum from sebaceous glands, and modified sweat from the so-called ceruminous glands – cerumen being a pretentious Latinised word for ear wax, first coined in the eighteenth century. These two secretions pass through microscopic ducts into hair follicles and emerge into the ear canal to combine with the solid debris. The characteristic smell of ear wax – which people may find either repulsive or enticing – appears to result from oxidation of the resulting mixture and

modification by bacteria.<sup>6</sup> (The Germans, incidentally, do not call it wax at all but *Ohrenschnalze* or ear fat.)

There are well-known racial differences in ear wax. Dry wax, which is grey and flaky, is commoner in Asians. Wet wax predominates in Africans and Caucasians, and is brown and sticky. The difference is determined by a single gene, with the allele for wet wax being dominant.<sup>7</sup> The recessive form seems to have emerged in north-eastern Asia about 2000 generations ago. Among other mammals, whales can acquire particularly huge accumulations of ear wax.<sup>8</sup> In the largest of blue whales, a plug of ear wax can be as long as 10 inches. Analysis will show evidence of the whale's age, exposure to chemical contamination of the oceans, and stress levels over time due to hunting pressures or alterations in the climate.

## ENCOUNTERING WAX

Every doctor will have encountered wax as an annoyance when trying to see an ear drum, and many will also have experienced it as sufferers. I suspect some doctors only realise the problem is worthy of their interest and sympathy when their own hearing and comfort become significantly impaired by wax, which is commoner over the age of 40. The traditional way of removing excess wax is by requiring the patient to apply drops of various kinds for a few days, followed by manual syringing using water at body temperature and a large metal syringe. Older general practitioners (GPs) will remember that it was common to do this for two or three patients a week. In this century, that function has been taken over by nurses and audiologists, while manual syringing has been replaced by electronic irrigation machines and microsuction. Setting aside issues of clinical effectiveness, the doctor-patient relationship in communities may have been significantly altered because this intimate and painstaking procedure, which most patients would have undergone at some time, has now changed from a personal interaction with their family doctor that often led to instant relief, to a delegated and technological one.

Wax removal has also been increasingly commercialised. Many GP practices in the United Kingdom no longer offer the service and it is not a requirement for them or their commissioners to do so any more.<sup>9</sup> Some patients are still entitled to referral to a hospital-based audiologist for reasons such as pre-existing hearing loss. However, for most people, wax removal is something they will need

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to pay for privately and may be beyond their means. In effect, the Cinderella status of ear wax has been seized on by politicians as a way of lowering expectations of what society and the state will provide, without any apparent attempt to assess the social or economic costs. This is a salutary reminder of what can happen with any condition lacking in prestige.

Equally, doctors can still rebel against this in the way that a GP colleague and dear friend of mine did when seeing an elderly man with ear wax in a care home. In his own words: “I just brought the decommissioned ear syringing machine from the practice and bypassed all the regulations. He is much better now: hearing problems, sensory deprivation, dementia, the lot.”

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