

WIRED FOR SOUND

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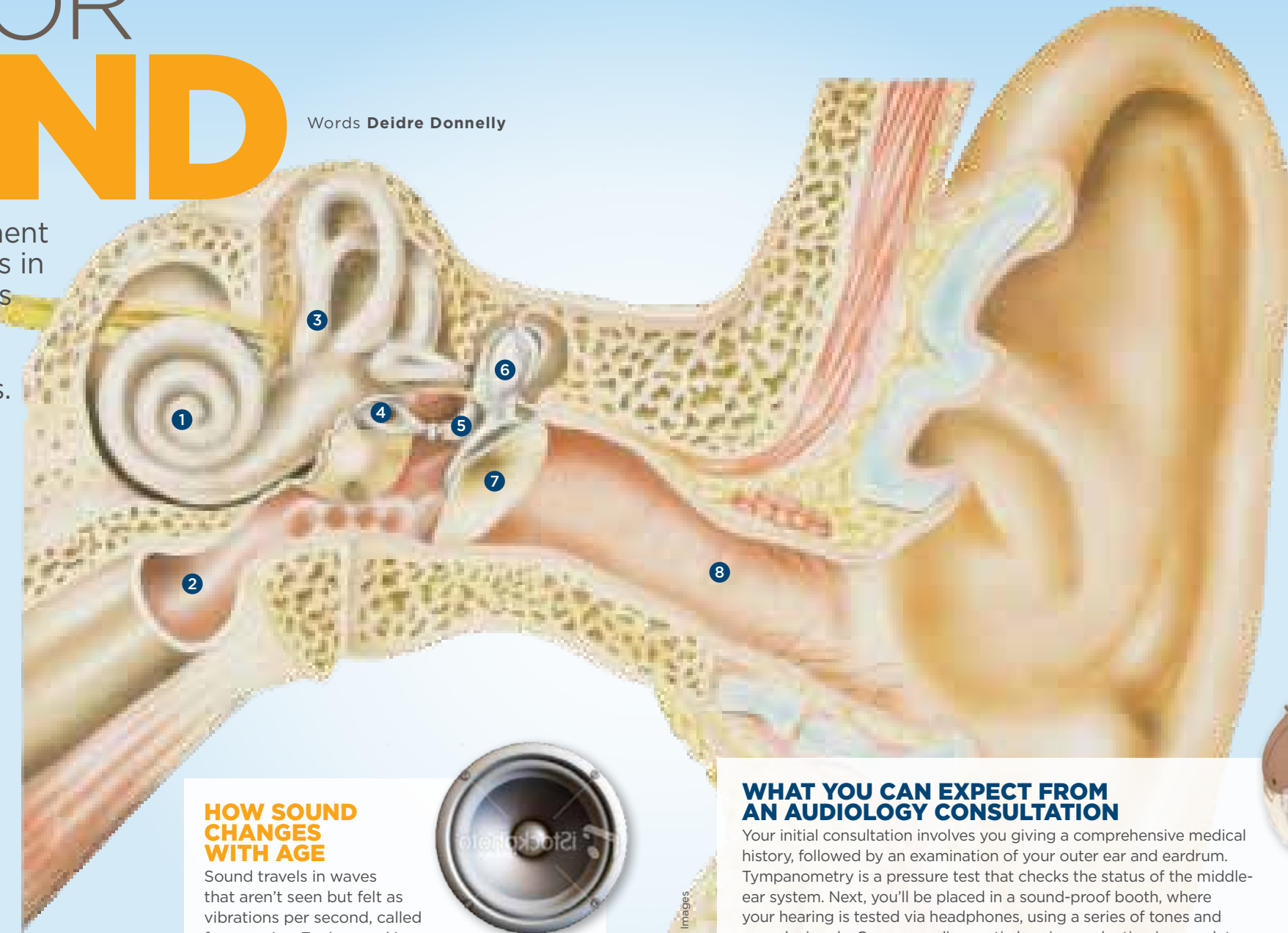
Hearing loss is not the impediment it once was. Thanks to advances in technology, hearing instruments of today are smaller and more sophisticated than ever. Here's how they help with hearing loss.

WHO SHOULD HAVE A HEARING TEST?

'One in 10 people worldwide are estimated to have some degree of hearing loss,' says Tanya Hanekom, an audiologist at Sandton Hearing & Balance at Mediclinic Sandton. Sadly, most will wait about seven years before doing something about it, she adds. This may be because of the stigma that still surrounds hearing loss, and a lack of awareness of how smart and sleek hearing instruments (aids) have become. 'We've come a long way since the big old ugly hearing aid your granny wore, the one that always whistled,' says Tanya. Advances have been rapid in the last 10 years specifically, she says, comparing hearing technology to computer technology: your slow and clunky home PC can hardly be compared to the latest elegant and efficient tablet, and the same goes for hearing instruments.

You needn't fear facing hearing loss. If you're over 50, have your hearing tested regularly, as it declines with age. Hearing loss can be genetic, occur from injury to the head or eardrum, infections, medications and even cancer treatments, such as chemotherapy. Every adult should have a baseline audiogram at some point, especially if you experience the following:

- Conversations are hard to follow, especially in busy environments.
- You struggle to hear someone in another room or on the phone, or when you can't see their mouth.
- You need the volume on the TV or radio turned up, when nobody else seems to.
- People seem to be mumbling more and more, and you become irritable and withdrawn as conversations become draining.
- You can't hear high-pitched sounds, like certain cellphone ringtones or bird calls.



- 1 Cochlea
- 2 Eustachian tube (connecting to the pharynx)
- 3 Three semicircular canals
- 4 Stirrup
- 5 Anvil
- 6 Hammer
- 7 Eardrum
- 8 Outer ear canal

HOW SOUND CHANGES WITH AGE

Sound travels in waves that aren't seen but felt as vibrations per second, called frequencies. Each sound is associated with certain frequencies, measured in Hertz (Hz). 'At birth, we can typically hear between 20Hz and 20 000Hz,' says Tanya. From age 20, that frequency range gets smaller and less sensitive with each decade.

Age-related hearing loss (presbycusis) is normal. It comes from degeneration in the hearing system, like damage to the hairs of the inner ear or to nerve endings. Higher-frequency pitches are the first to go (the whistle of a kettle, for example). This affects a person's ability to understand speech as they struggle to hear soft, high-pitched consonants (s, f, th, k) that convey the nuanced meaning of words. Hearing loss may progress to include the lower frequencies, too.

WHAT YOU CAN EXPECT FROM AN AUDIOLOGY CONSULTATION

Your initial consultation involves you giving a comprehensive medical history, followed by an examination of your outer ear and eardrum. Tympanometry is a pressure test that checks the status of the middle-ear system. Next, you'll be placed in a sound-proof booth, where your hearing is tested via headphones, using a series of tones and speech signals. Once your diagnostic hearing evaluation is complete, you'll get feedback and recommendations. If there are any medical concerns, the audiologist can arrange a referral to an ear, nose and throat specialist. Alternatively, you can begin the discussion about your hearing instrument options.

Tanya says once she has a patient's audiogram results (showing hearing range decibels and frequencies) she enters the audiogram results onto her computer. 'Then, using hearing-instrument software, I wirelessly connect to the hearing instruments to programme them according to the patient's preferences and needs. Most hearing instruments have between six to 20 frequency channels, allowing for precise fittings.'

Fine-tuning can also be done digitally. There's plenty choice, with prices ranging from R7 000 to R30 000 per ear. In some cases, two devices are recommended. Most medical aids cover one hearing instrument per year. Ask for a trial run if the choice is overwhelming.

HOW HEARING INSTRUMENTS WORK

They're mini-amplification devices that work at ear level to enhance your existing hearing, depending on what you need. Today's designs have sophisticated feedback management systems and are much better at reducing background noise, even though they still can't entirely eliminate it. While hearing aids can't restore your hearing to what it was or prevent further hearing loss, they can make consonants sound clearer, soft sounds more audible and loud sounds more comfortable. Types include styles that fit behind the ear or in the ear. Hearing aids include three components, explains Tanya: microphones that pick up sound, an amplifier that includes a programmed microchip, and a receiver that directs sound into your ear canal. Some nifty devices can also:

- Stream audio signals via Bluetooth or wireless streaming (to be used like hands-free phone kits).
- Stream movies, computer audio and TV wirelessly at a volume you can set.
- Stream a speaker's voice directly to the device (good for busy surroundings).
- Have volume changes that can be made using a smartphone app.

For severe hearing loss that can't be helped by an aid, cochlear implants (read more on page 30) and bone-anchored solutions are available.

WHAT'S IT LIKE TO WEAR ONE?

While newer models are far more comfortable to wear and natural-sounding than before, you still need time to adapt, says Tanya. Dave Estment, who's worn three different types of aids in 10 years, says, 'They all take getting used to.' But it's worth it, says Cynthia Rose. She developed eczema in her ears in reaction to the fitting of her hearing instrument. Once this was replaced with hypoallergenic material, she got to enjoy the benefits: 'I can hear the creak of a door in need of oiling and the fizz of a soft drink. And I can hear people talking without having to sift through a maze of garbled sound. I rate my hearing technology as one of my best buys ever, along with my first car,' she says. ●

