



## Headphone culture is making young people deaf to warnings

If Nicole Russell could turn back the clock, she'd probably turn down the volume, too. When she was seven years old, she plugged in a pair of headphones, cranked it up and formed a habit she'd enjoy for five hours a day for a decade.

## Face mask challenges

Hundreds of thousands of Victorians in Melbourne and Mitchell Shire must wear a face mask in public under a new law this week aimed at slowing the spread of COVID-19. For those with profound hearing loss this latest rule is going to be a huge communication barrier.



## Technology reduces indigenous ear disease

Chronic ear disease in kids has lifelong ramifications. A big part of the problem is getting ear, nose and throat specialists out to the affected children, because in rural and remote communities there are not many specialists.

## Dinner Table Syndrome

Hearing individuals take turns in conversations using visual and auditory cues. But when deaf individuals attempt to have a turn, they are often lost in the ongoing dialogue.



## The job of an interpreter is important and highly specialised

It takes skill and patience to accurately render a message between two parties who do not share a common language. Interpreters do not give opinions, they are completely impartial.

## Help deaf Australians manage face mask challenges



By Samantha Dick writing for [The New Daily](#)

Hundreds of thousands of Victorians in Melbourne and Mitchell Shire must wear a face mask in public under a new law aimed at slowing the spread of COVID-19.

For many people, wearing a mask or face covering when outside their home will simply be an inconvenience.

But for those with profound hearing loss – like Melbourne woman Adrika Sri Bawan – this latest rule is going to be a huge communication barrier.

That's because face masks make it much harder to read facial expressions, which she says is "critical" for those with a hearing loss.

"If I want to ask a question, the cashier might be wearing a mask and they want to have a conversation ... but I don't understand what they're saying," Ms Sri Bawan told *The New Daily*.

"(The new rule) definitely made me feel worried. I felt a little bit stressed and overwhelmed.

"And it's not only me. A lot of people with hearing loss in this time, we're in isolation – and this adds a further dimension to that isolation."

The legislation will apply to anyone aged over 12 who is leaving home.

Those who refuse to wear a mask could be slapped with a \$200 fine.

But it's not just losing the ability to lip-read that will make life harder for some people with poor hearing. Mandatory social distancing rules only add to the challenge.

"Masks already hamper speech clarity, reducing speech volume by about 12 decibels," Ms Sri Bawan said.

"Standing 1.5 metres apart just makes this even more difficult."

Despite the difficulty that mandatory face masks will bring to deaf people, Ms Sri Bawan said she supported the public health measure.

"Everyone has their own health issues, and I understand that, but we all have to work together to combat this pandemic," she said.

"I just want to raise awareness and encourage people to have patience and understanding."

### **How can you help people who have a hearing loss manage face masks?**

"Please be conscientious and patient if you're wearing a mask," Ms Sri Bawan said.

"If one asks you to repeat, please be mindful that person may have a hearing loss and may not wish to disclose it."

### **Important tips when communicating with a mask**

- Do not yell, but talk a little louder
- Articulate your words rather than mumble
- Slow down, don't talk too fast
- Use your hands and your body language
- Move to a quiet place if you can, and
- Use alternative communication methods, such as text if required.



## Artificial intelligence technology to reduce indigenous ear disease



By [Angelica Snowden](#) for [The Australian](#)

Indigenous children in Australia suffer from the highest rates of chronic ear disease in the world, but artificial intelligence and a smartphone app are set to 'close the gap' on hearing loss that leads to lifelong inequalities.

University of Sydney and Westmead Hospital have trialled an artificial intelligence (AI) solution that will use a database of more than 10,000 pictures of Aboriginal children's ears, collected over the last 10 years. Nurses will use an otoscope to take a picture of the patient's ear which will be compared with the database of pictures via an algorithm in a smartphone app.

Chief investigator and fellow of the Royal Australasian College of Surgeons Narinder Singh said the new solution could help to reduce inequalities caused by the ["critical" health issue](#).

"Chronic ear disease in kids has lifelong ramifications in terms of developing their speech, their hearing, their ability to interact with friends and family," Associate Professor Singh said.

"A big part of the problem is getting ear, nose and throat specialists out to the affected children, because in rural and [remote communities](#) there are not many specialists in general," he said.

Associate professor Singh said the idea was successfully tested on a computer with a few hundred images.

"Eventually, we'll create a smartphone app so the untrained health worker out in the community can put an otoscope into the child's ear and get an instant and accurate diagnosis," he said.

"The results may indicate the child needs to go immediately to a specialist, or this child can have antibiotics and come back in a week, or this child is fine and can come back in a few months' time – it's an immediate point-of-care tool."

The next phase of the trial will involve several hundred patients in remote communities in Queensland and the Northern Territory.



The Department of Education, Skills and Employment wants your views for its 2020 Review of the *Disability Standards for Education 2005*.

All the information you need including the [discussion paper](#) is at the [Consultation Hub website](#).

There will be webinars focusing on education which you can find information about on the [Consultation Hub website](#).

You can also [make a submission](#) or complete a short online [questionnaire](#).

There are a range of other events and activities you can participate in during the consultations. To find out more and register to be involved visit the [Consultation Hub](#).

The last review of the Disability Standards for Education was 15 years ago: this review is an important opportunity to ensure that the Standards are comprehensive and up to date. We encourage you to have your say and help us to spread the word about the consultation process.

Making a submission is not the forbidding task it might seem. A submission can be as little as a one page letter, or as much as time and resources allow. Whether it is from an individual or a corporation, all submissions get the same weighting.



The consultation period closes at the end of Friday, 25 September 2020.

The consultation wants to hear from anyone with an interest in making sure students with disability can access and participate in education on the same basis as students without disability.

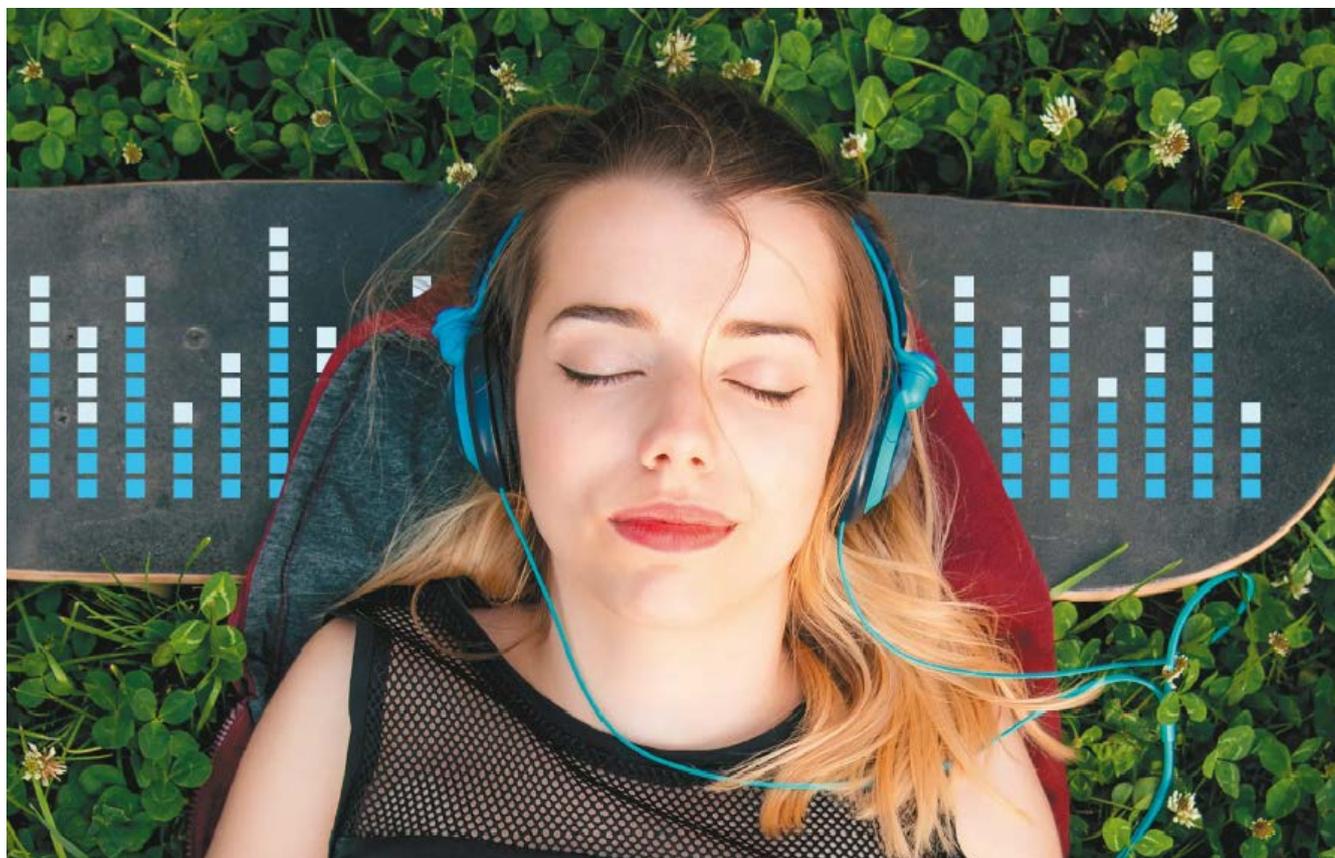
The consultation is interested in the experiences and views of current, former and prospective students with disability, their families and carers, advocates and educators. The [discussion paper](#) has been developed with guiding questions to help you have your say.

Due to COVID-19 restrictions, engagement activities are mostly being held online.

To assist in the consultations for the 2020 Review of the Standards, the Department of Education, Skills and Employment has engaged The Social Deck. If you have questions or need help to contribute, email The Social Deck at [engage@thesocialdeck.com](mailto:engage@thesocialdeck.com)

## Why 'headphone culture' is making young people deaf to health warnings

Lengthy exposure to loud noises is affecting the hearing ability of a growing number of people, especially those who are part of the "headphone culture". But few are listening to the experts' concerns.



By Guy Kelly for [The Sydney Morning Herald](#)

If Nicole Russell could turn back the clock, she'd probably turn down the volume, too. In 2004, when she was seven years old, she picked up an Apple iPod, plugged in a pair of the standard white headphones, pressed play, cranked it up and formed a habit she'd enjoy for "at least five hours a day" for the next decade. She'd listen in the morning, on the way to school, during breaks, even as she fell asleep.

A few years later, she was in the car – listening to music, of course – with her father, Dave, when he told her to turn the volume down. "He was like, 'Niki, what the hell?'" Russell, now 24, says. "It made me so embarrassed, I'd just say, 'But it has to be this loud ... it's the only way I can hear it.' I didn't know there was a problem then. I thought it was just me."

Throughout her school years in California –where the problem was made worse when headphones, used with iPads, became mandatory for many lessons, as they are in some schools here – Russell struggled to hear in class and spoke loudly, often resulting in being shushed, "which isn't exactly great for self-esteem". When she watched television, she would turn the volume up high and add subtitles to help her follow.

Eventually, while at university in Boston, doctors diagnosed her with hearing loss in both ears, though for some reason it was slightly worse in her left, and said there could only be one cause: the excessive loud music.

“I was told it had been accumulating over years, just getting worse,” Russell says. “I didn’t want it to be true, but it was a relief to know and be able to change things.”

And change things she did. The volume came down; her awareness of noise went up. But the damage is going nowhere. She will have hearing loss for life.

The main form of preventable hearing loss in Australian adults is noise-induced, increasingly from lengthy exposure to loud music in young people. A [report by the World Health Organisation](#) claims that nearly half those aged between 12 and 35 – or 1.1 billion young people – are at risk of hearing loss “due to prolonged and excessive exposure to loud sounds, including music they listen to through personal audio devices”.

The world we live in is louder than ever, particularly in busy cities, but many people are exacerbating the strain on their ears by constantly listening to music or watching videos on smartphones.

“If you have a particularly noisy commute and turn the music up to hear it, try listening to it at that volume in a quiet room. It’s painfully loud. I’d like to say it was improving, but people just generally don’t know about safe listening levels, and in a culture where headphones are everywhere, that’s dangerous,” explains Francesca Oliver, an audiology specialist.

“Biologically, our ears have not adapted to withstand the volume of noise most of us encounter – or subject ourselves to – almost every day. For example, anyone using headphones should listen at less than half the maximum volume for no more than half an hour at a time, but how many people know that, let alone implement it? If you have a particularly noisy commute and turn the music up to hear it, try listening to it at that volume in a quiet room. It’s painfully loud. So imagine what that’s doing to your ears.”

There is nuance to the statistics, of course: genetic factors, such as mutations in inner ear sensory cells, make some people more susceptible to hearing loss – especially the age-related kind. (It’s believed the causes of this are 35 to 55 per cent genetic.) But while much is still being done to tackle going deaf in old age, the focus of many audiologists has shifted to avoidable, noise-related hearing loss.

“Another problem is that people are often quite reluctant to admit they have hearing loss, especially the young,” says Oliver. Put plainly: the human race is losing its hearing.

### **Vincent Howard knows precisely how dangerous noise can be.**

In 2004, he was a 15-year-old heavy-metal fan – floppy hair, always on the lookout for a moshpit – when he found himself standing directly beside a stack of speakers at a Motörhead gig in Birmingham in the UK. As the band warmed up, a crew member walked past the speakers holding a microphone, causing a brief but piercing feedback sound. Howard was directly in the firing line.

“It almost knocked me over – I didn’t even see the rest of the gig properly,” he remembers. At the time he saw the pain as a badge of honour, as much a souvenir of the gig as buying a T-shirt at

the merchandise stall, but by the next morning, the high-pitched squall, the disorientation - (manifesting in a lack of balance, and the perception of people talking "out of sync") and the deafness were still there.

Howard couldn't hear silence. "Sign of a good show," he thought, trying to reassure himself - but now, almost 16 years on, he still can't hear properly. "Some souvenir, huh?"

Now 31, Howard is an audiologist.

His traumatic experience at Motörhead all those years ago was eventually confirmed as tinnitus, a condition that's believed to affect one in eight of us but is still largely mysterious, defined by a false perception of sound - usually a buzzing or static noise, but it can vary wildly - when there is nothing external causing it. By far the most common cause of tinnitus is prolonged exposure to loud sounds, and more than 90 per cent of sufferers also have hearing loss.

Having trained in the branch of science that would allow him to understand ears better, Howard is now on a mission to awaken the rest of us to the devastation that noise can wreak on humans - especially young people.

Loud concerts are nothing new. But an appreciation of what could be lost by refusing to take care of ourselves when attending them is relatively recent. As are many other harmful factors.

"Headphone culture" hasn't been a part of everyday life for long enough for scientists to entirely agree on how best to make it safe, or for thorough regulations to be introduced. It is only recently that "noise pollution" has been considered alongside other environmental worries, too.

"We get our teeth checked all the time and see opticians regularly. But our ears, we just neglect them. And once they're gone, they're gone."

"The thing is, it doesn't take something like what happened to me to ruin your ears - you could be doing it without even knowing." People just don't value their ears. We get our teeth checked all the time and see opticians regularly. But our ears" - he gestures to his damaged pair - "we just neglect them. And once they're gone, they're gone."

**To understand what noise-induced hearing loss is**, it helps to first understand the ears. You may not have given them much thought before - besides decorating them, wishing they were smaller or shoving things in them - but our ears are appendages of almost incomprehensible complexity, every bit as miraculous as the eyes.

The outer, cartilaginous part (known as the pinna) that we recognise as our "ear" is unique to us: the shape, protrusion, size, it's all matched with your height, head shape, everything that makes you "you".

Swap ears with your partner and you won't be able to hear properly. Do what Vincent van Gogh did - cut one off - and you definitely won't. They are your ears, and you have two for a reason.

Inside the ear are two muscles and three of the smallest bones in the body, encased within the hardest, the temporal bone, which is so dense it can make the inner ear almost impossible to biopsy. When sound waves hit the eardrum, vibrations move through these bones to the inner ear, the cochlea, where they meet 15,500 tiny hair cells, called stereocilia, which are divided into 3500 inner hair cells and around 12,000 outer hair cells.

When sound arrives, these move, sending signals along the auditory nerve to the brain, which will instantly try to interpret what the sound is and where it's coming from. These hair cells are crucial to what makes hearing loss so dangerous. Of course, 15,500 sounds like a lot, but compare it to the millions of photoreceptors in the retina or chemo-receptors in the nose and it's nothing. They're also in extremely limited supply. At 10 weeks of foetal gestation, all 15,500 are created, and from that point on, for the rest of our lives, we can only ever lose them.

Still with me? Good, now picture a perfect, luscious lawn of grass with each blade erect, pristine in every way. This represents your hair cells at birth. Ideally, all the grass has to handle is wind, rain and the occasional bird plodding over it. This is safe, low-level sound, such as people talking or music played at a reasonable volume. Once flattened by that sound, the grass, like our hair cells, springs back into place, ready for more.

Now imagine if someone walked across that grass. That's like exposure to very loud music or machinery. If it occurs only for a short time, tufts might take longer to rouse themselves, a few might be bent, but they should, most of them, go back to normal in time. This is the feeling of your ears ringing after a party, say, before that sensation wears off by the next morning.

But what if you keep cutting across the lawn on that same path over days, weeks, months and years? What if some people scuff the ground with boots? What if somebody drives over it? Eventually, the grass will wear down to such a damaged state that it cannot recover. This is what happens with hearing loss: hair cells have been destroyed permanently, creating a gap, so sound waves have no way of getting to the brain. And there is no Miracle-Gro, there is no "getting used to it": this hearing loss is completely irreversible.



As anybody who has ever fought with an elderly person over the volume control on a television knows, there are competing definitions for what constitutes “loud”, but fortunately audiologists, such as Oliver and Howard, have a more concrete answer: most agree the “safe sound threshold” sits at around 80 to 85 decibels (dB) – typically somewhere between a vacuum cleaner and an alarm clock.

Where it gets more complex is when time is introduced. After eight hours’ exposure at 85dB, hearing is damaged. That’s fine, nobody listens to an alarm or Hoover for eight hours (though it may give cleaners pause for thought).

Most agree the “safe sound threshold” sits at around 80 to 85 decibels (dB) – typically somewhere between a vacuum cleaner and an alarm clock. Where it gets more complex is when time is introduced.

The scale is then exponential: each increment of 3dB doubles the pressure, therefore halving the safe exposure time. An iPod at full blast is around 100dB, the same as a nightclub or hairdryer. Just 15 minutes of that can result in hearing loss. (For the record, Howard says the parental adage of “if I can hear your music outside your headphones, it’s too loud” is absolutely correct.)

Moving up the scale, a rock concert is about 113dB – though some groups, like Motörhead, proclaimed “the loudest band on earth” for reaching 130dB in 1984, push it far more – meaning well over a minute can be dangerous. A pneumatic drill is harmful after one second. A gun blast is even quicker. Even gym weights crashing can reach 140dB, enough to give permanent damage in one go.

Sound, remember, is a force that can destroy more than ear-hair cells. When a bomb levels a house, it’s sound that’s tearing those bricks apart. One of the loudest noises ever recorded, the Krakatoa volcanic eruption in 1883 – estimated at 180dB at a distance of 160 kilometres – didn’t just burst eardrums within 65 kilometres, it was heard as two rifle shots in Alice Springs, Australia, 3600 kilometres away.

Slowly, governments and industries are starting to understand this information and legislate accordingly, but in reality, it’s up to us.

“The simplest thing we can do is be aware of the noise levels of the environment we’re in, then act,” Oliver says. There are dozens of free apps that act as sound meters (Apple introduced a similar feature on its watches last year), which instantly tell you the decibel level you’re experiencing. If you can control the level, turn it down. If you can’t, specialist earplugs are cheap and easy to carry around.

**Audiologist Vincent Howard sees people of all ages** – “from three to 103” – who have all degrees of damage. Hearing loss in old age isn’t inevitable, but it is common. However, Howard is most interested in young people, and making hearing checks “cool”, rather than something associated with the elderly.

Will Harvey carries a pair of custom earplugs made by Howard. The 32-year-old is a violin player, who used to be in a rock band. He was at a concert a decade ago when he found himself a little too near the drummer. (Drummers themselves wear ear protection.) For a week afterwards he

was hearing “a semitone different pitches in either ear” as a result of the impact of the noise. The experience had scarred him.

“My hearing basically went back to normal after a week or two, thankfully, but because it had messed with my understanding of pitch, the paranoia was agony,” Harvey says.



*Dave Russell started making “safer” headphones after daughter Nicole’s hearing loss was discovered.*

He now preaches ear health to everybody, and carries a small, fairly cheap pair of earplugs on a keyring everywhere. They filter, rather than block, music, so they don’t dull the experience of a gig. He also wears noise-cancelling headphones on public transport, even when he’s not listening to music.

Nicole Russell’s experience led her father, Dave, to try to do something about the cheap, potentially dangerous headphones that damaged her ears as a child. In 2014 he founded a technology company fighting noise-induced hearing loss.

He still goes to gigs and still wears headphones. But the ringing in his ears, and slight deafness, is a constant companion.

With children spending an average of 23 hours a week glued to a screen, normally wearing headphones, he appreciated the tech is easier to change than habits, so he created headphones which have a volume limit of 85dB (most smartphones have noise warnings these days, but it is easy to brush past them) and block background noise that might otherwise provoke users to turn the volume up further.

It’s the kind of advancement that, paired with education, could make all the difference. “I’ve gone from not caring at all, to having a scare, then being militant, to now – where I have a good understanding of precautions, without worrying too much,” Harvey says. “But that’s because I know.”

To read more from *Good Weekend* magazine, visit its page at [The Sydney Morning Herald](#), [The Age](#) and [Brisbane Times](#)

## Dinner Table Syndrome



By David R. Meek at Lamar University, USA.

### **Conversations at the dinner table involve turn-taking.**

There are typically multiple exchanges between family members, providing opportunities for rich conversations and opportunities for incidental learning.

Deaf people who live in hearing, non-signing homes often miss out on these exchanges, as typically hearing individuals use turn-taking rules that differ from those commonly used by deaf individuals.

Hearing individuals' turn-taking rules include use of auditory cues to get a turn and to cue others when a new speaker is beginning a turn. Hearing individuals frequently interrupt each other even if they are signing.

When deaf individuals attempt to have a turn, they are often lost in the ongoing dialogue. This experience, where deaf individuals are excluded from the flow of conversations at mealtime, is known as the dinner table syndrome.

A study in the U.S.A. documents deaf adults' experiences growing up with dinner table syndrome. Personal interviews and a focus group were used to explore how deaf adults experienced conversations during family dinner gatherings. The study found deaf family members felt loved yet disconnected.

Researcher David Meek has 15 years of experience as an educator in Deaf Education, Special Education, working with students with various degrees of disabilities and Higher Education.

Download [Dinner Table Syndrome: A Phenomenological Study of Deaf Individuals' Experiences with Inaccessible Communication Individuals' Experiences with Inaccessible Communication](#)

## The job of an interpreter is important and highly specialised

It takes skill and patience to accurately render a message between two parties who do not share a common language.

WA media outlet Perth Now spoke with Auslan interpreter Jenny Pupich and Azita Samandari, who regularly uses an interpreter.

“Due to Auslan being a visual language, Auslan interpreters possess the skills to break down and unpack information for the different communities,” Azita said.



Where would you use an interpreter? “From getting my hair done to work meetings, viewing presentations, workshops and training, hosting parties, weddings and funerals, when I go to buy a TV - anywhere! An interpreter allows me to communicate effectively and clearly with the wider community and express myself in my native language.”

“The interpreter doesn’t influence the outcome of the conversation. Interpreters do not give opinions or advice, they are completely impartial,” Jenny said.

“It’s also important to know that Auslan Interpreters use facial expression, body language, and tone of voice, to convey the information from one language to another. This may sometimes result in the Auslan Interpreter seeming mad or upset. It is important to remember that this is the tone of the Deaf person, not the interpreter!”

What advice would you give someone interested in being an interpreter? Azita said, “Join a basic class and get involved with the Deaf community. This will give you a better understanding of the people and their language, which would be a great asset on your interpreter journey!”

From [Perth Now](#) Visit the [Australian Sign Language Interpreters' Association website](#)

## Know someone who might like to get their own One in Six?

Drop us a line: [hello@deafnessforum.org.au](mailto:hello@deafnessforum.org.au)

We acknowledge the traditional owners of country throughout Australia, and their continuing connection to land, sea and community. We pay respect to them and their cultures, and to elders past, present and future. We acknowledge the challenge of overcoming high levels of ear health issues among First Nation people and its role in Closing the Gap. We acknowledge the risk to indigenous sign languages of disappearing and the importance of Auslan.

People with disability have and continue to be subjected to isolation, exploitation, violence and abuse in institutions. We thank the Australian Parliament for its bipartisan support of a Royal Commission into the evil committed on people with disability.

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