

HEALTH

Gaining e-sight



Becky Mok, who is visually impaired, reads a newspaper at the Society for the Blind office in Sham Shui Po with the help of a portable magnifier device. Photos: Paul Yeung

With innovative apps, blind or visually impaired people can better connect with and cope in the wider world, writes Jenni Marsh

Hong Kong is a tricky place to be blind. Learn the route to your favourite restaurant, and it moves. Walking through Wan Chai in rush hour is a dizzying crush. Attempt getting a guide dog and you probably would have a hard time. Hong Kong has just a handful of guide dogs since a ban on them imposed following a road accident in 1975 was relaxed in 2006.

While the city can't change its ways, technology is starting to give back to the visually impaired the skills they lack to navigate our concrete jungle. From recognising products in 7-Eleven to knowing which bus stop to jump off at, today there's an app for that.

Lend An Eye is perhaps the most ambitious of the bunch. Developed in Singapore by digital marketing agency Grey, the app gives the user a remote assistant who lends their eyes at a moment's notice.

The user wears the phone around their neck. When they need help – facing an unfamiliar street or roadworks perhaps – they dial up the app, which reaches a pool of volunteers. The phone's front-facing video camera automatically fires up and the volunteers guide the user to safety.

Ali Shabaz, of Grey, says: "In Asian cities, learning your route from A to B isn't enough. You

step outside and there's construction work. This technology is simple and it enables people to get to exactly where they want to go."

While initially developed as a sort of interactive GPS, the app has evolved. "What's phenomenal is the relationships that built up between users and volunteers. They began using the



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ALI SHABAZ, GREY CREATIVE OFFICER

app to get their help to read letters for them, or find the right bag of low-calorie nuts in 7-Eleven. It was very heartening."

One volunteer, Siew Hwei says the work is easy to fit around her life despite having a full-time job as an accountant. "If someone calls me at work, it's okay, it doesn't take long; it's just like going to the restroom."

And as well as the satisfaction of helping others, it gives Hwei a fresh insight into the disability.

"Everything here is concrete and changing. If I were to blindfold myself in all this, at least I'd have the confidence that someone can see what is in front of me."

The app is only available on Android, but Shabaz hopes to

get iOS approval for the open source software soon and roll it out further, recruiting more volunteers to support the service.

Philanthropic developers are rolling out new products every month. In Santa Cruz, University of California tech wizards are creating an app that lets visually impaired people take focused, well-framed photos. Rather than using a shoot button, the app is voice controlled, giving the snapper audio cues as to how many people are in the shot and whether they are in focus. To shoot, the user makes a final broad swipe.

Elsewhere, LookTel's money reader recognises currency for blind people, Colour Identifier means mismatched socks are a thing of the past, while oMoby reads out the product information when a bar code is scanned in a shop.

Becky Mok Pui-ki has been



Becky Mok scrolls through her voice-enabled smartphone and listens as the app "reads" material out to her.

visually impaired all her life. But as her retina condition worsens with age, such apps become more crucial to her independence. "Before smartphones, it was so much harder to get information," she says. "Now I can do things on my own without relying on someone being there to help."

Mok cites the Kowloon Motor Bus app, which allows her to input her start and end destination. As she rides, the GPS tracking knows when her stop approaches and alerts her. "Before, I had to ask a stranger for that information," she says. "It's empowering."

Keny Yuen also uses technology to extend his independence and integrate better with society.

The 30-year-old, who lives in the New Territories and was born blind, says Tap Tap See has been the biggest revelation for him. Developed specifically for the blind, the app allows him to take a photo of any object – say, a red apple at the market – and identify it.

It not only helps users shop but also assists in organising the contents of their fridge and making meals. Disasters such as soup on toast rather than beans can be avoided.

Other apps are less practical but no less valuable. Thanks to Apple and Google's voice-over technology, Yuen can now use popular news apps, such as that of *Apple Daily*, on his bus ride to work. With his earphones in, the text grabber feature simply reads out the day's news.

Similarly, Apple eBooks and Kindle are both fitted with voice technology. Yuen says being able to engage with current affairs and literature makes him

feel more engaged with society, and integrated with a world he cannot see.

However, Navy Hui, of the Hong Kong Society for the Blind, warns that the voice-over technology that Apple and others have provided will only work if app developers ensure their content conforms to the web content accessibility guidelines. While many apps and websites in Hong Kong – such as OpenRice – have done this, other are still to catch up.

But catch up they probably will. According to the World Health Organisation, there are 285 million visually impaired people in the world (with 120,000 in Hong Kong). Globally, that's a big business.

Israeli entrepreneur Boaz Zilberman, CEO and founder of Project Ray – a new Android phone with an interface for blind people – has called it a "billion dollar" market. "There's no better tool for blind people than the smartphone," he says.

In Hyderabad, Indian company Kriyate Design Solutions this year revealed its Braille-enabled smartphone which uses a grid with sliding pins. The phone will launch next year.

Technology which is so often credited with making the world smaller, is doing the exact opposite for the visually impaired.

Shabaz says: "Previous aids, such as the guide dog, were limiting. They were trained to take a person from A to B, and the cost of training is pretty high. These new apps are cheap and everyone can get them. It's something very new and totally liberating."

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HEALTH BITES

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Camping to reset your clock
Having trouble falling asleep or waking up for work? Camping outdoors can help reset your body clock. In a study published in *Current Biology*, University of Colorado Boulder researchers found that a week of exposure to true dawn and dusk, with nights lit only by a



campfire's glow, can tightly synchronise a person's internal biological clock to a natural cycle. A typical, modern environment causes about a two-hour delay in the circadian clock as indicated by fluctuations in the hormone melatonin, the researchers say.

Rewired by lunch

Where and who you have lunch with can affect your work later in the day. Eating at a restaurant with a friend reduces cognitive control more than lunch eaten alone at a desk, according to research in *PLOS ONE*. A team of scientists led by Humboldt University in Berlin assigned study participants to either lunch option, though all meals were identical. People who had a restaurant lunch were calmer than those who ate at their desks. They also fared more poorly on performance tests of cognitive control, and neurophysiological measurements indicated decreased cognitive control of performance and error monitoring processes. This could be a disadvantage if your work involves number crunching, the researchers say, but could be an advantage when social harmony or creativity is desired.

Born with a taste for alcohol

Vulnerability to alcohol and drug abuse may begin in the womb and be linked to how much fatty and sugary foods a mother eats during pregnancy, according to a University of Florida study. Compared to pups of rats that ate regular rodent food, the offspring of



rats that ate high-fat or high-sugar diets while pregnant weighed more as adults and drank more alcohol, and those on high-sugar diets also had stronger responses to commonly abused drugs such as amphetamine, says research neuroscientist Nicole Avena.

HITS AND MYTHS

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Q: can leftover cut onions prevent illnesses?

The straight answer: no

The facts: it has long been thought that leftover onions are a magnet for bacteria and viruses. As far back as the 1500s, raw onions were placed in and around homes all over Europe, in the belief that they prevented diseases – including bubonic plague – by absorbing the "elements of infection". The Chinese, Ancient Greeks, and Native Americans, used onions to ward off infections and relieve respiratory congestion.

Today, because raw onions are thought to attract bacteria, it is assumed that one should never keep half an onion, not even in the fridge, because it can spread illnesses like colds and flu. Based on this belief, many people avoid eating leftover onions.

This ancient folklore might stem from the fact that raw onions contain compounds that kill or inhibit bacteria when ingested,

says associate professor Lee Yuan-kun from the Department of Microbiology at the National University of Singapore. One such compound, allicin is thought to have anti-fungal properties, while quercetin, a bioflavonoid, has been found to be anti-fungal as well as anti-bacterial.

However, there is no scientific evidence that cut onions, when placed around the house, are a flu remedy. In the first place, bacteria and viruses do not "fly around" from surface to surface. They are transported by contact – that is, if you cut



contaminated meat and then use the same, unwashed knife to chop vegetables, bacteria will be transferred from the meat to the vegetables.

In the case of airborne viruses and bacteria, it is not true that these agents of infection can direct themselves to land on an onion, so the notion that half an onion can draw dangerous, illness-causing germs from the air like a sponge is far-fetched.

Bottom line: Ingesting raw onions may boost your resistance to infection, but placing a cut onion in a room in which everyone is coughing and sneezing will not.

When left for a prolonged period, whether at room temperature or in the fridge, onions, like any other produce, decay. During this process, which speeds up when the environment is warm and moist, bacteria that are already present on the onion multiply naturally. Certainly, consuming the contaminated onion – especially when it is in an advanced stage of decay – can cause infections, as well as diarrhoea, vomiting and other symptoms associated with food poisoning, says Lee.

Handling onions with utensils that have had contact with contaminated food can also cause food poisoning. This is why food hygiene is so important.

Avoid cross-contamination by using separate cutting boards for raw and cooked foods, and always wash your hands well before and after preparing ingredients for a meal.

It also helps to store both raw and cooked foods the right way. Raw onions can be stored at room temperature, but once they have been cut, it is best to keep them in a sealed container or in a plastic bag in the fridge.

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