

# The wellness hacks

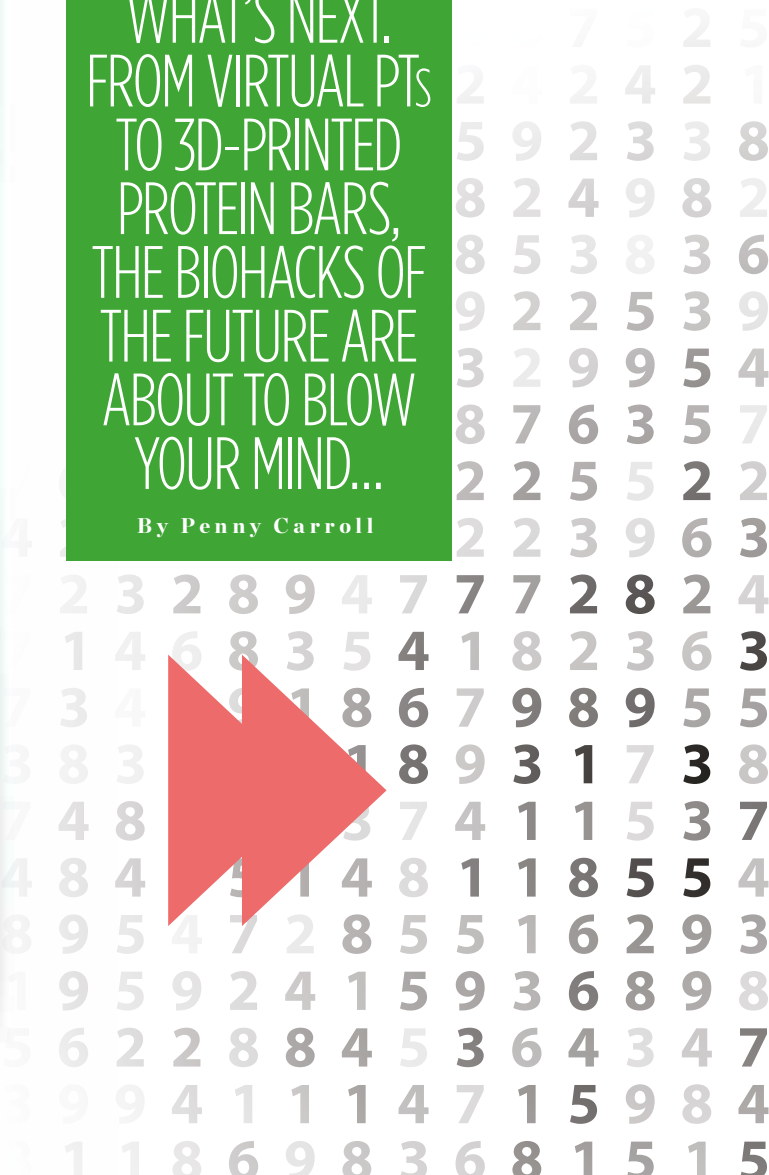


# of the future



IF YOU THOUGHT YOUR SMARTPHONE-SYNCING FITNESS TRACKER WAS COOL, WAIT UNTIL YOU SEE WHAT'S NEXT. FROM VIRTUAL PTs TO 3D-PRINTED PROTEIN BARS, THE BIOHACKS OF THE FUTURE ARE ABOUT TO BLOW YOUR MIND...

By Penny Carroll



# Decode your gut

Fun fact: there are trillions of microorganisms living in your gut right now. But finding out exactly what they're up to has always been a bit of a guessing game - until recently. Enter Microba, a biotechnology firm founded by scientists from the University of Queensland. They've developed an easy, at-home test you can use to get a high-def picture of the microbial action in your gut.

So what is it exactly? Good question! Microba uses metagenomic sequencing, which extracts the DNA from a sample and uses it to reconstruct the entire genome of microbes. Originally developed for the environmental field, it's the most advanced tech around for exploring the gut microbiome. "It allows us to not only see who's there, but all that additional information about what they're able to do and how they're interacting with you," explains Microba co-founder Professor Gene Tyson.

This is great news if you're one of the 10.7 million Aussies suffering from digestive problems: Microba gives detailed info about what's going on in your gut, and tailored advice on how to improve it with food and exercise. But that's just the start, says Tyson. As research into the gut microbiome and its impact on our overall health develops, he expects gut microbiome sequencing to become routine, like blood tests. "In the near future we hope that this can be used as an early warning diagnostic test for things like colorectal cancer," he adds. "We'll be able to offer tailored probiotics specifically based on your microbiome. The future is amazing in this space."

**Your move:** The Microba Insight Sampling Kit isn't a diagnostic tool - yet. But it can give you a personalised snapshot of your gut health, as well as tips to help you improve it. Order the kit for \$349 at [microba.com](http://microba.com).



## Delegate contraception

It's the news we've been waiting for since, oh, the '60s ... The male contraceptive pill is coming soon to a dude near you. And thanks to researchers at Monash

University, it'll be hormone free (read: sans side effects like man boobs). "We hope to stop the contractions of the tube (vas deferens) that transports sperm so that when ejaculation occurs there is no sperm present in the semen," explains the project's lead researcher, Dr Sab Ventura. "We aim to do this by blocking two proteins that receive a chemical message from the brain to tell the vas deferens to contract just prior to ejaculation." Vas-cinating.

One of the chemicals involved in this process is already used in a mainstream medication for men, leaving just one chemical to develop. Depending on funding, it's between five and 10 years away. Bring it on.

**Your move:** If you want to get him more involved in contraception in the meantime and are intrigued by a natural approach, look into a fertility awareness app such as Kindara (free, App Store and Google Play), where he can track your cycle with you.



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TRY

FANTASY

FITNESS

Virtual reality is heading to the gym, and it's going to make workouts feel out of this world. Companies in the US (Black Box VR) and Germany (ICAROS) have already crafted unique exercise systems for gyms using VR headsets and sensors, to give lucky users a mind-blowing experience while they work out (think flying through space or fighting futuristic robots). While you enjoy the game, inbuilt AI ensures

that you keep progressing your fitspo gains. The systems trickling out to gyms now use large headsets to immerse users in a virtual world, but technology futurist Shara Evans says we can expect to see smaller devices such as smart contact lenses taking their place within five to seven years, along with other sci-fi-style tech. "What a lot of people are starting to work on now is holograms at an affordable price that

could be a fitness trainer," she says. "You'll have a little gadget where the personal trainer comes out at you like something from a *Star Wars* movie." **Your move:** A study by The University of Sydney found that virtual reality games already offer enough exertion to be considered exercise. Interested? Try VR archery game Holopoint for a heart-pumping sesh.





# Watch this space

FAST  
TRACK IT  
TO ZEN

## Implantable tech

It's already a 'thing' in Sweden and quickly gaining ground here: embedding a microchip under the skin in your hand can allow you to do away with cash, cards, keys and travel passes.

## Drone delivery

Hold-off tracking your online shopping via the mail. Retail giant Amazon is working on drone delivery, so you can expect your goodies buzzed to you in 30 minutes, or less.

## Hypersonic travel

Boeing has unveiled plans to develop an aircraft that travels at Mach 5 (or about 6500 kilometres per hour) by 2050. Australia to Europe in less than five hours? Sign us up already!

If calming your mind in meditation seems about as likely as Trump declaring himself a feminist, we have good news (on the meditation front, anyway). E-meditation – aka, zapping your brain with transcranial direct-current stimulation (tDCS) while you om – could help you achieve a monk-like state in 20 minutes flat. Seriously.

"tDCS is a safe form of brain stimulation in which two electrodes are placed on the head and deliver a weak electrical current to the underlying brain areas," explains Bashar Badran, a US neuroscientist leading the research into e-meditation. "The electricity is delivered to specific

brain areas that are associated with a meditative state. Stimulating these areas accelerates and enhances meditation for both novice and expert meditators."

Two research trials have shown people feel more calm, and also experience less mind-wandering and restlessness when meditating using tDCS. Researchers from Canada are also applying tDCS to yoga, with initial results indicating similar effects.

The outcomes are so positive, Badran and his colleague Baron Short are now testing a portable tDCS device called Zendo at meditation classes in major US cities, which will one day be available for

home use. It delivers an electrical current through adhesive electrode pads that feels like a "warm, tingling sensation", with the only known side effect a little skin redness after 15 minutes. Om-azing.

**Your move:** While you wait for Zendo to switch on, you can harness the effects of tDCS to fast-track physical learning with Halo Sport. These clever and crazy hi-tech headphones stimulate the motor cortex to help you pick up new movements faster – like your handstand scorpion in yoga. Check it out (for a hefty price tag of about \$700) at haloneuro.com.

# Print healthy meals pronto

Forget ordering takeaway when you're too exhausted to cook. The next big thing in kitchens is 3D food printers, designed to make healthy meals at the press of a button. US company Natural Machines is leading the charge with a device called Foodini that uses fresh ingredients to print healthier versions of processed foods such as burgers, pizza and pasta. The machine is already available for professional kitchens and a consumer version is in the works, with the company predicting they'll be as standard as microwaves within 10 to 15 years. Wow! When they do arrive, Evans says it's likely 3D printers will act as a personal nutritionist, connecting with everything from our Fitbits to fridges to

plan and print tailored meals – like a protein bar that packs the exact nutrients your body needs post-run. "Artificial intelligence, in conjunction with the sensors we have either in applications or on our body and devices like 3D printers, could customise your nutritional intake based on what's happening in your body right now and whether you're trying to get well, get fitter or cure an illness," Evans says. Mind-blowing. **Your move:** This app can't cook your meals, but it can tell you how to optimise them: download HAPIcoach (free, App Store and Google Play), snap pics of your meals and a nutritionist will provide feedback to help improve your eating habits. Now that's customer service! **WH**

\$10.00

