



Science

Bushwalking is really good for you. Sure, it's relaxing — but it boosts your biology too

ABC Science By science reporter [Belinda Smith](#)

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[Wild Oz is streaming Australian nature live.](#) (ABC News)

Need a quick pick-me-up? Get back to nature.

Not only will a walk in the park rejuvenate, calm and clear your mind, but it also lowers diabetes and heart disease risk, improves mental health and prolongs life.

And while it may seem logical to chalk these benefits up to exercise, it's not quite as clear-cut as that.

So how does merely being in nature affect us on a biological level?

We have an innate desire to connect to nature called "biophilia", said Lisa Wood, a public health researcher at the University of Western Australia.

Loads of research into nature's pick-me-up qualities is conducted in Japan, where "forest bathing", or shinrin-yoku, is a popular way to unwind.

You keep your clothes on, but otherwise immerse yourself and your senses in nature: run your fingers through the soil, fill your lungs with fresh, sweet air and listen to the rustle and creaks of towering trees.

Qing Li, a clinician and researcher at the Nippon Medical School in Tokyo and keen forest bather, has led much of the work into what he calls "forest medicine".

Stress less

Urban life is far from relaxing. There's the constant auditory onslaught of traffic. Deadlines, people and social media battle for our attention.

When you start feeling stressed out, your body pumps adrenaline and cortisol into your bloodstream, raising blood pressure and heart rate.

Cortisol is also thought to suppress inflammation — an immune response which brings white blood cells to injured or infected areas to help the healing process.

A bit of inflammation is helpful. But if you're stressed all the time and constantly churning out the cortisol,

[#ABCWildOz streaming nature LIVE](#)

immune cells can become insensitive to cortisol's effects.

And when not kept in check, [inflammation can become chronic](#), leading to a range of conditions such as diabetes and heart disease.

Step into a peaceful forest, though, and you relax. Studies show [stress hormones drop after a short walk among the trees](#).

Breathe it in

Some researchers, such as Dr Li, suspect part of nature's restorative effect is blowing in the wind.

That fresh, zingy smell of a pine forest is partially due to chemicals called volatile phytoncides, which are secreted by plants to protect against pests.

We know them as wood essential oils.

And it turns out that inhaling phytoncides from the Japanese pine *Chamaecyparis obtusa* can give your immune system a boost, [even if you're in a hotel room](#).

Exactly how phytoncides do this is still a mystery, but they appear to increase numbers and activity of white blood cells called natural killer cells.

Natural killer cells are like our bodies' security guards, patrolling the body and looking out for infections and cancers.

If they spot something untoward, they sidle up to the cell in question, tear a hole in its membrane and slip deadly proteins into it.

Dr Li found higher levels of natural killer cells and their lethal arsenal in people after they [walked in a forest than after a similar stroll around a city](#).

Eucalypts exude phytoncides too, but as to whether they impart the same effects as pines, Dr Li doesn't know.

Microbial mates

The burgeoning field of microbiota may also show that being in the wild is good not only for you, but also for the legions of microbes that call your body home.

The gut harbours a rich microbial population, said Danica-Lea Larcombe, a PhD candidate at the Edith Cowan University in Perth.

"But our skin, too, is exposed to so many things in our everyday lives.

Microbiome research is still in its infancy, Ms Larcombe said, so there's no agreed "healthy" type of



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[Some plants emit chemicals that, when inhaled, seem to impart health benefits to us.](#) (Getty Images: Mint Images/Jonathan Kozowyk)

[How does your diet affect your gut bacteria?](#)

microbiome.

Generally, the more varied your microbial residents, the better.

In an urban environment, sitting in an office all day, you're pretty much surrounded by your microbial cloud only.

Step among the trees, though, and you'll swap microbe populations with all sorts of organisms.

"In the forest, there's stuff blowing around you, microbes in the soil and on leaves," Ms Larcombe said.



[Are there certain foods you should eat and others you should avoid to keep your gut bacteria healthy?](#)

How much nature do I need?

Dr Li's work showed the biological benefits of forest bathing could last seven days to a few weeks.

Don't live near a national park? Dr Wood and her colleagues found that living near a local park, no matter how small, is [linked to positive mental health](#).

If you don't live near parks, Dr Li recommends using essential oils to reap some benefits of a walk.

Other research suggests simply listening to recordings of the outdoors can reduce stress.

People who'd been subjected to a tricky maths test calmed down faster when they [listened to a recording of a fountain and tweeting birds](#).

You might even create your own miniature forest with indoor plants, said Ms Larcombe, who is running a year-long study on the effects of indoor plants on the microbiome of apartment-dwellers.

"By researching all of this, and how nature affects our stress and inflammation, hopefully with a causal link we can have a central pathway for health and greening strategies," she said.

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