Hope on the horizon

Without a medical breakthrough, the number of families impacted by Alzheimer's disease is only going to rise over the coming decades. But there is reason to be positive, with experts agreeing we're in one of the most exciting times for research and prevention, too.

Words **RACHEL SMITH**

NOTICING SIGNS OF MENTAL DECLINE in someone you love (or yourself) can be scary. As can finding the right specialists, knowing the right questions to ask and taking the right steps towards managing it.

But manage it you can. New drugs on the horizon for Alzheimer's disease, the most common form of dementia, are giving hope to many. And the evidence is mounting that the lifestyle choices we make can go a long way towards preventing it – or help those with it live a better and longer life.

"This is a disease in which education is more powerful than medication – and our decisions are more powerful than our DNA," says Dr Helena Popovic, a leading authority on brain health and the author of *Can Adventure Prevent Dementia?*. "If you're diagnosed and a doctor says, 'There's not a lot we can do for you, get your affairs in order and come back in a year', that's outdated advice. There's a lot we can do."

DR HELENA POPOVIC
Leading authority on brain health

There are huge strides in research, too, adds Michael Breakspear, professor of neuroscience and psychiatry at the University of Newcastle and a group leader at the Hunter Medical Research Institute (HMRI). HMRI is screening people into a drug trial on lecanemab, which has been shown to slow cognitive decline caused by Alzheimer's by 25%.

"We're also starting to understand more about the underlying mechanisms that lead to Alzheimer's and the changes in the brain that occur well before people get symptoms," he says. "In the dementia field, it's been the most exciting few years in decades."

CRUNCHING THE NUMBERS

Currently, more than 400,000 Australians live with all forms of dementia, and nearly seven in 10 cases are Alzheimer's. According to Dementia Australia, numbers are expected to double by 2060 – if there isn't a medical breakthrough.

So what causes Alzheimer's? There are two schools of thought. The first is that it's caused by abnormal levels of amyloid beta protein in the brain, clumping together to disrupt cell function. Other experts say unhealthy lifestyle habits play a significant role. "A landmark study found that a healthy lifestyle dramatically reduces your risk of developing Alzheimer's, even with a high predisposition," says Dr Popovic. >

Thankfully, we're seeing a number of 'firsts' happening in the dementia world – and that's encouraging for people living with the disease and their loved ones.

"We've finally got disease-modifying treatments," says Professor Breakspear. "The other big breakthrough has been in what we call biomarkers – things you can detect early in the disease that are present in blood tests. And we're seeing amazing research outcomes with new agents that actually modify the underlying disease, that seem to slow and possibly reverse some of the biological changes."

In HMRI's clinical trial, his team is looking to see how early in the disease lecanemab can work. "These are people with just a small build-up of amyloid, but no cognitive changes," he explains. "What we're hoping is to see these people sort of 'rescued' from developing Alzheimer's in the next five to 10 years."

There are concerns with lecanemab and its side effects, which can include back pain, blurred vision, dizziness and nausea. "Not everybody is yet convinced by these drugs," says Professor Breakspear. "But the consensus in the dementia field is that these are extremely exciting discoveries and they're going to be available in Australia in the next 12 months. That's important because it gives people with the condition a longer life, a better quality of life and more of an opportunity to stay at home and in the community."

WARNING SIGNS

The changes in your brain can start decades before an Alzheimer's diagnosis is made. "It's a different journey for everyone," says Dr Popovic. Signs can include:

- misplacing items
- becoming confused about dates, days and times
- mixing up facts or not being able to find the right word for something
- having a diminishing attention span
- making inappropriate remarks, personality changes or mood swings
- becoming withdrawn and not wanting to socialise.

If you're noticing any of these signs – either in yourself or a loved one – go to your GP for a medical assessment. They will decide if you need to be referred to a specialist such as a neurologist, psychiatrist or geriatrician.

THINGS WE CAN CONTROL

The positive news is that the research suggests there are 'tweaks' we can make in our lives that could potentially prevent a future diagnosis.

The Lancet Commission found that millions of dementia cases globally were attributed to 12 potentially preventable risk factors: less education, hearing loss, hypertension, obesity, smoking, depression, social isolation, physical inactivity, diabetes, drinking to excess, traumatic brain injury and air pollution.

"In the dementia field, it's been the most exciting few years in decades."

PROFESSOR MICHAEL BREAKSPEAR
Group leader, Hunter Medical Research Institute

"They were conservatively saying that if we take steps to eliminate those 12 risk factors, we could reduce the number of cases worldwide by 40%," says Dr Popovic. "I believe if you add in better sleep, reducing sugar, a strong sense of meaning and purpose, and dealing with emotional trauma – we could all more than halve our individual risk. If we give our brain a reason to stay sharp, it most likely will."

SO WHAT ELSE CAN WE CONTROL?

Positive thinking. In a study led by America's Yale University, people who believed ageing meant getting old and doddery experienced three times the rate of brain shrinkage in the hippocampus (the brain's memory centre), compared to people with a positive attitude towards ageing. The first step to ageing better is to feel better about ageing, says Dr Popovic. "It makes a huge difference."

Staying sharp. "There's a whole branch of medicine now looking at the power of meaning and purpose and how that prolongs life and improves the functioning of your brain – because it builds cognitive reserve," she says. "So set meaningful goals, look after grandchildren, volunteer, go travelling!"

Regular exercise. "If we could bottle physical exercise, it would be way more powerful than any dementia drug," says Dr Popovic. "Exercise halves our risk of developing dementia in the first place, builds new brain cells, enhances the size of our hippocampus and slows progression of the disease if you're already diagnosed with it. Swimming, running, cycling, dancing – just do it. And incorporate strength training too!"

Getting good sleep. "What did Ronald Reagan and Margaret Thatcher have in common apart from being leaders and having Alzheimer's? They both bragged about how little sleep they needed," says Dr Popovic. "The decades of saying, 'I can survive on six hours sleep' – that increases your risk. When you sleep, your brain detoxes and the amyloid and the tau are washed away – so good sleep is essential."

Tweaking your diet. "Alcohol is a toxin and drinking more than four standard drinks a week starts to shrink our brain. Every soft drink is also a bullet to the brain. If you eat any amount of processed food, you're consuming way too much sugar. Excess sugar is toxic to the brain, depletes brain cells of energy and leads to inflammation."

So, will we ever see a cure for Alzheimer's? "I don't know that we'll see a cure; few of our serious chronic illnesses have cures," says Professor Breakspear. "But we keep many illnesses at bay. I mean, HIV used to be the number-one killer of young men. Now, a combination of four drugs can keep you well for decades. And there's no reason we won't be doing exactly the same for dementia – I mean, why not? It's a biological disease of the brain."

He believes we're not too far away from widespread screening with a genetic test and cognitive tests. "So I say, people with a family history of Alzheimer's, watch this space closely and agitate for more investment in research. And in the meantime, we already know a lot about modifiable risk factors, such as physical activity and a healthy diet."

Dr Popovic agrees. "We might not yet have a cure, but we certainly know how to slow down the disease. Ageing is inevitable; mental decline is not." ●

CASE STUDY

RACHEL SMITH & VANDA SMITH

Rachel, 50, on her mother and Alzheimer's

I knew there was something up with Mum's memory years before she was diagnosed with Alzheimer's. It was a little thing: she offered to make me a cuppa and right after handing it to me, she popped her head round the kitchen door and said, "Darling, would you like a cup of tea?" I just thought, "Whoa. Something's not right here."

It took three long years to convince Mum she needed help and to get a diagnosis of Alzheimer's. My parents just got on with it; they're very stoic, optimistic people. I went through a kind of grief for a few months. But it's impossible to be down around Mum. Four years on, she's still my lovely, funny, amazing mum – and a fabulous nanna to her five grandkids. We do silly things as a family to make memories – photoshoots, trips away, funny cakes. She doesn't remember any of it, but we will.

Rachel Smith with her mother Vanda and father Paul.

The challenges? We live in the moment; Mum's short-term memory is gone. She loses things endlessly and often wakes my dad for 4am "cups of tea and a chat" – he must be knackered but he's so patient, loving and kind to her. I cannot imagine a better person to be by her side. I worry about the future and what we might face, but right now, we're all managing okay. And she's surrounded by a heap of love, support and help, and always will be.

Vanda, 82, on living with dementia

I've always been an airhead and didn't think there was anything wrong with my memory but Rachel was a big bully about it all! I'm sure at the time I thought, "All right! I'll go, I'll prove you wrong". I was 78 when I did the PET scan (I'm 82 now) and when we got the results, I was surprised, but I've faced it head on. We have a great geriatrician, and I'm on medication.

The worst thing about Alzheimer's is getting a sense that people might be talking about me. I don't want people huddling in the corner – I like honesty. I also think you need to laugh about it; my sense of humour sure serves me well now! I see friends occasionally and we're all old and everybody has something wrong with them but no-one treats me any differently. If I worry about anything it's my kids and the people around me and how it might affect them, because it's my journey and they don't deserve it.

There are things I miss. Like the freedom of driving, or handling all my decision making. Or getting on a bus to go to the art gallery on my own; I've got to have a minder. Luckily, I've got the best minder in the world: my husband Paul. We still travel, we have everything we need. I feel guilty that Paul has to do so much for me. He thought we'd retire and have fun, fun, fun, but instead he's dealing with Alzheimer's. But he always says to me, "All I want in life is to spend time with you." So he's a keeper.

ADVICE AND HELP

CogDrisk
An assessment tool (for 18+) for your dementia risk profile. *Visit neura.edu.au/project* and search *'CogDrisk'*.

National Dementia Helpline
Call 1800 100 500 for information about carer support groups.