WHAT’S NEXT?

At our Drug Discovery Institutes, we’re already working on the future.

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Dr Susan Kohlhaas, our Executive Director of Research and Partnerships, pictured at the UCL Drug Discovery Institute in London.
Welcome to A better future is coming.

As this issue goes to press, we await a very important decision from the Medicines and Healthcare products Regulatory Agency (MHRA) on whether the Alzheimer’s drug lecanemab will gain its first approvals for use in Great Britain.

That is a truly exciting prospect. Yet even if this particular drug doesn’t succeed as we hope, great news is coming.

Because thanks to the support you give us, our scientists, experts and Drug Discovery Institutes are already working on the next generations of life-changing treatments. These will go further than lecanemab, by targeting the many biological processes that lie behind dementia. And alongside our pioneering work into diagnosis and prevention, each and every one of them will lead us to a cure.

Hilary Evans
Chief Executive, Alzheimer’s Research UK

This magazine has been prepared ahead of the MHRA’s decision about lecanemab. You can check the status of the decision at alzres.uk/cure-news
Too many people in the UK are left anxiously waiting for a dementia diagnosis – up to two years on average and more than four years if they’re under 65.

This is because people are currently diagnosed using memory tests, brain scans and sometimes a lumbar puncture. These methods can be time-consuming and uncomfortable. And some types of specialised scans are not available to all dementia services in the UK.

That’s why earlier, accurate dementia diagnosis will be crucial. It would mean people could access personalised care and support faster, and put future plans in place in a more timely manner. It also opens up many more opportunities for volunteers to take part in medical research.

And, of course, an early diagnosis will be essential if people are to access the new, first-of-a-kind treatments that are on the horizon.

The good news is that blood tests are already showing great promise as a way of improving dementia diagnosis in the UK. And they could help make dementia diagnosis faster and more accurate.

So, to make this happen, we’ve teamed up with Alzheimer’s Society and the National Institute of Health and Care Research (NIHR) to run an initiative called the Blood Biomarker Challenge – funded in part by a £5 million award thanks to players of the People’s Postcode Lottery. Our hope is that the collaboration will enable world-leading scientists to build on existing research, so a blood test that can help diagnose diseases like Alzheimer’s quickly and accurately could be used within the NHS within 5 years.

We will be supporting two teams of researchers. The READ-OUT team, led by Dr Vanessa Raymont at Dementia Platforms UK at the University of Oxford, are exploring blood tests for the different diseases that cause dementia. And the ADAPT team, led by Professor Jonathan Schott, based at the University College London, are focusing on the most promising biomarker for Alzheimer’s disease, known as p-tau217. Working together, these two teams will maximise the chances of providing the evidence needed to prove that blood tests are ready for use in the NHS.
Across our research network, you’re helping scientists to unravel the disease processes behind dementia and bring forward innovative ways to slow, stop or even reverse them. On the following pages, we look at just two of the studies that are leading to this next generation of treatments – and which will take us even closer to a dementia cure.

“How the new blood tests could work.

In future, when someone is referred to a memory clinic, as well as taking cognitive tests, a doctor or nurse would also take a small sample of blood in a simple procedure. Just as one might give a blood sample today.

The sample would then be sent for testing, to identify any biomarkers of dementia (such as a raised level of particular proteins). Results could be available within a matter of weeks and used alongside cognitive test results to help make a diagnosis. And although more specialist tests might be needed to confirm this result, many people would receive a faster, more accurate dementia diagnosis than is possible today. Importantly, these tests could also rule out people who don’t have diseases like Alzheimer’s.

“Our search for the next treatments is well underway.”

With such a strong partnership behind it, these two teams have enormous potential,” says our Executive Director of Research and Partnerships, Dr Susan Kohlhaas. “So much so that I believe the first blood test for Alzheimer’s disease could be ready for the NHS within five years. That would be game changing. And it would mean that within this decade, we could revolutionise how people with dementia in the UK are both supported and treated.”

To find out more about the partnership’s pioneering work into better diagnosis, go to alzres.uk/cure-blood
Could a drug for eye disease restore nerve cell damage in dementia?

Prof Nigel Hooper, University of Manchester.

“There are many examples of drugs and medicines designed for one health condition that can be used, often very effectively, to treat another. And right now, my team and I are intrigued by methazolamide, or MTZ, a licensed treatment for the degenerative eye disease, glaucoma.

“MTZ is typically prescribed for conditions like glaucoma, to reduce pressure in the eye and prevent vision loss. But what’s interesting is that the drug might also boost the beneficial effects of a protein called ACE2 – a natural enzyme that protects nerve cells and keeps them healthy.

“We already know that in Alzheimer’s disease, ACE2 activity is significantly reduced, making cell damage much more likely. So our plan is to test MTZ on human nerve cells grown in the lab, to see if the drug can restore ACE2’s protective function.

“If our theory is correct, and our testing shows that ACE2 can do this, we could discover a new way of treating Alzheimer’s. There’s even a chance that the drug could help reverse the damage being caused in the disease.

“And if that proves to be true, it would be fantastic. Because using an already developed drug means that a significant amount of drug discovery time can be cut. And it means we could test MTZ on people with Alzheimer’s far sooner.”

Autophagy – a promising treatment target?

Dr Christy Hung, University College London

“The brain is constantly renewing itself. And in a process called autophagy, old cells and proteins are broken down and removed so they can be replaced with new ones. And this could teach us some important things about dementia.

“Because in diseases like frontotemporal dementia, dementia with Lewy bodies and Alzheimer’s, autophagy becomes overloaded. Proteins build up in the brain and become harmful to the cells around them. And that triggers the kind of brain damage we see in different forms of disease.

“So I’m investigating the way autophagy works in dementia by comparing healthy brain cells against ones which are affected by disease. They’ve been created in our lab using stem cell technology, and by delving into the microscopic differences between the two, I’m hoping to pick apart how and where the renewal process goes wrong. Because if I can do that, we can start identifying ways to fix the problems.

“We already know that harmful proteins in the brain are an important area for drug discovery. Yet by finding treatments for an earlier point in the dementia-causing disease – such as autophagy – we could stop the harmful build-up of proteins from happening at all.”
When volunteers step up for clinical trials, they make dementia research stronger than ever.

Join Dementia Research matches willing volunteers with studies that allow our scientists to learn even more about dementia and the diseases which cause it. It can also help us to test potential new treatments.

And as 20 May marks International Clinical Trials Day, we want to celebrate the many brilliant volunteers already helping our research in this incredible way – including Priscilla Park-Weir, who’s been part of the initiative since 2015.

What first made you Join Dementia Research?

“Both my parents had dementia and unfortunately, my husband now has mild symptoms too. As you can imagine, it’s been really hard to see this happen to the people I love most. And I wanted to do something as positive as I could in response, to help find dementia treatments and maybe even a cure for this heartbreaking condition.”

And which study are you involved with at the moment?

“It’s called PROTECT. It’s to understand how our brains age, and to investigate why some people develop dementia when others don’t. For my part, it involves completing questionnaires and online brain tests every year.”

Has it been interesting? Difficult? What’s been the best part of it for you?

“It’s not difficult at all! And it feels great to know I’m helping scientists with their work just by doing what I can, when I can. I think getting involved with research is something more people should definitely consider. I’ve found it really rewarding.

“There are a lot of different tests I get to do as a volunteer. I’m quite competitive, so my favourite parts of PROTECT are where you’re asked to do things as quickly as possible. But I have to say, I’m less keen on the parts where you’re shown different objects in different squares and have to remember where you saw them. And I only say that because I’m no good at it!”

Our Dementia Research Infoline can help you with questions you have about dementia and research studies. The team can also help you to Join Dementia Research, just as Priscilla has. Call us on 0300 111 5 1111 (lines are open from 9-5, Mon-Fri) or email us at infoline@alzheimersresearchuk.org.

You can also find out more on our website at alzres.uk/JDR. Or if it’s easier still, just scan this code.
Dr Emma Mead is the Chief Scientific Officer at our Drug Discovery Institute at the University of Oxford. And as such, she’s part of a pioneering network of scientists, translating the findings from our research into the design of potential new dementia drugs.

For this issue of CURE, Emma speaks to us about her important work, the heartfelt reasons behind it and how scientists like her are focused on the next generation of dementia treatments. But first, she shares her excitement about a certain new Alzheimer’s drug.

Q. The Medicines and Healthcare products Regulatory Agency may approve lecanemab at any moment. How does it feel to see an Alzheimer’s drug make it this far?

A. “It’s really exciting isn’t it! Everyone is on tenterhooks. Of course, lecanemab will need to go through many further approvals if it’s to become a treatment. And it’s only going to help some people in the very early stages of Alzheimer’s. But it’s wonderful to see. As one of the newest treatments it represents an important first step in our ability to effectively treat dementia. And with so many other drugs in design and testing – both in our labs, and around the world – I have great hopes for the future. It’s a good feeling. Particularly as we’re going to need so many new treatments, including ones which do more than target the build-up of amyloid in Alzheimer’s – as lecanemab does.”

Q. So treating Alzheimer’s isn’t just about the amyloid protein?

A. “That’s right. There are many biological processes that go wrong in Alzheimer’s disease, and not just those that affect amyloid. They can be connected too. For example, when amyloid has built up significantly in the brain it triggers the clumping of another protein, called tau. And then this triggers more processes to go wrong causing damage to the brain.

“But just as removing amyloid could, one day, prevent this later stage of the disease from happening, there are other, earlier stages that we should be also able to target with new drugs.”
“We also know that people can live without symptoms of Alzheimer’s for a long time even when they have high levels of amyloid in the brain. So even for those with later stages of the disease, targeting other factors could be really beneficial.”

**Q.** And could people be given more than one drug?

**A.** “Absolutely! An example of this type of treatment comes from cancer research. An individual’s cancer treatment can involve a lot of different therapies. And how specialists prescribe a combination of drugs and treatments, depending on what kind of cancer you have, and your overall health. Well, we want to see the same thing with dementia. Where you’re prescribed a combination of drugs depending on what type of dementia you have, the stage of disease you’re living with, and in a way which creates the best possible outcome.

This range of treatments will be really important. Outside of the lab, I have volunteered at a dementia café, where people with dementia and their families, carers and friends can come together, feel supported and get information and advice. I have seen how dementia affects our lives in so many different ways, and spending time with people living with dementia gives me the motivation to help develop new treatments. It’s really clear that we need lots of different ways of helping people, too. And that’s why scientists like me can’t be satisfied with just one drug. It’s why we’re looking far beyond amyloid treatments.”

**Q.** So what could the next dementia drugs do?

**A.** “We know that inflammation is a key factor that drives changes in the brain seen in dementia. Inflammation is thought to cause damage to nerve cells in Alzheimer’s disease, so finding drugs that could reduce this could be a promising avenue. A particularly important target will be immune cells called microglia, which help repair damage to the cells around them. In diseases like Alzheimer’s, these microglia stop working properly and don’t help the brain as they should. They can even become a cause of damage.

“But what’s really interesting is that inflammation can happen alongside, but also at an earlier stage than the clumping of harmful proteins. So if we can target faulty microglia with new drugs, we could potentially slow or stop someone’s dementia at an earlier point, and prevent it from progressing.”

**Q.** How close are we to this next generation of treatments?

**A.** “We’ve already discovered a great deal about the sequence of events that happens when microglia start causing the damage that leads to Alzheimer’s. This includes changes to a protein called TREM2 on the surface of the microglia cells. These changes were first identified by researchers funded by Alzheimer’s Research UK, thanks to supporters like you. And there are already drugs in trials that target it.

We’re also looking at changes in a protein called PLCy2, which is involved in sending inflammatory signals around a cell.

“So we have some very clear targets for drug development. And if we’re successful in developing chemical formulations that can correct the problems, we’ll have an opportunity to treat disease when people’s symptoms are relatively minor. That means people could remain sharp and connected to their loved ones for much, much longer. And that’s what we all want isn’t it? That’s what we’re all working towards.”

**Q.** It must be rewarding to know that dementia research is going to help people.

**A.** “It really is! As scientists, we tend to focus on microscopic details and use technical terms like “PLCy2”. But really our work is about the big picture. And we never lose sight of the fact that this could make things better for a lot of people. You want your loved ones to have the best life possible. And we want that too.”
WALK WITH PURPOSE. WALK FOR A CURE!

If there was ever a time to come together for dementia research, it’s now. And if you can join our Walk For A Cure events this summer, you can help our scientists to make truly life-changing progress.

WALK FOR A CURE WILL TAKE PLACE IN SIX UK LOCATIONS.

- London, Kensington Gardens – Saturday 8 June
- Edinburgh, Holyrood Park – Sunday 23 June
- Southampton Common – Sunday 30 June
- Liverpool, Sefton Park – Sunday 7 July
- Sherwood Pines – Sunday 14 July
- Cardiff, Pontcanna Fields – Sunday 21 July

Whether you choose to walk solo or with your loved ones, you’ll be part of a community determined to make history, and you’ll be helping to end the devastation of dementia, once and for all.

The events are free to enter, but we set a fundraising target of £150. Which meant that last year, our incredible supporters raised over £145,000 for dementia research and with your help, we could set a new record in 2024. Sign up today at alzres.uk/cure-wfac

It’s not just a walk in the park. It’s for everyone impacted by dementia.

Taking place across the UK, our 5k Walk For A Cure events are dementia-friendly, accessible, and open to absolutely everyone.
Everyone is welcome. Even if you don’t want to walk.

If you’d like to join the action but walking isn’t for you this year – why not become an event day volunteer? You could be a route marshal, a pit stop motivator, a medal-giver or more.

So please join us if you can. And together, let’s create a future where dementia no longer devastates lives. For more info about joining us as a volunteer, go to alzres.uk/cure-vol

“It’s wonderful to meet the people who make our work possible!”. Alzheimer’s Research UK Research Fellow Dr Conceição Bettencourt shares her experience of attending one of our walks:

“Last summer, I joined Walk For A Cure in London’s Lee Valley park and it was a really moving experience. I’ve lost close relatives to dementia, and walking in their memory was a unique opportunity for me to reflect, share stories and to feel part of an understanding community.

“As a dementia researcher, I look at how our genes change in frontotemporal dementia. This is teaching us more about the disease and how we could design treatments to target it. Yet to work as effectively as I can, it’s essential that I collaborate with other scientists. Because working as a team and being part of a community makes us all stronger.

“For me, Walk For A Cure is a vital part of this teamwork. It was wonderful to be with old and new friends, and to meet the supporters who make our work possible. Your experiences really touched me last year, and they were a powerful reminder of why I chose this career in the first place. So thank you! I’m really looking forward to walking with you again this summer!”

Great for dementia research – and good for you!

Walking is great for your heart and brain and it’s a really accessible way to get active. But doing it with others could be better still, as research suggests that keeping connected to our communities and the people around us can have a really positive effect on our overall brain health.

We have a great selection of merchandise to purchase ahead of Walk For A Cure. You’ll find hats, hoodies and more at alzres.uk/cure-shop
Save 10% on your order with code Curemag10
Ever since her mum Kathleen was diagnosed with dementia, Serena Wigglesworth-Littlewood and her daughter Stella have been helping to find a cure.

As a young girl, Kathleen Horne was more like a mum than a big sister to her two brothers. Like many things, it came very naturally to her. And despite being told she’d be unlikely to have children herself, a dream came true for her and husband Roy when their daughter Serena was born in 1969.

When granddaughter Stella arrived in 2000, Kathleen’s world grew even brighter. She would spend hours and hours with Stella – baking, going for walks, visiting museums, the seaside or doing whatever took their fancy. There was always lots of laughter. And for Stella, her grandma had a knack of making everything like an adventure.

Serena cherishes the memories of these days, of seeing her mum and daughter enjoy such a close and loving relationship. She also thinks of the times when Kathleen was very much herself – caring, funny, quick-witted and at times, quite feisty. But tragically that all began to change. And in 2018, the family’s fears and suspicions were confirmed when Kathleen was diagnosed with dementia.

When Serena visits her mum today, at her care home, she can be greeted with hugs and kisses. But just as often Kathleen can be paranoid and aggressive. It’s very hard for Serena not knowing who or what to expect. What’s more, Kathleen has forgotten many of the wonderful times she shared with her family, even Serena’s wedding day. And painfully, she no longer recognises photos of her beloved granddaughter.

“I’m lucky to have had Mum for so long but it breaks my heart to see what this cruel condition has done to her,” says Serena. “It’s a constant feeling of grief. The slow death of someone you love.”

Inspired by her grandmother’s story and determined to make a difference for others, Stella developed a passion for neuroscience and is now completing a PhD in the subject at the University of St Andrews. As part of a dementia research team, she is investigating a potential risk gene for Alzheimer’s disease. And as Serena says, “If Mum could comprehend what Stella is doing, she would be so proud.”
Serena has also pledged to support dementia research, with a gift in her Will to Alzheimer’s Research UK. “Throughout the whole time Mum has been living with dementia I’ve felt utterly helpless,” she admits. “I’m not a scientist like Stella, nor am I able to provide the care that my mum needs.

“But leaving a gift in my Will is something that I can do. And I know that research is the only way we will stop others from feeling the heartbreak we have felt as a family. It may be too late for Mum and it’s possibly too late for me. But for Stella, her generation and those that follow, it doesn’t have to be like this. We can change things.”

Like Serena, your support could be vital in helping to find a cure for dementia. And a gift in your Will, whether large or small, can offer real hope to future generations. To find out more about the impact your generosity could have, please request a free gifts in Wills guide at alzres.uk/cure-wills

Online store Relish has tools to help those living with dementia by bringing joy, stimulating the mind, keeping independence, and helping close relationships with family and friends. They can also bring some precious moments of calm.

Relish is now offering our supporters 10% off all its products. Simply use the discount code RelishAR when shopping. Even better, they will donate a further 10% of the value of your purchase to Alzheimer’s Research UK.
YOUR TEATIME TEASERS.

Can you get from **WORK** to **CURE** by changing one letter for each rung of the ladder?

Can you find the pyramid’s **missing** numbers?

Solution 1: Missing words are: WORD, CORD, CARD, CARE.

Solution 2: Left to right and top to bottom: 26, 124, 71, 69, 43, 28, 27, 26.