Hello, this is the Global News podcast from the BBC World Service with reports and analysis from across the world, the latest news seven days a week. BBC World Service podcasts are supported by advertising. Hi, I'm Edmund Vistols from South Africa and welcome to the Happy Pod. Hi, I'm Ema and I'm at the Global Alzheimer's Conference in Amsterdam and I've got some really great news for the Happy Pod. She has. This is the Happy Pod from the BBC World Service. I'm Jackie Leonard and in this edition uploaded on Saturday the 22nd of July, we'll also hear from Sweden, the US, India and Iceland. We'll have what's being called a significant step in the treatment of Alzheimer's disease. The scientists who found a way to genetically alter trees making paper more environmentally friendly. We were blown away. That was just really, really amazing. It was fantastic. The ability to do it is almost a scientific miracle. Also in this podcast, an award-winning innovation to take healthcare to women in remote parts of the world. We had so many
women coming up to us and just saying, this is wonderful. I've experienced this. My mother's experienced this. It was wonderful to know we are working towards something that's going to directly
help those who need it. And does your employer have a director of happiness yet? It sounds crazy, but I don't really have a bad day. I'm just lucky enough to have been born this way.
And we start with what's being hailed as a turning point, a new era and a breakthrough in the fight against Alzheimer's disease. It isn't a cure, but in global trials, the drug Dunanamab appears to have slowed the pace of the disease by about a third. And that means that people
can carry on longer with day-to-day activities and hobbies that they enjoy. Mike Colley, who is 80, took part in the trial. He and his son Mark told us about it. I'm one of the luckiest people you'll ever meet, just for this. I seem to get more confident every day, and I'm sure this is going to be successful. They'll get all the rubbish off the top of my brain, and I'll be back to normality. I'm very confident about that. I never thought that I would see my dad just so full of life again. Now we have hope, and two years ago we didn't. And that's just an incredible difference.
So what does the drug do? Dawn Brooks is the global development leader for Dunanamab at the pharmaceutical company Eli Lilly. It was designed to very specifically target the positive plaque present in the brain and ultimately really triggers your own body's immunity to come and clear away the plaque. There is a 24% that that's experienced this what we call ARIA-E. Now largely that most people it's asymptomatic, and there are some cases that are serious. We are comfortable with the benefit risk that is there for Dunanamab, certainly in the backdrop of a Alzheimer's disease that is progressively and ultimately fatal. Dr. Ima McSweeney is a consultant neuro radiologist and medical director at Recognition Health. She led the trials of Dunanamab in the UK. It's a really,
really big breakthrough, and the reason for that is because it essentially means that Dunanamab can both remove the toxic amyloid protein from the brain and slow further progression
of disease and symptoms, and they're certainly bringing significant hope to people with Alzheimer's disease who urgently need these new effective types of treatment. Now a lot of us know somebody with Alzheimer's or cares about somebody who's affected. My own mum had early onset Alzheimer's and it was really distressing. It's something that a lot of people are worried about. How far away are we from an actual cure or even a vaccine or effective prevention of Alzheimer's?
I think it's really fair to say that we can be very cautiously optimistic today,
and that's for two or three reasons. Firstly, Dunanamab results are obviously extremely encouraging,

but also there are lots of other medications with different mechanisms of action that are currently in clinical trial, and these medications are also designed to slow or ideally halt further progression of disease and symptoms. The other most important thing is that there is huge advance in the development of biomarkers for this condition, and that enables the doctors to be able to identify the presence of the abnormal pathology, so the presence of elevated amyloid and tau protein in the brain. Actually, even before symptoms of Alzheimer's disease start, then the possibility in the future will be to provide treatments when we know the disease is present, but before the symptoms have started in order to delay or ideally push out the development symptoms such that they never develop. But today what we're looking at are medications which for the
first time are able to slow further progression of symptoms. You talk about the importance of hope. Are you personally optimistic about the progress that's being made? Yes, I'm very optimistic. On the basis of the scientific result that are coming from these studies, I believe it is entirely appropriate to be cautiously optimistic that we are definitely moving in the right direction for this disease, which is a pandemic. And whilst many of the trials have been unsuccessful in the past, every trial results in pharmaceutical companies getting closer to finding medications that will be effective. And the importance of hope in a disease like Alzheimer's disease is incredibly important. That was Dr. Ema McSweeney, a puzzle that has stumped some very clever people for over 50 years might just have been solved. It is, as I expect you to know, the invariant subspace problem in Hilbert's spaces. And the man who has written the paper purporting to answer it
is the Swedish mathematician and musician Per Enflow, who has quite a record with such things. This problem, it has got a particular interest also because of its application. So if we talk about the bigger area, functional analysis, it affects all of our society today. You can take cars, household machines, medical equipment, regulating traffic on freeways, etc. Mathematicians do enjoy these big open problems, don't they? And you have solved other open problems
before. One of them got you a goose, didn't it? It earned you a goose. That's correct. And it took me about five years to solve it. Why a goose and what happens to the goose? Oh, yes. I had to decide very quickly. So it ended up as a goose dinner. No. No, I can now, I can say no also, but this was a different time. And as I said, I had to make very quick decisions. It has to be said, we were all hoping it would have become a family pet, but no, it was dinner. Okay, thank you. Let's move on. Other open problems, other open mathematics problems, are there more that you're working on? So next, I will complete the project of human evolution. It concerns our relationship with Neanderthals and with other archaic humans. For instance, why have people in East Asia more Neanderthal genes than Europeans? You're certainly not shying away from the huge questions. You're not just a mathematician, you are also a musician. What part does music play into or complement your approach to mathematics? Are they just entirely different parts of your life or do they complement each other? I can say that I started in music and already as a teenager, I have had a musical career. And I think that there was a very important background for my mathematics. When I started in mathematics at the age of 17, 18, I thought that I should like a musician and create my own piece of art. And so I invented some things which were really out there. But in music, I have the general ambition to what I say, communicate from heart to heart. And I think that that was for me important for my approach to science.

The genius who is pear and flow. And he has a piano recital on Wednesday, the 26th of July in Vestland in Sweden. If you're in the neighborhood, just don't mention the goose.
Now let's talk about trees. What if we could find a way to make forestry related industry more productive, but more environmentally friendly at the same time? Biochemist Rudolf Barangu and geneticist Jack Wang at North Carolina State University have done just that, using gene editing technology known as CRISPR. CRISPR stands for clustered regularly interspaced short palindromic repeats. I don't know if that helps. They spoke to Anna Murphy about their research, starting with Professor Barangu. Unfortunately, the forestry industry has operational inefficiencies. And generally speaking, for example, it takes about two tons of wood to make one ton of paper. So the challenge that we're trying to do is to change the chemical composition of the wood itself. We can now use less input, fewer input, less trees to generate the same amount of products. Using CRISPR gene editing combined with artificial intelligence, we can now design and produce a specific type of wood properties that can substantially reduce the carbon footprint and the carbon emission of this conversion process, making the production of sustainable fiber materials so much more environmentally friendly.
What is it that's different about this modification in particular?
So what we're pursuing here is scientifically complex and requires the tinkering of DNA at multiple different locations. Because we're changing things that are chemically and biochemically important in trees, doing one change is not enough. And what we do in this particular study is assess nearly 70,000 different combinations of DNA tinkering strategies and then selected a few, because only a select few of those 70,000, about 350, which is 0.5% of them, will allow us to achieve the changes that we want in terms of tree fiber composition, yet enable us to maintain the important other attributes of the trees like growth and density and health. And is this a development that could have applications elsewhere?
I mean, absolutely. I think that we did that work in poplar, but we're doing the same in eucalyptus, we're doing the same in pine, we do the same with furs. And there are so many applications that are in play here, not just paper, not just fiber, but also wood for construction, bio products like bio plastics or biofuels that are more sustainable and environmentally friendly and acceptable. And then of course, a very important area here that is timely, that is compelling, that is global for which we have a sense of urgency is actually capturing carbon more efficiently in trees and growing trees that are healthier in environments that are increasingly challenging and difficult for them to survive. But until now, the possibility and the feasibility of doing what we did with multiplex genome editing at speed and at scale, it was aspirational, but difficult, if not impossible. When we harvested the first batch of trees, we were blown away and actually producing the first few sheets of CRISPR into the paper in the world. That was just really, really amazing. It was fantastic. The ability to do it, the ability to execute it, the ability to breathe those trees in the first place is almost scientific miracle. But importantly, being able to do this one thing, but being able to show and illustrate that there's such tangible value in increasing the sustainability and the environmental benefits that are derived from both operational gains and carbon emission impact. That is amazing. That is a dream come true in some
ways, but it's also just the beginning of a new era of tree breeding for which the community can now imagine doing things that until now we thought was impossible.
Rudolf Barangu and Jack Wang at North Carolina State University.

Now, what does your boss do to ensure your contentment? Some firms go further than others. Here in the UK, the company Timpson is to be found on many high streets. It does mainly shoe repairs and key cutting in around 2000 locations. And its boss recently tweeted a photo of a smiling woman introducing her as Janet, our director of happiness. Every company should have this role if they can. Janet is Janet Layton, and she is well suited to the job. It sounds crazy, but I don't really have a bad day. And I'm just lucky enough to have been born this way. So I'm naturally happy. Like this morning, I've been dancing around the room just because I can. Okay, this is just a lifestyle. And if things are a bit awkward or I'm overtired, I've got a really, really good husband, who's the opposite to me, very calm, very relaxing. And also if things are a bit difficult, I might go for a run, get some exercise. You've got to try not to let it get to you. And it's no good once you've done your best. That's all you can do. What is a director of happiness? It's a really interesting one, this one. The role is all about supporting our colleagues across the business to ensure that we are looking after them and helping them, whether that's away from work or in the workplace. And the idea behind that is not only are we just being kind because we want to be kind, which we really do, but also if we help people with problems away from work, then when they are in work, they'll be more productive. And what can a director of happiness actually do for colleagues that a pay rise and free cake wouldn't do just as well? Well, I think the issues are far greater than a pay rise. We all know that pay rises are the brilliant, the very short-term motivator. Cake, again, is a real nice thing to have, but certainly not a necessity in life. Oh, I don't know, Janet. I think we might have to disagree. I do get that. I do understand entirely. Whereas we look at the real issues that people have, whether that's relationship issues, financial issues, emotional well-being issues. I might go and visit some branches, pop in, say hi, talk to the colleagues. I've talked to them about the family, about things that are important, make sure that the area teams are looking after them, so they don't feel isolated. Or I might be on the phone all day receiving phone calls from colleagues who've got issues at home. Every business needs somebody that's looking out for people and can support people where that support is needed. Janet Layton, director of happiness.

Coming up in this podcast. I was born after the war, so if it hadn't been for that family, I wouldn't be here. The good deed that's being repaid decades later.

BBC World Service. We're in Australia and New Zealand throughout the tournament, going behind the scenes to bring you all the excitement of the competition.

This is something I've dreamed of. I love the spotlight. I love pressure. I love it all.

Listen now by searching for world football wherever you get your BBC podcasts.

Now to a bit of award-winning brilliance designed to improve the healthcare of women in remote parts of the world. FlexiGyne is a portable battery-powered device to enable doctors to see inside the uterus with minimal movement or pain. It won the South African biomedical engineer Edmund Vessels the Africa Prize for Engineering Innovation, and he told us about the woman who inspired him. The gynecologist, a brilliant one who was an innovator in her own right, the late Dr. Carol Thomas, approached us with this need for the tool that she could use outside of the operating theatre to be more mobile and essentially also to be comfortable to use for the patient, because in South Africa the equipment to do these procedures is too expensive and also too painful. The device is technically called a hysteroscopy system, but it's essentially you can see it as a tool for visualizing the inside of the uterus. So it's for diagnosing and treating conditions inside the uterus. It lets them see firsthand what the condition the patient

is experiencing. At the evening of the prize we had so many women coming up to us and just saying this is wonderful, I have experiences, my mother's experiences and it was wonderful to know we are working towards something that's going to directly help those who need it. And what does winning the Africa Prize mean to you? It means validation, it means years and years and years of work is finally coming to a point where people are starting to recognize it and almost just getting kind of affirmation and confirmation that we are doing something good. Africa Prize winner Edmund Vessels and a few of the other things that caught our eye in recent days. The Australian sailor and his dog who survived two months in the Pacific Ocean by eating raw fish and drinking rainwater. Tim Shaddock and his dog Bella left Mexico for French Polynesia in April, but their boat was damaged by a storm several weeks later. They were picked up after a helicopter spotted them. If you've ever accidentally sent an email to the wrong person you will perhaps identify with this one. Millions of emails with sensitive information from diplomatic documents and medical records to travel plans have been sent to the African country Mali rather than their intended US military recipients. The end of military email addresses is .MIL, while .ML is the country domain for Mali. The Pentagon says it's taken steps. And in New Zealand, an ignored historic site in Dunedin has been recognized as culturally significant. The 111-year-old toilets have been placed on the Heritage New Zealand list. A Heritage NZ Assessment Advisor, Alison Breeze, described the toilets as really significant in their ordinariness. Fill in your own puns about flushed with success if you really must. Now, Crystal from Oregon in the US sent us this.
So what is it? A pack of coyotes that I can hear from my house and when the evening comes I start to hear them singing and sometimes it sounds especially loud. Why is that your happy sound? What is it about that that moves you? Oh, it has to do with where I live. It's in a very rural area and it's so rural that I have a lot of wildlife coming through. I have more wildlife than I've typically seen in other places that I've lived in my life. For a lot of places, especially when there's more people around, you won't see so many coyotes and I just find them beautiful. I love the call. To me, it sounds so very wild and it makes me feel privileged to be in a place where I can be this close to what I consider to be wildlife, more wild than what I might find in a place with more people. Well, you say that but you are leaving the wildlife behind for a new chapter, aren't you? I am. It's bittersweet. I just found the most amazing man and we met during the pandemic which was also amazing and so it's been a couple of years and we just can't stand to be apart anymore and his kids are going to school in the city and he wants to stay close to them and so I am willing to give this all up and try a life in the city.
Are you nervous about that? I am but mostly I'm nervous about more about sharing a home with someone. I've lived alone for a long time so I'm more nervous about that part of it than leaving the country. Will you be taking dogs or animals with you to your new life in the city? Chickens. I have my beloved chickens and I'm a happy little farm tick talker so I do my chick talk, I call it here at home and that was part of my criteria for leaving the country is I had to have a place big enough so that I could bring my girls with me.
Yeah, the chickens aren't going to miss the coyotes are they?
No, not at all. Thank you, Crystal and good luck in your new life. Now, what does job satisfaction look like to you? For Khatija Bibi, a nurse in Tamil Nadu in India, it was overseeing the delivery of more than 10,000 babies. She has now retired after a 33 year career with a government award for her endeavors. Pramila Krishnan from the BBC Tamil service met her. She told me somehow

she has a feeling the intuition tells her that this might be a cesarean so if there are any difficulties if she notices some signs she would immediately inform the ambulance she would ask them to go for the bigger hospital. And during the 33 years that she worked delivering babies she must have seen a lot of changes in health care. She told me there were days when many women they would really feel bad about delivering girl children the mother would feel very bad and she would be shivering to leave the hospital but now the days have changed particularly the thoughts of having a girl child seeing the girl child as a burden to the family has changed so much over the years. When I asked her how she got into this job she told me she was inspired by her mother who was a village health nurse so when Khatija saw the villagers respected her mother she really wanted to be that kind of a person and she wanted to do some job where she will help the society so she chose to work like her mother. And as her career wraps up what are her reflections on what she's achieved? She had seen two generations of women coming to her that was her success some women came back to her telling their daughters that you were born in the same hospital with the help of this nurse and you would have a safe delivery with this nurse. Pramila Krishnan on the life's work of Khatija Bibi in India. Now to a story of an international friendship that has spanned generations it begins with a British soldier stationed in Iceland during the Second World War. He was rescued from a snowstorm by a local farmer and across the decades the families have stayed in touch and now they are returning the good deed. Our reporter Jess Lord met Sue Frecklington to find out more. My dad was trained for Arctic Warfare on manoeuvres in Iceland there was a very bad snowstorm he was rescued by a man called Mevant who was looking for his sheep I understand. I was born after the war so if it hadn't been for that family I wouldn't be here. Hi. Sue has kept the connection with Iceland going all of her life and when she found out that Mevant's great great-granddaughter Sunna had been diagnosed with an incurable illness she wanted to help. I feel it's in me it's something I've got to do you know to say thank you. So Sue and husband Tony got to work and Granny Maud and the old grump was born. Maud is my middle name I crochet as well and I found a Granny Maud square and that became my name and the old grump he makes jewelry and wooden things. Sue and Tony sell their creations and every single penny goes towards supporting Sunna. She's lovely she loves dressing in leopard prints full of fun she likes riding a wheelchair bike she just loves it. Oh she's great yeah she's real happy little soul. Age two Sunna was diagnosed with alternating hemiplegia of childhood which means she has episodes causing temporary paralysis and there's currently no cure. Sue and Tony's efforts over the past 10 years have paid for care and research which Sunna's family are so grateful for. She has lots of limitations water is very it's difficult for her it's a big trigger it's like a human time bomb we never know what's going to happen. Their support is tremendous. Yes we love them very much very dear. A life saved in 1940 to lives being changed in 2023. And that report was by Jess Lord and that's it from us for now remember if you would like to be part of the happy pod you can email us the sound that brings you joy we would also love to hear if you have any stories to share that will cheer us all up really as ever the addresses global podcast at bbc.co.uk this edition was mixed by Robin Schroeder the

producers were Phoebe Hobson and Anna Murphy the editor is Karen Martin I'm Jackie Leonard and until
next time goodbye