Parkinson’s Research and Artificial Intelligence Transcript

English (US)

Michael J. Fox

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Speaker 2

Navigating Parkinson's disease can be challenging, but we're here to help. Welcome to the Michael J. Fox Foundation podcast. Tune in as we discuss what you should know today about Parkinson's research, living well with the disease, and the Foundation's mission to speed a cure. Free resources like this podcast are always available at michaeljfox.org.

00:00:42.120 — 00:01:23.530 · Maggie Kuhl

Gemini. ChatGPT. Copilot. Whatever name you know it by. It is part of our daily life today. Artificial intelligence. I'm Maggie Kuhl, vice president of patient engagement at the Michael J. Fox Foundation. Welcome to our Parkinson's Science POV podcast. First, I talk with staff scientist Dr. Bradford Casey about artificial intelligence in Parkinson's research and the Michael J. Fox Foundation's portfolio. And then joining me back on the mic. Our chief scientists, doctors Mark Frazier and Brian Fiske, to talk more about how Parkinson's disease research is embracing and still questioning parts of AI. Bradford, thanks for chatting about this topic with me today.

00:01:23.570 — 00:01:24.690 · Bradford Casey

Yeah, very happy to be here.

00:01:24.770 — 00:01:32.650 · Maggie Kuhl

So first, let's just start off what is AI and how is it in use in Parkinson's research?

00:01:32.690 — 00:02:04.970 · Bradford Casey

So what is AI? AI is really a blanket term, and it really encompasses a lot of different things that have traditionally been just referred to as kind of computational analysis or computer guided analysis. Really what it means is it's a broad set of techniques where we can better dive into deep data sets to try to derive more meaning out of what we have in hand.

So those data sets can take a lot of different shapes, a lot of different forms. And ultimately AI is a tool that joins many others. That allows us to really distill out the most valuable insights from those data sets.

00:02:05.290 — 00:02:14.730 · Maggie Kuhl

You hear the term, as you said, a lot of data, big data when we use AI. How much data are we talking about? In Parkinson's research, specifically.

00:02:14.730 — 00:02:59.460 · Bradford Casey

When we talk about the data that's available in Parkinson's disease. It really encompasses a lot of different types of data sets. So we might have, for example, clinical data. We might have genetic data. We might have data from molecular testing that's been done either in Parkinson's patients or in in biological models.

So all that data together can be combined into really vast quantities of data in terms of the total footprint of the data. That depends a lot on which specific data type you want to look at. But often it really stretches into the terabytes, hundreds of terabytes, perhaps even petabytes. So really it's a tremendous quantity of data.

And they can be very rich data sources to really build on and build out some of our more exciting analyzes.

00:02:59.740 — 00:03:58.860 · Maggie Kuhl

I once heard that for those in our Parkinson's Progression Markers Initiative study, which gathers a lot of data from people in clinics, if you give a blood sample or a spinal fluid sample. Scientists are doing so many different kinds of analysis on that and generating lots of data. A lot of people participate online.

I once heard that if you put all of the PMI data next to each other, you could go to the moon and back. That is how much data just from one study. It is a really big study in Parkinson's research. But again, there are so many other studies too. And so to your point, there's just a lot to look at. And so how are we going to figure out what we should know or learn from all of that.

And like you said, computers are really helping us do that. What I think of the data that AI or computer generated analysis is looking at, though, you know, the answer is that you'll find are only as good as the data that you use. And so how do we think about good data in Parkinson's research. What does that really mean?

00:03:58.900 — 00:05:05.750 · Bradford Casey

As you point out, just having a lot of data that isn't a very high quality doesn't get you very far. It might give you answers that aren't really in line with what we might expect, or aren't really in line with the underlying biology for a disease like Parkinson's. So when we think about the quality of the data, what we really want to think about is consistency of the data that that is.

If we have multiple different experiments or multiple different patients that are involved in the study, how consistent are the data between them? Are they collected in the same way?

Are they brought together in a way where the formats of the data are the same? Are they taken from the same experiments and platforms?

We might also think about the completeness of that data. So that means that, for example, for a clinical study, if you have data that has, for example, people who visit on a weekly basis versus people that visit on a monthly basis, and there's a big mix, then you've got a lot more gaps in one of those data sets than the other.

So when we really dig through the data, it's about, again, making sure that it's complete, that it's consistent. And then it also is built around the quality for whatever specific methodology is being used. So whether that's clinical or biological or something else, we really want to make sure that it's very consistent and very clearly labeled as well.

00:05:05.790 — 00:05:52.710 · Maggie Kuhl

And who the data is from. You know, Parkinson's is such a heterogeneous disease, it doesn't incriminate by race or ethnicity. And so, you know, if we're only putting in data from individuals of certain backgrounds, for example, that's why we need a lot of people to participate in these studies, to really have the global picture of disease and to capture all the differences, because there are so many different flavors or types of Parkinson's.

And so we need as much representation in what data we're putting in to really get the best answers out of it. So I think about AI in the sense of what data are you pulling from, but also what questions you're asking and how you are guiding the computers to look at the right things. So how does Parkinson's research determine what questions to ask or what you know to tell the computer to look for?

00:05:52.750 — 00:07:38.840 · Bradford Casey

Yeah. So when we think about the types of questions where AI is really strongest, it's really about questions where identifying patterns is very important. So for example, for many years we've looked at the genetics of people who have and do not have Parkinson's disease to see if we can understand what might be common.

However, as you point out, we are thinking bigger than than our traditional studies. And as we add more and more people from more and more diverse backgrounds, those ancestries can bring in new complexity. And so approaches like AI can really help us understand how subtle changes that might be aligned with genetic ancestry might also inform on disease risk.

They might also let us really dig into some of the specific pathways that are going on within these individuals and think a little bit more deeply about it. So, for example, if we are looking at blood testing, if we have patients who may have comorbidities, these are other conditions that are facing Parkinson's patients.

And those might be things like hypertension or high cholesterol. Those might have an impact. And so tools like AI can help us reduce the impact of that type of additional finding. On the key questions around Parkinson's and help us really have confidence in the results, as well as help us look for signals that might be too subtle for a person to detect.

Additionally, AI is tremendously effective at helping to address questions of scale. You know, we talked about how large some of these data sets can be. And really, most of these data can no longer be managed by a person sitting at a desk or sitting in front of a computer. Digging through it, you know, line by line.

And so the computer can, can really help expedite this and allow us to make sure that that all of the careful consideration and the careful analysis that's done on any specific experimental question can really be delivered at a huge scale, perhaps even an infinitely large scale.

00:07:38.880 — 00:08:34.400 · Maggie Kuhl

Well, speed is something that I know the Parkinson's community is really focused on. So it's it's good to hear that these new technologies are helping us go faster. And I love, too, that you called out the sort of Comorbidities or other factors that people have, because a common question that people ask is this my Parkinson's?

Or is this aging? Or is this, you know, other inherited disease or lifestyle factors or, you know, we all are a sum of many parts, and for many, Parkinson's could be one of different things that someone's facing. And so like you said, sort of parsing that apart and saying, okay, like this is actually truly Parkinson's and the clarity that that would bring, how might that impact how we could look to develop new treatments?

You talked about risk. You talked about different, you know, pathology or disease, things that are happening in Parkinson's specifically. How does that all ladder up to our ultimate goal of new treatments and cures?

00:08:34.440 — 00:10:29.010 · Bradford Casey

Yeah. So absolutely, a critical question for for how the foundation addresses not just these types of analyzes, but all the analysis in our portfolio is how it ultimately is going to change the face of Parkinson's or the experience of that's facing people that have Parkinson's. And that ultimately is about treatments.

So when we think about how AI can help us speed the discovery of treatments, there are a number of different ways that we can do it. One, as I mentioned, is that that question about speed and scale. So that is a truly a new opportunity for us to really expedite the analysis itself. That could easily mean shortening the timeline of an individual study by half.

And so that simply means that we have more opportunities to run studies. We can run those studies faster, and we can get the results of those studies into the hands of other researchers. It also provides new opportunities, the opportunity, for example, of of digging through electronic medical records and seeing if we can identify whether specific treatments that might be in use in the clinic, but not in use for Parkinson's disease, might affect people's progression for the disease.

There are some approaches, as well, that leverage AI to actually discover novel drug targets or discover novel compounds. These are a little bit earlier in their development. We continue to follow that field as well. And we've worked with a couple. Of early partnerships to see how those opportunities can be explored for Parkinson's specifically.

So what that might mean is looking at the molecular models, the actual structure of those molecules in the body, and seeing if we can identify targets within those molecules that we could try to address therapeutically. It might also just mean looking at the existing catalog of of drug candidates, and thinking about how those drug candidates can be improved to make sure that they have fewer side effects, that they are more efficacious, that they have better safety overall, and perhaps a better opportunity to put them in the hands of patients.

So all of these things come together and really provide us new tools and new opportunities to think about those therapeutics.

00:10:29.050 — 00:10:41.770 · Maggie Kuhl

Sounds like a great future ahead. Is there anything from the AI portfolio at the foundation that we haven't covered that you think is just really cool, or that you're really proud of, that you want to make sure that our listeners know that we're doing?

00:10:41.810 — 00:11:35.340 · Bradford Casey

Sure. You know, we've had an opportunity to support a lot of really exciting projects in the computational analysis space over the years. One that I think has been really interesting to follow along is a deeper computational analysis of progression and disease. So essentially we're working with a number of researchers that have taken a lot of the existing data from

PMI, as you mentioned, in other studies, and really tried to use that to paint a clearer picture of what progression might look like for an individual patient.

There's a lot of opportunities there, because that perhaps gives us indicators of how people will progress when they're diagnosed with the disease, which can affect their treatment choices. It can affect big life choices that may face patients, but it also gives us opportunities to perhaps understand more about the mechanisms that go into that progression, because ultimately, that might be a new opportunity for us to address with therapeutics that process and see if we can actually prevent or slow progression for people who have already been diagnosed.

00:11:35.540 — 00:12:12.060 · Maggie Kuhl

Well, I think every person with Parkinson's when they're diagnosed asks that what's going to happen to me question. And between that for care and also for treatment. You know, this precision medicine that we're going to make a treatment that matches your, uh, your flavor of biology and, and the progression that we think that you'll have.

I think that's certainly the dream. So I'm glad to hear that, that that is part of the portfolio as well. Just one more question. Our computer is going to replace humans. How do you see AI working with the lab scientists and the doctors and the researchers who are also pushing science ahead?

00:12:12.100 — 00:13:44.590 · Bradford Casey

I think that's such an important question. I'm so glad you asked. So at the foundation, we really think of AI as an exciting new tool in the arsenal of tools already available for us to really dive in and dig deep. We recognize that there are so many new opportunities, and there's so many new forms of AI that are being developed, and we really want to see how they can best be utilized.

So what that ultimately means is that for a clinician, for example, we don't believe that we're going to replace clinicians with AI. But what we might be able to do is provide clinicians with better tools to help with diagnosis, to help make treatment decisions and to help tailor those treatment decisions to be as.

As efficacious and safe as possible for researchers, we might be providing them new opportunities to. Review existing literature on these targets, on these different things that we may be linking to PD. And we want to use that to see how we can better understand disease as a result. In addition, you know, when we think about how we manage the science that comes through the portfolio.

This provides us with new opportunities, again, to follow the field and to also to follow other fields. The foundation, of course, has longstanding partnerships with many scientists who are experts in Parkinson's disease. But this is a great opportunity for us to to think beyond the field of Parkinson's disease and also to have a broader reach and connect with people who may be researching other neurological diseases so that we can learn from those spaces as well.

And it allows us to do so without diverting resources that we would otherwise dedicate to Parkinson's. So these are all tremendous opportunities, and we see them again as being a new tool and an exciting new opportunity for us to build more with the resources we have.

00:13:44.710 — 00:14:10.030 · Maggie Kuhl

No more. Do better. One thing that computers will not replace is study participants. And we already mentioned our Parkinson's Progression Markers initiative, which is the source of a lot of data that is going into AI and helping scientists as a tool learn more about the risk, the onset, the progression of Parkinson's.

If you are not already part of our PMI study, you can learn more about that at Michael J. Fox.

00:14:12.430 — 00:14:18.550 · Maggie Kuhl

Doctor Casey, thanks so much for this fun and educational chat about artificial intelligence.

00:14:18.590 — 00:14:20.310 · Bradford Casey

Thank you very much. Happy to be here.

00:14:20.390 — 00:14:27.270 · Maggie Kuhl

It was great to talk with Doctor Casey, but is always nice to be back on the mic with my buddies. Hi, Brian. Hi, Mark.

Brian Fiske

Hello. Always good to be here.

00:14:29.230 — 00:14:30.190 · Mark Frasier

Hi, Maggie.

00:14:30.270 — 00:14:36.070 · Maggie Kuhl

True question. How many times have you used artificial intelligence in the last 24 hours?

00:14:37.070 — 00:14:40.550 · Brian Fiske

I think I used it to prepare for this podcast. So does that count?

00:14:40.590 — 00:14:46.080 · Mark Frasier

Brian uses it to find really nerdy neuroscience jokes, which I find impressive.

00:14:47.360 — 00:15:07.520 · Maggie Kuhl

For work for play. We are all really into AI these days, and as I was just talking with Bradford about, you all listened in. There is a lot of this work happening in Parkinson's research too. So, you know, you all are paid to get excited about Parkinson's science. Where does AI fall on your myth to yay meter?

00:15:07.560 — 00:16:36.160 · Brian Fiske

I mean, for me, I think I mean like everybody, it's it just feels game changing. And I think it's important to remember and I think, you know, Bradford mentioned this in his discussion about, you know, AI's been around for a while. We've been using it just we call it the different things. It was called machine learning and neural networks and all these kinds of, you know, more technical sounding terms that but we're all basically doing the same thing, looking at large amounts of data and trying to sort of understand patterns within that, that maybe the human brain couldn't quite pick out.

But I think what's changed recently and what just made it so much more exciting for all of us is this sort of democratization of it. You know, so this idea that we all now have access to this tool. It's really it's a tool, right? This tool that gives us access to this large information in ways that we normally in the past, wouldn't have been able to access unless we really understood the technical language of AI and those approaches.

And now you can ask AI to speak in whatever language you want it to be, you know. So if you don't understand the technical details, you just tell it, you know, read this scientific technical paper and give it to me in light language, you know, so that access has been the real game changer. And then connect that of course, to then the more technical, you know, features that AI can provide.

You suddenly created this sort of interface that I think is just, like I said, really exciting and just gives us all a better feeling like you're, you know, have more access, I think, to that, that critical information that we need.

00:16:36.200 — 00:17:28.170 · Mark Frasier

Yeah, I'm excited about it. Maggie and I would just emphasize what Brian said about it being a tool and one of many tools in the researchers hands that we all can use to make new discoveries and new insights about Parkinson's disease. You know, it's it's like a microscope. When it first came out, the microscope enabled someone to be able to see something that the naked eye couldn't see.

And AI is a similar tool, helping researchers identify patterns that traditional statistics or humans have not observed before. So just like the microscope, it will improve with time. But it is a powerful tool, that's for sure. And we're already seeing some of the impact in Parkinson's research.

00:17:28.209 — 00:17:36.850 · Brian Fiske

Yeah, I think it's a microscope, but a microscope that will actually point to the things that matter in the image that you're looking at. So there's like a it's like a smart microscope, right.

00:17:36.890 — 00:18:08.090 · Maggie Kuhl

That's a good analogy though for sure. And like you said, it's a it's evolved. I'm sure the microscopes and labs today are not what was around hundreds or whenever the microscope was invented. So Bradford and I talked a bit about the quality with AI, that it's really as good today as what you put into it and what you ask it.

And so, Mark, you know, what is going into AI today for Parkinson's research and what sort of, um, you know, what sort of questions do you see folks asking?

00:18:08.170 — 00:20:35.390 · Mark Frasier

Yeah. And I like that you emphasized that it's a really about the prompts and the questions that you ask, because it requires it still requires humans to know about Parkinson's disease, to ask very specific questions, identify the gaps within Parkinson's research, and use AI as a tool to fill those gaps or answer those questions.

So, for example, one of the things we've used it for is, um, we have collected a lot of digital sensor data using accelerometers and wearable sensors like smartwatches and smartphones. And one of the challenges for some people living with Parkinson's disease is they freeze. They feel like their shoes are stuck in cement, and this freezing of gait is what it's called.

Um, it's a real challenge. Uh, and so we collected sensor data using smartwatches and smartphones on individuals, um, for many days, including, um, when they freeze and, um, shared the data in anonymous way with computational researchers to challenge them to identify patterns of in the sensor data, um, that predict someone might have a freezing episode.

Typically, it's really hard to predict. People I don't know when it's coming on. And so it is a real challenge in daily life. And this AI data challenge, using the wearable sensor data identified these patterns using the objective sensor data that could predict someone that is on the road to having a freezing episode.

And and these are real world challenges that can be applied in the solutions can be applied to using these techniques and these methods to manage individual's care and their daily life, to avoid these episodes or know when they're coming. And so be able to be prepared for those freezing challenges. So that's one example of a very large data set using this sensor data, where we've challenged the community and brought in a new audience, computational researchers, to the Parkinson's field to really make a difference.

00:20:35.430 — 00:21:35.760 · Maggie Kuhl

That's true. That's something that the foundation has sort of a unique role in the research ecosystem, to be uniting folks who might not lead with their title or their area of focus with Parkinson's. And so some might not consider them relevant for our goals, but leveraging the skills and expertise that they have towards the questions that we're asking and the answers that we seek.

That's really a place where MJF shines and we've got a lot of examples, so I certainly remember us trying to figure out how are we going to explain to data scientists what what we were doing and how we were going to get them in our field. So thanks for that trip down memory lane. And you were sharing that the outcome of that project, the answers that AI gave could help people expect a freezing episode, for example.

And maybe they sit down or they get their cueing device, or they take some action that preempts that. Bryan, how are we using some of the AI answers to get us toward the therapies of tomorrow.

00:21:35.840 — 00:25:10.370 · Brian Fiske

Probably in lots of ways. I mean, again, part of this is in the where we're seeing movement towards, of course, is this again, this idea of precision medicine, personalized medicine. And so we talked about before this idea of trying to understand from the big data what the different forms of Parkinson's can take.

And that can of course then point you to biology that we should be developing drugs against more, more specifically and sort of moving that into the pipeline. And so, I mean, a lot of different ways that I think we're starting to think about how to use that, certainly from a structural standpoint, you know, structural chemistry.

So the sort of the, the, the chemistry of drug development, how do you make the different molecules fit the right kinds of proteins in the body, in the right way to, to have the actions that we want drugs to have? And, you know, that used to be done that was something of many years of research to go into one protein to figure out the structure of it.

So you could make a molecule that can fit that structure. Now you can almost do that overnight. It's just an AI is really helped change the the speed and our ability to answer questions like that. That used to take many years and many millions of dollars to to support. Remember, even from our own experience having funded researchers to study one protein in Parkinson's, in particular, a protein called LRR two, which you may have heard us talk about in past episodes, but we spent a lot of time trying to figure out the structure of that protein.

We even sent it up to the space station to see if we could. Microgravity would somehow make it easier to study the structure, and still struggled and struggled until AI came along and basically created a database of all predicted protein structures for all human proteins. And almost overnight. Suddenly we had this insight into all drug proteins that could potentially be relevant to Parkinson's.

So that kind of, you know, I think use of AI and these technologies has helped really accelerate, in that case, a very specific step in the drug development process, which is how do you kind of find the molecules that you need to find and improve on them to make them good drugs. We've been using it internally a lot for some of our initiatives where, for example, we have a whole initiative around target kind of validation, as they say.

So how do you pick the right biology that can be? I'd like to say translated into the language of drug development. So is it the biology, the right biology to go after? Is it safe? You know, there existing drugs that can hit that biology, things like that. Lots of questions, a lot of data out there, just sort of in the literature in other places that can be drawn from and in the past, it would be human beings sitting around trying to wade through thousands of papers and data sets to see if we could find the relevant information.

And now again, AI can help us pull that kind of and synthesize that information very quickly. So from our perspective, it helps us then to even think about how do we prioritize the research around specific, in this case biology, that we would love to see more drug development around and prioritize that in ways where we can gather this information a lot more quickly than we could have in the past.

So so we're seeing it kind of, I think, feed the whole process in so many different ways. And I think we're still learning about those different ways. It can it can help and speed up. And so I think more to come on that, you know, right now we're all about these generative AI, these large language model types of AI that helps us read the literature faster.

But in the future, there's something called a genetic AI, which is you basically send the AI bot on its way and it does the research for you and then comes back and tells you what it found. So those are, I think, in the future still, but I think there's still a lot more to come.

00:25:10.410 — 00:26:49.900 · Maggie Kuhl

I want to recap a couple of things. The first is speed. People with any condition, including Parkinson's, ask, why does research take so long? And there are so many steps between what are we going to go after and how do we do it and how do we test it. And so what I hear is that, like you said, this access to AI is really helping us speed up every single small step such that the whole process can move more quickly and more confidently.

So we're putting the right resources and the right funds and study participants in all of the things and people that go into science in the right place. Yeah, yeah. You also talked a bit about precision medicine, and that's certainly been a topic for our discussions for a very long time, but even more so more recently.

And so I wanted to ask if this interpretation sort of makes sense when humans, scientists are able to look at, say, 100 or 200 people with Parkinson's and they see a signal in, you know, 2 or 3%, that's 4 or 6 people. And so you don't really know. Is this something that we should go after? But with AI, you're able to look at, you know, hundreds of thousands of people.

And so that 2 to 3% is a much bigger signal and to the same conversation about resources and priorities. It just gives us this ability to scale and to understand where we do have all these different flavors of Parkinson's, where before something was maybe like a blinking light. Now it's it's shining a little bit brighter because we've just been able to look at so many other folks.

Do you think that that's an accurate representation?

00:26:49.980 — 00:28:06.430 · Brian Fiske

Yeah. Yeah, yeah. And again, I think a little like what um, Mark's earlier said about the microscope and just how, you know, I've spoken to oncologists who, you know, detecting early signs of cancer in an image, for example, you used to be something that human eyeballs would have to do and try to see, and you get trained over time.

You know, my dad was a veterinary pathologist. He would look in the microscope and he would look at tissue slides from animals to figure out, you know what? Maybe, you know, caused them to die. And and, you know, now AI can look at those things and detect signals and detect, you know, components of those images that the eyes can't really see in patterns that the eyes can't see.

So I think you're right. I think this ability to not only do that in one image, but to do that at scale in thousands of images and to then build this better picture of, you know, what is what are the forms that Parkinson's can take and how do they group and how do they what component features do they share? You know, these people have shared symptoms but and also shared biological signatures.

And maybe that isn't something that should be looked at as a more specific form of Parkinson's disease. So I think again, I think you're right. It's this really this, this scale, um, uh, sort of component of AI. That's really exciting.

00:28:06.470 — 00:28:23.710 · Maggie Kuhl

Mark, we talked a bit about what's to come and that very much again, like the microscope, there is probably an evolution that we are just at the cusp of in AI. What are some of the other limitations or just realities of artificial intelligence as we know it today?

00:28:23.990 — 00:30:51.880 · Mark Frasier

Yeah. Well, it is exciting because AI learned so quickly and we will see with additional data and increase improvement in some of the models that AI is using. I think it will just we'll see faster and faster discoveries and insights. But the challenges I think are a couple and we've observed them already.

One you alluded to in the conversation with Bradford around the quality of data. This is a really important point. Um, and the amount of data in Parkinson's disease is dwarfed by the amount of data, for example, on the internet that ChatGPT and other models used to train. So we need a lot of data, a lot more data in Parkinson's disease.

But we really want quality data. And I hesitate to I don't like this phrase, but it is a little bit like garbage in, garbage out if you don't have really good quality data on individuals living with Parkinson's disease. If the technologies are not reliable, if your sensor data is not tracking what you think it's tracking, if your lab tests are variable from day to day, that's really not useful data for the AI to use because it's so unreliable and cannot be reproduced.

So, you know, generating large data sets, but making sure that they're of good quality is really important. And it's a challenge that the foundation continues to address by supporting good quality data generation. The other challenge that I would highlight is not yet at least computers cannot do all of the work.

Um, and you can't just plug in data sets to an AI model and have an answer spit out, um, it really requires this domain expertise. And people who understand Parkinson's disease, neurologists who treat people living with Parkinson's disease, neuroscientists who understand the circuitry of the brain.

So having these these multiple different disciplines alongside the AI and the computational expertise is really important to drive meaningful, meaningful results and translatable impact.

00:30:51.920 — 00:31:12.480 · Brian Fiske

Yeah, I always I always like to think of it in this way to where, you know, let's say you threw in a bunch of data into an AI system and asked it, you know, you know, predict who's at most risk for Parkinson's disease. And it said, okay, you know, people who were born on Tuesdays who like vanilla ice cream and prefer dogs over cats.

00:31:12.720 — 00:31:17.480 · Maggie Kuhl

Would love to see your trial design for how to approach that.

00:31:18.320 — 00:32:11.930 · Brian Fiske

I mean, what would you do? You know, so yeah, so I think I think that, you know, the AI may be 100% correct in that it found a real pattern that for some reason, that is, or those are the people who are at risk for Parkinson's. But if you as the user don't understand what that means, it's not going to help anything.

It's not like you said, you're not going to now design a trial that tests, you know, recruits for only those individuals who meet those criteria. And then, you know, what is that? So. So I do think you're right. I think what Mark is getting at, it's, you know, AI is isn't replacing good solid, you know, hypothesis development and testing.

It's helping you baby see patterns. It's maybe helping you to point to to a concept you can explore further. But it's still a tool that we can use to help make things go a little bit faster, perhaps get to those hypotheses. But you still have to do the hard work, which is use your own human brain to to really understand what it means.

00:32:11.930 — 00:32:43.570 · Maggie Kuhl

So we have talked about big data and lots of people. We're going to bring it down to the individual level. And first I'm going to do my usual plug for research participation and how we need partners in this research, so please visit Fox Trailfinders org to find a study for you. But Mark and Brian, I want to ask some questions that people might be thinking of as an individual living with disease.

The first is around privacy and putting your data into these big systems. Should I be concerned about what the computers and the people accessing this data know about me?

00:32:43.610 — 00:33:31.460 · Brian Fiske

Probably, yes. Just like the internet in general, the more information you put into it, the more people are going to know about you. And certainly AI is built off big data, you know, derived mostly from, you know, public resources and what people put into the AI systems. You know, there's some privacy protections that are in place for certain systems.

Like, you know, we use an AI system at the Fox Foundation, for example, that is sort of firewalls, if you will. So information we put in it doesn't go and feed the AI model out in the world. But you know, if you don't have that firewall in place it's it can be a problem. So I think it's, you know, you should always make sure don't put your personal medical information into the I you know, here's all my, you know, medical information and sensitive information and financial information.

So I think just use good judgment like you would for any, you know, sort of online system.

00:33:31.460 — 00:34:12.139 · Mark Frasier

I would add to that and say that the research that the foundation supports adheres to the strictest privacy and data security policies and laws, and any data that's shared through the research studies is always de-identified and does not include any personal health identification information. And so we take that very seriously.

And, you know, we never say never. But I think the the the data that's shared with the research community is very secure and adheres to those privacy policies.

00:34:12.300 — 00:35:24.350 · Maggie Kuhl

So data and research, there are a lot of protections. It is not tied to you as an individual. privacy is. While nothing can ever be guaranteed very much a priority when you are using ChatGPT or Gemini or other products for your own personal disease. Navigation. Like you were saying, Brian, please be careful with a what you were putting into it and sharing in that and also be which was the theme of our conversation here, what you are sort of thinking about the answers, like, what are you evaluating the sources from which that information has come, and please don't trust anything that AI spits out as absolute truth because it is pulling from the whole of the internet, which I think, as we all hopefully know, contains multitudes across the falsities and truths.

So with that cautionary tale, I want to end back on our optimistic, accelerated timelines, new discoveries, new connections, and really a new tool in our toolbox, in our continued effort to try and bring cures and new treatments as quickly as possible. Mark. Brian. Any last thoughts around AI or Parkinson's research use of this tool?

00:35:24.390 — 00:35:52.430 · Mark Frasier

Well, I would just say that it is going to continue to evolve and the impact that it will have, I think will just be accelerating. And so what we're talking about with AI in six months from now, I think will be likely different than what we're talking about now. So I'm excited for the future. I think it is here.

It's a great tool. It's a powerful tool, and I'm excited to see what it produces for Parkinson's patients.

00:35:52.470 — 00:36:14.790 · Brian Fiske

Yeah, I'll agree 100% with that. And the idea that, yeah, a year from now it's going to even be more different than it is today. So I think we're always looking forward to that. And just, you know, again, the scale, the fact that more people have access to information for thinking about Parkinson's and solutions for Parkinson's than, than ever before, I think that's that can only be a good thing.

00:36:14.830 — 00:36:28.190 · Maggie Kuhl

Well, we will keep you updated on the evolution of AI and other updates in our pursuit of cures. Please visit Michael J. Fox for the latest in Parkinson's science. Mark Bryan, thanks for being with me. And to our listeners, thanks for joining us.

00:36:28.190 — 00:36:28.830 · Mark Frasier

Thanks, Maggie.

00:36:28.870 — 00:36:29.670 · Brian Fiske

Thank you.

00:36:33.750 — 00:36:48.710 · Speaker 2

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00:36:52.790 — 00:37:01.710 · Speaker 1

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