

Michael J. Fox: This is Michael J. Fox. Thanks for listening to this podcast. Learn more about The Michael J. Fox Foundation's work and how you can help speed a cure at MichaelJFox.org.

Speaker 2: Welcome to a recap of our latest third Thursday webinar. Hear directly from expert panelists as they discuss Parkinson's research and answer your questions about living with the disease. Join us live next time by registering for an upcoming webinar at MichaelJFox.org.

Larry Gifford: I am Larry Gifford, a member of The Michael J. Fox Foundation, Patient Council and co-founder of the PD Avengers, thank you for being here for the third Thursday webinar. I'm also a member of The Michael J. Fox Foundation's GALOP Advisory Group, and that's the Gait Advisors Leading Outcomes for Parkinson's. It's great to be here with them.

Before we get started, I want to share some breaking news. The FDA has just approved a new drug to treat progressing Parkinson's. It's an under the skin continuous infusion of carbidopa-levodopa called Vyalev, that's V-Y-A-L-E-V. And in clinical trials, the drug gave more on time and fewer and motor fluctuations throughout the day. We're going to tell you where you can get more information about this at the end of today's webinar. But good news in the Parkinson's world, for sure.

Today we'll be talking about Parkinson's and gait. Common symptom of Parkinson's is trouble walking, short steps, slow walking, foot dragging, falls, freezing in water. We're going to replay a portion of a popular past webinar to level set for the audience and then dive into a live session with an expert to talk about the latest research and the treatments for gait issues.

We have a lot to discuss today, so let's get started. Let me first introduce our panelists. Anat Mirelman is the associate professor at the Sackler School of Medicine and Sagol School of Neuroscience at Tel Aviv University. She's also director of the Laboratory for the Study of Early Markers of Neurodegeneration in the Neurological Institute at Tel Aviv Medical Center, and chair of the GALOP Advisory Group. Anat, welcome.

Anat Mirelman: Hi everyone. Hi, Larry.

Larry Gifford: Hello. Can you start off by sharing a little bit about what drew you to the topic of gait and Parkinson's?

Anat Mirelman: Yes, of course. So first of all, my background is in biomechanics, the study of movement. So you can say that I came to movement disorders through the fascination of movement. And movement, in my opinion, and gait more specifically is life. It allows us to move around the environment and in essence to be independent.

Gait is also deemed the sixth vital sign after things like breathing and heart rate. So when movement is impaired, these liberties are limited and this is something

that I have been focusing throughout my research career to better understand gait, to better understand the mechanisms of gait and to try to improve gait for those who have gait impairments. So this is my fascination with gait and this is how I came about to work and study gait in Parkinson's disease.

Larry Gifford:

That's great, thank you. Last year you participated in one of our third Thursday webinars on gait that was moderated by Becca Miller, who's an MJFF patient counsel with me. We featured yourself, Alfonso Fasano, who is the professor and chair of Neuromodulation and Multidisciplinary Care at the University of Toronto, and Terry Ellis, who is a professor and chair of the Department of Physical Therapy at Boston University's Sargent College of Health and Rehabilitation Sciences.

We're going to play about 25 minutes of that right now to go over some of the more commonly asked questions. But when we come back, you'll be here to give us all the exciting research updates and go over some of the projects underway to study gait and treat gait symptoms.

Becca Miller:

So how does Parkinson's affect gait imbalance? I'll say for myself that one of my first symptoms was a foot drag and that was something that was with me for years, starting out very slowly and then increasing.

Honestly, I first attributed it to laziness that I just wouldn't pick up my foot, which was in retrospect really strange, but when things come on gradually, these things happen. Can you talk a little bit about just how Parkinson's affects gait and balance? Alfonso, do you want to start?

Alfonso Fasano:

Yeah, sure. My pleasure. So thanks for having me and hi everyone. This is an important question and the answer in theory will be very long. I'll try to make it simple also because it depends on what stage in the disease we're talking about these problems.

But in general, in Parkinson's disease, there's inability to produce ample movements or large movements. So for this reason, one of the early signs of gait involvement is short steps and sometimes these short steps become so short and also the ability of the person to elevate the foot is impaired as actually described by you as well.

And this becomes more of a shuffling type of gait. They can also lead to falls quite soon because of tripping, simple. Simple like that. Also, when doing stairs, if the elevation of the foot is not big enough, so this is very early signs, actually.

Even earlier than this is the reduction of the arm swinging. When we walk, we move our arms, and a very early sign is actually a reduction of this movement, especially on one side. And often, people happen to see orthopedic surgeons initially because they have shoulder issues and that's actually coming from an inflammation.

And I've tried this with the joints because this movement is lost, has been lost for a few years, and therefore, there is not enough lubrication of the joint during walking. Over time, these problems can worsen and freezing of gait is a big issue and we'll talk about it. And also the different phenomenology of freezing of gait and also balance can be affected.

Balance is a more complex motor strategy because it's actually tacking into other functions. In order to be in balance, we need to be focused. Our tension need to be there. We should be careful, especially with both task, but balance also relies on our ability to move our legs. If we are perturbed, if there's a mechanical push, for example, on our body, sometimes a way we have to keep our balance is just to step, and stepping, we don't fall. So this is actually a very nice example of how gait and balance usually go together. And sometimes to fix balance, we need to fix gait.

Becca Miller: And that reminds me of every time I go to the neurologist, the neurologist is pulling me.

Alfonso Fasano: Yeah, actually this is an important point. So what you're describing is the so-called pull test. It is a test that was invented many years ago and there are online actually very nice historical videos of David Marsden, the founders of this field, when he explains how to do a proper pull test. Pull test has to be strong enough, but we want to perturbed the person center of mass.

So we want the body to be pushed enough so that we can see the reaction of the body to avoid a fall. There's a reason why this is done pulling backwards. The natural tendency of balance problems in Parkinson's disease is retropulsion, so people tend to go backwards.

We have issues especially in the anterior-posterior axis, so we tend to fall forward or backwards in this disease, not so much in the laterality axis. And this is why people with Parkinson's can actually ride a bicycle because to ride a bicycle you need to be challenged on this type of laterality.

So this is what we call the medialateral axis and that's why they can do it instead, it's more difficult to keep the balance in the anterior-posterior axis. That's why we do the pull test. So this is just to say, and that's something else that we've discussed I'm sure later today, that there is also a lot of compensation that the body puts in place.

I want to just give you two examples when it comes to balance. The fact that some people lean forward, there's something called camptochormia, it's something that can happen in Parkinson's. To some researchers, this is actually a mechanism of protection because if you're leaning forward, the chance to go backwards is reduced. And we see this often after physiotherapy because some people have a better posture yet they start holding more backwards because their posture has improved.

And the other example of compensation that I can think of is the cadence. Cadence indicates how many steps we can do per minute. And I mentioned already the step length is reduced, but the number of steps per minute is not reduced. Actually it can be modulated. So people can actually use that to compensate.

And that's why in order to keep a certain speed, people tend to have more steps with a short step length. That's compensation, that's good. But sometimes this leads to a vicious circle where these steps become shorter and shorter and faster and faster as the walking progresses and that's not good. So that's a bad compensation. But of course here, because I know I throw a lot of stuff in this answer and we'll need to address one by one these different aspects as we go forward.

Becca Miller: No, this is great. Anat, I wonder if you want to share with us a little bit how the evolution of gait impairment over time with the progression of the disease.

Anat Mirelman: So first of all, as you mentioned and as Alfonso mentioned in Parkinson, everything is gradual. So it starts off very minor and just accumulates over time. And we need to remember that gait disorders are not similar throughout the disease, but they're not similar also between individuals. They vary quite extensively.

And that has to do also with how a person, if he was mobile, very mobile, age also affected. So there's many, many additional aspects to gait disorders and Parkinson's disease that are not just the disease. But in general, when we're talking about early stages of the disease, we will find an asymmetrical behavior.

So something that is very... We can see the short steps, the word discussed here, more on one side, the arm swing in one side, and then once the disease progresses we'll see a more symmetrical behavior that also affects rotation of the trunk.

So this rotation of the trunk will create even a more shorter and slower walking movement. And with the progression of the disease, we will see additional issues that come off from the biomechanics of that impaired walking. And these relate to freezing of gait, for example, the inability to actually move or the feeling that the feet are glued to the ground.

And also, in addition, we will see falls, and this relates to the balance issues that were mentioned here by Alfonso, but also to the real challenge of the body of the biomechanics with the short steps and the inability to actually correct movement changes or imbalances along the way.

I think we need to also mention that it might not be the case for everyone. Not everything will appear for everyone, and it's really important to listen to your own body and really describe to your physician what is bothersome to you in order to actually define the treatment approach that is personalized and really will

treat the problems that you have. So the aim is to provide, at the end, personalized therapy.

Becca Miller: And I wonder, jumping in with a question from the audience and maybe Terry, this is something you could feel. They're asking, can weight training be something that improves balance?

Terry Ellis: Yeah, I can answer that. In general, there have been strength training or resistance training studies that have shown that have led to improvements in balance in people with Parkinson's disease. It's one aspect of a treatment plan that can help with balance.

There are other aspects, but the weight training can help with the... Sort of what Alfonso was saying earlier, people with Parkinson's have difficulty turning on their muscles sort of fast enough and with enough force to take a big step for example, and to prevent the fall.

Now, these weight training exercises aren't going to absolutely prevent falling, but they can help improve a response to a perturbation and help to reduce the frequency of falling. So it's one aspect of an exercise program that can help with balance

Becca Miller: And Terry, I wonder if you could share the guidelines for assessing fall risk and how you do as home safety evaluation.

Terry Ellis: Yeah, so I think one reason, one benefit of people seeing a physical therapist when they have walking and balance problems is that a physical therapist can spend a whole session, a whole 45 minutes to an hour session really going in more depth with trying to figure out what's wrong with the balance or walking for this particular individual.

Because like Anat was saying earlier, there's lots of variability in what can go wrong with balance and walking among people with Parkinson's disease. So a physical therapist will administer a lot of standardized tests that can be done, for example, in balance, standardized tests that look different aspects of balance.

So some people might have more trouble with balance when they're reaching down to the floor or reaching up overhead versus for example, being perturbed or nudged or some quick movement that leads to a fall.

And so by administering standardized tests, the physical therapist can help identify what aspects of balance are particularly problematic for this person, and that helps the physical therapist then create an exercise program that's going to be tailored to those aspects of balance. And the similar thing with walking, we do all kinds of walking measures.

We measure walking distance and walking speed, and we look at the quality of walking. Sometimes we might even ask people to wear some sensors on their body and wear them at home for a week and come back in the next week so that

we can take the data from the sensors to understand how much walking did somebody do or at what intensity.

And then even looking at some aspects of the quality of walking and from all that data, using that data, then we can create this individualized exercise program with the goal of improving walking outcomes and particular aspects of balance that hopefully lead to a reduction in fall risk.

In terms of assessing people's homes, people who are spending a lot of time at home and most of their falls happen in home, then it might be a great idea to have a physical therapist or an occupational therapist come in the home and do a falls risk assessment.

And that has a lot to do with identifying certain environmental barriers or environmental triggers in the home that might increase risk of falling or it can be examining strategies that people are using when they move in the kitchen or the bathroom for example. And there might be some different strategies that people can employ to reduce their risk of falling.

Alfonso Fasano:

Since we're talking about balance and gait think moving forward, and I made an example of how actually false risk has to do, not just with balance but also with gait. I think we should take a step back and describe a bit more the two major type of problem with walking. Bradley Kinesia means moving slowly, it comes from Greek.

Hypokinesia means moving in small steps in this regard, so it's the amplitude of the motion and that's something that we see, something that has to do a lot with our dopaminergic cells in the brain and therefore it can improve with specific treatments, for example, levodopa.

But what's really important to discuss a bit more is freezing of gait and actually Anat is an expert of freezing of gait and she can probably give us an overview of the different types of freezing and what triggers it. So let's start with the description actually of what freezing of gait really is.

Becca Miller:

That'd be great Anat, if you could do that

Anat Mirelman:

From a clinical perspective, really what a patient will describe to us is that he feels that the feet are really glued to the ground. So the inability to actually take a step, and this can be an inability in which there is total non-movement, so what we call akinesia. Or even a trembling in place feeling that they're trying to move the leg but they're not able to.

And this is actually a very, very interesting phenomenon. People have been studying it for quite a while, but I think there's a lot of questions and a lot of explanations that we still don't know. But currently, there are several theories that suggest, for example, that there might be triggers or there might be connections between neural networks that actually are involved in this situation.

So if we're talking, if Alfonso was sharing the issue with automaticity or problems with basal ganglia that create or the neurogenerative process that create this problem in automaticity, then one example, one theory that relates to freezing of gait is called the cognitive theory in which it suggests that because of the lack of automaticity, people use different compensations or different networks to actually compensate for this lack of automaticity, meaning thinking, being more aware of walking, for example.

And when these fail, we see a freeze, we see a problem with gait. So this is one example for a theory. Another one is for example, the stress or anxiety theory, which can explain why people tend to freeze in narrow passages or narrow hallways or when going through a door or when they're trying to reach their phone when it's ringing and so forth.

So when there is a trigger that relates to either time or space, this might be related to the anxiety theory. There's also theories that relate to visual spatial processing and other connections might explain it. But what we see in general is that there are several different types or subtypes of freezing of gait.

We see people who freeze when they're off medication and people freeze when they're on medication. These are two examples of subtypes, and these actually are really important distinguishes because if this is a person who is freezing off medication potentially by providing timely and under dose for a therapy, then we can avoid this gait issue.

When freezing of gait is done, it happens in on medication, then maybe the underlying mechanism is a bit different and it's not the [inaudible 00:20:37] and we need to think what exactly triggers it and maybe provide a non-pharmacological treatment. That can be, for example, cueing.

And we know the cueing might be very helpful when we're talking about cueing. That can be a strategy such as visual cueing by providing for example, lines on the floor when walking or an auditory cue like a metronome, giving some external feedback or external cueing for walking and taking a bigger step.

In any case, similar to what we said earlier about walking, here too, it's very personalized. So we think that in the beginning, freezing might be very distinct for each person and the triggers are very distinct for each person. And when the disease progresses, it might be a mixture of things, but initially it might be very distinct for each person and it's a good thing to maybe look at the triggers and look at exactly when this happens in what environment this happens and what is the situation that it occurs in.

Becca Miller:

Wow, that's such a great description and so important to have it be personalized is what I'm hearing. I wonder there was a question from the audience about the difference between freezing as we've been talking about and fenestration.

Anat Mirelman:

Festination.

Alfonso Fasano:

Yeah, festination. Fenestration. I would say they're both dangerous, fenestration and festination, but we are talking about festination now. It's an old-school term. I realize that anytime I have this type of webinars or I speak to people with the disease, it's a common question.

So just to make it simple, they belong to the same disorder and that's why we often talk about it at the same time. Freezing is basically when your feet are frozen and it's, in a way, a natural reaction that the body has.

Think about when you have all of a sudden you find an animal in front of you and you pose and scream then you freeze. That's actually a natural function that we have. Unfortunately, in parts of this disease, this happens all of a sudden. That's why often causes faults while there's ongoing walking or turning or passing or waves. So it's a motor block, that's the way we call it, so no movement.

Festination comes from the same pathological process most likely in the brain, but there is no motor block. It's quite the opposite. So people keep on walking faster and faster and faster, often leaning forward and this increase of the cadence that I mentioned before happens. Short steps, always shorter and shorter, fast-paced gait, but no motor blocks.

And that's why this can be quite dangerous because it feels like they cannot stop themselves and often the only way they have to stop themselves is either holding onto something landing on the wall, or unfortunately sometimes even landing on the floor.

So sometimes the patient actually falls on purpose to stop this propulsion. So festination is the same process of freezing of gait, this constant stepping without the motor block. Instead, in freezing often we see constant stepping and then the person with Parkinson's stops, which is lacking in festination.

So these are different, fascination is rarer than freezing, but it's still very important to be discussed and quite disabling. And to some extent, the approach is similar in terms of treatment. I also noticed a question about doorway, and this is something that Anat already mentioned, just could asked in case and people wonder, we now know which ones are the risk factors for this doorway problem.

It turns out that people with the disease more prominent on the left side of the body tend to have this problem more often. This means that most of the pathology is on the right brain and the right brain is the part of the brain in charge of visual navigation. So the problem here is with interpreting what's happening and the visual flow as we go towards a doorway in this case.

And lastly, in case people wonder, we often don't see these things in the clinic, we rely on what people say. Festination is a typical example, but also doorway freezing to some extent. And often, people with freezing of gait or festination don't have the problem in clinic. And I often see the spouse or the person with the

problem almost complaining, "No, you are pretending to have this problem then because when you come to see the doctor, you don't have this issue."

And actually that's the way it works. The brain in certain circumstances under the stress, the appointment in wide open space with a low light, no furniture works better. That's why we don't see freezing in the clinic. It doesn't mean that it's not a real problem, and that's why we need to educate people like we're doing today because we rely on the description you give us at home.

Larry Gifford: Okay. So now you're up-to-date, up to speed on the ins and outs of gait issues. Anat, thank you for your participation in that webinar and for joining us to update our audience on research. Can you start by telling us about the GALOP committee and what your role is in that?

Anat Mirelman: Yeah, sure. So the GALOP committee is formed by 11 members, experts in the field of gait in Parkinson's disease, including researchers and neurologists like Alfonso and Terry that were on the video with me as well as you, Larry, probably the most knowledgeable about how it feels to have a gait impairment.

Now, the aim of the GALOP committee is to identify gaps in knowledge and help Michael J. Fox Foundation direct research to help improve care and improve our understanding of gait dysfunctions in Parkinson's disease.

The GALOP committee started working two years ago, I think, and we are navigating through different types of research that we want to address taking a particular topic such as freezing of gait for example, and directing focus to that or taking additional topics which we can talk about later, and really trying to bring the community of researchers and clinicians together to focus on specific issues of gait and gait dysfunctions in Parkinson's disease.

Larry Gifford: Yeah, my role on the committee is to represent the patient and have the patient voice at every step and make sure that we are being considered and included and valued by the committee and all the teams we choose to award with research hours.

Anat Mirelman: This is really important in my opinion because at the end of the day, we can understand the biomechanics and talk all day, but we really need to understand how it feels and to get the perspective of the patient on the actual disorders.

Larry Gifford: Yeah, my dominant symptom has been gait since I was diagnosed in 2017, so it's something that I've lived with for quite a while now. Anat, you spoke in the video about what we just saw about freezing of gait or FOG. What is being done currently to understand and address that symptom?

Anat Mirelman: So freezing of gait is actually, as we talked about in the video, is one of the most debilitating motor symptoms in patients with Parkinson's disease. And besides being very dangerous because it leads to falls and loss of independence, it's also extremely common.

So about 70% of patients will experience freezing of gait sometime, and this can vary quite dramatically between patients in terms of how this happens and what the severity of the freeze is. But in general, it's a very, very common phenomenon.

But despite this, as was mentioned in the video, we don't really know a lot about it, why it happens, why it happens sometimes and not others, it's an episodic phenomenon, so it doesn't happen every day or every time you pass through a door. And we have some information about how to address it in terms of treatment and interventions, but it's not enough because it doesn't help everybody.

So in terms of treatment for example, we know that cueing really helps and also there's a lot of walking strategies that can help to a certain degree and these can be taught by a physical therapist and provide some relief for this phenomenon.

But again, it's very individual so it can change within patients and between patients. So in the GALOP committee, we took freezing of gait as one of our specific topics to address and we sought out to create a funding opportunity. And this funding opportunity came out last year. We received a lot of proposals from researchers all over the world.

Larry Gifford: Could you walk us through the projects that we're starting to recruit for?

Anat Mirelman: Yes, so of course. So in total Michael J. Fox funded six projects including one on measurement methods, two non-pharmacological interventions. One is a pharmacological intervention and two projects on deep brain stimulation.

So today, I can only talk about these three as they are already contracted. So the first one is called TURNIT. This study addresses a great need for patients because a lot of people are freezing or freezing of gait often happens during turning.

Larry Gifford: What can you tell us about the software robotics?

Anat Mirelman: Okay, so this is a study that is coming from Boston University and they're using soft robotic apparel. It provides support and a biomechanical help to prevent the freezing of gait episode. This study will recruit 20 patients into science in Harvard University as well as Boston University. And basically, it helps you when you actually walk to avoid or to prevent the freezing episode.

Larry Gifford: And kind of lengthen and smooth your gait?

Anat Mirelman: Yes. So basically, it deals with increasing the length of step and providing a more rhythmical movement, and that rhythmical movement will help to avoid freezing of gait.

Larry Gifford: A similar thing that I've been taught as somebody who has gait issues is as you're trying to assess where you want to go, try to turn in your head, pick a number of

how many steps you want to take to get there. So five steps or 10 steps, and then you extend your stride. It's a lot easier to get there, 10 strides or whatever. Same concept but this way it's robotic and it's helping you with some soft robotics, stimulating the brain to treat FOG as it occurs.

Anat Mirelman: Yes. So this is a study originating in Toronto and then they will evaluate a new neuromodulation trend for freezing of gait in patients with Parkinson with DBS, so with deep brain stimulation. They will use high-density cortical studies using brain-machine interface and they will record and stimulate at the same time in patients with DBS when freezing of occurs.

And to do so, they will study the patients in freezing-provoking situations and then they will be able to determine the exact stimulation to actually avoid the freezing episode. The primary objective obviously to decrease freezing events using that cortical stimulation, which already is inserted in patients with DBS. Now, this study will recruit 10 patients in Toronto, all of which already have DBS.

Larry Gifford: Since I'm on the committee, I know there are several things in the works that we can't get too detailed about but are very promising, can you give us a high level overview of those?

Anat Mirelman: Yeah, sure. So they are very interesting. The three additional studies are all originating in Europe. One is, again, looking at adaptive DBS for improving freezing of gait. The second study we will try to monitor and detect freezing of gait at home.

And as we said, this is super important because we know that freezing of gait is not the same when you come to the clinic and when you are at home. And we really want to understand and to actually identify how freezing is happening in the home and in the real world environment.

So they are going to monitor this using wearable sensors and potentially detect freezing of gait. And this will in turn can bring additional interventions that use this data to actually prevent or avoid freezing of gait.

The third project will explore the effects of attention medication on freezing of gait. And this again stems from the idea that there is cognitive involvement and cognitive compensation that people use without even realizing it to help avoid freezing of gait.

So if we can help with cognition and increased cognition, maybe that can help with the freezing of gait episodes. So all of these are going to be starting pretty soon. Hopefully, in the next couple of months or by the beginning of 2025.

Larry Gifford: Yeah. How do these projects go from being a study to being an available treatment to the general public?

Anat Mirelman: So this is a really good question. As mentioned in the video, every person is a bit different. Therefore, even when we finish a study, it doesn't necessarily mean that the provided solution is available. But things are moving in PD and are moving quite rapidly as we heard earlier, the clinical trial and there's a lot going on.

And I think that's great because that means that there's going to be something for everyone and we can provide treatment or better treatment and better care for a variety of patients. And I hope these kind of projects are there for two years or three years. But the meantime, there are additional things that are coming out and there's a lot of research that is coming out these days in Parkinson's disease. So I hope this answers the question.

Larry Gifford: How long is the process?

Anat Mirelman: So if we take these three studies that we talked about, one is DBS, for patients with DBS, if this actually works, this can be tried for all the patients using DBS. So I would say after the study ends, if they publish really good results, then it can be done anywhere that DBS is done.

For the study that uses TURNIT, again, this is a non-pharmacological intervention that can be used as a physical therapy aid. And once the studies like this are done and published, this kind of technique which requires no additional resources, can be provided to patients even as a recommendation, not necessarily as a study operation.

And for a study like the one with the exoskeletal, so the soft robotic device, this is a bit more cumbersome because these kinds of devices need to be approved by regulatory bodies. So it takes a little bit more time.

Larry Gifford: Just give a little bit of style points.

Anat Mirelman: There's lots of issues of bringing stuff like that to the market. But I think the idea here is not necessarily making this into a product, but rather looking at the solution and understanding if it helps. Because if it helps, then we can find additional ways that work on the same rationale and the same logic and provide it to patients.

Larry Gifford: Now, I was telling folks about my experience with DBS and gait. We've had a lot of questions about DBS and gait. What can you tell us about that?

Anat Mirelman: Yeah, so DBS is actually... It's an interesting in terms of freezing of gait, it's very interesting because for some patients, freezing of gait is improved after DBS. But for some patients, freezing of gait actually worsens. And it really depends on the type, the location, but also on an individual neural basis that may cause freezing of gait to actually worsen.

DBS is, again, it's a treatment, but it's treatment that alleviates some of the symptoms, but not all of them. And this is why it's a double-edged sword because

I don't know how to give an answer of it's good for everybody, it's not good for everybody.

Larry Gifford: Right. But for just general gait issues-

Anat Mirelman: For you, did it improve gait?

Larry Gifford: Oh yeah, for sure. I have not used walking sticks since my surgery and I was using them every day for seven years. So for certain, it was a huge leap forward in my gait and my ability to balance and everything.

So for me, I'm a big believer. But sure, it's different for... Just like everything, this disease is different for everyone. Consider all the options and ask all the right questions. So, Anat, how can people living with Parkinson's get involved to further this research?

Anat Mirelman: So for the particular research in Michael J. Fox Foundation, I would recommend to go to the website, Michael J. Fox Foundation website. There's a lot of research done there and you can find something. Trial Finder, for example, will help you find a study near you, specifically if you're looking for clinical trials or if you're looking for a gait study. They're all located in this wonderful resource.

There's additional resources out there that are not specific to Michael J. Fox Foundation, and generally, I tell all the patients that come to our lab that being involved in research is something that you can do for yourself, but you can also do for the community, because the information that we're getting as researchers from your participation is invaluable because it helps us to get to a better place in terms of care, in terms of understanding what this disease is and how to treat it.

So I really recommend that if you have the chance to participate, it's educational, it's good, it's often very fun and you can benefit.

Larry Gifford: Yeah, definitely, if you have the wherewithal and the time and the energy, you should participate because it's going to take all of us to raise our hands in order to do the research.

Anat Mirelman: Absolutely.

Larry Gifford: It's done in order for us to find advancements and treatments, but also ultimately a cure. So if we're not raising our hands, it's on us. We are going to move to the Q&A section of today's webinar. Does freezing affect more than gait? Can you freeze while driving or just sitting and generally not walk?

Anat Mirelman: Okay, so thank you for that question. Freezing does not happen during sitting condition, but it does happen in other motor function that is not gait. So for example, some people say that the voice changes or stuttering is a vocal freeze, so sometimes you can hear it in people's voices. You can also see it in manipulation tasks or upper extremity tasks.

So sometimes you can see freezing of gait and movement that is very, very minimal and stuck. That might happen. But in general, when we talk about freezing, we talk about freezing during gait, and this is why it's called FOG freezing of gait. It's the main phenomenon that this is happening. I have not heard about freezing during driving.

Larry Gifford: I haven't either, and usually because it's one of those automatic functions that they can get around. I don't know. People say that when they get into drive their car, a lot of times, their symptoms disappear. The other question here is can you regain losses in gait or balance with physical therapy? Short answer, yes. Long answer comes from Anat.

Anat Mirelman: Yes, yes, I have just a short answer to that. Of course. Physical therapy is super important, and I'm going to say it out loud really, really with a big smile. Physical therapy can take you from the day you're diagnosed and even before, it's really important.

We call it preventive care also because it provides you with strategies, it provides you with strength, it provides you with movement capabilities that are super important and also will help you to regain some of the movement that you don't or that you lost. So, yes.

Larry Gifford: Here's another question. Are muscle weakness and atrophy common in PD and does this contribute to gait problems?

Anat Mirelman: So muscle weakness in atrophy are not common in PD, it's not necessarily the... It's not the pathological process. However, people lose a lot of weight sometimes in Parkinson's disease. And because they're not mobile so much, they can lose muscle mass and muscle mass will be reflected as weakness. So it's not a destruction of the muscle as in atrophy, but it is just the immobility that causes it. So, move. Move a lot.

Larry Gifford: Yeah. What's interesting is what I was getting diagnosed, I went first to a MS neurologist, and he goes, "Good news is you don't have MS. You are not weaker, you're slower, so you probably have Parkinson's." That's the difference is the weakness and the atrophy comes with an MS. and the slowness is what is the trademark of Parkinson's.

Anat Mirelman: Yep.

Larry Gifford: What is the outlook for spinal stimulation for treating gait problems?

Anat Mirelman: Spinal stimulation has been in research for possibly the last five years in the focus of gait in Parkinson's disease so far. We have seen some publications, but the evidence is inconclusive in regards to improving gait.

We have to remember that the stimulation is peripheral stimulation, whereas the gait problems are central problems from the central nervous system, and

sometimes there might be improvement with stimulation, but we don't know yet as to the long-term effects.

Larry Gifford: And do you have advice on how people can find physical therapists who specialize in Parkinson's?

Anat Mirelman: I think in Europe there is a few consortiums, I should say, like the ParkNet that have physical therapists that are specific to Parkinson's disease. In the US, I think this mechanism is not yet very widely available. So I would suggest that when you talk to your movement disorder specialist or your neurologist, you ask for someone who is actually a physical therapist that is specialized in PD in your area.

The other resource that you can use is through the APTA, which is the American Physical Therapy Association. They have lists of physical therapists that are specialized in neurological care and that way, you can potentially find someone who is really specific to Parkinson's disease.

Larry Gifford: Yeah, the key there is to get a neurophysical therapist.

Anat Mirelman: Absolutely.

Larry Gifford: And that'll be good care of you. We want to get back to our breaking news. As I mentioned, for more information on the newly approved drug, VLF can check out the blog on MichaelJFox.org.

When considering a new medication, as always, talk to your doctor about what's best for you, and you can tune into our webinar next month as experts cover this drug and more about the transformational urine Parkinson's research for our 2024 year in review. That'll be exciting.

Thank you again for being part of our community and for joining us today. And thanks to Anat for sharing her time and expertise. We hope you found today's discussion helpful. We thank you for being here and have a great day.

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