

Mayo Clinic Q & A - Eoin Flanagan - Managing Multiple Sclero...

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SPEAKERS


Dr. Eoin Flanagan, Dr. Halena Gazelka, Narrator

N Narrator 00:01
Coming up on Mayo Clinic Q&A,

D Dr. Eoin Flanagan 00:03
Multiple sclerosis, the term, means multiple scars, and it's a disease that leads to damage of what we call the central nervous system, which is the brain, the spinal cord and the optic nerve.

N Narrator 00:15
Currently, there is no cure for multiple sclerosis or MS. But medications and other treatments can help control the condition. Treatments for MS depend on the stage of the disease and the specific symptoms that a person is experiencing.

D Dr. Eoin Flanagan 00:27
In the last five to 10 years, we really have strong medications that can keep MS very quiet. We're hopeful that will prevent a lot of the long-term damage that patients used to get in the past where after many years of having an MS diagnosis they may struggle with walking or have additional disability that would develop from those scars. And I think with these new medications we're going to be able to stop MS in its tracks. So, a really hopeful time for all of our patients with MS.



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Dr. Halena Gazelka 00:56

Welcome, everyone to Mayo Clinic Q&A. I'm your host Dr. Halena Gazelka. Multiple sclerosis affects an estimated 2.8 million individuals worldwide. Multiple sclerosis, or MS, is a potentially disabling disease of the brain and spinal cord, where the immune system attacks the protective covering around the nerve fibers. Signs and symptoms of MS vary widely, and while there is no cure, treatments can help modify the course of the disease and manage symptoms. Joining us to discuss management of multiple sclerosis is Mayo Clinic neurologist, Dr. Eoin Flanagan. Thanks for being here today, Eoin.

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Dr. Eoin Flanagan 01:35

Thanks for having me. Delighted to be here.

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Dr. Halena Gazelka 01:38

Well, I always like to learn something new, and I know that you have some new things to teach me today. For our listeners, would you tell us what is multiple sclerosis?

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Dr. Eoin Flanagan 01:49

Multiple sclerosis, the term means multiple scars, and it's a disease that leads to damage of what we call the central nervous system, which is the brain, the spinal cord and the optic nerve. And what we know is that there's some immune mediated, or the immune system attacking the brain and the spinal cord and the optic nerve, and that can lead to neurologic symptoms, and then we can make a diagnosis of multiple sclerosis. And what we know is that there is some insulation around the nerves called the myelin. So, the immune system attacks that myelin, and what happens then is you lose that insulation, and the nerves can't transmit signals as well. So, sometimes it's called a demyelinating disease, which means that the myelin or the insulation on the nerves has been damaged. And this is what leads to the neurologic symptoms.

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Dr. Halena Gazelka 02:43

And the myelin helps the nerves to actually conduct the signals, correct Eoin?

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Dr. Eoin Flanagan 02:49

That's correct. Yeah, so it makes it faster, and then when you get damage to that insulation, just like if you damage the insulation to a wire going to your television the signal might not be as good, or going to your computer it might not be as good. And then what the body does is it tries to repair it, but it's not able to perfectly repair and some of those damaged areas can cause some problems down the line for patients.



Dr. Halena Gazelka 02:55

D Dr. Halena Gazelka 03:11

Great analogy with the computer cord. I like that. I can see that. Tell us are there risk factors for developing multiple sclerosis?

D Dr. Eoin Flanagan 03:20

There are. There are some recognized, and vitamin D deficiency is recognized to be a risk factor, and MS tends to occur in the northern and southern latitudes away from the equator, which is interesting. And some people think that might relate to those having less sun exposure in those regions of the world. And we also know something that's been in the news recently is Epstein Barr Virus, which is an infection, is a risk factor for multiple sclerosis. Most people actually get Epstein Barr Virus in their life and don't get multiple sclerosis. But people who've never had that infection have a really low risk. So, we don't know the exact reasons behind that, but that's an area of ongoing study. And then cigarette smoking is known to be a risk factor for both developing MS and making it worse. So, it's another good reason for us to try and avoid cigarette smoking if we have a diagnosis of MS or to reduce the risk of developing MS. And then maybe the last thing I'll mention is genetics. It does sometimes run in the family. So, there are some genetic factors. I would say the risk of first-degree relatives like a sibling or a parent if the patient has MS is about 5%. And it can go up if multiple family members have that. So, it doesn't run from generation to generation, but there is some increased risk and some genetic factors involved.

D Dr. Halena Gazelka 04:37

So, when you see patients how does MS typically present? And is it at any age?

D Dr. Eoin Flanagan 04:43

It is at any age. Yeah, it's a bit more common in females than males. And I would say the most common age is a young female adult, so maybe somebody in their 20s or 30s, but it can really present from children all the way up to older adulthood. And patients generally sent with problems related to those areas of involvement. So, if the optic nerve is affected, that's the nerve that goes to the eye, so patients might have blurred vision, or pain moving the eye, for example. If the brain is affected patients may have an imbalance or they may get double vision would be a common symptom. And then the spinal cord is probably the most commonly affected, where patients will get numbness so they might notice numbness from their waist down, or numbness over half of the body. And this kind of tends to come on over the course of many days. And the patients who have MS might know the term relapsing remitting, which means that the symptoms tend to come in the form of episodes or attacks. So, patients will develop the symptoms, they'll plateau, they might develop symptoms over many days, they'll plateau for many weeks, and then the symptoms tend to go down. And sometimes the treatments can help them resolve, and sometimes patients are left with some lingering symptoms after the episodes. But it does tend to come and go in these what we term attacks. And the goal of many of our treatments nowadays is to prevent new attacks and to prevent those episodes from happening, and to prevent long-term damage in MS.

D Dr. Halena Gazelka 06:06

Eoin, I can imagine that there are multiple other neurologic disorders that you have to sort of rule out when you see a patient. So, how do you diagnose MS?

D Dr. Eoin Flanagan 06:16

Yes, so MS is sly, it's readily diagnosed because we have MRIs available, but we don't really have a single test. So, we have to kind of combine all the tests together to make a diagnosis. So, usually what we do is MRIs, and we can see on the MRIs what we call some lesions or white spots on the MRI that can be quite characteristic of MS. And a lot of times we can recognize those very well. That MRI will often include the brain and the spinal cord, and sometimes the optic nerve. And a lot of times that can help us make the diagnosis. Another useful test is something called a lumbar puncture or spinal tap, where we can take some spinal fluid and analyze that for a marker called oligoclonal bands, which are very common in MS. About 85% of patients with MS will have that. And then, you know, based on our history and our neurologic examination that can also help us. And we also have some new antibody tests. Some of these actually developed at the Mayo Clinic to test for kind of some cousins of MS. They're less common, but they present in a similar way to MS, but they have different treatments. So, there's one called neuromyelitis optica, where we test for a blood test called aquaporin-4 antibodies, and the other is MOG antibody-associated disease where we can test in the blood for a special antibody that is a blood test that can make a diagnosis. So, we try to look for the changes of MS, and then make sure there's not some other things involved. So, we can do a number of other tests. But a lot of times the MRI and the spinal fluid are probably the main tests that we do.

D Dr. Halena Gazelka 07:51

Eoin, are those antibody tests that you mentioned widely available clinically?

D Dr. Eoin Flanagan 07:57

They are widely available. Yes, here in the United States we have a neuro immunology lab at the Mayo Clinic that test for those, and there's many other laboratories around the country that do tests for those. And the good thing is they're a blood test. So, they're quite easy to do, and they can make an important diagnosis. So, that's something that's kind of been discovered in the last 15 to 20 years. And one of those was actually discovered at the Mayo Clinic. So, it's quite interesting, and now that test is widely available around the world and has really made a difference for those patients. But those diseases are much less common than MS. So, we, you know, most of the time they come back negative, but they're a useful test to do.

D Dr. Halena Gazelka 08:36

Interesting. So, now you have a diagnosis of MS. What are the treatment options for an individual who's suffering from this?

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Dr. Eoin Flanagan 08:43

The great news is in the last 15 to 20 years, we've really developed a lot of new, very effective treatments. And we have a whole range of treatments now available, up to 15 to 20 treatments available that are very effective. And the goals of our treatment are to prevent those new spots coming on the MRI, and to prevent patients having those episodes, or those attacks of multiple sclerosis. And while I won't go through all of the names of all of the different medications, I'll just say that, in the last, you know, five to 10 years, we really have strong medications that can keep MS very quiet. So, nowadays, you know, our MS patients, once we make that diagnosis, we can keep things very quiet. And we're hopeful that that will prevent a lot of the long-term damage that patients used to get in the past where after many years of having an MS diagnosis they may struggle with walking or have additional disability that would develop from those scars. And I think with these new medications we're going to be able to stop MS in its tracks. And lots of that long-term damage that we used to see very commonly is going to be much less. So, a really hopeful time for all of our patients with MS.

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Dr. Halena Gazelka 09:51

That's very hopeful. Eoin, what is meant by MS management?

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Dr. Eoin Flanagan 09:57

So, yeah MS, in addition to the medications that I mentioned, which we have a wide range available, we also have to manage the symptoms of MS. So, sometimes from spinal cord involvement patients can have urinary difficulties, and there are medications that we can use to help manage those symptoms. And if patients get stiffness in the legs, we have medications that we can reduce the stiffness. So, we have to take kind of a multidisciplinary and multimodal approach to our MS patients. So, we have to look after every aspect of their symptoms in addition to the immune medications that target the immune system. So, and I think here at Mayo Clinic we have very good links with all of our other sections. So, we will often involve our urologists, our physical medicine and rehab doctors, our ophthalmologists, and we kind of work together as a team to really try and manage all of the symptoms of MS. And I think, along with our physical therapists, occupational therapists, we really can do a good job of helping to, you know, help patients in their day to day lives so they can get back to functioning normally. Because what I tell my patients is I want the MS to be an inconvenience, but I don't want it to dominate their lives, and I think nowadays with the medications, and with this multidisciplinary approach, we can really do much better at putting MS in the background more.

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Dr. Halena Gazelka 11:13

Eoin, I understand that besides using the expertise of other individuals, there's also some neat new technology that you're using to help patients with MS.

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Dr. Eoin Flanagan 11:22

Yeah, yeah, we really are trying to embrace technology here at the Mayo Clinic. So, we have an

electronic gait mat, where we can measure patients walking along a digital mat, and see how their walking speed is, see how their mechanics of their gait is, and see how that's changing. Because we know that walking is something that really can get affected with MS over time. So, we're trying to follow our patients over time and see how those changes are happening and see if we can intervene early, and maybe help patients more. I'll also mention that we do have some sophisticated techniques. We can now take a picture of the optic nerve and measure how thin the optic nerve is and follow that over time to see if patients have been developing any visual damage over time. We also even now have blood biomarkers. There is one called a neurofilament light. That's a test in the blood that can test if your MS is kind of more active. And that might be a reason why we'd have to monitor someone more closely with MRIs, or adjust our treatments. So, we're really getting, trying to embrace these new technologies to both learn more about MS and see how we can help our patients better because at the end of the day, we you know, the needs of the patient come first. And we really want to help our patients, so these new technologies, I think, are going to do that and are something that we're trying to embrace so we can learn more and help our patients more.

D Dr. Halena Gazelka 12:45

That's just wonderful. Eoin, is there anything else that you'd like to share with our listeners today?

D Dr. Eoin Flanagan 12:50

Um, no, I'd just like to, you know, emphasize that this is a really good time for our MS patients in terms of the treatments that we have available now. So, you know, I think we can do much better than we can do. And there's a lot of hope out there for our patients that in the long-term, these new medications are going to really help reduce a lot of those disabling issues that patients have had in the past. So, that would be my message for today.

D Dr. Halena Gazelka 13:17

Thanks for being here today, Eoin.


D Dr. Eoin Flanagan 13:19

Thanks so much. Pleasure.

D Dr. Halena Gazelka 13:21

Our thanks to Dr. Eoin Flanagan, neurologist at Mayo Clinic, for being here today to talk to us about multiple sclerosis, its diagnosis and treatment options. I hope that you learned something. I know that I did. We wish each of you a wonderful day.

N Narrator 13:37



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