Eric Rinehardt, PhD, Chief Neuropsychologist, Carolinas HealthCare System

Q: What do you do on a daily basis?

A: Basically, what I tell my patients is that we take your brain out for a test drive. We see how they do compared to other people their same age and educational level. In particular, for this purpose, we look at their memory and we see if their memory as good as it should be compared to other people or is it off a little bit. If it's as good as it should be, then that's great news for them to know. If it's off a little bit, then there's hundreds of reasons why it might be off. It's my job to help try to figure that out and help try to get them to be the best version of them they can be.

Q: Why are neuropsychological data key to progress in understanding and developing more effective treatments for Alzheimer's disease?

A: The hallmark feature of Alzheimer's disease is memory loss. And if the intervention that we're using doesn't impact memory loss, then it's going to be useless, so we use our measures to track the trajectory of someone's memory. When they come and see us, usually if they have Alzheimer's disease, their memory is going to be poor. If we have an intervention that perhaps slows that down or even reverses it, then we know that we're doing a good job.

Q: What are the efforts to identify non-biological markers and dementia?

A: I think that we can do a good job in evaluating and understanding if people have early dementia. We can find symptoms and signs before they progress to having functional loss. If we see someone soon enough, we can identify the mild memory loss that they might have and that might be associated with Alzheimer's disease, and we can initiate treatments sooner potentially or at least understand what potentially might be coming down the road.

Q: What does the neuropsychological testing process for Alzheimer's disease patients look like?

A: You have to know your patient before you start testing them and then you have them do neuropsychological tests, which are standardized tests. We compare them, like I said, to other people who are the same age and educational level. It usually takes about an hour or so to administer those tests. When they're done, they would come see me and I would interpret those tests and let them know where they lie on a continuum of normalcy.

Q: Is it possible to slow the course or progression of Alzheimer's?

A: That's why we're doing the clinical trial work. About 10 years ago, 2007 approximately, there were efforts made to really break down the beta amyloid that's thought to be responsible for Alzheimer's disease. We found that we could break it down in people who had Alzheimer's disease, but their memory problems persisted.

Now what we're doing in clinical trial work is that we're trying to break down the beta amyloid before it even gets built. Now the hope is that potentially that will either slow down the memory loss or reverse it all together, but we're not there yet.

Q: Where do you currently stand with the efforts to develop efficient cognitive measures for clinical screening?

A: Because most of the dementia patients are going to be seen in the primary care settings, it's really important that primary care physicians are capable of identifying dementia. We have to have quick assessments for them, and there are many quick assessments that could be used in those settings. Sometimes they're as simple as a phone call interview that takes only five minutes. Other times it's simply a few questions or a brief cognitive exam that could only take five minutes. It's certainly possible to initiate those things, but it would take a coordinated effort by the system to make sure that happens.

Q: What is the most important thing that you want people to understand about the work that you do?

A: I think a major question for a lot of people is, "Is what I'm experiencing part of the normal aging or is it something else?" I can help figure that out for them. If it is just part of normal aging, then that discussion can be a little bit hard, but it's much better than having the other discussion, which is I think this could be early signs of dementia or Alzheimer's disease. But either way it gives them important information to understand themselves and what's going on with them. It can change the trajectory of their life in many ways. It's important to try to identify it as soon as possible to deal with what's going on with them.

Q: Could you define the differentiation between dementia and Alzheimer's?

A: I do this all the time for my patients. Dementia is a broad category. It just means that there's a significant loss of cognitive functioning and a significant loss of functional capability. There's many flavors of dementia, and Alzheimer's is one of them. Alzheimer's is the most common, but that big loss of cognitive capacity and functional capacity can occur for a multitude of reasons. One of my jobs is to help people understand is it Alzheimer's disease or is it something else?

Sometimes it's a very easy job. If someone comes in and they had a large stroke, then it's quite easy in determining why they might have such significant cognitive issues. In other cases it's actually quite hard because the structural brain imaging that we take, it's normal, and there's no other clearly critical issues that hit on to tell us what's going on. It becomes very difficult to try to figure out if it's one of the more rare dementias that can occur with folks. Again, that's one of the main reasons it's great to have coordinated, high-level experts working together to try to help these folks.

In some respects it doesn't matter what the name is that we label them, but patients always want a name. Sometimes it can be very helpful in terms of how we attack the disease process.

Q: In Marty Schottenheimer's case, how important is it in the role of his wife that he has that caretaker?

A: In general, people with better support systems will have better prognosis. It's an unfortunate situation where we have people with weaker support systems. What happens is it usually takes a tragedy to identify there is an issue, and they end up in the hospital. Then I see them and find out there's no one helping them manage their finances, there's no one helping them manage their medicines and there's no one helping them with their activities of daily living. Some major failure happens medically and then we realize this person's had Alzheimer's disease for quite some time. There can be devastating consequences from that.

Another example is that wandering can be a symptom of Alzheimer's disease. And if caregivers aren't involved, then someone might get lost and when someone's lost and they can't find their way home, there are times certainly when that can result in death.

Caregivers are extremely important, which is another reason why it's very important to try to identify this early, so families can prepare themselves and get the resources situated to help the individual who's suffering from disease.

Q: Could you talk about how Marty’s wife has been supporting him through this process?

A: I met them once in the clinical trial work that I do. I can say that they truly love each other. You can tell. He's so appreciative of all the care that she provides to him, and she obviously cares very much for him. Very compassionate woman and genuine. Marty, unfortunately, is in a situation where his memory loss is quite severe. He undoubtedly needs someone to be there for him or else I think that he would struggle in many aspects of his life.

Q: Are there certain populations that tend to be more at risk for Alzheimer’s?

A: Yes, absolutely. People with moderate to severe brain injuries are at increased risk for having neurodegenerative diseases. The literature is pretty clear when someone has a moderate to severe traumatic brain injury, they can have increased risk for Alzheimer's disease. A lot of that information comes out of World War II. That information that we looked at longitudinally over time shows they are at a higher risk than the general population.