



**National
Multiple Sclerosis
Society**

**MS Learn Online
Feature Presentation
Three Cures: Stop, Repair, Prevent
Part Two
John Richert, MD**

Tom>> Hi, I'm Tom Kimball

Tracey>> And I'm Tracey Kimball, and welcome back to the second part in our series on the three cures for MS. In the first part, Kate Milliken spoke with Dr. John Richert about the first two cures: stopping and repairing the destructive processes of the disease

Tom>> Now Dr. Richert will talk about what's being done to prevent MS from happening in the first place. Let's watch.

>>John Richert: To prevent MS, the third cure, we need to know the cause or the causes. Fortunately, in order to tackle the first two cures, we don't need to know the cause. So, we can make a lot of progress on the first two cures without knowing the cause, but we will make no progress on the third cure until we know the cause.

We have a lot of data now to tell us that there's a genetic disposition to MS, and that there is an environmental trigger, and that that environmental trigger probably occurs early in life, years or decades before MS becomes symptomatic, or clinically evident. Because of

that gap in time, it's been impossible so far to identify what that triggering agent is, and there may be more than one triggering agent. There may be different triggering agents in different people.

With funding from the MS Society, we have made great progress in the last two to three years in understanding the genetic basis for the disease, the genetic predisposition for the disease, and we are now beginning to understand what are the variations in the genes that people inherit that can predispose to developing MS.

And the answer to the disease is probably going to lie in the ways in which the genetic influences and the environmental triggers interact.

And so we are putting a lot of effort now into both of those areas. Once we understand those areas better than we understand them now, we should have an excellent chance at preventing the disease in the first place. Now, whether that's going to be a vaccine or something else, we don't know. But we have good, strong leads at this point.

There are things like vitamin D, sunlight. There are a number of viruses that have been candidate viruses over the years. One at the top of the list now is Epstein-Barr virus, the virus that causes infectious mononucleosis. Whether that will turn out to be the trigger or not, it's too early to say, but we've got some important leads. So, I'm confident that we will continue in the near term to make strong progress on learning the cause.

>>**Kate:** Do you feel like in the three cures that you have that you have equal amounts of attention in budget?

>>**John Richert:** We have roughly equal amounts of attention in budget, and the amounts are really appropriate for the efforts that we're making and that our researchers are making. We could always use more. We don't have enough money to do all the research we

want, but in terms of how they're proportioned, we have it about right, it looks like.

>> **Kate:** In light, and I can speak as somebody who has MS and does take a medication, it is such a great feeling to actually have something that you know tangibly through data that it works, and you talk about your second cure and your third cure here, and all the stuff that's going on. Is there anything definitive coming down the pike that will excite me as much as the stuff I've heard about in the stopping cure?

>> **John Richert:** Well, the therapies that hold the most promise are those that are immunomodulatory therapies for the first cure. And the reason for that is because we understand a lot more about the immune system and the abnormalities in the immune system that lead the immune system to attack the nervous system.

One of the phenomena that our listeners, our viewers, will be familiar with is the phenomenon of women with MS doing better from the MS standpoint during pregnancy. So, one of the issues has been what is it that is responsible for that and can we bottle it and give it to people? And one of the things that we are very proud of is a series of grants to Rhonda Voskuhl, Dr. Voskuhl at UCLA, taking this issue from the very basic level, studies in animals, right on through Phase I trials -- a Phase I trial, and now a large Phase II trial of a form of estrogen called Estriol, which is produced by women during pregnancy, predominantly during the third trimester of pregnancy when their MS disease activity is dampened the most. And taking this oral therapy, Estriol, into Phase II trials in the hope and the expectation that this relatively inexpensive pill will have a significant beneficial effect on the course of MS.

>> **Kate:** My feeling when I read your publication is hearing the word "cure." You know, we're looking for three cures. It was such a strong word, especially to address it to three domains. From your experience being in this field and being so hands on in the industry,

do you actually feel like in your lifetime you think you might find a cure in any of these parts?

>>**John Richert:** It's always dangerous to make predictions on timing. When I first got into this field 30 years ago, people were saying, well, we should have a cure in 10 years, 15 years, 20 years, and as we understand more about the disease, we understand how more complex it is than we ever thought.

On the other hand, I think that we have a good chance of controlling this disease maybe not to the point of a total cure, of completely stopping it, and certainly not stopping it in everyone. But I think we have a very reasonable chance in my lifetime to be able to control the disease, the inflammatory process, the destructive process, well enough to give us a fighting chance at being able to come in subsequently with reparative processes and try to fix the nervous system.

>> **Kate:** I have to believe from when you started in this industry compared to now it's just been leaps and bounds. Do you feel like that's true?

>>**John Richert:** Absolutely. And it's only because of the MS Society and the people who fund the research in the MS Society in conjunction and collaboration with the funding from the National Institutes of Health, that these advances are getting us where we need to go.

>> **Kate:** Thank you, Dr. Richert.

Tracey>> We still have a ways to go before any of the three cures is found, but with all the progress that's been made, I have reason to be hopeful.

Tom >> Yes and remember, this amazing research would not be possible without the millions who support the National MS Society. Your contributions in events like Walk MS and Bike MS make this possible.

Tracey>> Thanks for joining us on MS Learn Online, and keep the movement alive!