Transcript Details

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Exploring Metabolomics in Multiple Sclerosis

Announcer:
You're listening to *NeuroFrontiers* on ReachMD. On this episode, we'll hear from Dr. Pavan Bhargava, who's an Associate Professor of Neurology and Co-Director of the Autoimmunity Center of Excellence at Johns Hopkins University School of Medicine. He'll be discussing the role of metabolomics in managing multiple sclerosis, or MS. Here's Dr. Bhargava now.

Dr. Bhargava:
To begin, I'll talk a little bit about why we study the metabolome in MS. What we find in the metabolome in our circulation or in the CSF is directly downstream of several other risk factors for MS, such as your genome, your epigenome, and the proteome that comes from those genes. But also, the metabolome is influenced by effects of environmental exposure—so your exposome—and this is also a reflection of the makeup of the gut microbiome and its function.

And so what we and others have found in people with MS is that there are changes in several aspects of the circulating metabolome. Specifically, we see in multiple studies changes in aromatic amino acid metabolism, like tryptophan metabolism, both in endogenous metabolites that are produced from our own body and also in metabolites that come or are produced from the gut microbiota. We see changes in a lot of energy, metabolism-related molecules like glucose metabolism as well as nucleotide metabolism. And we've also seen changes in several species of lipids, which might be expected given that this is a demyelinating disease where myelin is primarily made up of several different kinds of lipids. And so those are some of the changes that we see associated with MS itself. We also see changes that may be associated with treatments that are used for treating MS as well as changes that might be associated sometimes with comorbid conditions that are common with MS.

We are heading potentially towards a time where metabolomics will be an important addition to both a diagnostic and prognostic approach to the disease, and metabolomics can help us potentially personalize treatment for people with MS, and also provide important insights into the pathophysiology of the disease in a specific patient.

Announcer:
That was Dr. Pavan Bhargava talking about how metabolomics can play a role in multiple sclerosis. To access this and other episodes in our series, visit *NeuroFrontiers* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!