

## FUNCTIONAL MEDICINE UPDATE

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### **Functional Neurology: The Wrap Up!**

April marks the fourth and final installment of a series on functional neurology. How much influence does diet have on brain health? It's a question that has been explored throughout this series, but this month's issue will take this discussion to a new level. In March 2015, the mainstream media picked up the story of the MIND (Mediterranean-DASH Intervention for Neurodegenerative Delay) diet—an approach that combines elements of a Mediterranean-type diet and Dietary Approaches to Stop Hypertension (DASH)—because the results of a recently published study indicate adherence to this diet can significantly lower a person's risk of developing Alzheimer's disease. In this issue, Dr. Bland interviews one of the study's lead authors, Dr. Martha C. Morris of Rush University.

### **Researcher of the Month**

**Martha C. Morris, ScD**

**Professor**

**Director, Section of Nutrition & Nutritional Epidemiology, Department of Internal Medicine**

**Assistant Provost for Community Research**

**Co-Director, Rush Translational Sciences Consortium**

**Rush University**

**Oak Park, Illinois**

Dr. Martha Morris received training at the Harvard School of Public Health and Nutritional Epidemiology, where she focused on how diet might impact cognitive aging and the development of neurologic conditions with aging, such as Alzheimer's disease, Parkinson's disease, and stroke. The current research interests of Dr. Morris include dietary and other preventable risk factors in the development of chronic diseases and problems of older persons, including Alzheimer's disease and cognitive decline, and cardiovascular diseases. She is an expert in population studies, and has an extensive publication record in top-tier medical journals.

Dr. Morris holds several key positions in the Department of Internal Medicine at Rush University in Oak Park, Illinois. She is associated with a vibrant group of researchers that is involved in long-term community studies to examine both physical and cognitive decline associated with aging. For the last five years, she has led a section devoted to nutrition as it relates to aging and neurodegenerative diseases.

Dr. Morris has been involved with many studies, including those that examine the effectiveness of nutrients from both supplements and food sources. In March 2015, she was the lead author of a study published in *Alzheimer's & Dementia* that garnered national media attention: "MIND Diet Associated with Reduced Incidence of Alzheimer's Disease." The MIND diet is a hybrid Mediterranean-Dietary Approaches to Stop Hypertension diet that emphasizes dietary components and servings linked to

neuroprotection and dementia prevention. Dr. Morris and her colleagues followed 923 participants, ages 58 to 98 years, for an average of 4.5 years and found that moderate adherence to the MIND diet may decrease Alzheimer's disease risk.

Dr. Bland and Dr. Morris discuss some of the unique features of the MIND diet, such as a component—separate from other vegetables—dedicated to green leafy vegetables, and another that is specific to berry consumption. Dr. Morris feels prevention of Alzheimer's disease is very important at a public health level. She would like to see a diet intervention randomized trial take place that will lead to public health messages and dietary recommendations for Alzheimer's prevention, and she and her team are working hard to make this goal a reality. REF #1-8

### **Functional Neurology Wrap Up**

Dr. Bland's series on functional neurology has featured interviews with four extraordinary professionals: Dr. David Perlmutter, Dr. Dale Bredesen, Dr. Gregory Jicha, and Dr. Martha Morris. To bring the series to a close, Dr. Bland highlights some of his personal takeaways and insights from these discussions.

Dr. David Perlmutter: Dr. Perlmutter's latest book, *Brain Maker: The Power of Gut Microbes to Heal and Protect Your Brain—for Life* (Little Brown and Company, 2015), has just been released, and Dr. Bland calls out Dr. Perlmutter's discussion of the gluten story—and the influence of a chronic inflammatory response on neurodegeneration—as a highlight of their January discussion. In addition, Dr. Bland feels special acknowledgement of Dr. Perlmutter's discussion of insulin signaling and its impact on neurological function is important to note. Not only do glial cells represent the glue that holds neurons together, but they also represent the brain's immune system, and so activation of glial oxidative and inflammatory response can injure neurons, ultimately leading to neuronal apoptosis and loss of neuronal reserve.

Dr. Dale Bredesen: Billions of dollars have been spent on developing pharmaceutical drugs to treat Alzheimer's disease—with very little success to show for it. Dr. Bredesen designed a multifactorial functional medicine approach for his patients with cognitive decline, and—through a small study—he has demonstrated a *reversal* of symptoms. The results are very important from a research perspective, but perhaps even more importantly, Dr. Bredesen has seen his patients regain function that has allowed them to return to the activities of normal life. Dr. Bredesen is truly pioneering a new approach to treating patients who are experiencing cognitive decline.

Dr. Gregory Jicha: It is impossible to overstate the important role of mitochondrial activity in promoting neuronal reserve. Dr. Jicha—both a researcher and a clinician treating patients—provided invaluable insights into identifying a symptom profile (involving the brain, the liver, the heart, and the muscles) in patients experiencing mitochondrial fatigue. Dr. Jicha helped to illustrate the important roles of traditional nutrients as well as phytochemicals as neuroprotective agents that are important in a treatment program for cognitive decline.

Dr. Martha Morris: Diet has been demonstrated to play an important role in both prevention and treatment of cognitive decline. With her novel new program, the MIND diet, Dr. Morris is an expert guide in describing the dietary constituents that promote neurological health and function.

Dr. Bland concludes the April issue with a brief summary of recent medical literature that supports different aspects of the field of functional neurology. REF #9-17

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