



Participate in clinical trials

Tirisham Gyang, MD

Several clinical research projects with human subjects are currently underway at the Ohio State MS Center. Tirisham Gyang, MD, is the principal investigator of a COVID-19 vaccine study in patients with MS, which continues to enroll patients. This study is measuring the immune response of patients, whether they're on or off disease-modifying therapies, to all of the COVID-19 vaccines. A special test invented by scientists at Ohio State is being used to specifically measure immune responses that protect against the virus and prevent it from entering human cells. The preliminary data are

currently being analyzed and the results will be published very soon.

The next phase of this study will investigate the effects of the COVID-19 booster vaccine on patients with MS. Early results show that patients treated with certain disease-modifying drugs have a reduced response to the COVID-19 vaccine. The muted response was seen in patients taking drugs that deplete B cells or that modulate sphingosine 1-phosphate receptor. We're now studying how the booster vaccine will affect the response in all patients with MS. Enrollment is open to all interested in participating.

Yinan Zhang, MD, one of our new MS doctors, also has a very interesting study that will begin enrolling patients in 2022. It will investigate biological aging in individuals with MS, with the goal of determining if individuals with MS age differently from those without MS. An individual's biological age may be older or younger than their chronological age, and people whose biological age is older than their chronological age

may be at risk of worse health-related outcomes. The study will measure markers of biological aging from MS participants' blood, compare them to those from people without MS and correlate the biomarkers with clinical and MRI outcomes pertinent to MS.

Finally, the Ohio State MS Center is evaluating patients with MS for enrollment in an important clinical trial of a new pill that may be effective against progressive as well as relapsing types of MS. The oral drug under investigation works by inhibiting an enzyme called Bruton's tyrosine kinase (BTK); drugs in this category are called BTK inhibitors. The hope is that BTK inhibitors will prevent progression in MS disability, in addition to suppressing relapses. Ohio State is one of the leading MS centers participating in these pivotal clinical trials.

For more information and to participate in any of these research projects, contact us at 614-293-6123 or MSResearch@osumc.edu.

DEPARTMENT OF NEUROLOGY

MULTIPLE SCLEROSIS PATIENT NEWSLETTER

WINTER 2021



COVID-19 vaccine booster timing and efficacy in multiple sclerosis — it's not so simple

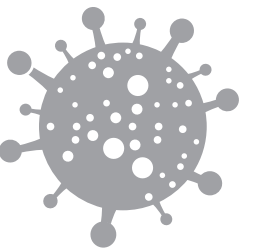
Emily Harrington, MD, PhD

A recently published study investigating how people with multiple sclerosis on B cell depletion therapies respond to COVID-19 vaccination has offered new insights into vaccine responses. This study offers hope that people on B cell depletion therapies may have some protection from COVID-19 infection after vaccination.

We often look for antibodies in the blood, which are produced by B cells, to determine if someone has been exposed to a virus or has been vaccinated. T and B cells also become activated during infection or vaccination and the presence of activated T and B cells can be measured in the blood. Multiple studies have demonstrated that some patients on B cell-depleting therapies (ocrelizumab, rituximab) and S1P1R antagonists (fingolimod, siponimod)

may not generate antibodies after COVID-19 vaccination. A recent study at the Amit Bar-Or, MD, laboratory at the University of Pennsylvania measured not just antibody levels but also B and T cell responses after COVID-19 vaccination in patients with MS on B cell depletion therapies. They found that people with MS on B cell depletion therapy had strong T cell responses despite having reduced levels of antibodies after COVID-19 vaccination.

This study also found that the production of antibodies after COVID-19 vaccination was the strongest in people with MS on B cell depletion therapy who had some B cells (C19/CD20) present in the blood, suggesting that checking B cells



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LEARN MORE

Mark your calendar for our next MS Education Series Event on Thursday, April 21, from 6-7:30 p.m. via Zoom. Registration and details are available at wexnermedical.osu.edu/mscommunity.



MAKE AN APPOINTMENT

Our caring MS team is dedicated to you and your unique MS journey. Visit one of our experts in an MS Specialty Clinic to see how we can work with you to improve your quality of life. Learn more at wexnermedical.osu.edu/neuroclinics.



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may be a good strategy to determine when to recommend a COVID-19 vaccine booster. In this study, it took approximately six to 10 months after the last B cell depletion infusion to see B cells coming back in the blood.

Determining the optimal timing of COVID-19 vaccine doses is a challenging decision. People with MS and MS providers have to weigh the risk of adjusting the therapy plan and the risk of potentially not generating an adequate COVID-19 vaccine response. For some MS medications (fingolimod, siponimod, ozanimod, ponesimod, alemtuzumab, cladribine, ocrelizumab and rituximab), it's generally recommended to get vaccinated two to four weeks prior to starting them. If you're already taking one of these medications, the optimal timing of vaccination should be discussed with your MS provider.

Tirisham Gyang, MD, at The Ohio State University Wexner Medical Center's Multiple Sclerosis Center is currently enrolling patients in a unique study measuring antibodies that neutralize or inhibit COVID-19 after COVID-19 vaccination. If you're interested in participating,

Visit wexnermedical.osu.edu/mseducation to view recordings of our virtual MS Education Series. You'll have access to past events, view resources and download the Q&A from each session.



MS Care Team Staff Spotlight: Tirisham Gyang, MD

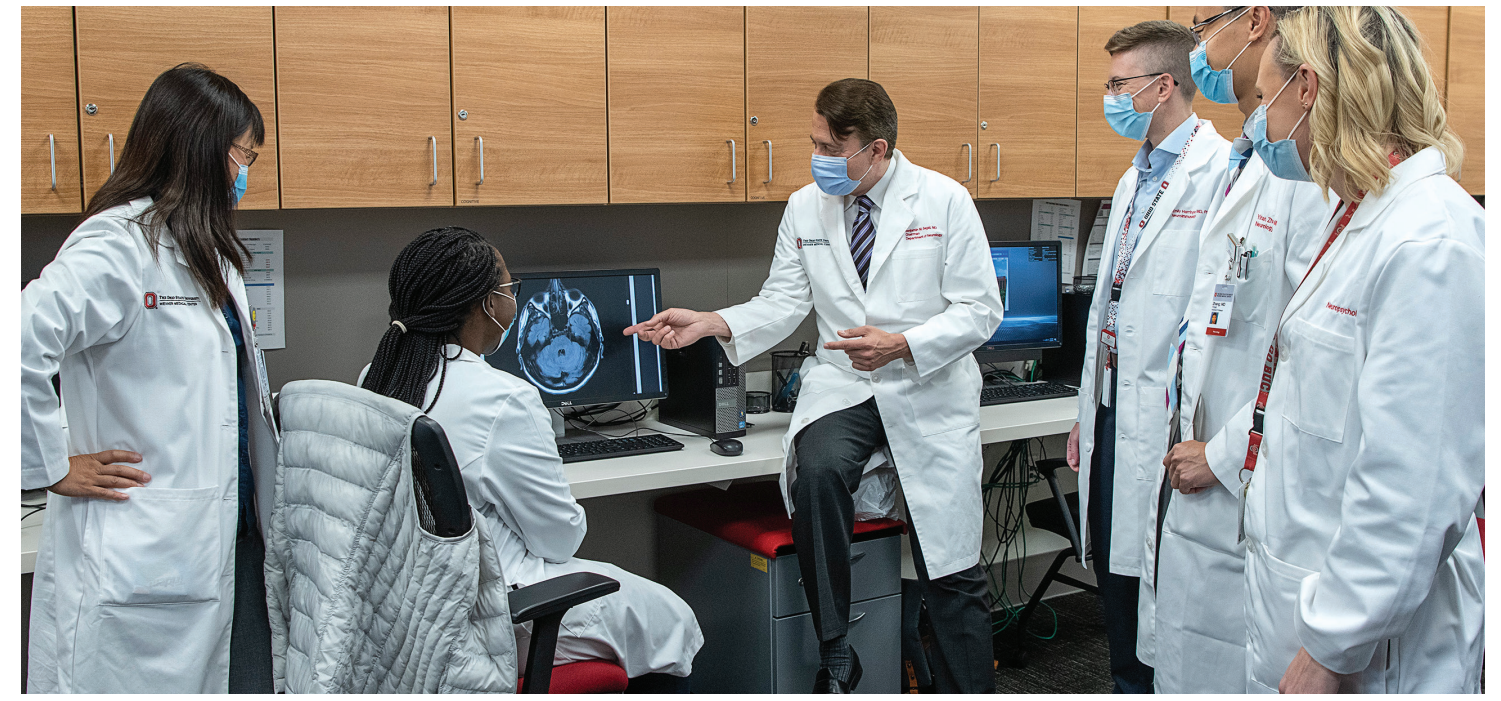
Hometown: I'm from a small city called Jos in the central part of Nigeria, where I spent most of my childhood before moving to the U.S. for college.

Education/Training: Undergrad: Saint Louis University; Medical School: St. Georges University; neurology residency: SUNY Upstate Medical School; fellowship: University of Rochester Medical Center

Clinical and research interests: My current research interest is in understanding how patients with MS respond to the COVID-19 vaccine and booster shot. We're currently enrolling patients. I'm also a clinical trialist and enjoy investigating new drugs in MS.

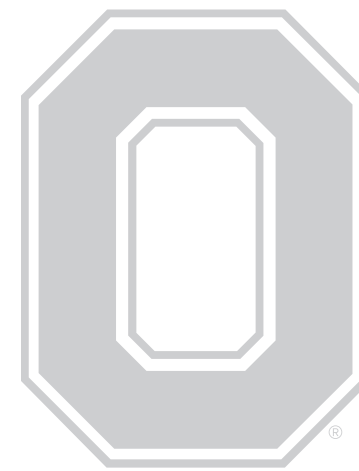
Hobbies and interests: I recently starting learning to play the guitar. I also enjoy cooking, traveling and knitting.

What makes Ohio State a leader in MS care? The Ohio State MS Center has effectively integrated excellent multidisciplinary MS clinical care with groundbreaking, innovative clinical and bench research. I'm very excited to be part of a team with such excellent talent and innovation.



Basic science and translation research

Tirisham Gyang, MD



As a critical part of our core mission, the Ohio State Multiple Sclerosis Center is actively involved in a variety of cutting-edge research initiatives, with the overall goals of increasing our understanding of what goes wrong when a patient has MS and better treating and preventing disability in patients. In addition to clinical studies, we have a very active basic science lab that has made instrumental strides in revealing the causes of MS, and that is pointing the way to improved therapies.

The director of the MS division, Benjamin Segal, MD, has a lab that's doing very innovative research recognized all over the world. Recently, his lab published an article in the prestigious journal *Nature Immunology* about its discovery of a new subset of white blood cells with the potential to reverse damage in the nervous system. These cells also have the ability to suppress the destructive inflammation that damages nerve fibers and the protective myelin sheath that's wrapped around nerve fibers during MS. The ultimate goal of this research is to develop cell therapies that restore lost neurological function in people with

MS and other disorders that target the central nervous system.

Another study in Dr. Segal's lab involves investigating the impact of aging on MS. Studies are underway to investigate interventions that block the transition from relapsing to progressive MS. The goal of this study is to increase our understanding of how changes in the body that occur with normal aging can interact with harmful pathways in MS to drive disease progression. Understanding these mechanisms is instrumental in the development of therapies that delay, or even prevent, the onset of progressive disease.

There are also studies looking into the immune response of patients with MS before and after treatment with disease-modifying therapies. These studies can lead to the discovery of new biomarkers that predict how well an individual with MS will respond to specific disease-modifying drugs, or that reflect "silent" inflammation in people with MS that otherwise would only be revealed by more expensive MRI scans.