

# Eating for MS How Diet May Be Linked to Symptoms and Outcomes

A Publication of the North American Research Committee on Multiple Sclerosis



# IN THIS ISSUE

# INFO CORNER

### NARCOMS Info Corner

### **Director's Letter**

**Feature Focus:** Eating for MS: How Diet May Be Linked to Symptoms and Outcomes

**Snapshot:** Learning From NARCOMS Surveys

**12** MS News

**4** MS Messenger

5 Crossword

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What is NARCOMS? NARCOMS is a registry for people who have multiple sclerosis (MS). Registry participants complete two surveys each year to provide information about themselves and their experience living with MS. Data from these surveys are used in research studies and to help further our understanding of MS. Participation in the registry is voluntary, and responders' identity and privacy are carefully secured.

## What is the goal of NARCOMS?

The NARCOMS Global MS Patient Registry helps to facilitate research about multiple sclerosis in North America and around the world. Collaboration between MS centers of excellence throughout the world helps to increase knowledge, improve clinical care, and enhance the quality of life for persons with MS.

### How private is my information?

We will keep the information that you provide us private and confidential by storing your data in a secure database. All information will be used for research purposes only. We do not share any personally identifying information with any person or research institution. We follow all Federal (HIPAA) laws regarding confidentiality.

## Not yet a NARCOMS participant?

Please contact us at **www.NARCOMS.org** to enroll online.

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### **Tell us your thoughts!**

Have an idea? We would love to hear from you! Send us your questions, comments, and suggestions. Email: MSRegistry@narcoms.org Online: www.narcoms.org/contact-us

2 ///

### NARCOMS NOW

VOL. 12, ISSUE 1, 2023 Robert Fox, MD Managing Director

Ruth Ann Marrie, MD, PhD Scientific Director

Amber Salter, PhD Coordinating Center Director

Gary R. Cutter, PhD Scientific Advisor

Alexis Plaga, MS Managing Editor

John Fredieu, PhD Medical Writer and Editor

Samantha Lancia, MS Technical Editor

#### PUBLISHER

MH life sciences

2 Clarke Drive Cranbury, NJ 08512, USA

Alicia Bigica Editorial Director

**David Lepping** Vice President & Executive Producer, MJH Productions

Helena Coppola Senior Graphic Designer

Katherine Wandersee Writing Consultant



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## DIRECTOR'S LETTER

Dear NARCOMS Now Readers:

**WE HOPE THAT YOU ARE** enjoying the changing seasons where you are living.

In this issue of *NARCOMS Now*, the Feature Focus examines how diet may relate to symptoms and outcomes in patients with multiple sclerosis (MS). People with a healthier diet (higher in fruits, vegetables, fiber, etc.) tend to have less severe physical disabilities and were less likely to experience severe fatigue, depression, and pain. These studies



Robert Fox, MD

suggest that it may be helpful to consider your diet and lifestyle and how it might relate to your MS.

In the SnapShot, we examine the level of physical activity and the participants' ability to perform daily work and leisure activities. In the Spring 2022 NARCOMS survey, we asked participants if their MS affects their performance of moderate activities, strenuous activities, and whether MS has reduced their physical function or caused physical limitations. We also asked them whether they participated in physical activities or exercise. This data reveals some of the challenges faced by people with MS as it progresses.

In the MS News section, we review a recent report about the Mediterranean Diet and how it is associated with cognition in MS. We also examine a study that describes the impact of diet on inflammation and brain health, as well as a study that examines diet and vitamin supplementation on anxiety and depression.

As always, we appreciate your participation in the NARCOMS registry and thank you for your continued effort and contribution to MS research!

Sincerely,

Robert Fox, MD Managing Director, NARCOMS



# FEATURE**FOCUS**

# **Eating for MS:** How Diet May Be Linked to Symptoms and Outcomes

Many claims have been made about how certain food choices can help or hurt your MS journey, but the answer–and the science–isn't quite that simple.

person's diet can make a big difference in health conditions like diabetes or heart disease. But what about a disease like multiple sclerosis (MS)? At one time, people dismissed the idea that diet might affect MS symptoms or disease course, explained Kathryn Fitzgerald, ScD. That might be changing as we learn more about the different ways that diet can affect the body. Dr. Fitzgerald is an assistant professor of neurology at Johns Hopkins University School of Medicine, where a lot of her work and research focuses on how diet can have an impact on disorders like MS. "Research is continuing to evolve with respect to diet and MS outcomes," she told *NARCOMS Now*.

Dr. Fitzgerald has published over a dozen studies on the role of diet in MS, including several based on NARCOMS survey data. A recent study looked at whether different diets can affect cells in our bodies that regulate inflammation in people with MS. She also has studied specific diets in people with MS, and whether diet-related changes can be seen in imaging studies like brain MRI **(TABLE)**.

### **Diet Affects the Body As a Whole**

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Poor diets are linked to a variety of health problems. "Diet and other lifestyle factors are

strongly related to developing diabetes, high blood pressure, or heart disease," Dr. Fitzgerald noted. "We know from many large-scale studies that having these conditions is associated with poor outcomes in people with MS." Dr. Fitzgerald worked on a study based on NARCOMS survey data from approximately 9,000 people with MS. The study showed that people who had a greater number of non-MS health conditions (such as diabetes) were more likely to have severe MS-related disability. For example:

- People with MS and certain non-MS health conditions need an assistive device (such as a cane) to walk at an earlier stage than people who do not have non-MS diseases.
- In the NARCOMS study, people with MS who did not have a vascular condition (like heart disease) were able to walk without an assistive device (like a cane) for a median of 18 years after MS diagnosis. Those who had at least one vascular condition were able to walk without an assistive device for just 12 years after diagnosis.
- This 6-year gap was present even after the researchers accounted for other factors that might have affected disability. These included disability level at diagnosis, socioeconomic status, race/ethnicity, MS treatments used, and other factors.

### TABLE. Selected Research Studies on MS and Diet

Study	Торіс	Key Findings
Katz Sand I, et al. Mediterranean diet is linked to less objective disability in multiple sclerosis. <i>Mult Scler</i> . 2023;29(2):248-260.	Mediterranean diet in a real-world group of 563 people with MS	People with MS who ate a Mediterranean diet were more likely to have lower disability as observed by the researchers and lower patient- reported disability.
Fitzgerald KC, et al. Diet quality is associated with disability and symptom severity in multiple sclerosis. <i>Neurology.</i> 2018; 90:e1-e11.	Results of 2015 NARCOMS diet questionnaire from about 7,000 respondents	Survey data showed that a healthy diet combined with healthy lifestyle habits were associated with lesser disability and symptom burden in MS. People who consumed diets low in fruits and vegetables and higher in processed foods had greater symptom burden.
Fitzgerald KC, et al. Measures of general and abdominal obesity and disability severity in a large population of people with multiple sclerosis. <i>Mult Scler</i> . 2020;26(8):976-986.	Study among NARCOMS participants to determine associations between higher waist circumference and MS outcomes	Higher waist circumference was associated with more severe MS disability, even after adjusting for overall obesity.
Katz Sand I, et al. Randomized- controlled trial of a modified Mediterranean dietary program for multiple sclerosis: A pilot study. <i>Mult Scler Relat Disord</i> . Nov;36:101403.	Thirty-six women with MS were randomly assigned to consume either a modified Mediterranean diet or their regular diet for 6 months	The modified Mediterranean diet was high in fish, fresh fruits, vegetables, and whole grains; it eliminated meat, dairy, and most processed foods and limited salt intake. This dietary intervention was associated with reduced fatigue and disability and overall reduced the impact of MS symptoms.

### What Constitutes a Healthier Diet?

Recently, over 7,000 NARCOMS participants completed an extensive survey about their diets. The questionnaire asked people with MS about their intake of fruits and vegetables, whole grains, and sugar, and other eating patterns. The diets rated *highest* in quality had the following features:

- Higher in fruits, vegetables, and legumes (average 3.3 servings per day)
- Higher in fiber and whole grains (average 1.7 servings per day)
- Higher in calcium
- Lower in red meat and processed meats (such as packaged lunch meats)
- Lower in sugar from desserts and sweetened beverages





### INTERESTED IN PARTICIPATING IN A STUDY ABOUT DIET AND MS?

Here's What You Need to Know

- Before entering a study, find out what is involved: whether you need to travel to the study site, whether all meals will be eaten at the site (controlled feeding), how you will manage the study diet, and what aspects of your MS and lifestyle will be evaluated.
- Sticking with a dietary intervention trial is difficult.
  If a trial involves a placebo or control, people in that group may not perceive the benefits of participating.
   "Cheating" or deviating from the study diet is common, even if the participants are given all the foods to consume.
- Measuring changes in MS related to diet can be very challenging and often involves a large number of study subjects or a long time period.

REFERENCE: Fitzgerald KC, Sand IK, Senders A, et al. Conducting dietary intervention trials in people with multiple sclerosis: Lessons learned and a path forward. *Mult Scler Relat Disord*. 2020;37:101478. doi:10.1016/j.msard.2019.101478

Survey participants were asked whether they had an MS relapse or a gradual worsening of symptoms in the past six months. They were also asked to rate the severity of their symptoms, including fatigue, mobility problems, pain, and depression. The survey results suggested that people with healthier eating habits also tended to live healthier lifestyles: they were less likely be overweight or smokers, and more likely to routinely engage in physical activity. Eating a healthier diet and having healthier habits had a major impact on their MS symptoms:

- People with the highest-quality diets were 20% less likely to have more severe physical disability than those with poor diets.
- Those with healthier overall lifestyle habits were less likely to report having severe fatigue, depression, pain, or cognitive impairment.
- MS symptom severity was reduced among those who were non-smokers, especially if they consumed better-quality diets.

"Since our original NARCOMS study, newer studies have also shown that eating a healthy diet is related to other MS outcomes, such as disability. The specific diets studied differ slightly, but they share many common core components, like being high in fruits and vegetables and low in processed foods," Dr. Fitzgerald said.

# What About Diets Aimed at Controlling MS?

Many books, websites, and apps promote cure-all diets for a variety of diseases and health conditions. Still, much of the dietary advice out there is not based on scientific evidence, Dr. Fitzgerald said. Some of these diet plans focus mainly on what *not* to eat instead of promoting a variety of healthy foods. Some diets designed for people with MS include Swank (low in saturated fat) and Wahls (a modification of the Paleo or "cave man" diet). Some people who follow them feel that their

6



MS symptoms have improved while on the diets (check out MS News on page 12 to read about a recent study on these diets and how they might affect mental health symptoms in MS). Others have found these diets difficult to follow over long-term periods due to their restrictions. Research on these MS-specific diets is mostly from small studies, but there are few controlled studies, Dr. Fitzgerald said. "Some small studies have looked at MS-specific diets in relation to MS symptoms like fatigue. However, we don't know what the effects would be in a larger group of people with MS." So far, the scientific research available has not identified one specific "MS diet" or nutritional program that can directly slow or reverse the disease process in MS. This research is ongoing.

### **Does the Gut Hold the Answers?**

We can't overlook the role of the gastrointestinal tract, or "gut" in diseases like MS. As much as 80% of the immune system is thought to reside in the gut. In addition to immune cells, there are more than 100 trillion micro-organisms living in our intestines. Among these are about 10,000 species of bacteria. These organisms coexist in an environment called the "microbiome." Many researchers believe the microbiome contains clues about the underlying causes of MS and possibly even new treatments. Scientists are beginning to gain more knowledge about the interactions between the microbes of the body and the foods and nutrients we consume. "We know that diet is an important contributor to the composition and activity of the gut microbiota—the bacteria and other living cells in the intestinal tract," said Dr. Fitzgerald. "This is an evolving area of research. We are hoping to explore the contribution of diet to activity of the gut microbiota as it relates to MS outcomes in a future study."

# Should You Change Your Diet to Improve Your MS?

When many people think about changing their diets, their goal is often to lose weight. But improving diet quality may have other benefits as well. Some benefits might include reducing risk of heart disease (such as a heart attack), improving mood and energy levels, and possibly helping with MS symptoms such as fatigue. Among the general population, people who consume what is considered a healthier diet tend to have lower levels of pain, fatigue, depression, and difficulty with thinking and memory.

Diets are very hard to stick to, which can make them very hard to study, Dr. Fitzgerald cautioned. It is also not easy to clearly see the effects of a diet and separate them from the many other factors that affect health. A registry such as NARCOMS helps to capture "real world" information about how people really live, including their diet and lifestyles, Dr. Fitzgerald noted. NARCOMS surveys also help MS researchers learn what is important to people with MS. With these perspectives, researchers are able to be more "patient-centered." This means focusing on the issues that people affected by MS and their families care about most.

## POPULAR DIETS STUDIED IN PEOPLE WITH MS





# **LEARNING FROM NARCOMS SURVEYS**

WHEN PEOPLE WITH MULTIPLE SCLEROSIS (MS)

have disease progression, they may experience worsening fatigue and more difficulty with walking. These complications, as well as anxiety, depression, and sleep disorders impact the performance of activities of daily living (ADL), daily accomplishment, and participation in leisure activities.

Over the years, exercise and physical activity therapies have been considered to slow disease progression and manage disease symptoms in people with MS.<sup>1,2</sup> While studies have not confirmed that a structured exercise program can improve the quality of life in people with MS, people with MS who maintain a higher level of physical activity have been shown to have reduced measures of disease activity and progression.<sup>3</sup> Further research into exercise and physical activity and MS disease progression is needed to investigate the effectiveness of exercise for preventing disability worsening and to understand the application of exercise and increased physical activity as a therapy across all types of MS.

In the recent Spring 2022 NARCOMS survey, participants' levels of physical activity and their ability to perform daily work and leisure activities were examined. Participants were asked to selfassess whether their MS affects their performance of moderate activities (e.g., moving a table, pushing a vacuum cleaner, bowling, or playing golf) or more strenuous activities, such as climbing stairs (the rating scale for both was 1 = "limited a lot" to 3 = "not limited at all"). Participants were also asked whether



their MS has reduced their physical function (ability to accomplish their regular work or daily activities) or has caused some physical limitations (types of work or activities they can perform). The rating scale for both was 1 = "all of the time" to 5 = "none of the time". Answers on the rating scale were transformed



#### **FIGURE 1.**



**A.** Higher scores in Moderate Activity, Strenuous Activity, Physical Function, and Physical Limitations indicate greater ability. Higher scores in the PDDS indicate lesser ability. A score close to 1 in Low Leisure Activities and High Leisure Activities indicates fewer participants reporting an impact of symptoms on activities, while a score closer to 2 indicates more participants reporting an impact of symptoms on their ability to participate in leisure activities. Average = Physical Functioning Score of 50-60; Below Average = Physical Functioning Score between 50 and 40; and Significantly Affected = Physical Functioning Score less than 40.

**B.** Average Physical Functioning Scores and Age for each group. No apparent association is seen between age and Average Physical Functioning Score in women participants with relapsing remitting MS.

to scores from 0 to 100 (Physical Functioning Score). A Physical Functioning Score of 50 represents the average score in the general population, with a score of 40 representing a below average score. Participants with a score less than 40 are considered to be significantly affected.

Further, participants were asked whether they participated in physical activities or exercise (Low Leisure Activities) outside of their job (e.g., running, calisthenics, golf, gardening, or walking), and if they engaged in moderate or high physical activity (High Physical Activities) for at least 30 minutes 5 or more times a week (1 = "Yes" and 2 = "No"). Finally, participants were asked to complete the Patient Determined Disease Steps (PDDS), a patient-reported outcome of disability (0 = "normal function" to 8 = "bed ridden").

An example of the data compiled from these questions is shown in **FIGURE 1**. This example shows data obtained from female participants diagnosed with relapsing remitting MS (n=2123). Participants were grouped according to their Physical Functioning Score as average or above (scores of 50-60; n=576), below average (scores between 50 and 40; n=274), and significantly affected (scores less than 40; n=1286). As expected, as a participant's PDDS score increases, their ability to take part in moderate or strenuous



#### **FIGURE 2.**



**A.** Higher scores in physical function and physical limitations indicate greater ability. Women show little difference in participation in high leisure activities with age.

**B.** However, men seem to report less impact on these scores at ages 0-40 years compared to older male participants.

activities decreases. Similarly, participants ability to accomplish daily activities, limitations in activities they can perform, and the PDDS worsened as their Physical Functioning Score declined. Also, as the Physical Functioning Score worsened, more participants reported not participating in leisure activities. This data seems to have little correlation with current age as the average age in each group was similar. Results are similar between MS types (clinically isolated syndrome, relapsing remitting MS, secondary progressive MS, primary progressive MS, and progressive relapsing MS), suggesting that outcomes from a successful study may be applicable to a broad range of people with MS.

As indicated above, age has no association with the Physical Functioning Score in women with relapsing remitting MS. However, in **FIGURE 2**, which compares participant responses between women and men with relapsing remitting MS, the data suggests that men at a younger age (0-40 years) with relapsing remitting MS show a greater impact of MS on physical function and physical limitations compared to women.

Together, the data provided by NARCOMS participants reveals a detailed picture of challenges faced by people with MS as the disease progresses. In addition, data reveal some age and gender differences in the struggles with MS symptoms. These challenges and gender/age-based differences in response to disease progression may provide important details to assist research into therapies and their implementation in people with MS.

#### REFERENCES

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Riemenschneider M, Hvid LG, Ringgaard S, et al. Investigating the potential diseasemodifying and neuroprotective efficacy of exercise therapy early in the disease course of multiple sclerosis: The Early Multiple Sclerosis Exercise Study (EMSES). *Mult Scler.* 2022;28(10):1620-1629. doi:10.1177/13524585221079200

Stroud NM, Minahan CL. The impact of regular physical activity on fatigue, depression and quality of life in persons with multiple sclerosis. *Health Qual Life Outcomes.* 2009;7:68. doi:10.1186/1477-7525-7-68

# MSNEWS

# Highlights From Recent Medical Research in MS

### Eating a Diet Full of Fruits, Vegetables, Seafood, and Whole Grains May Help Preserve Thinking and Memory Skills in MS

A RECENT STUDY LOOKED AT how well people with multiple sclerosis (MS) adhered to (stuck to) the Mediterranean diet, which focuses on foods such as fruits and vegetables, whole grains, seafood, and olive oil. The study asked whether adherence was related to cognition, that is, thinking and memory.

How well people stuck to the diet was measured using the Mediterranean Diet Adherence Screener (MEDAS). Cognition was measured using tests of learning, and how quickly people processed information. The results of the cognitive tests were combined into one measurement.

Among a group of people with MS, researchers found that scores on the MEDAS predicted how well people did on cognitive tests that measured thinking and memory. People who stuck to the diet better had better cognition. They were also 20% less likely to have impaired cognition. Notably, the researchers pointed out that the study results indicated a strong relationship between diet and cognition among people with progressive MS. This suggests that greater adherence to the Mediterranean diet might help to protect the brain in these patients.

The study took into account demographic factors (like age, sex, ethnicity, and socioeconomic status). The study also took into account health-related factors (like body mass index, exercise, sleep habits, hypertension, diabetes, and smoking), as these can affect cognitive outcomes.

The study findings require further research to fully understand the impact that diet can have on MS-related outcomes.

#### REFERENCE

Katz Sand I, Fitzgerald K, Sumowski J. Mediterranean Diet is Associated with Cognition in Multiple Sclerosis. Presented at: AAN 2023. Boston, MA.

# Lowering Your Calorie Intake Could Help Improve Inflammation and Brain Health in MS

**A RECENT STUDY EXPLORED** whether cutting back on food intake 1 to 2 days per week could help improve factors related to multiple sclerosis (MS).

The short, 12-week study compared outcomes of people with relapsing MS who stuck to a reduced calorie diet compared to people who had an unrestricted diet. People in the study group ate 1 to 2 salads with non-starchy vegetables with a light dressing, totaling about 400 to 500 calories, 2 days per week, then ate normal the other 5 days.

At the end of the study, participants in the restricted diet group had experienced significant weight loss, resulting in a lower body mass index (BMI)—a measurement used to estimate a person's body fat



based on their weight and height—and smaller waist measurement. On average, people in this group lost about 2.2 kilograms (nearly 5 pounds) of body fat over the course of the study. Notably, there were no changes observed in the group of people who did not change their diet.

In addition to overall weight loss and lower BMI, people in the lower-calorie group showed improvements in indicators of inflammation, immune, and brain health, as well as other MS-related outcomes. Participants who restricted their calorie intake 2 days per week had improved scores on the Symbol Digit Modalities Test, which measures cognition, as well as reported improvements in fatigue and the overall impact that MS has on their lifestyle. Although more research needs to be done to confirm the study results, the researchers noted that previous studies have shown that being overweight can have a negative impact on MS disease outcomes, and for children and young adults, being overweight may actually increase their risk of developing MS. Together, this prior knowledge and these study findings suggest that improving what we eat and maintaining a healthy weight and body composition may not only improve MS, but may also help prevent it.

#### REFERENCE

Ghezzi L, Tosti V, Cantoni C, et al. Randomized clinical trial of intermittent calorie restriction in people with multiple sclerosis: effects on immunometabolic and cognitive measures. Presented at: 2023 ACTRIMS Forum; San Diego, CA.

### How Anxiety and Depression in People With MS Can Be Affected by What You Eat

**MAINTAINING A HEALTHY WEIGHT** through a balanced diet and exercise may help improve overall disease outcomes in people with multiple sclerosis (MS), but what about mental health?

Research has shown that depression and anxiety are common symptoms in people with MS. Also, lower levels of vitamins like  $B_{12}$  and folate, and higher levels of an amino acid called homocysteine, have been observed in people with MS and have been linked with brain disorders, including mental illness and mood disorders.

New research explored this very topic, comparing the effects of 2 diets and supplements (vitamins) on measures of anxiety and depression in people with relapsing MS. Researchers had study participants with MS follow either the Swank diet, which is low in saturated fats from foods like animal meat and dairy, or the Wahls diet, a paleo-style diet that focuses on vegetables, fruits, and lean meat, for 6 months. Participants also took  $B_{12}$  and folate vitamins during the study.

The researchers measured change over time on the Hospital Anxiety and Depression Scale (HADS) and the Mental Health Inventory (MHI). Blood work was also done at each study visit to monitor vitamin and amino acid levels.

Both diets had a positive impact on measures of depression severity and anxiety symptoms, as well as overall MHI score at the 12- and 24-week visits. The researchers also observed a drop in measures of homocysteine in the blood, as well as significant increases in  $B_{12}$  and folate. This means that the increased levels of vitamin  $B_{12}$  and folate are helping to break down homocysteine, which is needed to create other chemicals important to the body. Notably, the researchers did not find a strong connection between improvements in depression and anxiety and the improved vitamin levels.

Although there was no clear connection between improvements in vitamin levels and depressive and anxiety symptoms, the positive effects of the diets on these symptoms suggests that they may affect mood disorders through a different pathway.

#### REFERENCE

Shemirani F, Titcomb TJ, Saxby SM, et al. Association of serum homocysteine, folate, and vitamin B12 and mood following the Swank and Wahls elimination dietary interventions in relapsing-remitting multiple sclerosis: Secondary analysis of the WAVES trial. *Mult Scler Rel Disord*. Published online May 1, 2023.

# MS**MESSENGER**

The Spring 2023 Survey is going on now! Please be sure to return your paper surveys or complete the online survey if you have not done so yet. Thank you for your participation! >>

<< Previous Page

As always, you can update your contact information with us by calling us at (214) 648-4583 or by email at **msregistry@narcoms.org**.

Save & Return Later



As a refresher for those who complete your surveys online: you no longer need to go to the NARCOMS website to access your surveys, and you do not need a login username or password. A link to your individual survey is emailed to you. You just click on that link to access

survey is emailed to you. You just click on that link to access your survey. To take a break, you can use the "Save & Return Later" button.

A return code will appear on the screen that you must save for use to access your partially completed survey. You also can enter your email address to have the return code emailed to you.



Next Page >>



### HAVE YOU HAD ISSUES RECEIVING THE SPRING SURVEY?

Recently, many participants using web-based email (Gmail or Yahoo) have reported that they have not received the Spring 2023 Survey. This is an important issue that affects your participation, as well as the continuity of survey data.

We have some suggestions that should fix the issue and prevent difficulties, as follows.

1. Add **msregistry@NARCOMS.org** to your safe-senders list in your Gmail or Yahoo account. This should be performed on a computer rather than a phone (if possible). This makes sure that our emails to you are considered safe by your email provider.

For further instructions, use the links below to assist with either Gmail or Yahoo.

Gmail: https://downtimemonkey.com/blog/how-to-whitelist-an-email-address-in-gmail.php) Yahoo: https://www.whitelist.guide/yahoo/

2. Alternatively, if you prefer that your survey be sent to another email address (a non-Gmail or Yahoo email), please let us know. We will update your contact information to your preferred email address.

Please feel free to email us at **msregistry@NARCOMS.org** or call at 1-214-648-4583 if you need assistance changing these settings on your computer or receiving the Spring 2023 Survey.



Thank you very much for completing the recent *NARCOMS Now* Reader's survey. We had almost 100 responses to our questions concerning your interests for *NARCOMS Now* to cover in future issues. Responses showed great interest in quality of life, information about relapses or progression of symptoms, as well as immunological therapies and participant characteristics. Additional comments showed interest in possible comorbidities (shingles, fatigue) and more information on primary progressive MS. Your responses are much appreciated and will allow *NARCOMS Now* to be more relevant for you. As always, thank you again for participating in NARCOMS! We sincerely appreciate your time and effort!





#### ACROSS

- 3. Type of scan to view the brain and spinal cord
- 4. Diet that focuses on eating fruits, vegetables, olive oil, and fish
- 7. A registry that collects data from patients with MS
- 9. Process of acquiring knowledge and understanding
- 10. Area of demyelination seen on brain imaging

### DOWN

- 1. Can help improve MS symptoms and disease course
- 2. Another word for feeling tired
- 5. Type of MS with disease flare ups
- 6. Also known as the 'Cave Man' diet
- 8. Limiting your food intake for a period of time

### NARCOMS Coordinating Center University of Texas Southwestern

5323 Harry Hines Blvd Dallas, TX 75390-8806 Non-profit Org. U.S. Postage PAID Permit No. 2683 Dallas, TX

# NARCO**MS NOW**

### BE PART OF NARCOMS—HELP TO ADVANCE RESEARCH IN MS

Whether you were recently diagnosed with multiple sclerosis (MS) or have lived with it for years, your personal history with the disease helps contribute to improving the lives of others with MS.



Participation in the NARCOMS registry allows you to be part of the process. The data provided by participants gives researchers a clearer picture of how a condition like MS impacts the lives of those affected.



Participation in NARCOMS is confidential—your information is kept secure and completely private. If you have MS and are not yet participating in NARCOMS, or have been out of touch for a while, we would love to hear from you! Contact us via email at MSRegistry@narcoms.org.





For more information on the CMSC visit www.mscare.org www.NARCOMS.org