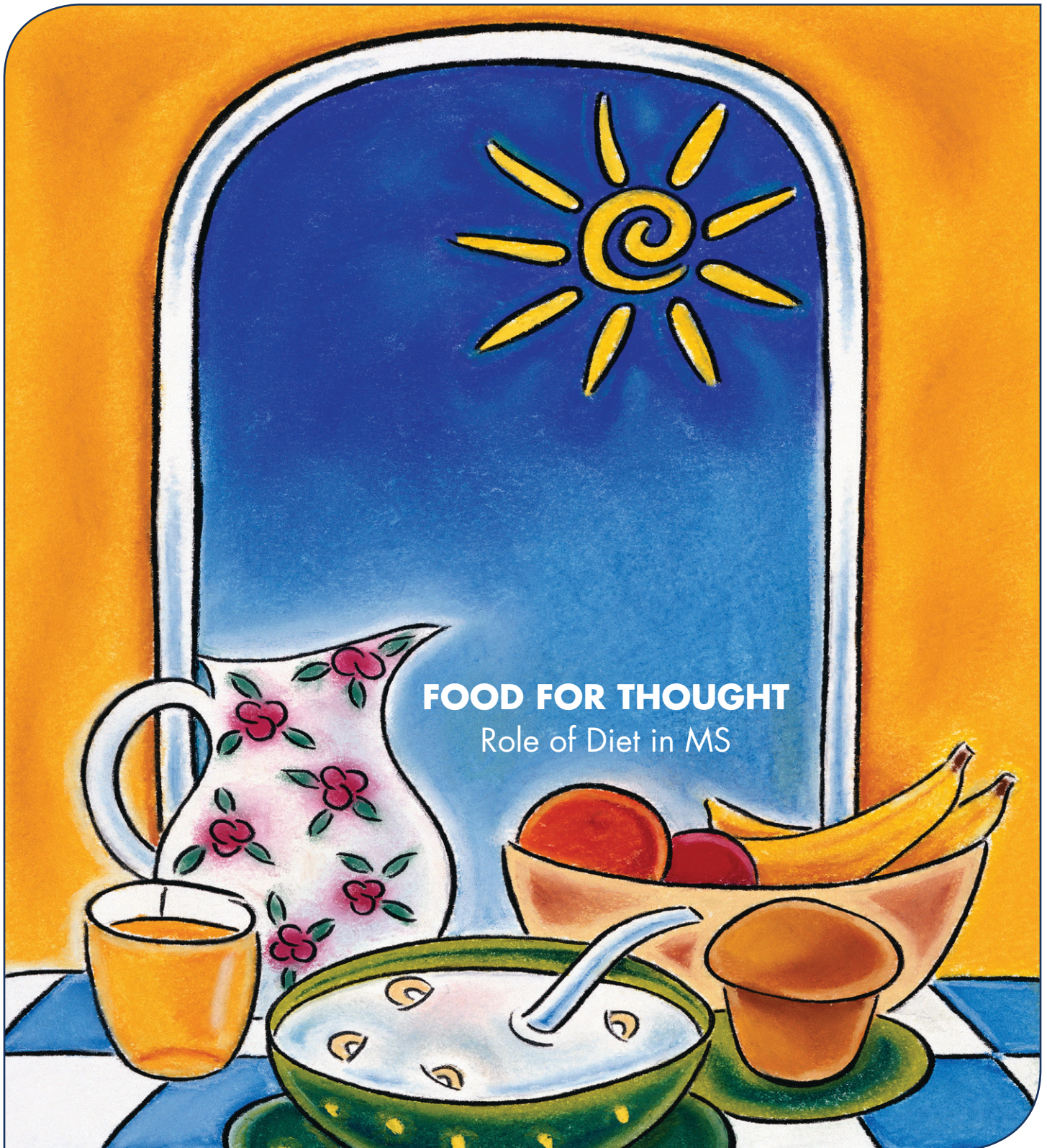


# NARCOMS NOW

www.narcoms.org

Vol. 7, Issue 1, 2018



## FOOD FOR THOUGHT

Role of Diet in MS



# INFOCORNER

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## Reminder When Completing Paper Surveys

Please use a **pen** rather than a pencil when filling out the NARCOMS paper surveys.

Responses are scanned to electronic files for data capture, and pen is easier to read. Thanks!

## What is the Goal of NARCOMS?

The NARCOMS Global MS Patient Registry is a registry database that helps to facilitate research about multiple sclerosis for research centers across North America. 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.



NARCOMS is a project of the CMSC.

For more information on the CMSC visit [www.msca.org](http://www.msca.org).

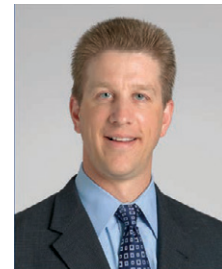
- Robert Fox, MD**  
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Senior Scientific Advisor
- Michele Curran**  
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NARCOMS Now acknowledges and appreciates the companies listed below which have provided unrestricted educational grants through the Foundation of the CMSC toward production costs of NARCOMS Now, including printing and mailing. None of these companies have any control or influence over the content of NARCOMS Now and are not provided access to NARCOMS data in return for their support. For any questions regarding NARCOMS Now funding please call 1-800-253-7884.

# DIRECTOR’S LETTER

Greetings,

Welcome to the newly redesigned issue of *NARCOMS Now*! This publication has been provided as a service to NARCOMS Registry participants since 2012. *NARCOMS Now* has a new look and a new publisher, Delaware Media Group, but I want to assure you that your information will remain confidential, as always. We always appreciate reader feedback on the publication, and with this issue we have made that easier for you. In this issue is a reply card seeking your feedback about *NARCOMS Now* magazine. We hope you will share your thoughts!



Robert Fox, MD

This issue focuses on diet and nutrition, a topic that applies to everyone. Diet is so much more than just satisfying our hunger—the science suggests that how we eat may be tied to our immune systems in ways we are just beginning to recognize. The goal of the NARCOMS surveys is to connect the dots between scientific theories and what happens in real life. The nutrition questionnaire you completed in 2015 has provided solid insights for two major published articles, with more in development. *NARCOMS Now* interviewed lead researcher Dr. Kathryn Fitzgerald to learn more about the results.

There is a lot more in this issue, including the Word Search back by popular demand! I invite you to explore, and look forward to receiving your feedback. As always, we would like to thank you in advance for completing our Spring survey. We are grateful for your continued participation in NARCOMS.

Sincerely,

Robert Fox, MD  
Managing Director

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This publication is supported by grants from:





# FEATURE FOCUS

## FOOD FOR THOUGHT

*What NARCOMS Survey Research Reveals About Diet and MS Symptoms*

Can a condition as complex as Multiple sclerosis (MS) be affected by something as basic as diet? MS acts mainly in the central nervous system (CNS), where immune cells attack nerves and other structures in the brain. How could what passes through the digestive system affect what is happening in the CNS?

For every person, diet has important implications for overall health. We tend to focus mainly on our weight, but diet quality also affects mood, energy levels, and risk for conditions like high blood pressure and diabetes. For people with MS, diet quality appears to have an important influence

on symptoms and disability, according to a recent North American Research Committee on MS (NARCOMS) survey. In 2015, NARCOMS participants completed an extensive questionnaire that looked closely at intake of foods such as fruits and vegetables, whole grains, and sugar, along with other eating patterns. The data collected provided new information that was not previously recognized about the role of diet in MS. NARCOMS researcher Kathryn Fitzgerald, ScD, of Johns Hopkins University in Baltimore, spoke with *NARCOMS Now* about why these research findings may be of interest to any person with MS.

One of the mysteries about MS is why some people seem to experience a milder course, with fairly little disability progression. Many things affecting our health cannot be controlled, Dr. Fitzgerald noted, such as our age or family history. Diet, on the other hand, is one aspect that can be changed—although most people will admit it is not always easy! “We knew from studies in the general population that consuming a healthier diet is associated with lower levels of pain, fatigue, depression, and cognitive difficulties,” Dr. Fitzgerald explained. “From our research, we wanted to find out more about how diet and



other lifestyle factors such as smoking and exercise habits might affect symptom severity in people with MS.”

**How Was Diet Quality Measured?**

There are many different ways to assess diet quality, so deciding what constitutes a “good” diet is often subject to debate. Dr. Fitzgerald and her fellow researchers used guidelines from the American Heart Association, U.S. Department of Agriculture (USDA) and other established sources to place survey respondents into 5 groups. Group 5 represented the highest-quality diets, while Group 1 had the lowest quality. Some of the factors that went into a better diet are listed in **Table 1**. The researchers also defined an overall healthy lifestyle, which included the combination of healthy weight (body mass index less than 25), regular physical activity, non-smoker, and above-average diet quality score. NARCOMS survey participants

**NARCOMS by the Numbers**

- The strength of NARCOMS is in the registry’s large size and the quality of the information received from survey participants:
- The NARCOMS Registry has over 41,000 enrollees who report having MS
- 11,100 NARCOMS registrants have completed a survey within the past 2 years
- Over 7,600 NARCOMS registrants participated in the nutrition survey, and nearly 7,000 of these responses met the standards needed for the analysis
- Semi-annual NARCOMS update surveys collect essential information such as height, weight, smoking habits, alcohol intake, and MS therapies. This information was combined with the nutrition data to provide a clearer picture of how diet affects people with MS.



**Table 1. What Factors Were Considered for a Better-Quality Diet?**

- Diets of NARCOMS survey participants rated as highest quality (Group 5) had the following features:
- Higher in fruits, vegetables, and legumes (average 3.3 servings per day, compared to 1.7 for the lowest quality diets)
- Higher in fiber and whole grains (average 1.7 servings per day)
- Higher calcium
- Lower in red meat and processed meats (such as packaged lunch meats)
- Lower in sugar from desserts and sweetened beverages

were asked whether they had a relapse of MS symptoms or a gradual worsening of symptoms in the past six months and rated the severity of their symptoms, including fatigue, mobility problems, pain and depression.

**What Did We Learn About Diet and MS Symptoms from the NARCOMS Study?**

Not surprisingly, the survey results suggested that people with healthier eating habits also tended to live healthier lifestyles: they were less likely to be overweight or smokers, and more likely to engage in physical activity. Consuming a healthier diet and engaging in healthier habits had a significant impact on how

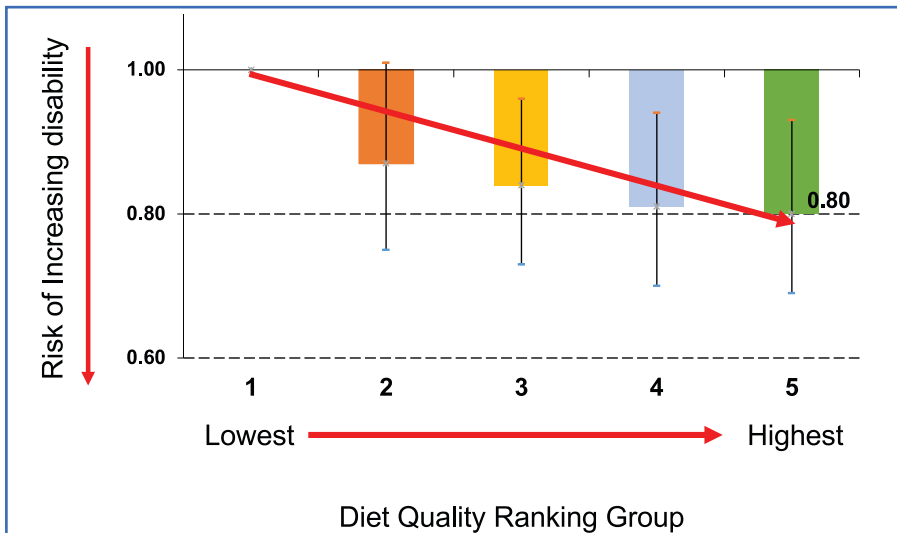
NARCOMS registrants experienced symptoms of MS. Among the key study findings:

- People in the highest-quality diet group (Group 5) were 20% less likely to have more severe physical disability and had less depression than those in the grouping for poorest diet (Group 1). (Figure 1)
- Those with healthier composite lifestyles were less likely to report that they experienced severe fatigue, depression, pain, or cognitive impairment.
- Severity of MS symptoms was reduced among those survey participants who were non-smokers, especially if they consumed better-quality diets.

**What About Specialized MS Diets?**

Many people with MS have wondered about specialized diets and whether they truly impact the disease. Among the myriad of specialized programs available, there are gluten-free diets; diet trends such as Paleo, Atkins, and

Zone; and commercial weight-loss programs such as Weight Watchers or Jenny Craig. The NARCOMS study sought information about whether survey respondents have followed any of these diet plans now or in the past, and the reasons that prompted them to start the diet. Among the total survey participants (6,990) over 3,000 said they had tried at least one of the diet programs listed above. Women, nonsmokers, people with higher incomes, and people with secondary progressive MS (SPMS) were more likely to have followed any diet program. Overall, weight loss was one of the most common motivations for starting. Followers of the Mediterranean diet were shown to have the highest overall diet quality. Taken together, one can see in the chart that participants with the highest-rated diets (green bars; also aligned with lowest MS symptoms) were also more likely to have used low carbohydrate, low sugar, and Mediterranean diets high in healthy fats such as fish and olive oil (Figure 2).

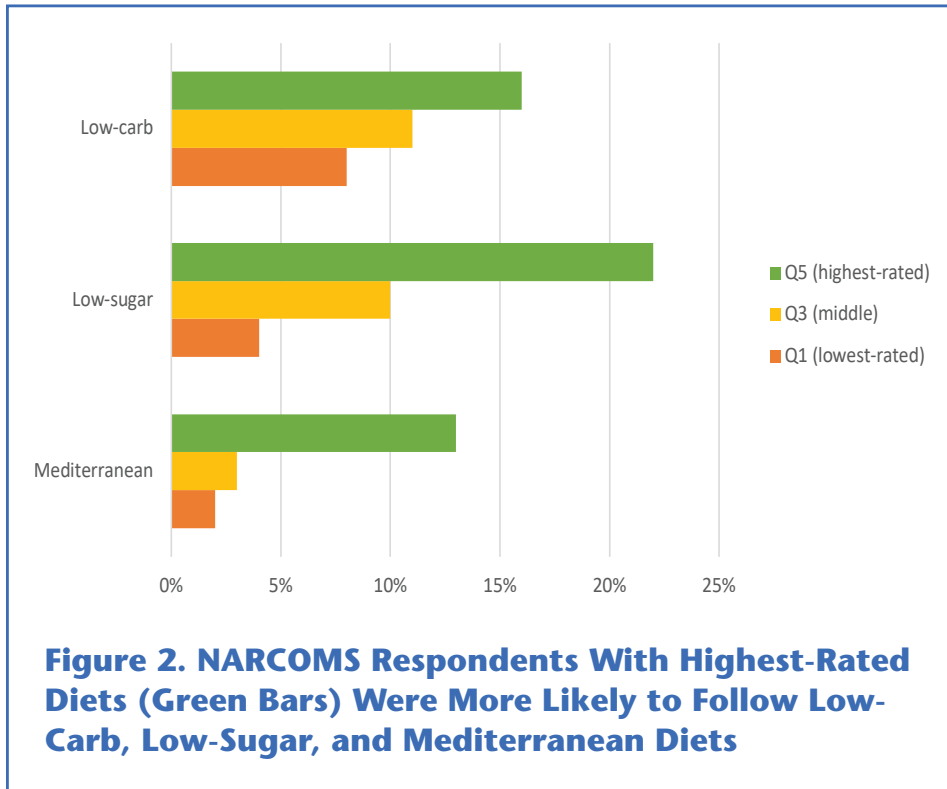


**Figure 1. NARCOMS Respondents with the Highest-Quality Diets (Green Bar) Had Reduced Risk of Severe MS Symptoms**

MS-specific diets include the Swank diet (low in saturated fat) and the Wahls diet (a modification of the Paleo or “cave man” diet). MS-specific diets were followed by a relatively small proportion (between 1.5% and 5.5%) of the nutrition survey respondents (Table 2). Management of MS was the main reason for most people who started these diets. About 40 to 45% of those who had quit the MS-specific diets said they believed these diets were effective.

**Table 2. NARCOMS Participants on MS-Specific Diets**

Wahls Diet	Currently on 104 (1.5%)	Previously on 135 (1.9%)	Prohibits whole grains, most dairy, most seeds
Swank Diet	Currently on 85 (1.22%)	Previously on 315 (5.5%)	High in whole grains, low in saturated fats



healthy lifestyle choices like regular exercise. How does a better diet influence MS? Several mechanisms could be involved, Dr. Fitzgerald suggests. “We know from conditions like diabetes and heart disease that poorer diets raise levels of inflammation and oxidative stress.”

Some limitations to the survey findings reflect the NARCOMS Registry population as a whole: participants are more likely to be older (average 59 years), mainly white, and

This jumped to 85% to 93% of the current followers of the MS diets saying they believe in their effectiveness. While the numbers were too small to draw any clear conclusions about MS-specific diets, people who followed the MS diets did tend to have diet scores ranking toward higher quality.

**What Conclusions Can Be Drawn from the Study?**

This study based on NARCOMS survey results suggests that improvements in diet may indeed affect MS symptoms and MS progression, especially when paired with

have had a diagnosis of MS for an average of 20 years or more. Therefore, the results may not be applicable to everyone with MS. She says the data collected will be used as part of further studies. “Our study is cross-sectional, which means that it looked at just one point in time rather than observing people over a longer time period. And, it did not test how diet might affect future MS progression,” she explained. “The results are not enough to make definite clinical recommendations for MS patients, but they are a good starting point for further research.”



# SNAPSHOT

HOW WE'RE USING YOUR NARCOMS FEEDBACK

## Initial Report on SymptoMScreen Testing

The Fall 2017 NARCOMS update survey introduced the SymptoMScreen (SMS), a new measurement tool developed by Dr. Ilya Kister. The screening tool lists 12 MS symptoms and asks responders to

rate how much each symptom affects their daily activities, from “Not at all” to “Total limitation.” (Table 1)

A total of 6,287 NARCOMS Registry participants completed the SMS and follow-up questions. Most found the SMS easy to understand (80%) and easy to complete (92%). However, responders with lower Patient-Determined Disease Steps (PDDS) scores found the SMS easier to complete and understand, compared to participants who had higher PDDS scores. Nearly one in ten responders at PDDS level 8 felt that the SMS was not easy to complete (Figure 1).

When asked “Does the SMS capture your most important symptoms?” 80% said they agreed. But, as shown in Figure 2, people with lower PDDS scores were much more likely to “strongly agree” with this statement. This suggests that clinicians using the SMS may need to include supplemental questions

**Table 1. SymptoMScreen Questions**

1. **Walking**
2. **Hand Function/Dexterity**  
Poor hand coordination, tremors
3. **Spasticity and Stiffness**  
Muscle cramping or muscle tightness
4. **Bodily Pain**  
Achiness, tenderness
5. **Sensory**  
Numbness, tingling, or burning
6. **Bladder Control**  
Urinary urgency, frequency
7. **Fatigue**
8. **Vision**  
Blurry vision, double vision
9. **Dizziness**  
Feeling off-balance, ‘spinning’, vertigo
10. **Cognitive Function**  
Memory, concentration problems
11. **Depression**  
Depressed thoughts, low mood
12. **Anxiety**  
Feelings of stress; panic attacks

**Table 2. Most frequently reported symptoms not covered in SMS**

Bowel	Speech	Weakness
Sleep	Hearing	Itching
Sex	Headache	Constipation

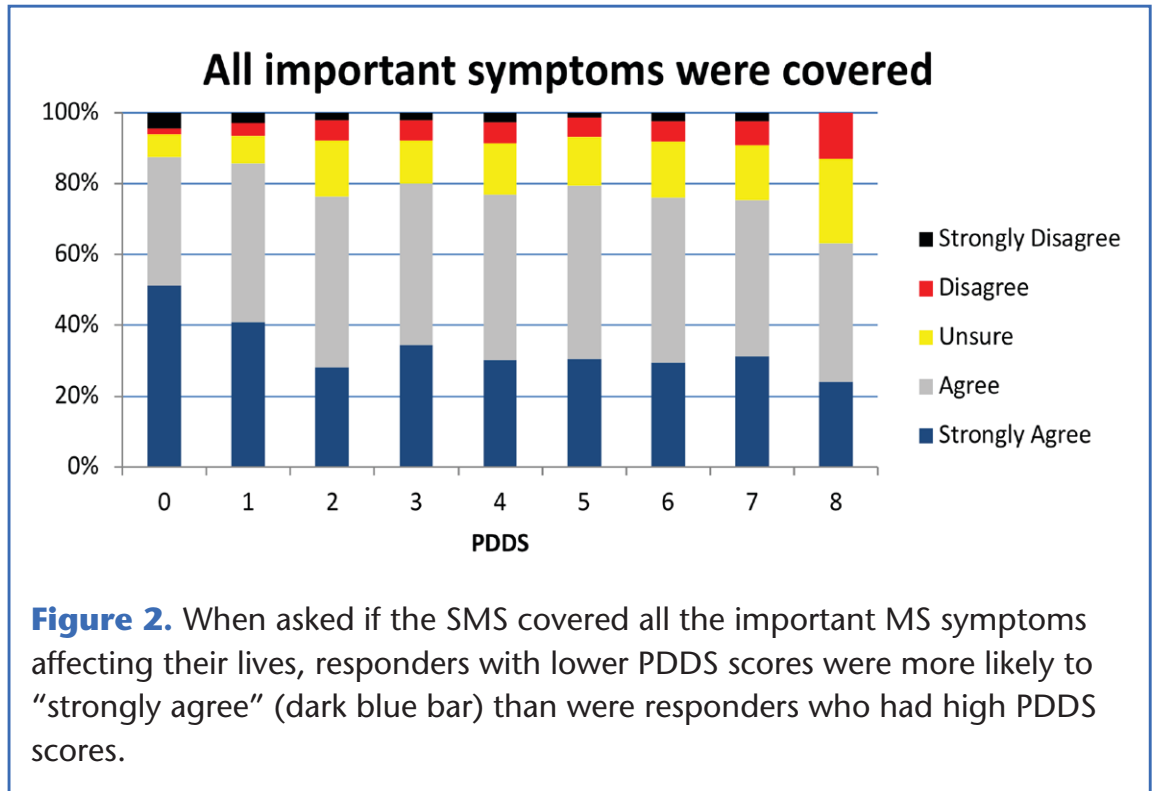
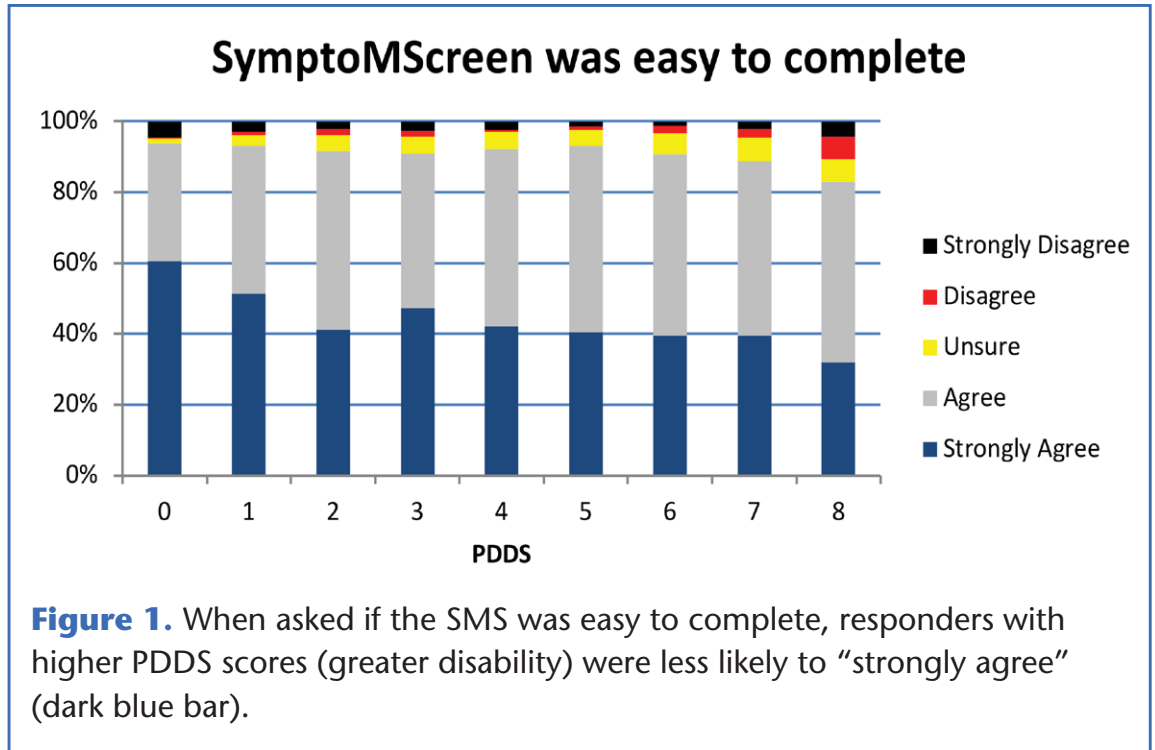


to address other MS symptoms, especially for people at higher disability levels.

More than 1,000 responders provided comments about the SMS and offered several excellent suggestions. Some of the most frequently reported symptoms

suggested for further study are shown in **Table 2**. We will look at all the entries in detail to get a more comprehensive view of the symptoms affecting your daily life. Thank you very much for taking the time to tell us which MS symptoms affect your life the most!

The upcoming spring 2018 update survey will introduce another instrument, the Health Utility Index (see MS Messenger, page 13).



We hope it will address some of the areas not covered in the SMS. We truly appreciate your help in testing these various instruments and look forward to your feedback!



## Do Probiotics Alter the Immune System in People With MS?

Can taking a probiotic supplement help to alter the immune systems of people with multiple sclerosis (MS)? Researchers from Boston used a medical probiotic to explore whether it could change the balance of digestive bacteria that may affect immune system function.

The use of probiotics for general health has become widespread and accepted, but little is known about how people with diseases like MS might benefit from probiotics. Stephanie Tankou and colleagues at the Brigham and Women's Hospital and Harvard University used a medical probiotic known as VSL3 in a small pilot study to determine how a probiotic affects the digestive tract in people with MS. VSL3 is a prescription product used to treat 2 inflammatory diseases of the digestive tract, ulcerative colitis and irritable bowel syndrome. The researchers compared 2 months of probiotic use in 9 people with MS (7 treated with glatiramer acetate, 2 untreated) and 13 healthy volunteers without MS. They analyzed stool samples before the probiotic, during probiotic use, and 3 months after the probiotic was stopped. The results showed that during probiotic use there was an increase in certain bacteria that they believe may lead to a more anti-inflammatory environment in the digestive tract. This effect was seen in both

healthy volunteers and people with MS. When probiotics were stopped, the digestive changes returned to starting levels. A larger research project is planned to see if these changes in digestive bacteria have any impact of disease patterns in MS.

Should people with MS use probiotics, and if so, which ones and how much? According to NARCOMS Managing Director Robert Fox, MD, a neurologist at the Mellen Center for Multiple Sclerosis at Cleveland Clinic, "It's really too early to know if probiotics are beneficial to people living with MS. This study suggests that the immune system's response can change after taking probiotics, but more work is needed to understand if this change translates to benefits for people living with MS."

**Reference:** Tankou SK, Regev K, Healy BC, et al. Investigation of probiotics in multiple sclerosis. *Mult Scler.* 2018;24(1):58-63. Funding from the Americas Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS) provided for this article to be available free online to the public.



## The Gut-Immune System Connection

Years ago, suggestions that the bacteria in the intestinal tract, or the “gut,” may be connected to the immune system seemed a bit far-fetched. With research, this idea is now gaining some support. While MS is known to be an immune disorder of the central nervous system, recent reports suggest that altered gut *microbiota* may contribute to the disease.

The gut microbiota refers to the balance of bacteria and other living organisms that reside in the body, mainly in the stomach and intestinal tract. These “germs” have many essential jobs—breaking down nutrients, but also other beneficial functions such as fighting off potentially harmful invaders like infections and parasites. What’s living in our guts varies widely, depending upon where we live and what we eat. Research by Lloyd Kasper and his team at Dartmouth University compared the diets of people in Burkina Faso, Africa with those of people from Western Europe, and found that the groups harbored very different germ families. The “hygiene hypothesis” suggests that in modern society we might be a bit “too clean” and not exposed to the bacteria that help our bodies to develop a healthy immune system. In this African population, MS is largely unknown, and research suggests that the balance of certain bacteria (such as *Bacteroides* species) might be one of the reasons. These societies have higher exposure to certain germs—both beneficial and harmful—through practices such as using sand to clean dishes in areas where water is scarce.

Studies by Dr. Kasper have also shown that a disease similar to MS can be induced in mice, but by altering their genes and their microbiomes the mice can be resistant to MS.

Human studies have identified some differences in the contents of the gut microbiome among people with MS compared to those who do not have MS. A review summarizing what we know about the microbiome and MS was published by McGill University microbiologists Sebastien Trott and Irah L. King in a special issue of the journal *Multiple Sclerosis* focusing on environmental influences on the disease.

Laboratory experiments have shown that mice fed a diet rich in long-chain saturated fatty acids (more common in the Western diet) were more likely to develop a condition similar to MS. In contrast, mice fed diets that higher in short-chain fatty acids, (derived from plants and high-fiber whole grains) were less likely to develop the MS-like syndrome. Similarly, diets including tryptophan, an essential amino acid, also reduced severity of the experimental MS. When this concept was studied in humans, the composition of the gut microbiota differed between healthy people and those with relapsing-remitting MS, and also for people treated with MS disease-modifying therapies versus those who were untreated.

Much of the research on gut bacteria and MS has been limited to lab research, and we still need more information about how these issues affect individuals with MS, explains NARCOMS Managing Director Robert Fox, MD. “Gut bacteria represent an interesting area of research into how the immune system gets confused and attacks the brain. It’s very early in this research area, so the actual connections between gut bacteria and MS remain mostly unknown.”

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**Reference:** Trott S, King IL. An introduction to the microbiome and MS. *Multiple Sclerosis*. 2018;24(1):53-57. (Funding from the Americas Committee for Treatment and Research in Multiple Sclerosis/ACTRIMS provided for this article to be available free online to the public.)

## Gene Study Predicts the Severity of MS Disease Course

Whether a person's genetic makeup influences multiple sclerosis (MS) is becoming better understood with ongoing advances in genetic research. Previous studies have found at least 11 genes and over 100 genetic combinations that seem to predict a higher likelihood of a person developing with MS. However, the contribution of each of these gene combinations is very small.

We still know little about why some people have a more active MS disease course and whether there may be a genetic link to this. Researchers in Australia found that a variant

of the LRP2 gene (DNA) was associated with relapse risk in MS. The LRP2 gene makes a protein that is involved in the intake of materials inside the cell. To test this observation, researchers from the University of Leuven in Belgium studied an LRP2 gene variant in 527 people with MS (71% women and 29% men) who had not initiated any MS treatment. These investigators concluded that the presence of this LRP2 gene variant may be associated with higher average yearly relapse rates in people with MS. Because many factors contribute to relapse rates, this conclusion is considered preliminary.

**Reference:** Hilven K, Vendebergh M, Smits I, et al. Genetic basis for relapse rate in multiple sclerosis: Association with LRP2 genetic variation. *Mult Scler.* January 1, 2018.

## New Study Shows Higher MS Rates in U.S.

A new study shows that more people in the U.S. have multiple sclerosis (MS) than was previously thought. The number of people with MS in 2010 was estimated at 309 per 100,000 population, or 727,344 people. This count was based on private and government insurance data from 2008 through 2010. In contrast, the last complete national study from the 1970s showed MS prevalence to be just 58 per 100,000. This earlier estimate is the basis for the figure of 400,000 Americans affected by MS, a figure cited by many MS advocacy groups.

Mitchell Wallin, MD, Director of the VA MS Center of Excellence—East in Washington, DC, announced the results at a European MS conference in October 2017. "We believe the increase in prevalence largely reflects the aging

of the population, with improved survival among people with MS," Dr. Wallin explained.

**Reference:** Wallin M. The Prevalence of Multiple Sclerosis in the United States: A Population-Based Healthcare Database Approach. Poster presented atECTRIMS, Oct 26, 2017. Abstract P344.

## Other Resources

- **To read more on microbiome in MS:** Gut Germs Appear to Play Role in Multiple Sclerosis: Are Probiotics for MS Next? [www.scientificamerican.com](http://www.scientificamerican.com), Sept 17, 2017 issue.
- **New research on microbiome:** The MS Microbiome Consortium, Baranzini Lab, San Francisco, CA; (415) 502-6865. <http://baranzinilab.ucsf.edu/ms-microbiome-consortium-msmc>
- **Gene studies in MS:** To participate in genetic studies on MS: See the National Multiple Sclerosis Society's Research web page for details. [www.NationalMSSociety.org](http://www.NationalMSSociety.org) > Research > Participate in Genetic Studies



# MS MESSENGER

WHAT TO EXPECT ON THE NEXT NARCOMS SURVEY

## SPRING SURVEY PREVIEW

The NARCOMS Registry will send the next update survey in April. The Spring 2018 Update survey will include two new sets of questions. One set will include *The Health Utilities Index*® and the other set will include additional employment questions.

The *Health Utilities Index*® (HUI) is a set of questions that measures health status (relative level of wellness and illness) and health-related quality of life. The HUI assesses vision, hearing, mobility, pain, and other aspects of health. When combined, the response options can describe over 1 million unique health status profiles! Information has been gathered with HUI for many years so we will be able to compare the responses with other studies in both MS and non-MS populations as well as with other chronic conditions.

Based on comments from past surveys and feedback from our website, many NARCOMS participants would like to see questions that give more detail about their experience with MS symptoms and the impact on quality of life. This has prompted us to add the *Health Utilities Index*® questions in the Spring survey—on a trial basis for now. We look forward

to hearing from you about whether the HUI better represents your individual experiences.

For research purposes, the survey will also include the previously used performance and functionality scales. We understand that these scales may not address all aspects of your symptoms. As always, please choose the answers that come closest to your situation. We welcome your comments and feedback as we work to find the most suitable survey instruments for long-term use.

### ***Exciting news!***


We have started to collaborate



with the ***UK MS Register*** in Great Britain. This collaboration will allow us to compare how the different health care systems affect the lives of people with MS. The first analysis will focus on employment and will be largely based on the responses to the special section in the upcoming Spring NARCOMS survey. Thank you in advance for participating!


# NARCOMS Q&A

## **Why do your surveys ask personal questions on sensitive topics?**

 Ongoing collection of long-term data on routine topics is one of the main goals of the NARCOMS Registry. NARCOMS also wants to advance MS research beyond what has been done in the past. Many aspects of MS are still poorly understood. The NARCOMS team reviews recent research and presentations at scientific meetings to identify areas that represent “gaps” in our knowledge base about MS. We cannot fill in knowledge gaps if no one asks the questions. As you know, the NARCOMS Registry is in a unique position to quickly obtain thousands of responses to questions on a particular topic. The published results can help to jump start other research studies, many of which are required to have background data like this available before the investigators can apply for funding and ethics approval to proceed.

Sensitive questions are not meant to offend anyone, and often what may seem sensitive to some people does not have the same effect for others. We provide an option to skip questions if you prefer. We truly appreciate your willingness to contribute to the wide range of MS research, even when it is a topic that does not interest you as much. Please keep in mind that your responses can play an essential role in advocacy and healthcare policy development.

## **Can NARCOMS help to facilitate brain tissue donations?**

 Some Registry participants have contacted NARCOMS about donating brain tissue upon death. There are a few options to consider if this is something that interests you. The following institutions accept brain and other central nervous system tissues:

- **Human Brain and Spinal Fluid Resource Center** – Gift of Hope enrollment packets can be requested via email at [vhaglabrainbank@va.gov](mailto:vhaglabrainbank@va.gov), online at [www.brainbank.ucla.edu](http://www.brainbank.ucla.edu), or by phone (310) 268-3536. This institution is a part of the National Institutes of Health (NIH) Brain and Tissue Repository. They will accept donations from anywhere in the country if the specimen can get to their facility within 24 hours.
- **The NIH Neurobiobank** is a network of brain banks and repositories that supply researchers with brain specimens. Locations include the University of Miami, University of Maryland, Harvard University, Mount Sinai Hospital in New York City, and University of Pittsburgh. They also work with the Human Brain and Spinal Fluid Resource Center (HBSFRC) which has locations in every state except in Connecticut, Kansas, Kentucky, Montana, Nebraska, Nevada, Utah, and Virginia. Their web address is [www.neurobiobank.nih.gov](http://www.neurobiobank.nih.gov).
- **Rocky Mountain MS Center Tissue Bank** The tissue bank is located in the Denver area and is affiliated with the University of Colorado-Denver ([www.mscenter.org/research/tissue-bank](http://www.mscenter.org/research/tissue-bank)).

This is not a comprehensive list of all resources. Please check with your local research institutions if you are looking for other options; most medical schools will have information available to you. Not all areas of the country are able to facilitate donations due to the lack of trained pathologists.

It is important that you register with a donation center as soon as you reach your decision. They might request information

from your health care providers or ask that you complete some forms. You will need to discuss your wishes with your next of kin, long-term care facility, and/or funeral home. A donation cannot be made after death *without the consent and action of your next of kin*. Please remember that this should not come with any cost to you or your loved ones. *However, funeral expenses are not covered by donation centers, only donation costs.*

# Play WORDSEARCH

Find the following hidden words relating to ***Meatime Essentials***

- APPRECIATE
- GRAPES
- DINNER
- RECIPE
- PARTICIPANTS
- HEALTHY
- SNACKS
- LIFESTYLE
- PERSONAL
- LUNCH
- INGREDIENTS
- MEASURE
- FAMILY
- MEALS
- BREAKFAST

A	S	H	M	G	V	J	A	G	Y	X	B	E	M	M
S	P	A	E	R	Z	H	U	K	F	G	Z	T	R	E
T	K	P	L	A	N	O	S	R	E	P	G	U	T	A
N	B	M	R	P	L	Q	Y	L	S	I	C	B	C	L
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I	A	Y	R	P	N	I	B	Y	E	Z	P	N	N	S
C	K	T	D	V	H	G	A	L	I	H	G	O	N	N
I	F	S	E	G	C	K	E	T	D	G	R	C	E	A
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R	S	F	N	R	U	P	U	R	R	O	C	V	C	K
A	T	I	T	Y	L	M	S	M	G	Q	I	S	T	S
P	Y	L	I	M	A	F	A	X	N	F	P	A	U	B
R	J	B	W	W	N	K	E	S	I	L	E	S	F	S
K	W	T	V	X	B	O	M	B	E	D	Z	P	B	V

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