

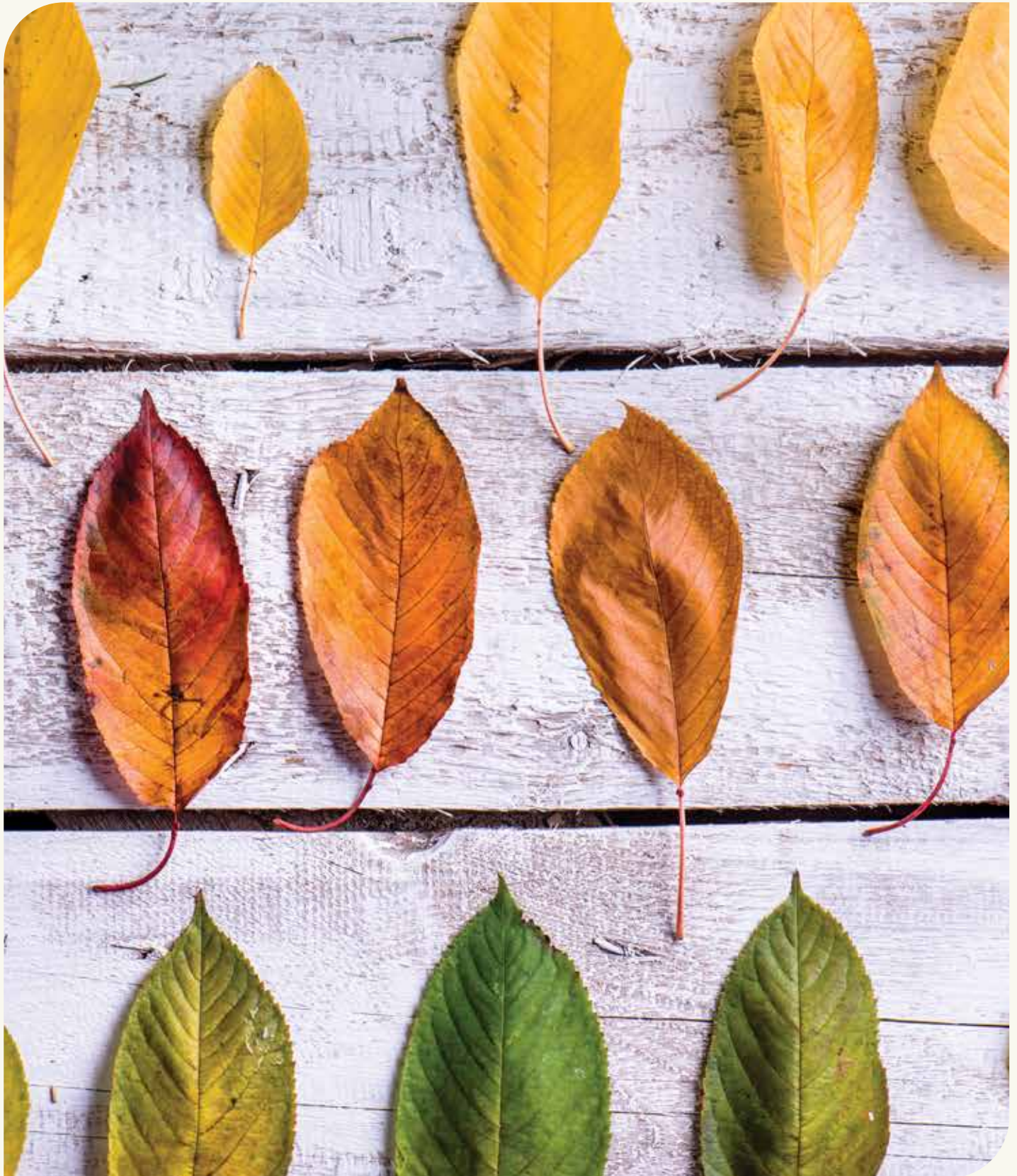
NARCOMS

NOW

Fall 2017

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A Letter from the Director - FALL 2017

Greetings,

We hope you have found the time to complete and return your fall 2017 update despite the holiday season being just around the corner! If for any reason you have not received the survey form in the mail or did not get an email with a link to the survey, please let us know. As always, we want to thank you sincerely for your continued participation.

The fall 2017 survey includes two sets of new questions, one related to waist circumference as a health indicator and the other on gender and sexual identity. Both of these topics are of current interest in the MS and healthcare research communities, so up-to-date results from a large-scale survey are highly desired. We will touch on these topics in more detail in "Survey 101". The fall survey also introduces a new scale that we are considering for future use - depending on your feedback. More details on the SymptoMScreen can be found in the "Q&A" section.

As you may know, NARCOMS is committed to facilitating MS research by encouraging and supporting research efforts by young researchers in their early careers. In this issue's "Feature Focus" we have the pleasure of presenting results from a study conducted by a graduate student and her advisors at Davidson

College. All study participants were recruited from NARCOMS registry; some of you might recall completing an online survey on social participation. On a similar note, the "Snapshot" page summarizes the fall 2016 survey results on social participation, as well as fatigue, for all update responders. Further analyses based on data from that survey will be presented later.

The "MS News" section features an interesting selection of recently published results from researchers around the world. Finally, the "MS Reflections" summarizes the research that Dr. Amber Salter published earlier this year on employment among registry participants. She focused on data that we routinely collect on employment to assess in more detail how MS impacts the hours worked or days missed due to MS.

Happy Holidays,

Ruth Ann Marrie, MD, PhD
Scientific Director, NARCOMS



Dr. Ruth Ann Marrie is a Don Paty Career Scientist, practicing neurologist and Director of the MS Center at the University of Manitoba Health Science Center in Winnipeg, Canada.

NARCOMS INFORMATION CORNER



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We would love to hear from you!
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Your personal information is always
confidential.

The NARCOMS Global MS Patient
Registry facilitates multi-center
research on multiple sclerosis,
developing collaboration between
MS centers of excellence throughout the
world to increase knowledge, improve
clinical care, and enhance the quality of
life for persons with MS.



FACES of NARCOMS

Interested in sharing your story with
other NARCOMS participants?
We are looking for contributions for
the Faces of NARCOMS section.



NEW MAILING ADDRESS

CONTACT INFORMATION

Address: The NARCOMS Registry
Washington University in St. Louis
School of Medicine CB 8067
660 South Euclid Avenue
St. Louis, MO 63110

Remember, you can report email and
address changes anytime to
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Reminder When Completing Paper Surveys:

If possible, please use pen rather than pencil when filling out NARCOMS paper surveys. Responses are scanned to electronic files for data capture and pen is easier to read. Thanks!



FEATURE FOCUS

Loneliness is a growing public health epidemic according to Surgeon General of the United States. In a recent article for the Harvard Business Review he brought to attention that loneliness and weak social connections are associated with a greater risk of depression, anxiety, and reduction in life expectancy comparable to life years lost due to smoking 15 cigarettes a day and even greater than that related to obesity.

The problem of loneliness and social isolation is especially pressing among individuals with chronic illnesses that present barriers to social participation. Symptoms of MS can be perceived as stigmatizing and isolating in ways that interrupt individuals' social participation. By diminishing cognitive and physical functioning, the disease threatens personal autonomy, independence, dignity, and future plans in an unpredictable manner.

Social participation used to be typically understood as in-person interactions with family members and friends or with an extended community through work, church, or volunteer groups. No gold standard exists for its measurement; in some studies, social participation is measured by frequency of interactions, and in others, it is measured by the size

of social networks. Evidence of the relationship between in-person social participation and emotional health has been shown to improve confidence, self-awareness, self-esteem, and depression in individuals with MS.

Over the past few years, new types of social interactions have increased thanks to the introduction of online social networks, such as Facebook as well as disease-focused virtual peer communities. Sites like Shift.ms or MS-Connection.org are solely designed to meet the social needs of patients by creating a safe space to communicate with others, share knowledge, and make friends. Other sites like Patients-LikeMe.com use a health data-sharing platform to allow patients to forge a community around both shared circumstances and a shared purpose of advancing research. Online networks do not have the stigma and physical barriers triggering in-person social isolation and may increase quality of life. Furthermore, such networks are available any time of the day. Although virtual communities are not barrier-free for individuals with MS (e.g., must have access to a computer), these forums hold potential quality-of-life benefits.

Our interdisciplinary research examined social participation of individuals with MS using survey answers from the NARCOMS registry. We developed an original social participation survey and distributed it in cooperation with NARCOMS. We used the survey participants' answers to examine the role of access to resources and other determinants that enable social participation as well as the relationship between emotional health and online vs. in-person types of social participation in individuals with MS. Specifically, we distinguished between in-person participation with friends, online participation with friends, in-person participation with community, and online participation in social networks.

We considered at-least-once-a-week communication frequency as a marker for individuals' using certain types of social participation. Measures of access to

resources included owning a car, public transportation, in-home vs. public computer access, and in-home vs. public internet access. Emotional health included happiness, depression, anxiety and stress measures commonly used in psychology literature. We used descriptive analysis and logistic and linear regression analysis to analyze the data.

The sample consisted of 508 individuals diagnosed with Relapsing/Remitting (71.5% of the sample) or Secondary/Progressive MS (28.5% of the sample). Happiness levels were moderate to high. 40.3% of the sample were in the mild to severe range of depression, 34.2% were in the mild to severe range of anxiety, and 21.3% were in the mild to severe range of stress. The majority of the sample were women (81.5%). The mean age was 59.21 (SD = 9.54) and ranged from 29 to 96. Characteristics of individuals in the sample are summarized in Table 1.

Table 1 Characteristics of the study participants.

	Number (%)		Number (%)
Female	414 (81.5%)	Employed	183 (36.6%)
Social Participation		Access	
Friends In Person	345 (67.9%)	Internet	475 (93.5%)
Friends Online	406 (79.9%)	Car	441 (86.8%)
Community In Person	236 (46.5%)	Public Transp.	182 (35.8%)
Community Online	327 (64.4%)		
Living Situation		Household Income	
Spouse	350 (68.9%)	< \$15000	28 (5.5%)
Parents	30 (5.9%)	\$15,000 - \$29,999	65 (12.8%)
Children < 18 yrs	61 (12.0%)	\$30,000 - \$49,999	81 (15.9%)
Children > 18 yrs	54 (10.6%)	\$50,000 - \$100,000	133 (26.2%)
Friend	11 (2.2%)	> \$100,000	104 (20.5%)
Domestic Help	6 (1.2%)	Not Wish to Answer	95 (18.7%)
Other	16 (3.1%)		
Alone	97 (19.1%)		
Disability		Education	
Normal	83 (16.4%)	High School/GED	119 (23.4%)
Mild	84 (16.5%)	Associate's	79 (15.6%)
Moderate	43 (8.5%)	Bachelor's	150 (29.5%)
Gait	67 (13.2%)	Post Bachelor's	140 (27.6%)
Early Cane	64 (12.6%)	Technical	17 (3.3%)
Late Cane	60 (11.8%)		
Bilateral Support	56 (11.0%)		
Wheelchair	45 (8.9%)		
Bedridden	3 (0.6%)		
History of Depression	159 (31.3%)	Introvert	239 (47.0%)

Using regression analysis, our most important finding was that regular in-person interactions was associated with better emotional health. On the other hand, we found no evidence of a relationship between emotional health and participating in online social networks. Our study implies that to improve the emotional health of individuals with MS, implementing policies and projects that encourage in-person interactions with friends would be more helpful than investments in online interactions. In addition, since we found no relationship between online social networks and emotional health, online social networks could perhaps be optimized to better tend to emotional needs of users, especially in the cases of disease-specific online forums. An extension of this study should consider distinguishing between MS-affiliated vs. non-MS-affiliated community social participation.

We found that access to resources matters most for online social participation as this type of social participation is sought out when individuals have internet at home. Owning a car increased the likelihood of in-person social participation in the community, but did not seem to impact individual's social participation with friends. This result may reflect the fact that when meeting with friends in-person, it is the friends who travel and visit the individual with MS, thus making the MS individual's access to transportation less relevant.

In addition, we found that poor emotional health appears to be a problem for younger individuals, individuals with a disability, and individuals with a history of depression. Thus, individuals with MS with characteristics that put them at risk for emotional health concerns should be monitored and given psychoeducation and resources.

Overall, we found that access to resources matters for online social participation and that in-person interactions are more important for emotional health than online interactions. We would like to extend our thanks and appreciation to all those who participated in our survey. It is with your time and feedback that we can continue to work towards a deeper understanding of how society can enable types of social participation with the greatest influence on emotional health to improve overall quality of life for individuals with MS.

Please note that our findings may not be representative of the whole MS community because of the voluntary nature of participants' membership in the NARCOMS registry and their participation in our survey. On a similar note, the validity of what constitutes "adequate" social participation is unknown. We considered at least once a week as a marker for individuals' using certain types of social participation, but this length of time does not capture the quality and quantity of that social participation. Another limitation is that our study only examined associations between variables; therefore, any discussion of causes and effects should be interpreted with caution.

By: Alica Sparling, PhD and Haley Sanner
Davidson College

Citation: Sparling, A., Stutts, L.A., Sanner, H. et al. *Qual Life Res* (2017) 26: 3089.
<https://doi.org/10.1007/s11136-017-1645-y>

MS Messenger

Introducing the “SymptoMScreen”

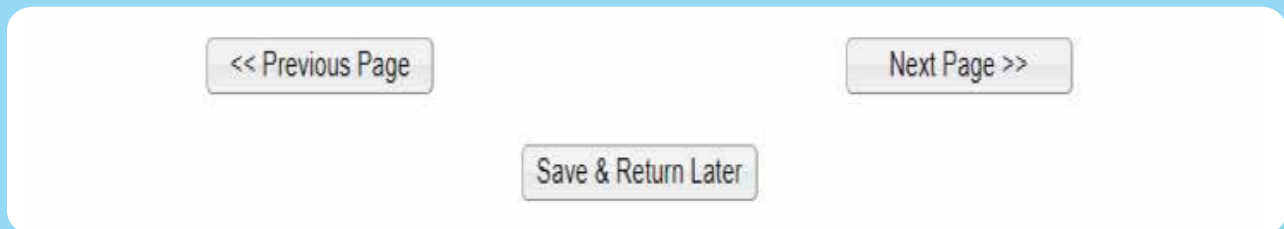
Your feedback over the years has prompted us to explore the use of alternative tools to measure the effects of MS. The SymptoMScreen is a new tool to help capture the severity of symptoms typically associated with MS. This new tool was developed by one of our long-time collaborators, Dr. Ilya Kister. We are excited to give it a try in the fall 2017 survey.

One of the most frequent comments we get relates to the lengthy set of functionality scales in each update survey. The primary issues reported have been that ‘they do not apply,’ or ‘it’s hard to recall back to the time before MS.’ Now we have what we hope is good news! While the process still continues, we have been busy reviewing and selecting other tools for potential use. The fall 2017 includes a scale that has been recently developed by an MS physician. We think that the scale addresses most of the issues reported by registry participants earlier, but we really want to know what you think! As you may have already noticed, we have included a space in the fall 2017 survey for you to give us your thoughts on these new questions.

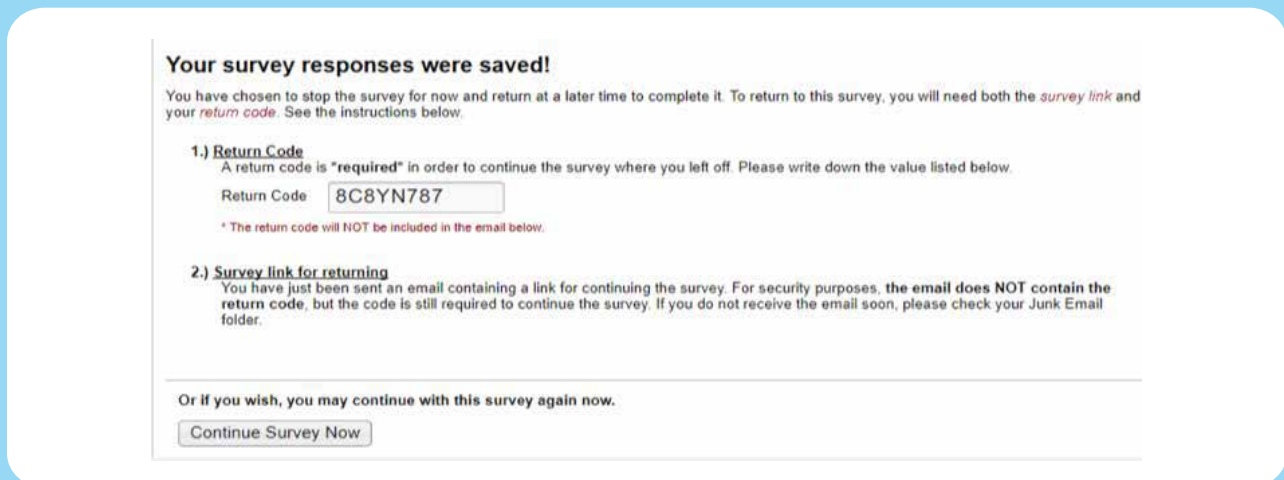
An important part of changing to a new scale involves being able to understand how all of the data collected in the past using the old scales relates to the new scale. That is why we need to collect responses to both scales at the same time. We will also need to repeat both of them again in the spring 2018 survey to understand how change over time is reflected on each scale. This validation work will temporarily increase the survey length and it may seem a bit redundant, but we hope you understand and are patient with the process. In the end we hope to be able to provide a much shorter and easier survey, while still correctly capturing each participant’s symptom severity. We are looking forward to all your comments!

Return Code:

The new online format includes a feature that allows you to stop and take a break while completing your survey. If you wish to take a break, click on the “Save & Return Later” box found at the bottom of each survey page and a Return Code will be emailed to you.



The next time you login to your survey, you will be prompted to enter your return code. Once you have done so, you will return to the survey, right where you left. If you accidentally close your browser, you can call us for the code at (800) 253-7884, or email MSRegistry@narcoms.org.



The “Official” NARCOMS Tape Measure

The Fall Update survey includes questions about waist size. In recent studies waist size has emerged as an important health indicator. To ensure that everyone has easy access to accurately measure their waist we have mailed standardized tape measures to all registry participants. We ask you to use it to measure your waist circumference as instructed in the survey form. Online survey users had their tape measures mailed separately; if you typically complete the NARCOMS surveys on paper, the tape measure was included with your survey.

Questions or Comments: Please contact us by email, MSRegistry@narcoms.org, or by phone, at 1-800-253-7884 (toll free US). Our hours are 8:00 am- 5:00 pm Central Time, Monday-Friday.

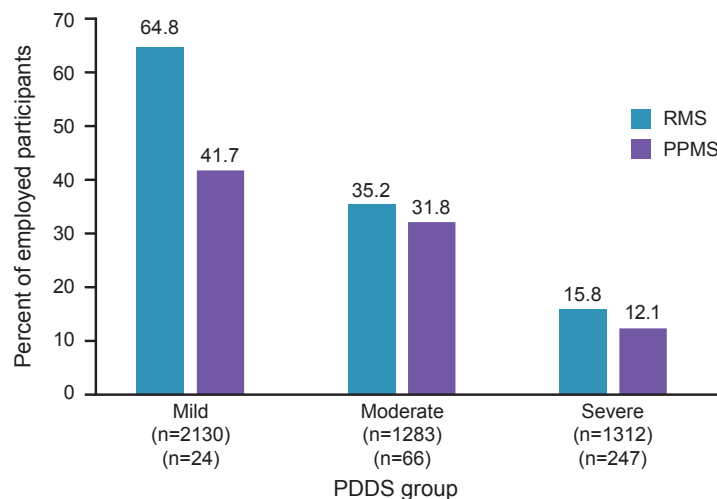
Employment in the NARCOMS Population

One set of questions that is routinely asked of NARCOMS participants is in regards to employment. In a recent article titled, "Employment and Absenteeism in Working-Age Persons with Multiple Sclerosis," published in the Journal of Medical Economics, NARCOMS survey data were used to evaluate the instances of absence or decrease in working hours among those who have been diagnosed with relapsing-remitting, secondary progressive or primary progressive MS. For this study, we analyzed information only from people aged 18-65 years, typically considered to be of "working age." The employment information was combined with data from some of the functionality scales, in which the participants semi-annually report their levels of ability to perform daily activities.

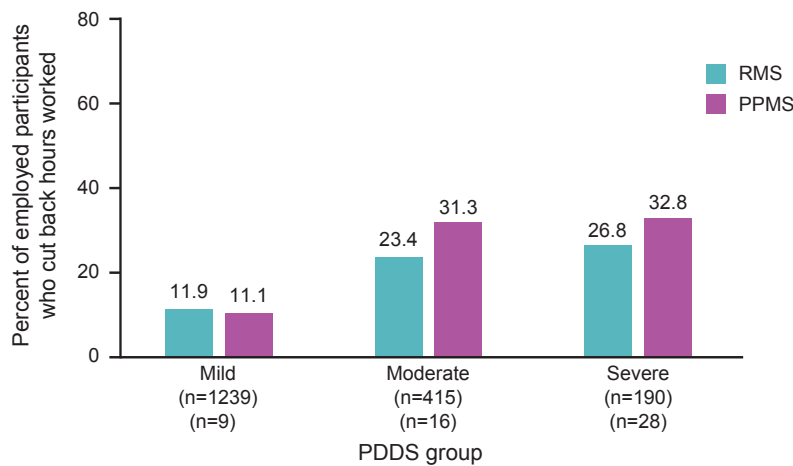
For the analysis, the respondents were broken down into categories of working full time, part-time, or not employed. Those who worked were also asked how many hours per week they typically spent working.

The NARCOMS participants who reported that they had relapsing-remitting and secondary progressive multiple sclerosis were grouped together for the main analysis. That combined group had higher rates of both overall employment and full-time employment, when compared to the primary progressive group. Not surprisingly, participants who answered that their limitations were mild were far more likely to work over 35 hours per week than those with severe limitations.

EMPLOYMENT IN MS



ABSENTEEISM IN MS



Regardless of the full-time vs. part-time status, some participants also reported cutting back on the hours that they were able to work each week. There was little difference in the two groups of people (relapsing-remitting/secondary progressive vs. primary progressive) when evaluating the amount of those who had reduced their working hours. There was a difference when it came to disability levels. Those with more significant disabilities had more reduced working hours regardless of the type of MS. The same results were true when it came to days missed from work or absenteeism. Almost half of NARCOMS responders with relapsing-remitting or secondary progressive multiple sclerosis stated that they received at least some disability benefits due to their reduced capability to work. More than 75% of primary progressive patients received disability benefits, and if working, reported more frequent part-time work.

Other factors also contributed to decreased work hours, such as age, difficulties with memory and concentration, fatigue, and hand function. Participants who had three or more other chronic illnesses or conditions reported decreased employment. Notably, the level of education did not have an impact on working hours in a six-month time period.

All of this information serves to show the impact of MS on the ability to work. Ability to work often goes hand-in-hand with quality of life. Studies like this are needed to increase the awareness and support for research in innovative ways that would allow those with multiple sclerosis to continue in the work force longer if they choose to do so. More research could be done to reinforce the role of rehabilitation services, disease modifying therapies, and increase patient-centered support.

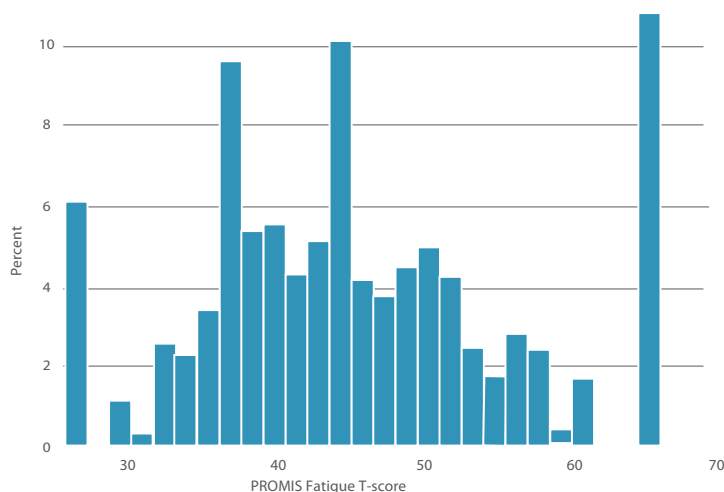
In your role as a NARCOMS participant you are providing very important information about your life with this disease. Your contributions often point out where we and other research groups need to focus more attention. Thank you for allowing us to build on your experiences to help so many others.

Results from the Fall 2016 survey

Fatigue and Social Participation

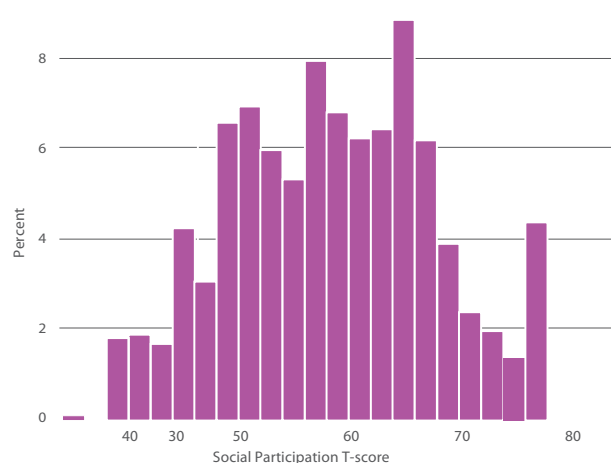
The fall 2016 update survey asked about Fatigue and Ability to Participate Socially. Fatigue is a common and disabling symptom experienced by many persons with MS. Social interaction and support are associated with coping and health-related quality of life. To assess these important issues and how they relate to each other, we used validated tools (questions that have been tested for reliability, accuracy, and sensitivity) that were originally developed with support from the National Institutes of Health. They are aimed at measuring symptoms affecting health-related quality of life. The scoring is compared to that of the US general population. A T-score of 50, is always assigned to the mean of the general population. Each 10-point difference, above or below, is considered a standard deviation, or a meaningful difference.

Distribution of Fatigue scores

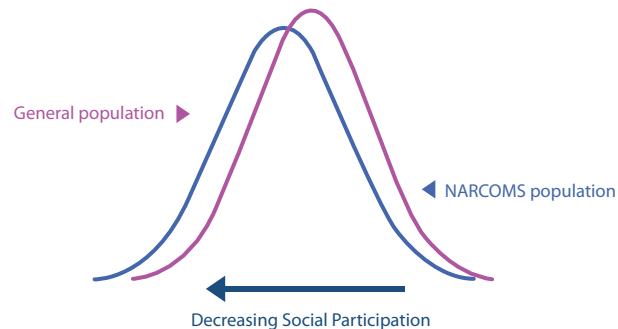
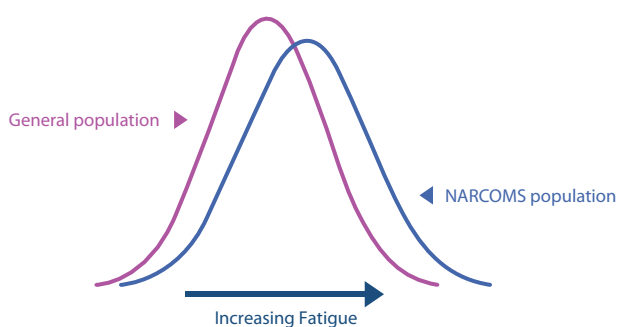


41.6% of the respondents reported fatigue levels at least 10 points higher than the general population average.

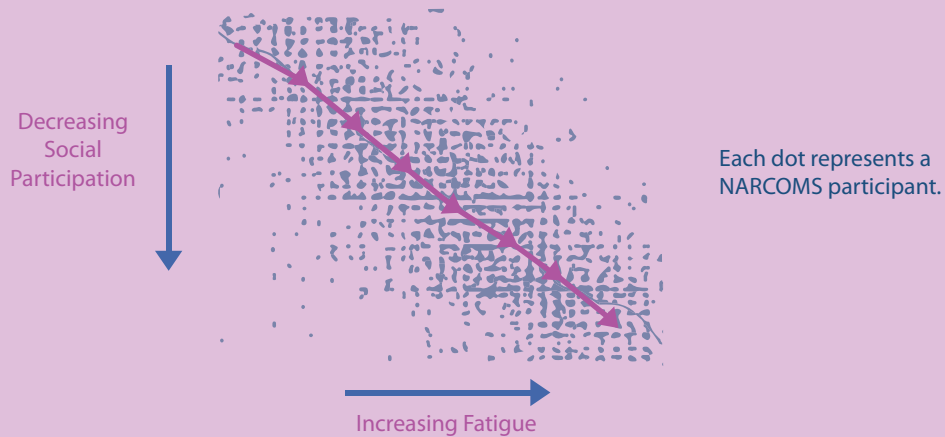
Distribution of Ability to Participate in Social Roles and Activities scores



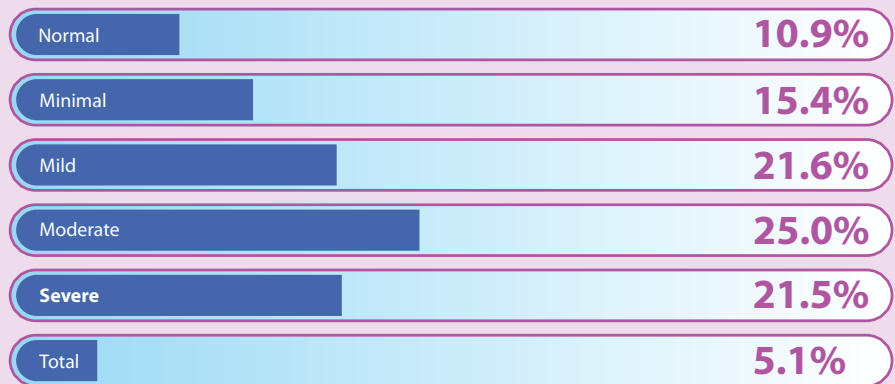
34.7% indicated that their ability to participate in social roles was at least 10 points lower compared to the general population.



As fatigue increases, social participation decreases



Participants that fall into each Fatigue Performance Scale Category



Fatigue is a common and disabling symptom experienced by many persons with MS.

Social support is associated with coping and health-related quality of life.

Reducing fatigue may improve social participation and consequently health-related quality of life for persons with MS.

Epstein-Barr virus, cytomegalovirus, and multiple sclerosis susceptibility: A multiethnic study

Annette Langer-Gould, MD, PhD; Jun Wu, MD, MS; Robyn Lucas, PhD; Jessica Smith, MPH; Edlin Gonzales, MA; Lilyana Amezcua, MD, MS; Samantha Haraszti, MS; Lie Hong Chen, DrPH; Hong Quach, BA; Judith A. James, MD; Lisa F. Barcellos, PhD; Anny H. Xiang, PhD in Neurology® 2017; 89: 1–8

Antibodies are present in the blood for people who have been infected with a virus. The presence of Epstein-Barr virus (EBV) antibodies is known to be associated with increased risk of MS in whites. This study sought to investigate the relationship between the presence of the EBV antibodies and risk of MS specifically in blacks and Latinos. The researchers also wanted to find out more about the potential protective effect of cytomegalovirus (CMV) antibodies on MS risk across the same racial and ethnic groups. The study was designed to test the hygiene hypothesis that states that early exposure to microorganisms (germs) supports healthy immune system development and thus decreases the risk for allergic and autoimmune diseases.

The researchers studied blood samples from black, Latino, and white participants who were diagnosed with either MS or CIS (clinically isolated syndrome) and compared the results with those from matched controls without MS or CIS. The analysis also took into account other factors, such as past and present smoking, socioeconomic status, age, sex, genetic ancestry, country of birth, history of breastfeeding, exposure to younger siblings, and self-reported history of infectious mononucleosis (IM).

The main findings of the study included that having evidence of EBV infection increased the odds of an MS or CIS diagnosis across all three racial/ethnic groups. Evidence of a CMV infection was linked to a lower risk for MS or CIS, but only in Latinos.

Conclusions:

1. There is a strong link between an EBV infection and the increased risk of developing MS. This is true for people across racial and ethnic lines.
2. The evidence of a link between a CMV infection and the lower risk of developing MS is not strong. The authors suggest that a young age at the time of CMV infection may play a key role. While the findings add support for the hygiene hypothesis, the inconsistency between the racial and ethnic groups implies that there is no direct cause and effect involved with CMV and lower risk of MS.

Evidence that supports the idea that there is a role in early –life hygiene includes:

- There is a decreased risk for MS associated with exposure to siblings when young
- There is an increased risk of MS linked to infectious mononucleosis (this is the indicator of EBV) that is delayed into adolescence or adulthood
- There is an extremely low risk of MS when there are no antibodies present for EBV

Smoothness of gait detects early alterations of walking in persons with multiple sclerosis without disability

Massimiliano Puaa, Serena Mandaresu, Giuseppina Pilloni, Micaela Porta, Giancarlo Coghe, Maria Giovanna Marrosu, Eleonora Cocco in *Gait & Posture* 58 (2017) 307–309

In people with MS with little or no signs of disability, early detection of walking impairments is hard. Simple gait measurements such as speed, rhythm and stride length may not be much different from those of healthy individuals. If clinicians could identify those MS individuals with early walking impairments, they could intervene earlier. Adding walking practice/exercise as part of disease management earlier could slow down the progression of the symptoms and help limit the consequences of the disease in middle or late stages.

A research team in Italy developed a study to identify possible differences in walking gait measures using a Harmonic Ratio (HR). This HR compared trunk accelerations between 50 people diagnosed with MS but without disability to 50 age-matched healthy controls. What they found was:

- There were no differences in terms of gait velocity, stride length, stance/swing between the two groups, as they had suspected.
- The Harmonic Ratio in the direction of motion was significantly lower in the MS participants, indicating a less smooth gait.

Findings and Further Questions

The researchers concluded that the study of trunk accelerations through calculation of HR

represents a fast, non-intrusive technique to identify early changes in gait patterns of people with MS before they have evidence of disability. Earlier identification hopefully means earlier corrective action.

Further studies are needed to clarify whether or not more challenging walking paths may cause significant gait changes in a MS group with respect to healthy controls. The researchers were also unable to assess step width using the HR inertial sensor. In other studies, step width was found increased in people with MS with minimal disability and may also represent an early sign of the presence of gait alterations.

Concussion in adolescence and risk of multiple sclerosis

Scott Montgomery BSc, PhD, Ayako Hiyoshi PhD, Sarah Burkill MSc, Lars Alfredsson MD, PhD, Shahram Bahmanyar MD, PhD, Tomas Olsson MD, PhD in *Annals of Neurology*, 25 September 2017

In an earlier small study, researchers found that concussions in childhood or adolescence were associated with a higher risk of developing multiple sclerosis as an adult. Another larger study in Sweden seeks to look at that relationship under better controlled conditions.

They found a higher rate of MS in people who had suffered a severe concussion in adolescence. That increased risk was even higher when the person had more than one concussion, usually from playing sports.

How the study was set up

The researchers searched the national Swedish Patient register for people with a diagnosis of concussion from the register's start in 1964 through 2012. They used the patient registry and the MS registry to identify persons with MS. The 7,292 patients with MS were matched individually with 10 people without MS by sex, year of birth, age/vital status at MS diagnosis, and region of residence (county). That resulted in a study population of 80,212. They determined how many of these people with and without MS had had concussions. They also looked at children and adolescents who had broken limbs during their childhood, birth to age 10 or adolescence, ages 11 to 20.

Results

Only concussion in adolescence was associated with a raised risk of MS. The risk increased as the number of concussions increased. No greater risk of MS was found with concussion in children aged 10 years or under or in children or adolescents who had broken limbs.

Researchers believe that the mechanism by which head trauma in adolescence, particularly if repeated, may lead to a raised risk of future MS, could be due to an autoimmune process in the central nervous system (CNS). Because MS is an immune-mediated disease of the CNS, non-specific damage to the nervous system such as brain concussion or head trauma could release CNS components into the cerebrospinal fluid, eventually reaching the systemic compartment including lymph nodes, causing the autoimmune reaction of MS to be activated.

Table 2 (abbreviated). Association with MS after age 20 years for concussion in childhood and adolescence.

Concussions	Birth to age 10 years		Ages 11-20 years	
	With MS n (%n)	Without MS n (%n)	With MS n (%n)	Without MS n (%n)
None	7179 (98.5)	71747 (98.4)	7075 (97.0)	71202 (97.6)
One	109 (1.5)	1127 (1.6)	201 (2.8)	1649 (2.3)
Two or more	4 (0.1)	46 (0.1)	16 (0.2)	69 (0.1)

Traumatic brain injury signaled by a diagnosis of concussion in adolescence is associated with a raised risk of MS in adulthood. Repeated mild head trauma has been associated with other delayed neurological outcomes and this study provides yet further evidence of the importance of protecting young people from traumatic head injury, especially during participation in sports.

Based on this study, the authors recommend further study on head trauma up to age 20 years because:

- It is more likely to pre-date clinical onset of MS, which tends to occur after age 20 years.
- There may be age-specific differences in susceptibility to some exposures as childhood and adolescence represent distinct developmental phases of the CNS
- The importance of other specific environmental MS risks appears to vary between childhood and adolescence.

A friendly reminder

Please return your Fall Update Survey if you haven't already. If you haven't yet received your survey please let us know.

As always we appreciate your commitment to the NARCOMS Registry and MS research.



MS APPS & BLOGS

There are a lot of applications, or “apps” (as the kids like to say) available to assist you with monitoring and tracking your symptoms. Some apps track sleep or help with rotating injection sites for medications. These apps can be used on your phone, computer, or tablet. Below we describe a few of these apps. You may be aware of other helpful apps. Most of the apps we will describe are free with fee-based upgrades available.

The Symple Symptom Tracker app is available for iPhone, iPad and iPod. The developers are working on an Android version. It can track medications, sleep, and other symptoms (up to 5 symptoms for free).

My MS Manager is an application with a daily journaling feature so you can add any information that is relevant to you. This app was created by the Multiple Sclerosis Association of America for individuals with MS and their caregivers. This free app is available for iPhone, iPad, iPod, and Android.

MS Self is available on iOS operating systems as well as Android. Of not, it also has a voice activated mode. Here you can find educational materials, medication monitoring and heat index information. This app can also share data with a Fitbit fitness tracker. Best of all, it’s also free.

There are so many more apps available for download. If you have a favorite, please let us know. We would love to tell other NARCOMS participants about it. Please email us at MSRegistry@narcoms.org, or call (800) 253-7884.

Dan and Jennifer Digmann (www.danandjenniferdigmann.com) Dan and Jennifer are a married couple who are both diagnosed with MS. Jennifer has Secondary Progressive MS and Dan has Relapsing-Remitting MS. They have devoted their lives to MS activism and inspiring others with their story. They also have written a book, host a radio show and speak about MS nation-wide.

Everyone Here is Jim Dandy (www.everyonehereisjimdandy.blogspot.com) R.W. Broughton writes about his experiences with MS as he lives in Bali, Indonesia. He has quite a way with words are you feel as though you are sitting with him, and a cup of coffee, in his home. His honest approach to his condition is very moving. He is a truly gifted writer.

An Empowered Spirit (www.anempoweredspirit.com)- Cathy Chester writes about her experiences with Relapsing-Remitting MS and her focus on living a “vibrant life after 50.” Not only does she write about her experiences but there are also several videos available as well.

MS Australia Blog (www.msaustralia.org.au) a monthly blog for people with MS. This blog features news articles and information about MS patients. There are stories about research, well-being, services, and personal stories. There is also a special section discussing treatments and medications. As always, you should discuss any questions with your own health care provider.

There are so many more blogs that we have yet to discover or feature. If you have a favorite, please let us know. We would love to tell other NARCOMS participants about it. Please email us at MSRegistry@narcoms.org, or call (800) 253-7884.

Editor’s Note: This information is provided for your convenience, but NARCOMS is not responsible for the content of the individual sites and apps listed.

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