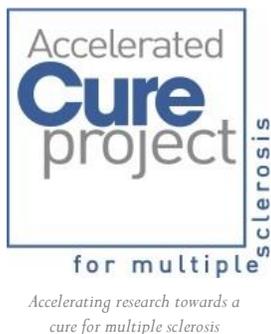


Accelerated Cure Project for MS

July 2019



MS is a complex neurological disease that can be unpredictable and, at times, difficult to treat. People with MS often have other diseases, which may complicate things further. These other conditions, called comorbidities, may occur either before or after an MS diagnosis. Secondary illnesses have the potential to reduce wellbeing and quality of life in and of themselves. In the context of MS, they have been shown to impact MS diagnosis, treatment and disease course. Our first article sheds light on [other health conditions](#) proven most common in people with MS and how they may affect those living with the disease.

The majority of people with MS have other health conditions to contend with. Many rely solely on their neurologist for their care. While a neurologist is an expert in neurological conditions like MS, he or she may not be the ideal clinician to address other problems that frequently occur with the disease. It's important for people with MS to assemble a healthcare team with the appropriate specialists to manage the many facets of MS and any comorbidities they may have. Good communication is essential for the best outcomes, both between people living with MS and their providers, and among clinicians on one's team. Preventing and treating secondary illnesses is also important in this regard. Learn more about [managing MS and other health concerns](#) and some simple strategies to help people with MS achieve the best outcomes and quality of life possible.

Clinical research is the study of health and illness in people. It is the way we learn to prevent, diagnose and treat diseases. A clinical trial is one type of clinical research study. Clinical trials are most often done to determine whether new drugs, treatments or devices are safe and effective. There is evidence that individuals with MS and other health conditions are underrepresented in clinical trials. The end result is a lack of knowledge about the safety, tolerability, and effectiveness of the studied treatments in the "real world" MS population. In addition, very few studies have looked at the incidence of comorbidity in MS. Therefore, when MS studies do include subjects with other diseases, the information necessary to determine their significance is not available. Read more about the [knowledge gaps](#) surrounding comorbidities in MS clinical research and the implications of them.

Our [Repository Spotlight](#) focuses on Dr. Farren Briggs and his team at the Neuroimmunological Disorders Gene-Environment Epidemiology Lab at Case Western Reserve University, who recently uncovered interesting new information about the relationship between MS and comorbid autoimmune conditions.

Our [iConquerMS Spotlight](#) highlights Healthy Mind Healthy You, a nationwide study that looks at how to use mindfulness to cope with stress. The knowledge gained from this research could help people with more than 100 different medical conditions, including MS. Healthy Mind Healthy You is currently recruiting those living with MS, care partners, and family members, even if they are not members of iConquerMS. Read more about the [study](#).

We hope you enjoy this newsletter and encourage you to share it with anyone you think may be interested in learning more about MS research.

Jan and Lindsey, on behalf of the Accelerated Cure Project Team

Comorbidity – Living with MS and...

MS is a complex neurological disease that can be unpredictable and, at times, difficult to treat. People with MS often have other medical conditions, which may complicate things further. These other illnesses are referred to as comorbidities. Managing multiple health conditions poses a challenge to people with MS and their health care providers. Coexisting maladies may have the same symptoms as MS, as is the case with depression, which may mimic MS fatigue. Teasing out symptoms and determining which are due to MS and which are due to another health condition is often difficult. This distinction is important in both the diagnosis and treatment of MS. MS disease modifying therapies (DMTs) may also interact with medications required for other illnesses.

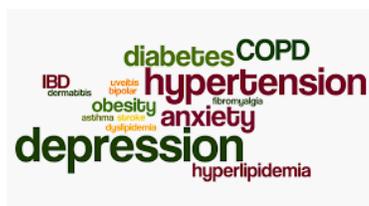


Comorbidities may occur either before or after an MS diagnosis, and have the potential to reduce one's wellbeing and quality of life. Exactly why a secondary condition develops isn't always clear. In some cases, it may be related to MS. For example, some people with MS have trouble with mobility. This may lead to being less physically active and overweight, which in turn may increase the risk of high blood pressure, high cholesterol and diabetes. In other cases, comorbidities and MS may share common risk factors. For example, smoking increases the risk of MS and also increases the risk of lung cancer and other pulmonary diseases. Unfortunately, comorbidities in MS are often overlooked. This may be due to patients attributing all symptoms they experience to MS and not to other undiagnosed conditions. Treating these additional conditions is essential for people with MS, not only for their overall health and wellbeing, but also for the effective management of their MS.



The prevalence of comorbidities in people with MS varies widely. [Researchers](#) in Australia conducted an international survey of people with MS. Of the 2,399 respondents, 67 percent reported having at least one other health condition. Investigators concluded comorbid disorders are significantly more prevalent in North America. Obesity and smoking (either former or current) are associated with an increase in the number of comorbidities, while healthy diet, physical activity and moderate alcohol consumption are

associated with decreased number of comorbidities. Data show having a higher number of concurrent health conditions and MS leads to a lower quality of life, as well as an increased chance of disability and MS relapse. Another [study](#) confirms smokers with MS (particularly women with MS) have an increased risk of developing comorbid conditions (specifically, autoimmune diseases) after MS onset. A [research article](#), published in 2008, suggests the risk of comorbidity in MS is more common in certain groups, specifically in males, older individuals (greater than 60 years old), African Americans (compared to Caucasians), and those with lower socioeconomic status (annual income less than \$15,000).



The [International Advisory Committee on Clinical Trials in MS](#) is a committee comprised of international leaders in MS research and clinical care that is jointly supported by the [National MS Society](#) and the [European Committee for Treatment and Research in MS](#) (ECTRIMS). In 2015, the committee conducted an international workshop on comorbidities in MS (called the MS

Comorbidities Project) to characterize the types and frequencies of comorbidities in MS, as well as to evaluate their impact on those living with the disease. As part of this effort, investigators conducted a [review](#) of existing published studies related to coexisting medical conditions in people with MS. They concluded the five most prevalent disorders occurring alongside MS are depression, anxiety, high blood pressure, high cholesterol, and chronic lung disease. The committee's review showed other common disorders in people with MS include heart disease, congestive heart failure, stroke, arthritis, inflammatory bowel disease, irritable bowel syndrome, seizure disorders, bipolar disorder, sleep disorders, and alcohol abuse. The most prevalent autoimmune diseases occurring with MS were thyroid disease and psoriasis. Interestingly, [researchers](#) at the University of Buffalo found that autoimmune comorbid conditions develop sooner in individuals with MS taking DMTs, suggesting a possible link between the two. However, it's important to note these results have not been replicated in other studies. Other [research](#) confirms depression, bipolar and anxiety disorders are highly prevalent among persons with MS. As discussed in our [April 2019 newsletter](#), depression has the potential to reduce quality of life, make other MS symptoms, such as fatigue, pain or cognitive changes, feel worse and may be life threatening.

According to the MS Comorbidities Project, the risk and prevalence of cancer in people with MS varies according to the type of cancer. Data suggest the types of cancer that occur most often in those living with MS are cervical, breast, and digestive system cancers. Results show people with MS have a higher risk of brain tumors and bladder cancer, and a lower risk of pancreatic, ovarian, prostate and testicular cancer, compared to the general population. Other investigations shed additional light on cancer risk in people with MS. A [2014 study](#) confirms an increased incidence of breast cancer in MS (with larger tumor size at diagnosis) compared to other common malignancies. [Researchers](#) in Sweden suggest there is a decreased overall cancer risk in people with MS, however increased risks were also observed for brain tumors and bladder cancer. [Investigators](#) at the University of Buffalo agree there is a lower rate of cancer in people with MS compared with the general population. Interestingly, this study found MS subjects with a personal history of cancer were more likely to report DMT use, suggesting a possible relationship between the two. [Researchers](#) in France also found MS to be associated with a reduced overall cancer risk. Statistical analysis revealed MS subjects were 37 percent less likely to develop cancer compared to the control group when matched



by geographic area, age, sex and lifestyle habits like tobacco use and alcohol consumption (which are known to increase cancer risk).

There is growing evidence that comorbidities affect MS disease progression. [Investigators](#) at the Cleveland Clinic have studied the impact of a number of comorbidities on disease course in people with MS, including hypertension, hyperlipidemia, diabetes and obstructive lung disease. Their results show all of the comorbidities studied except hyperlipidemia impact clinical outcomes (walking speed, disability, and depression). The study team also observed a cumulative effect in subjects with multiple comorbidities. Of all of the conditions studied, hypertension had the greatest effect. Interestingly, study results showed MRI outcomes are unaffected by comorbidities.

Concurrent vascular conditions, such as heart disease, hypertension or peripheral vascular disease, adversely influence health outcomes in several chronic illnesses, including MS. A [2010 study](#) found comorbid vascular diseases substantially increase the risk of disability progression in MS, whether such conditions are present at MS symptom onset, diagnosis or later in the disease course. In addition, results suggest the risk of MS progression increases with the number of vascular conditions an individual may have. [Researchers](#) at the University of New York suggest people with MS having one or more cardiovascular conditions (including hypertension and heart disease) show an increased lesion burden and more brain atrophy on MRI. There is also [evidence](#) that vascular and visual comorbidities, such as cataracts or glaucoma, are associated with progression of visual disability in MS.



In addition to influencing MS disease progression, there is evidence that comorbidities may complicate an MS diagnosis. One [study](#) suggests coexisting illnesses may delay MS diagnosis and worsen the amount of disability an individual may have at that time. Data suggest the odds of moderate disability at diagnosis increases in subjects with vascular conditions or obesity. The odds of severe disability increase with musculoskeletal or mental comorbidity. More research is needed to better understand the mechanisms underlying these relationships.

Comorbid conditions have the potential to profoundly impact an individual's care, whether they have MS or not. Those taking medications for multiple diseases may have difficulty coordinating them, in terms of correct timing and dosage. Some may experience compounding effects of medications or drug interactions. Comorbidity may affect the frequency or intensity of treatments for MS and other medical conditions, as well as their effectiveness, safety, and tolerability. According to a [2015 study](#), comorbid conditions increase the risk of hospitalization in people with MS.

MS treatment in the context of comorbidities has been a major focus of MS research. There is evidence some DMTs for MS increase the likelihood of developing other health conditions. For example, a [recent study](#) showed individuals with MS are at increased risk of developing autoimmune thyroid



disease when treated with [Lemtrada](#) (alemtuzumab). There is [evidence](#) that individuals with MS and diabetes are at increased risk of developing macular edema when treated with [Gilenya](#) (fingolimod). In addition, [research](#) has shown people with MS may experience more frequent and more severe migraines while on [interferon-beta therapy](#). Research shows the converse is also true – comorbidities can substantially impact MS treatment. A [recent study](#) examined the correlation between comorbidities and the decision to initiate DMT in a cohort of over 10,000 subjects with MS. Data suggest subjects with higher numbers of comorbid conditions are less likely to start DMT. Some health conditions show more of an effect in this regard than others. Specifically, subjects with ischemic heart disease and anxiety are least likely to initiate DMT, followed by those with hyperlipidemia, chronic lung disease, and bipolar disorder. [Researchers](#) at Johns Hopkins University found subjects with MS and other coexisting conditions are more likely to change from their current DMT due to intolerance. Of interest, there was no relationship between a specific comorbidity and DMT intolerance.

Concurrent illnesses warrant the full attention of people with MS and their healthcare providers. Coexisting health conditions can increase the number of hospitalizations an individual with MS may have, as well as reduce their ability to participate in daily activities at home, work, or in the community. They may delay MS diagnosis, affect treatment, cause more rapid disease progression and may even be life threatening. Learning more about comorbidities and their impact is key to improving outcomes, wellbeing and quality of life for people with MS. We, at ACP, are committed to facilitating research into subjects, like this, that are of utmost importance to the MS community.



Managing MS and Other Health Concerns

MS is a complex disease, in and of itself. In many cases it isn't always the only health problem those living with the disease have to manage. Other conditions (referred to as comorbidities) may occur either before or after an MS diagnosis. These secondary illnesses often complicate things further. Many people with MS rely solely on their neurologist for their care. While a neurologist is an expert in neurological conditions like MS, he or she may not be the ideal clinician to address other problems that frequently occur with the disease (for example, bladder issues). In this case, it may be best to have input from a urologist. Likewise, those struggling with depression may benefit most by seeing a



psychologist or therapist. It's important to assemble a healthcare team with the appropriate specialists to manage the many facets of MS and any comorbidities one may have. These providers may change over time depending on individual care needs.

Comprehensive care, with many health professionals taking a team approach, is becoming the gold standard in MS care. The goal of comprehensive care is to focus on the whole person and provide the necessary healthcare services, as needed. Comprehensive care is not a "one time" assessment, but a series of ongoing evaluations and treatments over the life of the person with MS by their healthcare team. Each clinician contributes in a unique way to health management. Sometimes all professionals are within a single center, or one may see specialists in the community by referral. This approach establishes, continues and sustains care in a coordinated fashion. When other health conditions occur alongside MS, having team members who communicate with each other ultimately helps prioritize which comorbidities need to be addressed first, how best to treat them and, in the event treatments overlap, how to avoid duplicate medications/services.



The most important member of the healthcare team is the person with MS. Those living with the disease hold the ultimate responsibility of selecting the best specialists for their care, setting expectations, or goals, of therapy and following a treatment plan. Individuals know their own bodies best and often are the first to recognize when something doesn't feel "right." Communicating these changes and observations to one's providers can make a real difference in a

person's medical care. Working with a diversified healthcare team and participating in healthcare decisions is essential to improving not just health outcomes, but also one's overall experience.

Neurologists are central to providing quality care for people with MS. Only a neurologist can give a definite diagnosis of MS, and is the best provider to help manage disease relapses, as well as any MS symptoms one may experience more regularly, such as weakness, tremor or cognitive changes. In addition to the neurologist, a number of other clinicians may also contribute to one's care. Nurses often play a universal role, educating people with MS and their families about the disease, coordinating care, providing support throughout treatment, and helping people access programs or services for which they may be eligible (among other things). One may include a number of different rehabilitation specialists on their healthcare team, for example, a [physiatrist](#), a [physical therapist](#), an [occupational therapist](#), or a [speech-language pathologist](#). People with MS may benefit from the expertise of a mental health specialist, such as a [psychologist](#), a [neuropsychologist](#), or a [social worker](#). A nutritionist or dietitian can assist with diet and weight management. Urologists can diagnose and treat urinary and kidney problems, as well as sexual dysfunction in men. A gynecologist is also an important member of the healthcare team, especially for women with MS considering pregnancy or with reproductive issues.

A primary care physician (PCP) is also essential to providing comprehensive MS care. While the above specialists generally focus on an individual's MS, the PCP usually focuses on the overall health and wellbeing of the person



with MS and his or her family members. A PCP often plays a pivotal role in helping people with MS manage any other health conditions they may have. In addition to providing regular health screenings and immunizations, a primary care physician may assist with recommending a specialist with expertise in a certain area, or be a central point in care, coordinating services from multiple specialists. For those taking multiple medications, a primary care physician can help to ensure they are taken correctly, to avoid any dangerous drug interactions.

Secondary health conditions are generally treated the same way in people with MS as they are in the general population. For example, high blood pressure in MS is often treated with a low-salt diet, exercise, stress reduction and antihypertensive medication, if necessary. When comorbidities are treated alongside MS, doctors may take a more proactive approach to keep an individual's MS from progressing more rapidly. As a result, the threshold for treatment may be lower for certain conditions. For example, a "healthy" individual with borderline hypertension may be treated with exercise and a healthy diet, with medication added should the condition not improve. However, if an individual with MS presented with that same blood pressure measurement, a physician might add an antihypertensive right away.

A number of general strategies may help people with MS work with their healthcare team. It's important to be as prepared as possible for doctor's appointments and communicate with providers. Some find it helpful to keep track of symptoms in a notebook, noting when they happen and how severe they are. Many people with MS automatically blame new or worsening symptoms on their MS, especially if the symptom is consistent with MS, like pain or weakness. However, new symptoms may be a side effect of medications or the first sign of a new



condition. If they appear, it's important for people with MS to consult with their PCP (or another member of their healthcare team). Having a prioritized list of questions to address at a given appointment can help people with MS and their physician use their time together efficiently by addressing their biggest worries first. When discussing MS and any concurrent illnesses with a provider, it's important to speak up, even about issues that are hard to discuss, and be as clear and concise as possible. Don't be afraid to ask for help understanding, or for more information. Providing an updated list of medications

(including over-the-counter products and alternative medicines) to every provider on one's healthcare team, along with contact information for other providers, is instrumental in coordinating care. Using one pharmacy for all medications is a good strategy to follow to ensure these medications are dispensed accurately and safely.

Communication between providers within a healthcare team is also essential to effectively manage MS and other health conditions. When people with MS have a doctor's appointment, they can facilitate this communication by asking that physician's office to share a record of the appointment with their other providers after each visit. Effective communication between providers helps them prioritize an individual's treatment needs (for example, treating life-threatening conditions before MS). One's team may consider

whether the same treatment could be used to manage more than one condition (for example, a healthy diet and exercise to treat high blood pressure, high cholesterol and MS fatigue), and which treatment is most affecting one's quality of life and daily function. This coordination of care is often very complicated. For those in need,

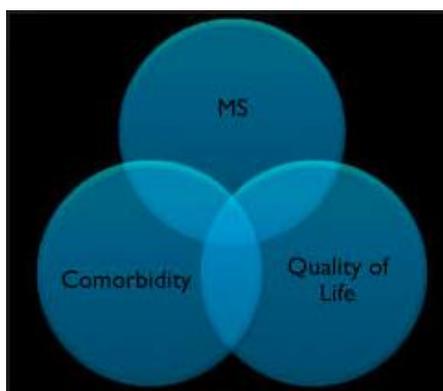


the National MS Society offers free care management resources through their [MS Navigator program](#). Care managers are available to help people with MS assess their needs and develop a customized care plan.

A [recent study](#) looked at the impact of comorbidity and lifestyle factors on outcomes in MS, and how different lifestyle strategies may affect these outcomes. Researchers concluded obesity, cardiovascular conditions and psychiatric disorders (for example, anxiety, stress or mood disorders) cause an increase in MS disease activity, disability and mortality, as well as reduce overall quality of life. Researchers suggest effective management of MS disease activity and select comorbid conditions can be achieved by a number of healthy lifestyle strategies as adjunct therapies to DMTs. Data show a potential role for vitamin D supplementation in this regard. In addition, results indicate such habits as reducing/stopping tobacco and alcohol use, maintaining a healthy weight by eating a healthy diet and increasing physical activity, increasing the amount of sleep one gets, and reducing stress to be of benefit.

A number of other healthy techniques may help individuals better manage MS and any concurrent illnesses they may have. As discussed in our [April 2019 newsletter](#), mindfulness-based interventions, such as meditation, appear to be a safe, drug-free approach to coping with stress and anxiety, which in turn may have a positive ripple effect on other conditions. (For those interested in mindfulness, see this month's [iConquerMS Spotlight](#) for a study into this helpful practice.) Other helpful approaches may include acupuncture, massage, or seeking the encouragement of others through a support group. Some find distraction to be of benefit in reducing stress and anxiety. This distraction could take many forms, including movies, books, walking, journaling, writing, reading, time with family, friends, or pets. As we discussed [last month](#), there is also a growing emphasis on the role of brain preservation and cognitive exercises as important factors in the broader management of people with MS.

The majority of people with MS have other health conditions to contend with. Preventing and treating these secondary illnesses is essential to improving MS outcomes. The complexity of MS and the multitude of comorbid conditions that individuals with MS may experience require coordinated, comprehensive care. It is essential for people with MS to be engaged with a diverse team of healthcare providers with the expertise to manage their MS and any other health conditions they may have. Preventing comorbid conditions through a number of healthy lifestyle strategies can also help people with MS achieve the best outcomes and quality of life possible.



Are Comorbidities Hindering MS Clinical Research?

As discussed in our [October 2017 newsletter](#), clinical research is the study of health and illness in people. It is the way we learn to prevent, diagnose and treat diseases. A clinical trial is one type of clinical research study. Clinical trials are most often done to determine whether new drugs, treatments or devices are safe and effective. Some studies involve healthy subjects, and others pertain to patients with specific health conditions who are willing to try an experimental treatment. Some clinical trials also look at other aspects of care, such as improving the quality of life for people with chronic illnesses, like MS. Others test ways to find a disease early, sometimes before there are symptoms, or prevent a health problem.



Every clinical trial has specific requirements for who can or cannot participate, called [inclusion and exclusion criteria](#). These prerequisites are used to protect subjects' safety during a clinical trial. Inclusion criteria, as the name implies, are those standards participants must meet in order to participate in a study. There are also factors that can bar some subjects from participating, which are exclusion criteria. In order to enroll in a clinical trial, subjects must qualify by satisfying both the inclusion and exclusion criteria. These standards are often related to a wide variety of factors, including one's age, gender, type and stage of a disease, previous or current medications or existing medical conditions.

Clinical trials can be classified in two categories – [explanatory or pragmatic](#). In general, explanatory trials test the effectiveness of a treatment in a highly selected, uniform group of subjects. Participants are selected using strict inclusion and exclusion criteria and all aspects of the study are controlled. These rigid requirements eliminate confounding factors in a study and enable researchers to take a “clean” look at the parameter of interest. However, findings from trials conducted under these “ideal conditions” may not be generalizable to the broader population. For example, if having high blood pressure excludes subjects with MS from participating in a clinical trial looking at a new MS treatment, no data will be collected on the safety and effectiveness of that treatment in people with MS and hypertension. Therefore, the results of that study may not apply to these individuals. Clinical trials in MS to date largely have been explanatory in nature. In contrast, pragmatic trials attempt to understand the real-world benefit of a treatment. This type of clinical trial has a more flexible design (for example, includes a more varied subject population) that allows for wider clinical applicability of study results.



As discussed in our [February 2018 newsletter](#), diversity is essential in clinical trials to ensure their findings benefit everyone. [Research](#) shows individuals with comorbidities, in general, are underrepresented in clinical trials. Comorbidity is a medical condition that occurs with another illness in the same person at the same time. Therefore, the results of these studies may not apply to a typical population with coexisting diseases. The [MS Comorbidities Project](#) (MSCP) characterized the types and frequencies of comorbidities in MS and other diseases, as well as their [prevalence in clinical trials](#). Researchers reviewed studies on diabetes, heart failure, chronic obstructive pulmonary disease, and stroke and concluded subjects with comorbidities were frequently

excluded from participating. Results show the situation is similar in MS clinical trials, where most exclude subjects with severe comorbidities or substance abuse. While exclusion of participants with comorbidities is intended to ensure participant safety, the consequence is a lack of knowledge about the safety, tolerability, and effectiveness of the studied treatments in people with MS who have common comorbidities.

[Data and safety monitoring](#) in clinical trials is a planned, ongoing process of reviewing study data with the primary purpose of protecting the safety of subjects, the credibility of the study, and the validity of its results. Typically, large studies, like those used to evaluate disease-modifying therapies (DMTs) for MS, establish a [Data Safety Monitoring Committee](#) (DSMC), which reviews trial conduct and accumulating data and makes recommendations regarding the ongoing safety of the trial subjects. When participants experience [adverse events](#) (AEs), the DSMC must decide whether these events are occurring at a greater than expected rate and whether or not they are treatment-related. In order to determine if an AE is occurring more frequently than expected, the DSMC must be able to determine the typical rate the illness or injury occurs in the population of subjects under study. According to the MSCP, a recent [review](#) identified very few studies evaluating the incidence of comorbidity in MS. Therefore, the information necessary to determine the significance of coexisting health conditions in MS clinical trials is not available. Frequently it is not until a new MS drug is released to the market that it is used in a significant number (if any) of individuals with MS and other illnesses, and this is when data regarding AEs specific to people with MS and comorbidity can be collected. Unfortunately, post-approval safety is not monitored as systematically as it is in clinical trials.



As discussed in our [September 2017 newsletter](#), the [Belmont Report](#) established three basic ethical principals in clinical research: respect for persons, beneficence, and justice. **Respect for persons** dictates that individuals participating in research must be given the opportunity to choose what happens to them and those who are less capable are entitled to protection. This is the foundation for the informed consent process that is currently used in clinical research. The consent form must include sufficient information for potential subjects to understand the procedures, benefits and risks of a given study, and to make a voluntary choice to participate. **Beneficence** is the principal that clinical research should maximize possible benefits and minimize possible harms so that human subjects are not harmed. **Justice** requires the selection of research subjects be done in a manner that distributes the benefits and risks of research fairly. These three ethical principals are the cornerstones for regulations on research involving human subjects today.



The MSCP suggests considering whether to include or exclude subjects with comorbidity in clinical trials presents a potential conflict with these ethical principles. This is a frequent issue in MS clinical trials because comorbidities are common in people living with the disease. For example, older people (with MS and in general) typically have more concurrent illnesses. Many clinical trials have strict age requirements that exclude these individuals. Increasing the age of enrolled participants and including those with comorbidities are ways to make MS study results more relevant to the general MS population. However, older

individuals with MS may be less likely to benefit from the treatment under study (for a variety of reasons) and they may have an increased risk of AEs (both of which violate the principle of beneficence). On the other hand, excluding individuals with MS from clinical trials solely on the basis of age or comorbidity violates the principle of justice. Another issue is whether or not inclusion of participants with comorbidity may complicate interpretation of study data. Subjects with comorbid health conditions may not follow the assigned treatment as well, or may discontinue participation in a study prematurely. This would result in incomplete or inaccurate data. As discussed earlier, the converse would also be true. The validity of study results may be questionable if the subjects enrolled in the trial do not represent the “real world” population in which the treatment under study will be used (study results may not be applicable).

There is a desperate need for more clinical research into the impact of comorbidities in MS and their affect on MS treatments. According to [researchers](#) at Brigham and Women’s Hospital, people with MS are at an increased risk of [emotional disorders](#). These conditions are frequently undetected and inadequately treated in the MS population. Clinicians may have difficulty determining whether fatigue is due to MS or depressed mood and, therefore, selecting appropriate treatment. Individuals with MS may experience emotional symptoms while taking DMTs, corticosteroids, and other medications. There is evidence that undetected and untreated mental illness may worsen functioning and quality of life, decrease treatment adherence and increase the risk of suicide in people with MS. After review of the current literature, investigators suggest more research is needed into these issues before recommendations on treatment can be made. For example, well-designed studies are needed on the [effect of interferon therapy on mood](#), as well as whether particular characteristics of individuals with MS might predict suicide. In addition, further study is needed on the effectiveness in people with MS of therapies frequently used in the non-MS population. A wide variety of medications and non-drug therapies are used to treat depressive and anxiety disorders in individuals with MS, but the evidence is insufficient to support or refute their use. This is a direct result of the frequent exclusion of people with MS from clinical trials. Investigators suggest improved detection, diagnosis, and treatment practices would significantly improve health outcomes in people with MS.



Concurrent health conditions are common in people with MS. Comorbidity affects the [safety and benefit](#) of many MS therapies, including those being tested in clinical trials. The eligibility criteria used in clinical studies often restrict subject enrollment based on comorbidities and factors that make secondary illness more likely (such as age). This creates a dilemma for MS researchers and people living with the disease. There is a tradeoff between focusing on a narrow subject population, which eliminates confounding factors and allows researchers to focus on select parameters in their studies, and the applicability of their findings in the real world. There is a tremendous need for more pragmatic study into comorbidities in MS and their affect on disease course and treatment.



Repository Spotlight – Dr. Farren Briggs, Case Western Reserve University

Dr. Farren Briggs and his team at the Neuroimmunological Disorders Gene-Environment Epidemiology Lab at Case Western Reserve University recently uncovered interesting new information about the relationship between MS and comorbid autoimmune conditions. Their research characterized 1,500 ACP Repository participants with MS and another autoimmune disease, as well as those with a family history of autoimmunity. For the purposes of the study, this was a representative sample of the general MS population in the United States. Subjects were classified as “polyautoimmune” if they reported having a second autoimmune disease. Results showed polyautoimmunity in people with MS is greater among women, older and more educated individuals, those with a personal history of obesity, and those with a family history of autoimmunity. In addition, data suggest non-white people with MS are less likely to report a history of autoimmune disease than white people with MS. This study was presented at the [2019 ACTRIMS Forum](#) at the end of February. The ACP Repository has been an invaluable resource for this, and more than one hundred other studies. These data will be shared with and built upon by other MS researchers, advancing our understanding of the cause and effect of MS in the lives of those living with the disease. Advances such as these bring us closer to better treatments and a cure.



iConquerMS™ Spotlight – Healthy Mind Healthy You

Mindfulness comes from a tradition that goes back hundreds of years. It focuses on being in the present moment while observing thoughts and feelings in an accepting, non-judgmental way. Individuals practicing mindfulness usually start by paying attention to their breathing and their body, and then move to their thoughts and feelings. Most people experience stress at some point in their lives. Health problems like MS, heart disease, type 2 diabetes, obesity, high blood pressure, depression, and more, can become worse if people are experiencing stress.

Here's how you can help! [Join](#) a nationwide study, called [Healthy Mind, Healthy You](#), that looks at how to use mindfulness to cope with stress. This could help people with more than 100 different medical conditions, including MS. The goal is to learn more about how mindfulness can reduce stress. In the study, subjects are randomly assigned to one of two online mindfulness programs, a three-session program or an eight-session program. People with MS, caregivers, and family members are all welcome to join, even if they are not members of iConquerMS. If you're interested in participating, act soon! The recruitment period ends 11/1. This study is just one of the many ways iConquerMS is facilitating and accelerating research on topics of importance to people affected by MS. If you are not already a member, please consider [joining iConquerMS](#). Already a member? Stay tuned for new opportunities to participate in research!

Healthy Mind Healthy You
A Study of Mindfulness

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