Cleveland Clinic

Augmenting MS Management with a Comprehensive Approach to Wellness and Comorbidity

Q: How should clinicians view wellness management in the context of MS?

A: Wellness is “an active process through which people become aware of, and make choices toward, a more successful existence” (www.nationalwellness.org).

Management of multiple sclerosis (MS) has traditionally focused on disease modifying therapies (DMTs) and treatment of chronic symptoms. There is now a growing interest in wellness practices that incorporate a comprehensive approach to health and well-being of those living with MS starting at the time of diagnosis. These practices augment rather than replace traditional MS management.

The Mellen Center has a comprehensive approach to Wellness practices for our patients;

1. Mellen Center In person, telehealth or Shared Medical Appointment Wellness Visits
2. Comprehensive rehabilitation services: Physical therapy, Occupational therapy and Speech therapy
3. Behavioral Medicine individual and group therapy.
4. Social worker consultation.
5. Wellness related research trials, see Mellen Center research trial list

Enterprise wide wellness programming:

6. Smoking cessation consultations.
7. Weight management consultations.
8. Ecoach, complementary 6 month health coach supported healthy living program...
9. Wellness Institute with comprehensive programming.

The Mellen Center captures MS wellness related parameters at each medical visit: primary care doctor status, nicotine use, BMI, blood pressure, pulse, mood disorder screens and annual vitamin D levels. Objective and longitudinal measures of disability, biomarkers as well as MRI measurements are captured through technology enabled assessments at each visit. MS Partners advancing Technology and health solutions, MS PATHS, uses advances in technology to generate and collect standardized patient data during routine office visits. The technology enabled assessments are completed through the MS PATHS platform which uses technology enabled objective comprehensive assessment of our MS patients including neuroperformance tests, patient- reported outcomes measures and MRI measurement (Baldassari et al. 2020). These routine assessments of our patients' wellness and MS disease parameters provides the opportunities to guide and intervene as needed to enhance the health and hopefully long term outcomes of our patients.

Abiding by a healthy diet, exercising routinely, maintaining sufficient vitamin D levels, abstaining from tobacco or nicotine use, incorporating stress management techniques, remaining active in the community, and engaging in health maintenance are all ways in which persons living with MS can help improve their overall health and potentially impact their risk of long term disability.

Q: What diet is best for MS patients?

A: The literature has not determined the one diet for all MS patients. We recommend a Mediterranean-style diet as outlined in the 2015-2020 Dietary Guidelines for Americans. The Mediterranean diet limits sugar and processed foods, limits sodium intake, and emphasizes fruits, vegetables, whole grains, and lean proteins such as fish. This diet is recommended for the general population and may have added benefits for people with MS by helping to prevent vascular risk factors that have been linked with worse long-term outcomes. In addition to the Mediterranean diet, other diets have been proposed for MS, some of which are currently being tested in clinical trials.

There have been a few small randomized dietary trials in MS patients completed and a few meta-analysis leading to a general recommendation of a healthy diet (Sofi et al. 2008). One of the completed trials includes a randomized controlled trial comparing anti- inflammatory diet and standard diet showing improved fatigue, QOL scores and isolated serum inflammatory marker in the anti-inflammatory diet cohort. (Mousavi-Shirazi-Fard et al. 2020) A very low fat plant based randomized-controlled, assessor-blinded, one-year long study showed good adherence and significant improvements in fatigue, BMI and metabolic biomarkers (Yadav et al. 2016). There have been feasibility studies of ketogenic and paleolithic studies in MS patients and their ability to maintain ketosis (Lee et al. 2020). There was also a prospective Danish study showing no correlation with diet quality and risk of getting late onset MS (Pommerich et al. 2020) herefore the role of diet in the risk of getting MS remains elusive. More disease progression, less activity and more obesity was seen in a large survey of MS patients who followed no specific diet, when a healthy diet was followed, to any degree, the patients had improved physical abilities (Fitzgerald et al. 2018). We therefore continue to recommend following a general healthy nutrition plan, such as the Mediterranean diet.

Q: Is exercise safe and helpful in patients living with MS?

A: Exercise is safe and helpful in people living with MS and is important for everyone to maintain fitness and overall health. In addition, many clinical trials suggest that exercise can lead to small but clinically important improvements in fatigue, cognition, depression, walking, balance, and overall quality of life in those living with MS (Edwards and Pilutti 2017). Exercise may also provide benefits for comorbidities, health related QOL and participation in social roles. (Motl et al. 2018) Studies have suggested that pediatric and adult MS patients have low levels of exercise even without physical disability from MS (Elizabeth Morghen and Robert W 2020). We recommend our patients with MS, with no physical disability, follow the American Heart Association, AHA, guidelines of 150 minutes of moderate level of activity each week. We recommend that all adults age 18-64 with mild to moderate disability get at least 30 minutes of moderate intensity aerobic activity twice a week and do strength training exercises for major muscle groups twice a week, consistent with the Canadian Physical Activity Guidelines. At the Mellen Center we counsel adults 65 and older to continue to exercise under the supervision of their primary physician.

The appropriate intensity of exercise can be difficult for people with MS to judge. Exercise should not be painful, and we do not recommend overexertion. As a general rule, if a person feels fatigued for more than 2 hours after completing an exercise session, they should decrease the amount or intensity of the physical activity. In addition, all MS patients should take rest breaks when exercising, 30-120 seconds at a time, and stay cool, using cooling equipment if necessary.

Please see the Mellen Center Approach for MS and Exercise

Q: Why is vitamin D supplementation important to MS?

A: We recommend vitamin D supplementation to maintain 25-hydroxy vitamin D levels between 40 and 70 ng/mL. Levels below 30 ng/mL are associated with osteoporosis and an increased risk of fractures (Rodney, Rodney, and Millis 2020). In addition, in several key observational studies, lower vitamin D levels were associated with increased disease activity and worsening disability(Miclea et al. 2020).

Refer to the Mellen Center Approach on Multiple Sclerosis and Vitamin D for more details.

Q: Why should MS patients abstain from tobacco and all forms of nicotine use?

A: In addition to its other harmful side effects, tobacco smoking and likely vaping is associated with worsening disability and increased mortality in people with MS. Long-term outcomes are better for people who quit smoking compared to active smokers. We recommend that all MS patients who smoke or use nicotine in any form be encouraged and assisted to quit. Brain volume has been shown to be less in smokers and in those with other vascular risk factors providing yet another reason to support our patients in smoking and nicotine cessation. (Pichler et al. 2019)

Please refer to the Mellen Center Approach for MS and Smoking.

Q: What is the best strategy to help people stop smoking?

A: Optimal strategies in smoking cessation use both behavioral and pharmacologic interventions. Behavioral interventions include written materials containing advice on quitting, multisession group therapy programs, and individual counseling (Siddiqui, Huque, and Dogar 2016). Pharmacologic therapies include nicotine replacement therapy, varenicline, bupropion, cytisine, and nortriptyline. Combination therapies, such as varenicline with nicotine replacement, may be more effective than either treatment alone. Find more support resources on the CDC website.

Q: Is social engagement important for people with MS?

A: Multiple studies suggest an association between social engagement and lower risk of all-cause mortality. MS is associated with an increasing burden on the social network of the patient and the caregivers. The social relationships of the people with MS are at a risk of stress leading to high rates of loneliness (A. Hakim et al. 2000). Higher “social capital” or social support is associated with less physical and psychological symptoms of MS (Reyes et al. 2020) therefore addressing the social network of our patients is linked to their overall outcomes.

The Mellen Center offers many opportunities for patients to gain social support;

1. Social Work consultation for patient, families and or caregivers
2. Behavioral Medicine Groups in-person and virtually:
    - Men’s Group
    - Young Professional Group
    - Caregiver Support Group
    - Neurodegenerative Group
    - MS Support Group
    - Sleep and Fatigue Group
3. MS Wellness Shared Medical Appointments in-person or virtually

Q: What is a comorbidity in an MS patient?

A: Comorbidity refers to a coexisting disease state other than the condition of interest and is distinct from complications of the pre-specified disease. In line with a holistic approach to health and well-being, there is a growing interest in the impact of comorbidities on disease-related outcomes in MS. Most studies have focused on obesity, vascular comorbidities, and psychiatric disorders in MS.

Q:What is the prevalence of obesity in MS?

A: Estimates of the prevalence of obesity in the MS population have varied widely. In the largest survey, which included 8,983 responders, a quarter of participants were obese and close to one-third were overweight(Ruth Ann Marrie, Cohen, et al. 2015). This may be an underestimate of the true prevalence of overweight and obesity, as respondents tend to under-report their true weight in self-reported evaluations(Ruth Ann Marrie 2017). At the Mellen Center our data show a similar range, we have 38% obese and 28% overweight, showing an opportunity to help with weight management. Cleveland Clinic has many resources for weight management: Ecoach, Weight management clinics and the Wellness institute with a plethora of programming to support healthy weights. We collect the weight of the patients at each visit through our MS Paths program to help guide the patient to overall health.

Q: What is the impact of obesity on disease activity and worsening disability in MS?

A: Overall, there is insufficient evidence to support a clear relationship between weight status and disease activity or worsening disability in MS (Pinhas-Hamiel et al. 2015) (So and Kalron 2020). There is a link with adolescent obesity and both pediatric and adult onset MS risk and adipokines, obesity related markers, have been shown to be related to Pediatric MS risk and disease course. (Keyhanian et al. 2019) Results from observational studies have shown conflicting results, and there have been no controlled clinical trials to date (Pilutti, McAuley, and Motl 2012). There is a recent study looking at retinal cell layer and higher BMI is associated with worsening neurodegeneration (Filippatou et al. 2020) and worsening cognitive performance (Owji et al. 2019). Obesity may indeed be related to the risk of MS, neurodegeneration and the disease course, more information is needed. Maintaining a healthy weight has other important benefits and is part of overall health and wellness.

Q: What is the prevalence of vascular risk factors and vascular comorbidities in MS?

A: Estimates of the prevalence of vascular risk factors and vascular comorbidities have varied widely, as have the quality of studies used to make these estimates. In a recent systematic review, the prevalence range for common vascular risk factors and comorbidities was provided for included studies: 6.75% to 8.57% for diabetes type II, 3.0% to 47.8% for hyperlipidemia, 0% to 47.8% for hypertension, 0.78% to 22.2% for coronary artery disease, 1.2% to 1.4% for ischemic stroke, and 1% to 4% for peripheral vascular disease (Marrie et al. 2015).

Q:Are certain vascular risk factors or vascular comorbidities more common in MS populations compared to the general public?

A: Ischemic heart disease appears to be more common in MS populations compared to the general public, but the data for other vascular risk factors and comorbidities is inconsistent. A recent English matched cohort suggests that MS is associated with an increased risk of cardiovascular and cerebrovascular disease that is not fully explained through traditional vascular risk factors (Palladino et al. 2020).

Q: What is the impact of vascular risk factors and vascular comorbidities on MS disease activity and worsening of disability?

A: Some studies have suggested an association between vascular risk factors and MRI lesion burden and brain volume in MS. Vascular risk factors were associated with lower brain volumes event early in the disease course. (Pichler et al. 2019) There is also some evidence that vascular risk factors and vascular comorbidities are associated with faster progression of disability including both physical and cognitive. (R. A. Marrie et al. 2010) The presence of multiple vascular risk factors may increase the risk of disability more than any one risk factor alone. These findings again reinforce the support and need for healthy living for our patients from early on in the disease course.

Q:Is there a role for stress management in MS?

A: Several randomized controlled trials suggest a potential role for stress management programs in MS. Most trials were focused on improving depression, fatigue, or quality of life, but one trial also demonstrated a reduction in MRI markers of disease activity. A randomized trial of stress management therapy (SMT) did show a significant Class 1 evidence that SMT reduced the number of gad enhancing lesions in 6 months yet with no corresponding clinical effect and another trial showed beneficial effect of SMT on a secondary analysis of quality of life (Agland et al. 2018) (Mohr et al. 2012). A mindfulness based stress management trial improved emotional wellbeing yet did not improve the primary outcomes (Senders et al. 2019). Various models of stress management have shown a lasting beneficial effect on emotional health (Khayeri et al. 2016) . Various stress management techniques such as mindfulness training can be offered to interested patients. The Mellen Center Behavioral Medicine team offers a 4 visit stress management visit series to support our patients living with MS.

Q: What is the prevalence of psychiatric disorders as a comorbidity in MS?

A: Reports on the prevalence of depression, bipolar disorder (BPD), and anxiety disorders in the MS population have varied widely. In a recent systematic review, reports of the prevalence of psychiatric disorders ranged from 4.98% to 58.9% for depression, 0% to 16.2% for BPD, and 1.2% to 44.6% for anxiety disorder (Ruth Ann Marrie, Reingold, et al. 2015). Depression diagnosed at the time of diagnosis was high in all ages and both sexes and should be screened for at all MS visits. (Persson et al. 2020) Depression and anxiety have been reported to be common symptoms of the MS prodrome, the symptoms preceding the diagnosis of MS. (Yusuf et al. 2020) All studies of depression and BPD that included a comparator population found a higher prevalence of mood disorders in the MS population therefore mood disorder screens and routine consultations with Health Psychology and other mental health services should be offered to MS patients as needed.

Q: What is the impact of psychiatric disorders on quality of life in MS?

A: Depression and anxiety disorders as well as other Psychiatric disorders have a major impact on quality of life in MS and potentially healthy living with MS. Depression, which has been studied the most, can affect multiple functional domains including energy, cognition, perception of health, healthy aging and sexual function and thereby effect the quality of life of the person living with MS. (The Health, Lifestyle and Aging with MS Canadian Consortium et al. 2020) Moreover, patients with MS who have depression may have worse long-term disease-related outcomes as a result of decreased adherence to DMTs. (Zettl et al. 2017) Routine mood disorder screening and consultations to mental health professionals are regularly needed in MS care.

Q: What is the risk of suicide in MS?

A: In a 2012 systematic review investigating the association between MS and suicidal behavior, the majority of included studies found rates of completed suicide 1.6- to 14-times higher than the general public.(Pompili et al. 2012) A Veterans study has shown risks for suicide in MS include male, depression and alcohol abuse (Kellerman et al. 2020). Suicide ideation has been associated with fatigue, poor social support and poor sleep quality, these should be preemptively addressed in the routine clinical care of the MS (Mikula et al. 2020).

Q: How should MS providers address depression in clinical practice?

A: Depression is often under-recognized and undertreated in MS. We recommend regular depression screening in clinical practice. Many screening tests have been validated. The PHQ9 is a free widely used tool to screen for mood disorders. (Patrick and Connick 2019) At the Mellen Center we use technology enabled comprehensive assessment of MS patients including patient-reported outcome measures (PROM) to regularly screen for mood disorders (Baldassari et al. 2020). Mood disorders are addressed per our Psychology and Psychiatry team as needed. Management of psychiatric disorders should follow general practice guidelines.

Q: Why do MS patients need a primary care doctor?

A: In addition to treatment and regular monitoring from a neurologist with MS experience, MS patients need a primary care doctor to help with age-appropriate health screening, staying up-to-date with immunization, and management of medical comorbidities. As mentioned previously, some of these comorbidities are of particular importance for people with MS. At the Mellen Center we encourage our patients to regularly see a primary physician.

Q: What vaccinations are acceptable in MS patients?

A: Primary care doctors will manage the needed vaccinations for our MS patients. We will review the timing and the type of vaccination as it relates to the type of DMT. Please refer to the Mellen Center Approach for Vaccinations and to the AAN guidelines on Vaccines and MS.

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