While some people with multiple sclerosis (MS) do not experience discomfort or pain, many others must cope with musculoskeletal pain, paroxysmal pain, headache, or chronic neurogenic pain. Pain may cause long-term distress and may have a severe impact on an individual’s quality of life.

Pain syndromes may occur in 29% to 65% of people with MS, according to Sylvia Lucas, MD, PhD, of the Swedish Neuroscience Institute Headache and MS Center in Seattle. Dr. Lucas, speaking at a Seattle symposium on the challenges of MS, discussed results from five studies that documented the prevalence and nature of pain in hundreds of people with MS. Compiling the results of these studies showed that most of the reported pain is “central pain,” or neuropathic pain in the central nervous system (CNS) caused by disrupted nerve signaling within the brain, she observed.

Patients have described their central pain as burning, aching, prickling, lacerating, shooting, squeezing, throbbing, crushing, stabbing, stinging, and icy. Paroxysmal pain is less common, and includes syndromes like trigeminal neuralgia and Lhermitte’s sign (an instantaneous stabbing pain brought on by bending the neck forward).

In the most recent study undertaken by Osterberg and Boivie, 65% of 364 participants with MS reported having pain at some point during the course of their disease. Consistent with earlier studies, much of the pain these subjects experienced was central pain, with the majority of painful sensations reported to be located in the lower extremities and affecting the body bilaterally.

For many people with MS, severe pain may be among the most difficult symptoms to treat. Dr. Lucas emphasized that “pain should be assessed comprehensively in order to select the most appropriate treatment.” For some people with MS, physical therapy and stretching may help decrease spasticity and muscle soreness. Relaxation techniques, such as meditation and deep breathing, may help relieve chronic pain.
Fatigue is defined as a subjective lack of physical and/or mental energy that is perceived by an individual to interfere with usual and desired activities. MS-related fatigue, like pain, is difficult to treat and may have a severe impact on quality of life.

“Fatigue is the most common symptom in MS—75% to 95% of people with MS experience it, and 50% to 60% report fatigue as one of their worst problems—but perhaps the least understood,” Dr. Lucas related. Frequently predating other symptoms of MS, fatigue may be difficult to diagnose owing to numerous potential causes, including deconditioning, depression, sleep disturbances, and the disease process itself. Sometimes labeled an “invisible symptom,” fatigue is often the primary cause of unemployment and disability even in persons with little physical impairment.

Fatigue is not associated with disease duration or magnetic resonance imaging measures of lesion burden, but Dr. Lucas suggested that it could be a clinical marker for immune activation. Its association with heat sensitivity and its relapsing-remitting behavior is evidence that fatigue is a distinct symptom of MS; its onset “may herald an exacerbation of disease,” she said.

Managing the Effects of Fatigue

Practical tips that may be used to control fatigue for those with MS include:
patients whose fatigue does not improve with amantadine may be prescribed pemoline (Cylert®) as a second-line alternative. This central nervous system stimulant is not chemically related to amphetamines or methylphenidate (Ritalin®), but tends to cause adverse effects in a larger number of patients compared with amantadine. Insomnia, anorexia, irritability, weight...

CLINICAL PRACTICE GUIDELINES FOR MANAGING MS FATIGUE

In 1998, the Multiple Sclerosis Council for Clinical Practice Guidelines published evidence-based management strategies for fatigue, which is now recognized as the most common symptom of MS. The integrated council was composed of 22 multidisciplinary representatives from key MS professional and consumer organizations. The council recognized the importance of starting with a generalized definition of fatigue that could later be clarified and quantified. Council members agreed on the following: “a subjective lack of physical and/or mental energy that is perceived by the individual or caregiver to interfere with usual and desired activities.” This description was further modified to eliminate nonsignificant or everyday fatigue and to differentiate it from MS-related fatigue occurring in either acute or chronic events.

Acute episodes of fatigue are often associated with disease relapses, illnesses (eg, viral infections or urinary tract infections), or changes in weather, and are defined as a “new or significant increase in feelings of fatigue in the previous six weeks that limits functional activities or quality of life.” In contrast, fatigue can be chronic or persistent, lasting more than six weeks. Chronic persistent fatigue is defined as “fatigue that is present for any amount of time on 50% of days for more than five weeks and that limits functional activities or quality of life.”

An algorithm in the form of a flow chart was developed to guide clinicians in the evaluation and treatment of MS-related fatigue. The chart combines in logical order a number of interventions—including patient education, energy effectiveness strategies, and pharmacologic management—that, in turn, take into consideration the severity of fatigue reported by the patient as well as the patient’s medical history.

Disrupted sleep, for instance, is reported in up to 35% of people with MS. The resulting daytime fatigue may be caused by disorders like sleep apnea, periodic leg movements, neurogenic bladder dysfunction, spasticity, pain, anxiety, or depression. Although the link between fatigue and depression is not fully understood, psychotherapy for depression has been shown to lessen fatigue in MS patients.

The council advised the use of energy effectiveness strategies to help persons with MS control their fatigue. For example, some people can adjust their work and social activity levels, take naps, drink cool beverages or take cool showers for heat intolerance, or begin an exercise therapy program. Although physical activity was once thought to worsen fatigue, the council noted that aerobic exercise therapy may improve this symptom in mildly disabled patients. When necessary, the council recommended pharmacologic management of MS-related fatigue and compiled a comprehensive list of medications that are known to induce fatigue and that are commonly prescribed to people with MS.

If you would like to obtain the clinical practice guidelines “Fatigue and Multiple Sclerosis: Evidence-Based Management Strategies for Fatigue in Multiple Sclerosis,” a copy is available in downloadable form on the Paralyzed Veterans of America Web site. Log on to: www.pva.org/prof/9811cpgs/mscpgh.htm.
loss, nausea, and stomachache are among the adverse effects experienced. According to Dr. Lucas, there have been 15 reported cases of hepatic failure associated with pemoline therapy since December 1998.

Other medications that may help reduce MS-related fatigue include methylphenidate, fluoxetine, and modafinil. None of these agents has been approved by the US Food and Drug Administration for treatment of fatigue in MS, but off-label use has shown them to be effective in this capacity.

Methylphenidate, a mild stimulant, is approved for treatment of narcolepsy and attention-deficit hyperactivity disorder. Common adverse events associated with methylphenidate include nervousness and insomnia. Fluoxetine (Prozac®), a selective serotonin reuptake inhibitor, is primarily used to treat depression, anxiety, and premenstrual dysphoric disorder. Anxiety, insomnia, headache, weight loss or weight gain, and sexual dysfunction are adverse events associated with fluoxetine therapy. Recently, a study published in Neurology found that modafinil (Provigil®) can improve moderate-to-severe fatigue in people with MS. Common adverse events associated with modafinil therapy, which is approved for treatment of narcolepsy, include headache, nausea, anxiety, and asthenia.

Although pharmacotherapy is effective for short-term management of MS-related fatigue, Dr. Lucas emphasized that “long-term management requires efficiency education for energy conservation, lifestyle and environmental modification, and exercise.”

**Calculating the Costs of MS Care**

MS is a very expensive disease. The costs associated with MS are not limited to those imposed directly by medical treatment, such as payments to physicians, hospitals, and clinics; purchase of drugs; and expenditures for laboratory tests, magnetic resonance imaging studies, and a host of other medical services. Rather, “the costs of this disease might well be measured in disability, in reduced quality of life, and in lost productivity and lost opportunities,” said Patricia K. Coyle, MD, who is Professor of Neurology, School of Medicine, State University of New York at Stony Brook, and the Director of the Stony Brook Multiple Sclerosis Comprehensive Care Center.

In a presentation made at the Consortium of Multiple Sclerosis Centers symposium in Fort Worth, Tex, held May 31 to June 3, 2001, Dr. Coyle pointed out that while MS does not necessarily cause early mortality, the morbidity it engenders leads to decades of disability for the young people who must live with it. “That’s where the real cost of MS becomes apparent.”

**Accounting for Intangibles**

MS affects young people in their most productive years. Disease progression is unpredictable, but 90% of those affected with relapsing-remitting MS who go untreated will experience a transition to secondary progressive MS over time. Irreversible disability, which starts with limited walking ability and a score of 4 or higher on the Expanded Disability Status Scale, will begin, on average, 8.4 years after disease onset, according to a study published in the November 2000 issue of the New England Journal of Medicine. From initial diagnosis, the average time to the need for a cane is 20 years, and the average time to use of a wheelchair is 30 years.

The morbidity of MS goes beyond the disability associated with disease progression. “MS has symptoms that cause pain and suffering. MS has secondary complications. MS has horrific implications for an individual’s quality of life and certainly has an impact on his or her ability to remain gainfully employed,” Dr. Coyle emphasized.

Many factors are responsible for the costs of MS, which have been estimated at $2.2 million per person over a lifetime. Direct medical expenditures and direct nonmedical costs, such as childcare services, transportation for those with limited mobility, and auto and home modifications, are only the beginning. “Models for cost analysis have not addressed the indirect and intangible costs associated with MS, perhaps because they are difficult to evaluate in dollars and cents. Yet, they are a significant portion of the costs related to this disease,” Dr. Coyle noted. The most obvious indirect cost is a reduction or loss of income for those whose physical disability affects their job performance.

The intangible costs are less apparent. Unpaid caregiving by family members and friends imposes a definite cost upon the people providing the care and comes at the price of lost independence and dignity for the person receiving it. MS symptoms reduce quality of life, disrupt activities of daily living, and undermine self-respect. Loss of mobility and embarrassing incontinence may also curtail socialization for affected individuals.

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Multiple Sclerosis Nursing in 2001: A Global Perspective

At the annual Consortium of Multiple Sclerosis Centers (CMSC) meeting in Fort Worth, Tex, May 31 to June 3, many professionals in the field of MS gathered to learn from each other’s experiences. The following is a sample of the international presentations.

**Indicators of Rheumatic Disease Are Common in People With MS**

Researchers from Zapopan, Mexico, found that rheumatic disease indicators and serologic abnormalities are common in individuals with MS. Owing to the broad spectrum of clinical and serologic symptoms that MS may include, the researchers believe that careful evaluation is necessary to avoid a misdiagnosis.

Forty study participants with definite MS (mean disease duration, 10 years) were assessed by two rheumatologists who used physical examination, Schirmer tests, and serologic laboratory studies, such as rheumatoid factor (RF); antinuclear antibodies (ANAs); anticardiolipin (aCL) antibodies; and anti-double-stranded deoxyribonucleic acid (anti-dsDNA) antibodies, to detect the signs and symptoms of rheumatic disease. Eight of the 40 participants—30 of whom were female—had a history of arthritis involving at least two joints, and four of them reported photosensitivity without malar rash. Seventeen people in the group complained of lower back pain, and one had definite sacroiliitis. Only one person met the criteria for fibromyalgia.

When testing was complete, seven participants demonstrated positive Schirmer tests. In the serologic studies, five individuals had positive RF; ANAs were present in another five; and three had aCL antibodies. None of the participants had positive anti-dsDNA. These results led the researchers to conclude that rheumatic manifestations and serologic abnormalities are widespread in people with MS.

**Increasing Incidence of MS in Caribbean Countries**

Recent observations on the status of MS in Caribbean countries point to an apparently increasing incidence and prevalence higher than was traditionally believed. This data review of current information was undertaken in response to the steadily growing interest in MS in this region of the world.

A study of the distribution of MS in Cuba by Cabrera-Gomez et al showed a prevalence of five to 10 persons per 100,000, though the rate may actually be higher, and prevalence rates appear to differ greatly in places having the same geographical situation. For example, surveys in the Espartaco Sugar Factory and in Ciego Motero found a prevalence of 150 per 100,000, and 100 per 100,000, respectively.

MS rates were found to be equivalent in both white and nonwhite populations, with symptoms clinically similar to those found in the disease worldwide. However, a primary progressive form of MS is found in Cubans whose ancestors were immigrants from Spain (particularly the Canary Islands and Galicia), France, and England; this clinical form of MS also appears in 15% of Cuban-Americans from the United States whose family histories include the subpopulation of Cubans with both this ancestry and with primary progressive MS.

Jamaican-born persons with MS show no clinical differences in disease experience from that of other countries, according to a report from Cruickshank and Montgomery. The Puerto Rican MS Study Committee found 2,300 clinically definite cases of MS and estimated prevalence at 40 persons per 100,000. Clinical, imaging, evoked potentials, and human lymphocyte antigen studies were similar to those in Europeans with MS; human T-cell lymphotrophic virus types I & II were not present. Martinique was found to be a medium-risk zone for MS.

Researchers urged the establishment of MS centers in the Caribbean to promote MS research and to improve
treatment and management of MS in this region. They also suggested organization of national computerized MS registries and databases to record the incidence of genetic, neuropsychologic, and epidemiologic markers of disease and to compare the gelatinase A and B activity in cerebrospinal fluid of Caribbean residents with MS.

Concerns About MS Treatment Reflect Reasons for Discontinuation
A study of persons with MS undertaken by Canadian researchers in Calgary, Alberta, found that concerns voiced by people with MS before the start of treatment were also likely to be the reasons why these individuals chose to discontinue such treatment. This suggests that persons with MS retain the education regarding potential side effects that they receive prior to the initiation of treatment.

Sixty-three people with MS participated in the study; 86% reported fears that treatment would not work, 85% had qualms about increased fatigue, and 81% were apprehensive that treatment would make them feel ill. There were no significant differences found in the treatment groups. Drug effectiveness is a frequent concern both prior to and during treatment; it contributes to an individual’s decision to discontinue pharmacotherapy. An increase in MS symptoms—particularly fatigue—and flu-like symptoms such as drug side effects also play a significant role in the discontinuation of MS drug therapy.

The researchers noted that directing nursing support to persons with MS who express anxiety about side effects or treatment results may improve the rate of continuation for pharmacotherapy. This may be especially useful in instances where the benefits of MS pharmacotherapy may not be obvious.

Is Substance Abuse Common Among Persons With MS?
In a recent study, significant alcohol problems were not found to be common among persons with MS. However, the rate of such problems may be slightly higher for females with MS than for the general middle-aged population of women. The study participants included 784 persons with MS who responded to a survey. Their average age was 49 and 78% were female.

Fourteen percent of the participants reported having an alcohol problem, and 7% reported using drugs or medications for non-medical purposes. Less than 10% responded that they thought that they should cut down on their drinking, although 41% of those reporting an alcohol problem were interested in learning how to stop or to reduce their intake. Those more likely to report problems with alcohol or drugs tended to be younger, employed, with less-severe MS symptoms, and had a more recent diagnosis of MS. Also, the one-year prevalence of alcoholism in the study group versus the general middle-aged female population was determined to be 4.5% versus 0.8%, indicating a slightly higher percentage for the females with MS. Alcohol and drug use were related to an increase in symptoms of depression.

The researchers suggest that substance abuse might naturally lessen as persons with MS age and develop more severe symptoms. Although the results of this study do not show significant substance abuse problems among persons with MS, health care professionals should be aware of the possibility of such abuse and be ready to offer intervention help or referral information, if warranted.

Depression in Veterans with MS
Researchers found the prevalence of depression in veterans with MS to be comparable to that in other MS populations, and the prevalence of bipolar disorder to be lower than that in other MS groups. This veterans’ sample from the Northwest region of the United States provided a unique grouping of persons with MS given the high proportion of older males (86% male, 20% older than 65).

Veterans with MS were identified by the Consumer Health Information and Performance Set (CHIPS) database, a Veterans Administration–based system that tracks veterans’ contact with health care providers. Each of the 453 participants completed survey questions about depression. For each item, they were asked to rate how much a specific problem had “bothered them in the last two weeks.”

To measure the prevalence of depression and bipolar disorder in persons with MS, the researchers used ICD-9 diagnostic codes for all three variables. The findings showed that: 1) the prevalence of depression in this veterans’ sample was comparable to that reported for other general MS populations; and 2) the prevalence of bipolar disorder was actually lower than in other MS groups, and instead, was comparable to that reported in the general population.

Also of interest was the inconsistency between the rates of depression as reported by the veterans and the CHIPS record of depression diagnoses. More than 64% of veterans having a CHIPS depression record did not report symptoms of a major recent depressive episode. Conversely, 71% of the veterans without any CHIPS depression diagnoses reported having symptoms of a major recent depressive event. It is un-
known whether the CHIPS record or the veterans’ survey responses provided the more accurate measure of depression in this sample.

Of concern to the researchers was that suicidal thoughts were common among the veterans who did report depressive episodes. They stressed that further study is needed to reduce suicidal risk in this veterans’ population given the known risk of suicide among persons with MS.

Cetirizine Improves Patient Reactions to Glatiramer Acetate Therapy

Urticarial reactions caused by immunomodulatory therapy were markedly reduced by the use of cetirizine (Zyrtec®) in a recent study. The study involved three persons with MS currently undergoing therapy with glatiramer acetate (Copaxone®). All three persons had urticarial injection site reactions from this therapy and wanted to discontinue it.

Each person was given Zyrtec, an antihistamine, once per day. Improvement in urticaria was evidenced within one week for all participants and continued to show even better responses at the two- to three-week interval. All study participants chose to remain on Copaxone therapy.

Such results are encouraging since injection site reactions are a primary reason for persons with MS to discontinue glatiramer acetate medication. By reducing uncomfortable urticarial reactions, persons with MS may be able to continue their much needed immunomodulatory therapy.

Family Approach to MS Care Yields Favorable Results

A number of studies have already explored the impact that MS can have on an entire family. Nurses are already aware of the influence that a family can have on the health and well-being of a person with MS. In one MS clinic, Diane Lowden, MSc(A), a clinical nurse specialist, was hired to address the various needs of persons with MS and their families. Specifically, Ms. Lowden’s role is to help families adjust to MS, to reduce the emotional stress on the family, and to enhance family coping mechanisms.

Ms. Lowden cited several case studies that successfully demonstrated the use of family nursing strategies. One of the studies involved a young woman named Kathy and her mother. Kathy, a person with MS, greatly desired to be independent and to live alone in an apartment. Her mother, very observant of Kathy’s condition, wanted her daughter to remain at home. Ms. Lowden had a series of meetings with Kathy and her mother, focusing on Kathy’s desire to be in control and how this could be accomplished while Kathy managed her MS exacerbations. As a result, Kathy first moved into the basement of the family home, and a year later moved out and now lives on her own.

Another case study involved Myriam, age 39, a wife and mother who called the clinic frequently to report in great detail her new MS symptoms and/or the worsening of her existing condition. The calls were often lengthy as she was very anxious about her MS diagnosis and in her ability to remain in the same family role. Ms. Lowden held a number of meetings with Myriam and her husband to discuss the couple’s concerns, and to explore different ways that Myriam’s family and other community agencies may provide support to help Myriam cope with her day-to-day symptom fluctuations and to reshape her family role as needed.

While these are just two of the case studies cited, Ms. Lowden’s experience with family nursing strategies has resulted in reported reductions in anxiety levels, improvements in family coping mechanisms, and in a wider range of family needs being addressed. She stressed that in a chronic illness such as MS, the nurse’s main goal is to help the family to adjust and adapt, not necessarily to accept the situation.

The IOMSN is the only organization dedicated to the education of MS nurses around the world. If you wish to join the IOMSN, you can access it on the World Wide Web at www.iomsn.org, or contact the organization at:

IOMSN

c/o Bernard W. Gimbel MS Comprehensive Care Center
718 Teaneck Rd
Teaneck, NJ 07666
(201) 837-0727

INTERESTED IN SHARING YOUR KNOWLEDGE WITH THE WORLD? JOIN THE IOMSN!
Multiple Sclerosis International Conference 2001

The Multiple Sclerosis International Federation (MSIF) International Conference 2001 will take place September 30 through October 5 in Melbourne, Australia. It is a collaborative effort of the International Organization of MS Nurses (IOMSN) and the MSIF. The conference sessions will include keynote speakers: Peter A. Schweitzer, United States; Professor Stephen Greyser, United States; Professor Ian McDonald, United Kingdom; Professor Alan J. Thompson, United Kingdom; Frederick W. Foley, PhD, United States; June Halper, MSN, ANP, FAAN, United States; Michael Richard Whitlam, United Kingdom; Colleen Harris, RN, MN, Canada; Eija Eliisa Luoto, RN, Finland; Marie A. Namey, RN, MSN, United States; Dawn Langdon, United Kingdom; and Terry Kilmister, Australia.

Registrations are being accepted through the beginning of the conference. The Conference Calendar on the last page of this issue contains registration information.

The IOMSN dinner is scheduled for Sunday, September 30 from 7 PM to 11 PM.

Lauding a Legend in MS Nursing Leadership

The Consortium of Multiple Sclerosis Centers (CMSC) inaugurated the presentation of its Lifetime Achievement Award by honoring a legend in MS nursing: June Halper, MSN, ANP, FAAN. “As founder and executive director of both the IOMSN and the Bernard W. Gimbel Multiple Sclerosis Comprehensive Care Center in Teaneck, New Jersey, June has long been recognized for her outstanding leadership in the advancement of specialty MS nursing practice and in the advocacy of improved health care for people with MS,” said Marie Namey, BS, MSN, whose pleasure it was to bestow the award.

Ms. Halper expressed her surprise and gratification at being chosen as the recipient, and said, “I accept this award on behalf of my associates at the Gimbel MS Center and at the CMSC, and on behalf of all MS nurses who contribute to the team effort in the fight against MS.”

IOMSN Celebrates Proponent of Hope

The IOMSN dinner meeting at the CMSC symposium in Fort Worth, Tex, was the setting for the presentation of the Fourth Annual June Halper Award for Excellence in MS Nursing. This year’s honoree, Linda Morgante, RN, MSN, CRNP, is familiar to the IOMSN membership as an authority on the topic of hope in MS care. She has been an MS nursing specialist since 1986 and is a frequent speaker about the nurse’s role in providing psychosocial support for both patients and peers.

Ms. Morgante revealed that she was so astonished when she realized that the award presenters (Kathleen Costello, RN, MS, CRNP, and Barbara Johnson, BSN, RN, CRNP) had said her name, “I don’t even remember what they said. I only managed to compose myself enough to say ‘thank you,’ and to promise to continue with self education, personal growth, and the sharing of information with other MS nurses.” She expressed her sincere appreciation for being chosen to receive this honor.

Marie Namey (left) and Linda Morgante (right) at the Consortium of Multiple Sclerosis Centers (CMSC) annual meeting in Fort Worth, Tex. Ms. Morgante, Director of Clinical Services, Maimonides MS Care Center, Brooklyn, NY, was the recipient of the Fourth Annual June Halper Award for Excellence in MS Nursing. Ms. Namey is immediate Past President of the CMSC.
THE NEED FOR INTEGRATED ASSESSMENT

In discussing the methods of analyzing cost studies, Dr. Coyle observed their application to MS is problematic, because none takes into account the numerous indirect and intangible costs related to this disease. For example, cost-of-illness studies identify expenses associated with a disease, but do not account for the effect of treatments. Cost-effective analyses, in contrast, allow a comparison between two different treatments or between treatment and nontreatment.

Cost-utility analyses are particularly meaningful since they include treatment and quality of life measures. The numbers are typically expressed as a “cost per quality gained” or “quality adjusted life years.” Finally, in cost-benefit analyses, actual monetary values are assigned to health outcomes.

In order to undertake an economic study of MS, “it would be necessary to take an integrated approach that would account for all corresponding outcome parameters indicating response to treatment,” Dr. Coyle explained. MS is costly on many different levels, and careful analyses of the direct, indirect, and intangible costs are needed to provide optimal disease management, she concluded.

MS nurses and allied health care professionals have a wealth of knowledge based on their experience in providing care for persons with MS. Writing an article for publication is an excellent way for these experts to share important information, to gain new perspectives, and to enhance existing knowledge.

When the manuscript is complete, put together a neat, organized package to send to a prospective publisher. Enclose an introductory letter to the editor and a résumé or curriculum vitae. Be especially careful with grammar and spelling in all materials in the package. If in doubt, ask a colleague or friend to review the entire package before it is sent. Fledgling authors should not be discouraged that manuscript review and acceptance by a publisher can take several months. After receiving the reviewed copy, revise the manuscript as directed and resubmit it. If the revised manuscript is not accepted, submit it to another publisher who may be interested. Eventually, persistence will pay off, and professional recognition and personal satisfaction will accompany a job well done.

Writing can be one of the most rewarding ways to express ideas and to contribute to the knowledge and experience of colleagues. It can strengthen relationships between MS nurses and enhance communication levels within the profession itself.
Influenza Vaccination Effective and Safe in Persons With MS

Influenza vaccination is safe to administer to patients with MS, according to a recent study published in Neurology. Previous studies have shown a temporal relationship between clinical exacerbations of MS and upper respiratory infections, yet in the past, researchers feared that vaccination against influenza might stimulate central nervous system antibodies in persons with MS.

Forty study participants were enrolled in one of two vaccination periods that occurred between October 1998 to February 1999 and October 1999 to February 2000. The study compared 12 patients with MS with 28 age- and gender-matched controls. Five of the participants with MS had the secondary progressive form and seven had relapsing-remitting MS (RRMS). None of the persons with MS had experienced a relapse during the two months prior to study inclusion, nor had they used steroids during this period. To be accepted into the study, patients were required to have a Kurtzke Expanded Disability Status Scale score of less than 7. All study participants were immunized intramuscularly with influenza virus vaccination during an infection-free period (persons with MS were not receiving immunosuppressive treatment at the time of vaccination).

Although minor postpuncture myalgia occurred in some vaccine recipients, those individuals with MS experienced no deterioration of neurologic symptoms or other serious side effects immediately following vaccination. All participants who received vaccination experienced increased mean antibody against influenza A, but there was no increase in T-cell frequencies responsive to human myelin basic protein that would have indicated immune stimulation. Of the seven people with RRMS, one had a relapse and five experienced upper respiratory infections following vaccination. None of the five participants with secondary progressive MS experienced a relapse, and only one presented with an upper respiratory infection. Three of the control participants experienced upper respiratory infections following the vaccination.

“Because vaccination can protect against or attenuate influenza disease,” concluded the authors, “it should be recommended for patients with MS who are at risk of infection-associated exacerbations or deterioration.”


Emotional Distress and ADL: Influencing Factors

Personal attributes have both a mediating and moderating effect on the relationship between emotional distress and activities of daily living (ADL) functioning in persons with MS, according to a study by Elsie E. Gulick, PhD, recently published in Nursing Research. Furthermore, social support was found to have a mediating but not moderating effect on this relationship.

The study sample consisted of 686 persons with MS from four local eastern chapters of the National Multiple Sclerosis Society. Participants included 513 (74.8%) women and 173 (25.2%) men, which is consistent with MS gender prevalence. No significant gender differences were observed for age or duration of MS; participants were middle-aged and moderately disabled, and averaged 13 years since diagnosis.

For the purposes of this study, Dr. Gulick defined personal attributes as a sense of humor, a positive attitude, hope, and an absence of or control over stress. Emotional distress was characterized as anxiety, depression, and loneliness. Social support was considered to be assistance with tasks, receiving emotional support, and receiving financial support. ADL functioning was divided into four areas of activity relevant to people with MS: fine and gross motor skills, socializing/recreation, sensory/communication, and intimacy.

Participants were given a series of items to rate their personal attributes, level of emotional distress, amount of social support, and independent ADL functioning on a scale from never (0) to always (5).

Personal attributes and social support both were found to be mediators (characteristics that resolve conflicts) between emotional distress and ADL. In addition, personal attributes proved to be a moderator (a characteristic that lessens intensity) between emotional distress and ADL functioning, while social support was not considered to have a significant effect in this area.

These findings suggest that having faith, hope, a sense of humor, and a positive attitude toward a
A trial of the new “Tremor Control System,” a motion-filtering software program that can be tailored to the needs of any individual with intention tremor in the upper limbs, demonstrated that this technology allows significantly improved computer interaction. This improvement is accomplished by neutralizing the effects of involuntary movements when using an input device (e.g., a computer mouse). Furthermore, the system allows simultaneous input from both a standard mouse and alternative tracking devices, such as game joysticks, force-control joysticks, trackballs, cordless mice, and helmets with infrared movement sensors. These alternatives may be more comfortable to use and less fatigue-inducing for those with intentional tremor.

This multicenter European trial involved 36 persons (17 male, 19 female; mean age, 42.9 years) with MS and upper limb intention tremor plus a control group of 16 persons (mean age, 38.3 years). Both the MS and control groups were tested for the time each group required to complete three tests of mouse-driven computer interaction: 1) a point-and-click test in which subjects were required to click on three targets on the computer screen in a predetermined order; 2) a drag-and-drop test in which five objects on-screen representing files were to be dragged from one directory box into another, with the destination box being smaller than the originating box, requiring accuracy in placing the moved files; and 3) a double-click test in which subjects were asked to open one file by double-clicking on its icon. In test 2, the number of failed attempts to place a file inside the destination box was counted; in test 3, the number of click attempts was recorded. Additionally, the presence or absence of compensation techniques, such as stabilizing the guiding arm with the other hand, bracing the upper arm against the trunk of the body, or supporting the lower arm on the computer table or chair armrest, was observed in the MS group.

After each individual in the MS group had chosen the optimal interface, speed of execution was improved and the number of inaccurate actions was decreased during both the double-clicking and drag-and-drop tests, suggesting that cursor movement became more efficient. Furthermore, using the motion-filtering program improved time performance on all three computer tests but reached significance only on the double-click test. Individuals with the worst tremor showed the best improvement in time performance when the software program was used.

The results of the study showed that this software could offer improved computer interaction, especially for those with marked intention tremor, according to the conclusions of the researchers. The newly developed Tremor Control System, which should be available shortly, may contribute to functional independence—particularly in the workplace—for people with MS and intention tremor. For those who would like more information about this technology, full text of this article is available at: www.vard.org/jour/01/38/2/feys382.htm.
September 12–15, 2001

September 16–20, 2001

September 30–October 3, 2001
126th Annual Meeting of the American Neurology Association (ANA). Location: Chicago. Contact: ANA, 5841 Cedar Lake Rd, Suite 204, Minneapolis, MN 55416; (952) 545-6284; fax: (952) 545-6073; Web site: www.aneuroa.org.

September 30–October 5, 2001

October 12–13, 2001
3rd Annual Conference of the American Association of Managed Care Nurses (AAMCN). Location: Nashville, Tenn. Contact: AAMCN, 4435 Waterfront Drive, Suite 101, Glen Allen, VA 23060; (804) 747-9698; fax: (804)-747-5316; Web site: www.aamcn.org.

October 18–21, 2001
European Charcot Foundation Symposium. Location: Venice, Italy. Contact: European Charcot Foundation, Heiwig 97, 6533 PA Nijmegen, Netherlands; 011-31-24-356-1954; fax: 011-31-24-354-0920; e-mail: info@charcot-ms.org; Web site: www.charcot-ms.org.

November 10–15, 2001