



MS AND DEPRESSION

Approximately half of all patients with multiple sclerosis (MS) will have at least one major depressive episode during the course of their illness, and it is estimated that at any given time 15% to 20% of clinic patients will experience significant depression.¹ Yet clinical evidence suggests that depression is undertreated in the MS population.² Because they are on the front lines of patient care, MS nurses and other allied health professionals can play a critical role in the recognition and management of depression in MS—sometimes by simply asking the right questions.

Among progressive neurological diseases, MS has one of the highest rates of major depression, but the reasons why are not clear.^{3,4} Some observers have suggested that it is because the disease is so unpredictable and difficult to live with. Others point to the pathophysiology of MS or to changes in the brain itself as factors contributing to an increased susceptibility to depression.⁴⁻⁶ Still others see the increased risk as resulting from a combination of all of these factors.

Whatever the reasons, the weight of epidemiological evidence indicates that patients with MS are at high risk for depression. Because depression is associ-

ated with significant changes in quality of life, prompt recognition and treatment is crucial.

The good news is that depression in MS is highly treatable. Studies have shown that psychotherapy and antidepressants can be effective in the treatment of depression in patients with MS.^{7,8} The real challenge, however, is to screen patients in the first place.

That is the view of Frederick Foley, PhD, of the MS Comprehensive Care Center at Holy Name Hospital in Teaneck, New Jersey. According to Dr. Foley, depression is one of those symptoms that frequently does not get asked about because of all the demands placed on health care providers who treat MS.

“They have to monitor their disease-modifying meds, deal with exacerbations, and ask patients about other symptom management, so they’re there to take care of all other aspects of the disease and sometimes [depression] doesn’t get addressed,” Dr. Foley said in an interview with *MS Exchange*.

One solution to the problem is quite simple, Dr. Foley emphasized—ask every patient who comes into the clinic about depression. “Whether you formally screen for it or ask people about their mood, it’s very important

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to do that,” he said. “Because the odds are between 15% and 20% of your patients are going to have significant depression that needs treatment. So it’s important to ask every patient about it, and we know that you can successfully treat it.”

TREAT THE DISEASE FIRST

Concurring with Dr. Foley is Scott Patten, MD, of the University of Calgary in Alberta, who said the main message he would communicate to MS nurses is to ask patients about depression. “MS nurses are usually very tuned into the psychosocial dimension,” he said. “We have to acknowledge that there still is a stigma attached to mental illnesses, and there might be more of a hesitancy to ask people about how they’re doing emotionally than there would be to ask about fatigue or bladder symptoms.”

Given that suicide rates are elevated among people with MS,¹ Dr. Patten recommends that nurses question patients about suicidal feelings. “It’s an uncomfortable topic, and there are some myths still around suicide—like talking about it might give

people an idea and lead to an increased risk of an attempt. None of that is thought to be true.”

Dr. Patten said the full answer to why MS has a high rate of depression compared to other progressive neurological diseases remains unknown, but that it is probably due to a combination of biological and psychosocial factors.

Although he is not aware of any data indicating that depression can affect the biological activity of the disease, Dr. Patten pointed to the huge impact MS can have on the patient’s quality of life.⁸ The difference between those who learn to live with the unpredictable nature of the illness and those who are overwhelmed by it is quite often “mental health.”

“When you look at the way people cope with MS, it makes a lot of sense,” Dr. Patten affirmed. “They find ways to get around the barriers that the illness produces and to accommodate symptoms. These strategies involve a degree of energy, optimism, and hope, and that all tends to be negatively affected by depression.”

Maintaining one’s health and

well-being also involves a commitment by patients to stay on track with the therapeutic regimens their care providers have worked out for them, including such drug therapies as interferon beta. Asked about the possible link between depression in MS and interferons, which are known to reduce serotonin levels, both Dr. Patten and Dr. Foley find the evidence inconclusive at best.^{9,10} Dr. Foley stressed the treatability of depression. “It’s very important—first things first—to treat [MS] first and then treat and manage its symptoms,” he said.

Dr. Foley cited a randomized trial conducted by David Mohr, MD, and colleagues at the University of California, San Francisco comparing two different types of psychotherapy and antidepressant therapy as “probably the best treatment study done to date.”⁷ Reached for comment, Dr. Mohr explained that the main finding of the study was that depression in MS does respond to treatment.

“Individual cognitive behavioral therapy (CBT) and antidepressant medication were more effective than group therapy, but some people did

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well in the groups,” Dr. Mohr stated. “Individual CBT was equivalent to antidepressant medication. From the general population there are data that suggest that CBT and antidepressant medication together are more effective than either alone. The bottom line is there are a number of good treatment options and patients should be offered a choice.”

WORKING OUT A STEP-BASED, OPERATIONAL APPROACH

Before a symptom such as depression can be treated, however, it first has to be recognized. One of the primary challenges for nurses is to differentiate depression from other symptoms of MS that can mimic depression, such as fatigue or sleep disturbances. “Because [patients who] have MS may have other problems, it could be a little more

tools—the Patient Health Questionnaire and the Beck Depression Inventory—that patients can fill out in the clinic waiting room. The Goldman group further recommended certain cutoffs on these self-reports that nurses can use while interviewing patients, to determine whether depression is present. The group is currently at work on a clinical algorithm for assessment and treatment for use by practitioners and such entities as the Medical Advisory Board of the National MS Society.

In Dr. Schiffer’s view, the Medical Advisory Board is looking to the proposed algorithm as a clear, step-based, operational approach to depression once it is suspected in MS patients. “The algorithm [for assessing and treating depression] is almost done,” he reported. “It will be designed for non-psychiatrists,

who is in private practice in Fairfax, Virginia, and on the neurology faculty of Georgetown University in Washington, DC.

“[MS nurses] are really on the front lines with the patients,” she concluded. “From my clinical perspective, MS nurses are able to make the critical difference by flagging these types of issues early on. And early detection allows for early treatment. Increased mood stabilization for the MS patient with depression will likely not only increase quality of life, but also increase some aspects of cognitive function as well.”

MSX

—Fred Balzac

“Increased mood stabilization for the MS patient with depression will likely not only increase quality of life, but also increase some aspects of cognitive function as well.”

complicated for the non-MS-mental health provider, for the nurse or other health care provider, to identify a significant depression when it’s present,” Dr. Foley observed. “And that’s one of the problems. How do you know *who* is depressed?”

Dr. Foley pointed to the work of a research group he belongs to, the Goldman Affective Disorders Study Group, chaired by Randolph B. Schiffer, MD, of Texas Tech University. A paper the group published in 2005 summarizes the current state of knowledge regarding depression in MS.¹¹ In it they recommend use of either of two validated screening

for typical MS care delivery teams of neurologists, nurses, social workers, and psychologists, since the reality is that there is too much general psychiatric disease in the US, and too few psychiatrists, to handle it all. We hope to publish the algorithm, then ‘test it out’ in some standardized way.”

FLAGGING DYSFUNCTIONS ON THE FRONT LINES

Conducting a good interview with the depressed MS patient is one of the most important things a nurse can do, and its benefit cannot be stressed enough, according to neuropsychologist Mary Beth Quiq, PhD,

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MS NURSING IN THE UK

The last decade has witnessed a significant growth in the number of MS specialist nurses in the UK. Prior to 1997, there were only a handful of such nurses. Today, an estimated 200 specialist nurses serve a population of 85,000 people with MS. The country's National Health Service (NHS), which is largely free at the point of delivery, funded by taxes, and run by the Department of Health, employs the vast majority of these nurses. (NHS posts are notably not reliant on either pharmaceutical sponsorship or research grants.)

There are several driving forces that have produced this increase in MS nurses. A major one was the licensing of disease-modifying drugs (DMDs) in the mid 1990s. It became increasingly obvious that if patients were to self-administer these expensive medications and adhere to treatment, they would require a structured support system to provide training, education, and psychosocial support. Who better to provide this but specialist nurses? However, MS patients on DMDs are in the minority in the UK (an estimated 10% to 12% of the MS population receive them). Therefore, much of the work that UK MS nurses perform involves symptom management, psychological and social support, and coordination of complex care.

Another important influence has been the continual push of the two leading MS charities in the UK—the MS Trust and the MS Society, which represent the voice of people with MS. And people with MS have made it clear that they want more specialist support. The

MS Society has provided funding for approximately half of existing MS nurse jobs.

Major government reforms have also been influential, reflecting the government's pledge to improve the quality and equity of care for patients living with chronic conditions such as MS. These reforms also facilitate evidence-based quality care and management. MS specialist nurses are recognized as key players in the real-life implementation of these quality standards.

UK MS nurses are extremely privileged and among the best educated in the world, largely because they have access to so many MS-specific educational opportunities. The MS Trust has pioneered this drive, offering many study days throughout the country and, most important, two annual MS conferences that provide high caliber educational opportunities and the chance for nurses to network and share best practices with their colleagues from all over the country. The Trust has worked tirelessly to secure sponsorship that ensures MS NHS nurses can attend these two events free-of-charge. A residential MS Nurse Induction Programme, run three times a year at Bachelors level, is another far-reaching MS Trust initiative that provides every new MS nurse with a timely course covering relevant clinical and professional issues.

Academic qualifications are essential for specialist nurses. The minimum requirement recommended to practice is Bachelors level. Upon qualification as a registered nurse, the majority do not emerge with this qualification and have to undertake it post-registration. Many ultimately carry out their studies on their own time. In 1999, the University of Central England in Birmingham, with the

initial sponsorship of the MS Trust, became the first school to offer an MS-specific academic course, at Bachelors level. This was followed by Diploma and now Masters level in MS care provided at Leeds Metropolitan University. MS nurses can also attend regular MS-focused non-academic studies offered by a variety of organizations, including the four leading MS pharmaceutical companies, the MS Society, and regional MS teams.

Many of the 200 MS specialist nurses enjoy the autonomy their role provides them. They are key players in developing and leading MS care and service provision. Most are extremely innovative and have designed quality initiatives that are eagerly received by the MS community. Projects are often structured around the philosophy of facilitating self-help and a self-management approach, with an obvious focus on patient education and health promotion.

In May 2006, the United Kingdom Multiple Sclerosis Specialist Nurse Association (UKMSSNA) was proud to be asked to facilitate a workshop detailing UK MS nurses' work and service provision at the 2006 CMSC conference in Arizona, and together with Australian nurses, presented *From Apathy to Action: An MS Perspective from Across the Oceans*. The workshop examined the evolution of MS services and also dedicated time for participants to summarize the personal projects they lead. The accompanying table lists these projects along with several others that UK MS nurses are so proud of. This list is obviously not exhaustive.

It's not all good news, though. There are 200 MS nurses on the job, but to achieve a safe and equitable service for people with MS in the

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Multiple Sclerosis Nursing in 2006: *A Global Perspective*

Grant Writing for Nurse Practitioners

Each year, high quality medical research is undertaken that adds to the body of scientific knowledge, advances the understanding of disease, and, ultimately, improves patient care. "Research also validates a health care professional's practice, validates his or her clinical tools, and contributes to the individual's expertise," Jennifer M. Smrtka, RN, MSN, ANPC, MSCN, told attendees at the 2006 CMSC Annual Meeting in Scottsdale, Arizona. But before the research is funded, one must complete a grant application, which can intimidate first-time grant applicants.

How to get around the fear factor? In a presentation co-authored with Amy Perrin Ross, APRN, MSN, CRN, MSCN, *Introduction to Grant Writing for Nurse Practitioners*, Ms. Smrtka advised nurses interested in obtaining a grant to start with a novel idea.

"The best place to find an idea you'd like to study is in your day-to-day practice, while you're working with your patients," said Ms. Smrtka. "That's when you have those 'Eureka!' moments." Your idea should then be assessed on a number of fronts: Is it relevant to and within the scope of your practice? Are you able to perform your research within your environment? Do you have

support for performing your research? Will you be able to get funding for your idea? Is the research feasible? What pitfalls might ensue?

Ms. Smrtka urged aspiring grant writers to get as much input from colleagues as possible on these points. Finding a good mentor, someone who has successfully navigated the grant application process and who can suggest how to avoid snags and get your grant funded, can be invaluable. Your mentor can also review your grant application before you submit it and co-author your findings once your project is completed. If you're in a university setting, you also may be able to present your ideas to and work with a clinical research committee within your department, which will provide constructive feedback and possibly direction with the process.

The integrity of your research depends upon doing a well-designed, well-controlled study. "You may want to sit down with a statistician or someone well-versed in statistics to find out the minimum number of subjects you will need to power your study, which will be necessary to have statistically relevant findings. Additionally, this information will be invaluable when it comes to submitting your budget," Ms. Smrtka advised. "Do a thorough literature search to see if any research has already been done on the

topic. If so, don't immediately give up. You may be able to approach the idea from a different angle or construct an additional hypothesis to further the original research."

Locating a Grantor

Web sites of different funding agencies may provide insight into what type of research they're funding, said Smrtka. The Bureau of Health Professions at www.hrsa.gov provides information about federally funded nursing grants. The CMSC, the IOMSN, and the National MS Society support nursing research. The MS Foundation and local organizations and foundations provide opportunities for nursing clinical research, too. "These organizations have an agenda and specific research they're interested in funding. Contact them. You may be able to speak to someone who can tell you about the types of grants being accepted, steer you to someone who's submitted a successful grant, or provide access to a grant writing kit."

Time and Money: Critical Factors

Underestimating the time a project requires from start to finish is probably the most common mistake people make, said Ms. Smrtka. "Researchers normally perform six-month, twelve-month, or twenty-four month studies—the latter being most opti-

mal. Determine your timeline and be realistic. Build into your timeline the time you'll spend on the intellectual process—conceptualizing the idea, doing the literature search, getting feedback, and writing up the proposal. It can take as much as six months of prep work, but doing all your homework can ultimately be a timesaver. For example, if you apply to the National MS Society to research mobility issues and they're currently interested in funding research on improving adherence to disease-modifying therapies, you've wasted valuable time."

Work out your budget carefully using a spreadsheet, Ms. Smrtka recommended. "When you're submitting a grant, you need to show how every dollar will be spent, so project accordingly and responsibly. Remember, this becomes a legal contract between you and the funding agency. If you misallocate or overspend, the grantor won't give you more money and your employer won't necessarily pay the balance. If you're at a university, find out from the department administrator or, if you are in a private office, ask the office manager what kind of overhead and indirect costs will be applied to your budget. Include a pricelist of supplies, cost of storage, and exam room time you may need, as well as nursing time and other staff time."

When writing your abstract paragraph, be specific about your hypothesis, what you intend to accomplish, and your research methods, such as data collection and study design and setting. Write with clarity, using simple, declarative sentences and good

grammar. Avoid generalities.

"You need to convince the funding organization that what you plan to do is going to be successful and meaningful, so provide evidence that

to validate the depth of their knowledge in their field through certification exams offered by the Multiple Sclerosis Nurses International Certification Board (MSNICB) and the

"When you're submitting a grant, you need to show how every dollar will be spent, so project accordingly and responsibly. Remember, this becomes a legal contract..."

you have institutional support for this research. Show how the environment in which the research will be performed is conducive to your project's success."

If your proposal is rejected, take heart, Smrtka advised. "The grantor may recommend changes and allow you to resubmit. You can also submit your proposal to other organizations. Rejection isn't always bad. You've learned something. You've learned the process. Writing a grant application is an undertaking, but it's just the first step."

MSX

—Kathleen Engel

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The MSCN and MSCS Exams

During the course of the year, health care professionals specializing in MS care have a number of opportunities

Consortium of Multiple Sclerosis Centers (CMSC).

The **Multiple Sclerosis Certified Nurse (MSCN)** exam is offered to registered nurses four times a year—at the CMSC conference, the MS Trust Meeting, and on two other dates in the spring and fall. The exam, taken in pencil at an exam center, consists of 150 multiple-choice questions and lasts two and a half hours. It is a one-day exam. "We typically recommend exam candidates have at least two years of experience in MS nursing, which seems to provide the minimum level of knowledge required to do well on the test," said Beverly A. Layton, RN, president of the MSNICB.

The **Multiple Sclerosis Certified Specialist (MSCS)** exam is offered to specialists involved with MS care delivery, such as physiotherapists, occupational therapists, psychologists, licensed practical nurses, licensed social workers, licensed dietitians, and physicians. According to Colleen Harris, MN, NP, registered nurses are also eligible for the MSCS certification but are advised to take

the MSCN exam, which focuses on nursing practice. The computer-based MSCS exam consists of a maximum of 150 multiple-choice questions reflecting a general knowledge base in MS care and takes two hours to complete. Two testing periods are offered each year. At least one year of practice in MS care is recommended for professionals interested in taking this exam.

“These are not credentialing exams,” explained Ms. Layton and Harris. “They provide a certification and a formal recognition of your level of knowledge in the field of MS care.” Exams are voluntary and are administered by the Professional Testing Corporation. For more information about dates, eligibility, and fees, or to download an exam application and a handbook, visit the Professional Testing Corporation Web site (www.ptcny.com). Click on Test Information and then on either the MSCS or MSCN icon. **MSX**

—*Kathleen Engel*

The Role of the Nurse Continence Advisor in an MS Clinic

Bladder and bowel symptoms are commonly experienced by persons with multiple sclerosis (MS), with some estimates of prevalence being upwards of 75%. Symptoms may range from mild to severe, and may vary in intensity throughout the lifespan. Because of the breadth and variability of these symptoms, and the

impact that these have on the individual, the Dalhousie MS Research Unit in Halifax, Nova Scotia, opted to expand the current clinical services offered to include a Continence Care Program (CCP) to provide ongoing assessment and treatment of bladder and bowel symptoms. As it was necessary to have an appropriately educated registered nurse to develop the CCP, I was asked to complete the Nurse Continence Advisor (NCA) program and develop the role of the NCA.

My first step was to complete the NCA Program on Continence Promotion and Management at McMaster University. The program is designed to assist the experienced nurse in acquiring skills and knowledge to become an NCA. The program is offered through distance education, has both a module and clinic practicum component of 150 hours, and takes about one year to complete. While the NCA role was first established in England in the 1970s, it was not offered in Canada until 1996.

My role as NCA at the Dalhousie MS Research Unit is to assist patients with MS in managing bladder and bowel dysfunction within the framework of the nursing process of assessment, planning, implementation, and evaluation. Patients are referred to the CCP by their neurologist, clinic nurse, or through self-referral. The initial visit lasts approximately one to one-and-a-half hours wherein a detailed history of voiding habits, fluid/dietary intake, caffeine intake, bowel habits, medications, and functional ability is collected. In

addition, a urinalysis and ultrasound post-void residual are completed. Contributing factors for bladder and/or bowel dysfunction are identified. Considerable education on common contributing factors—high caffeine intake, inadequate fluid intake, weak pelvic floor muscles, and medication side effects—and interventions to manage symptoms are provided. The treatment plan initially involves management of these contributing factors through the use of conservative measures to improve symptoms. Implementing strategies such as timed voiding, decreased caffeine intake, and pelvic floor muscle exercises can help minimize symptoms. Patients are recommended pharmacological interventions and referred back to the neurologist when the symptoms are more severe and when conservative measures are not enough to manage the problem. Patients are asked to return to the CCP for re-assessment within two months and as required thereafter.

I work collaboratively in my role as NCA with the MS clinic nurses, nurse practitioner, neurologist, psychiatry team, and the patient's family practice physician to manage symptoms and make lifestyle changes with an overall goal of improving the patient's quality of life. **MSX**

—*M. Loretta Stefura,*
RN, MSCN, NCA

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Patient Education

The **Expert MS Patient**, available at www.expertmspatient.com, is an on-line educational tool that addresses the specific needs of MS patients. A product of CMSC and IOMSN, the site offers:

- Video programs, featuring CMSC and IOMSN members addressing topics such as “Multiple Sclerosis Effects on the Mind.” (Transcripts are also available.)
- A searchable online database of Frequently Asked Questions (FAQs) such as “How can I make these uncomfortable symptoms go away” and “How can I cope with fatigue?”
- An opportunity for Web visitors to submit their own questions, which will be answered by nurses, doctors, and therapists who specialize in MS care.

An advisory board composed of CMSC and IOMSN members reviews all material found on the site. Go to www.expertmspatient.com, or access the Web site by clicking on the link at the CMSC site, www.ms-care.org, or at the IOMSN site, www.iomsn.org. **MSX**

—**Kathleen Engel**

Multiple Sclerosis Certified Nurses

In June 2006, candidates took part in a sitting of the examination for Multiple Sclerosis Nurses developed by the Multiple Sclerosis Nurses International Certification Board (MSNICB) and the Professional Testing Corporation. Successful candidates are eligible to use the

registered designation of Multiple Sclerosis Certified Nurse (MSCN). A sitting of the Multiple Sclerosis Certified Specialist (MSCS) exam will be from February 10 to February 24, 2007. For more information, visit www.ptcny.com/clients/MSCS. **MSX**

List of Passing Candidates

Gaylourd Anthony T. Ayag	Debra A. Goodwin	Laura E. Meyer	Nanette N. Rose
Cheryl L. Bowen	Helen K. Griffith	Dawn E. Moyer	Alayne M. Rosner
Eileen M. Boylan	Marsha L. Hanson	Jill R. Nelson (C)	Cynthia S. Schwanger
Vicki L. Cherry	Ann M. Harris	Brant Oliver	Nora H. Stark
Michelle Coleman	Denise L. Hartzog	Mary C. Owen	Cynthia M. Walsh
Deborah Curulewski	Marilyn D. Hester	Cheryl Poole	Yanette M. Yablecki
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Diane M. Flatley	Mary H. Lambert	Susan M. Reynolds	
Patricia A. Garrett	Jeanne M. McCullough	Angela J. Rogers	

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IOMSN c/o MS Center at Holy Name Hospital
718 Teaneck Rd • Teaneck, NJ 07666 • (201) 837-0727

UK, at least another 100 are estimated to be necessary. The possibility of this looks bleak at present. The NHS is experiencing major financial difficulties and will be overspent by an estimated £7 billion (more than \$13 billion) by 2010. This places all specialist nurses in an extremely vulnerable

position, with senior management considering layoffs as a quick and easy way to save. Many specialist nurses all over the UK are currently fighting to prove their worth. If jobs are lost, the impact on patient care will be enormous. It could also leave existing MS nurses overwhelmed by the sheer number of

patients who are eligible to access their nursing service. It has been established that if MS specialist nurses are to offer effective and quality care, they should each have a maximum of 300 patients on their client load. The reality, however, is very different. My own service is fairly typical of many others within the UK. I work in Birmingham, a highly populated urban city in the center of England, on a team of three full-time and one part-time MS nurse specialists. We serve a population of more than 1,800 MS patients. The NHS is free to all, so theoretically every person with MS within my area is entitled to MS nursing support.

Undoubtedly, MS nursing has undergone a great change over the past decade. MS nurses know that they have already influenced the standards of care that people with MS and their family receive. It is accepted that their input can positively influence quality of life. Despite the fact that some posts are under threat, MS nurses rise to this challenge, maintaining their ultimate goal of providing a greater understanding of MS and enabling patients, when possible, to reach their goals of self-management. They are proud of their achievements and realize that they offer services that will truly make a difference to their patients. **MSX**

—**Nicki Ward-Abel,**
RGN, MSCN, BSc (Hons)

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Table

Key Innovations Designed by MS Nurses in the UK

Pregnancy workshops for women with MS: Pauline Shaw, RGN, leads these workshops in London. The workshops are aimed at providing appropriate and accurate information to pregnant women with MS to enable them to make informed choices during labor, delivery, and prenatal and postnatal periods.

NeuroNet: Rhona Maclean, RGN, and Andrew Russell, RGN, from Leeds and York together with NeuroEducation lead this project, which provides a CD containing a software program featuring high quality information on MS that patients and their family can access in the privacy of their own home.

'MS in the Family' workshops: These workshops enable young people affected by MS to learn more about the condition and share their thoughts, concerns, and emotions about living with MS. Kerry Mutch, RGN, started these workshops in Liverpool and they are now run at a number of other MS centers. Kerry also produced a publication, "The Young Person's Guide to MS."

'Mums and Tots' groups: Fran Jackson, RGN, started this project in Manchester. The groups, offered to women under 40, offer practical support and information on reproductive health care and family life, and discuss the impact of MS on the expression of sexuality. The groups also support young women considering whether to start a family. This project has recently received an MS Society Partnership Award.

MS focus groups: Most MS centers run groups where patients identify their specific needs and requirements. These discussions direct the service that is provided.

Day care programs: Run by the MS nurses in North Staffs, these programs are aimed at self-management strategies for people with severe MS.

Group psychology sessions: Sessions are run by an MS team from North Staffs and are provided for people who have attended the course for the newly diagnosed, but who are still struggling to cope with their diagnosis.

Physiotherapy lunch clubs: The MS team in Southampton runs the clubs. Patients come to sessions at lunchtime, eat, and in a relaxed environment, interact with one another and are reviewed by the physiotherapist and MS nurse.

Chat rooms: MS nurses in Southampton provide advice to patients via Internet chat rooms.

Fatigue management courses: The MS team in Birmingham leads this research project together with 11 other MS centers to determine whether attendance at a six-week fatigue management course helps to improve an individual's levels of fatigue.



LITERATURE MONITOR/ NEWS ROUNDUP

FLU SHOT SAFE AND EFFECTIVE FOR PEOPLE WITH MS

In the United States, the flu season ranges from November through March or April. During that time, millions of Americans develop influenza (flu), about 36,000 people die from flu, and more than 200,000 people are hospitalized with flu complications. The National Multiple Sclerosis Society says the flu vaccine is safe and effective for people with MS and recommends an annual flu shot for those who are susceptible to flu, likely to be exposed to flu, or who have respiratory problems or certain chronic disorders. Pregnant women who will be in the second or third trimester during flu season should also receive a flu shot. However, FluMist Intranasal[®] is *not* recommended for use by people with MS. FluMist is a live-virus vaccine that may cause an increase in disease activity in people with MS.

The National Multiple Sclerosis Society.

INFECTIONS ARE LINKED TO MS EXACERBATIONS

An Argentinean study reported in *Neurology* showed that adults with relapsing remitting multiple sclerosis (RRMS) are three times more likely to experience MS exacerbations in the weeks immediately before and after the onset of a bacterial or viral infection.

Noting an association between infection and the onset of MS symptoms, the research team asked 60 pa-

tients with RRMS to report at the first signs of an infection. Twenty patients were evaluated with MRI on their initial visit and again two weeks and 12 weeks later. Blood samples were collected at the onset of infection symptoms and levels of IL-4, IL-10, IL-12, IFN- γ , TNF α , VLA-4, LFA-1, MMP-9, and MMP-2 were measured.

The researchers found increased disease activity on MRI and greater T cell activation and proinflammatory cytokine concentrations during the infection-related exacerbations. Three times more exacerbations occurred during the “at risk” period, defined as ranging from two weeks prior to the onset of infection symptoms to five weeks after infection onset, compared with time periods outside this window. Four times more exacerbations occurred when the “at risk” window was narrowed to two weeks prior to and two weeks after the onset of infection symptoms.

The investigators concluded that viral and bacterial infections promote inflammatory responses that trigger disease activity and exacerbations in MS patients. They also reported that viral and bacterial infections are equally associated with exacerbations and that relapses triggered by infection caused longer-lasting and more severe deficits than relapses occurring outside the “at risk” window.

Correale J, Fiol M, Gilmore W. The risk of relapses in multiple sclerosis during systemic infections. *Neurology*. 2006; 67:652-659.

WHOLE BRAIN T1 MAPS IDENTIFY MS CHANGES

Subtle changes in brain tissue, not discernable using standard MRI, affect MS disease progression, Dutch investigators have found. In a recent study in *Radiology*, the research team reported that advanced MRI technology called T1 mapping can help doctors detect damage to areas of the brain that appear normal.

Since areas of demyelination in MS patients correlate only moderately with clinical disability measurements, the researchers decided to investigate disease activity outside the visible lesions. They studied T1 changes in normal-appearing white and gray brain matter in 67 patients with MS and 24 control participants without the disease.

By using T1 mapping to measure proton relaxation after exposure to a magnetic field and a radiofrequency pulse, the researchers found significant differences between the graphs of normal-appearing white and gray matter for MS patients and for controls. T1 changes indicating a reduction in normalized brain volume were most pronounced in patients with secondary progressive MS, who also had the greatest degree of disability. In these patients, at least 31% of normal-appearing white matter and 20% of cortical normal-appearing gray matter were affected. These changes were not limited to a few sites but throughout the brain. Normal-appearing brain tissue was less affected in patients with relapsing-remitting MS and in those with primary progressive MS.

The researchers concluded that the MS disease process affects large parts of normal-appearing white matter and gray matter. When assessing the progression of brain atrophy and clinical disability, this damage may be more significant than visible lesions, they suggested.

Vrenken H, Geurts J, Knol D, et al. Whole-brain T1 mapping in multiple sclerosis: Global changes of normal-appearing gray and white matter. *Radiology*. 2006;240:811-820.

FINGOLIMOD REDUCES MS SYMPTOMS

The oral drug fingolimod (FTY720) helps prevent MS relapses, according to the findings of a Phase 2 clinical trial published in the *New England Journal of Medicine*. By binding to a

docking site on immune cells implicated in causing nerve damage associated with MS, fingolimod induces immune cells to remain in lymph nodes instead of migrating into the brain and spinal cord.

A total of 255 people with active, relapsing MS completed the international, double-blind, placebo-controlled study. Researchers randomly assigned participants either 1.25 mg or 5.0 mg fingolimod or a placebo once daily. The subjects were followed for six months with MRI and clinical evaluations. Active inflammation as indicated by enhancing lesions on MRI was significantly reduced in participants receiving the drug versus those who received the placebo. Additionally, fewer people in the treatment group than in the placebo group experienced relapses.

In an extension of the study, 227 study participants were followed for an additional six months. Subjects in the treatment group continued on the same dose of fingolimod. Those who originally received the placebo switched to either 1.25 mg or 5.0 mg fingolimod. The researchers found that lesions and relapse rates remained low in subjects continuing with fingolimod and decreased in patients who switched from placebo to fingolimod.

Adverse effects included nasopharyngitis, dyspnea, headache, diarrhea and nausea. Fingolimod was also associated with clinically asymptomatic elevations of alanine aminotransferase levels as well as an initial reduction in heart rate and a modest decrease in the forced expiratory volume in one second. One case

of posterior reversible encephalopathy syndrome occurred in the 5.0 mg dose group.

Fingolimod reduced the number of lesions detected on MRI and clinical disease activity in MS patients and warrants further study, the researchers concluded. A large-scale Phase 3 clinical trial is under way that will involve 100 centers worldwide. The study, called FREEDOMS (FTY270 Research Evaluating Effects of Daily Oral Therapy in MS), will follow more than 2,000 people with relapsing-remitting MS for 24 months and monitor the safety and effectiveness of fingolimod.

Kappos L, Antel J, Comi G, et al. Oral fingolimod (FTY720) for relapsing multiple sclerosis. *N Engl J Med*. 2006;355:1124-1140.

FATHERS AND MS TRANSMISSION

Men with MS are more than twice as likely as women with the disease to pass it on to their children, according to a recent study in *Neurology*. Since MS is twice as common in women as in men, the researchers theorized that men need a larger number of genes or stronger genes in order to develop MS and, given this genetic predisposition, would be more likely than women to transmit the disease to their children, a phenomenon known as the Carter effect.

The researchers studied 444 children (45 with definite MS) of MS-affected fathers or mothers from 3,598 individuals in 206 families. They found that, when both a parent and a child in a family had MS, the child got the disease twice as often from the father as the mother, demon-

strating the Carter effect in MS.

For 15% of people with MS, a family member within a generation is also affected by the disease, but investigators have not been able to identify a specific gene that predisposes an individual to developing MS. Hormonal differences and genes of the sex chromosomes also don't explain why men transmit MS to their offspring more than women, the researchers noted. And while the affected parent's gender remains an independent risk factor for familial MS, the investigators stated that men with MS should receive the same counseling they have been regarding MS risk to their children.

The research team concluded that a man's greater genetic load may explain why men are more likely to transmit the disease to their offspring and recommended that another study be performed by other researchers before these findings become widely accepted. **MSX**

Kantarci OH, Barcellos LF, Atkinson EJ, et al. Men transmit MS more often to their children vs women: The Carter effect. *Neurology*. 2006;67:305-310.

PLEASE SHARE YOUR COMMENTS

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CONTINUING EDUCATION CONFERENCE CALENDAR

April 28–May 5, 2007

59th Annual Meeting of the American Academy of Neurology. Location: Boston, MA. Contact: AAN Member Services, 1080 Montreal Ave., St. Paul, MN 55116; (800) 879-1960; fax: (651) 695-2791; e-mail: membership@aan.com; Web site: www.aan.com.

April 29–May 2, 2007

39th Annual Meeting of the American Association of Neuroscience Nurses. Location: Orlando, FL. Contact: AANN, 4700 W. Lake Ave., Glenview, IL 60025; (888) 557-2266; (US only); (847) 375-4733; fax: (877) 734-8677; e-mail: info@aann.org; Web site: www.aann.org.

August 25–28, 2007

11th Congress of the European Federation of Neurological Societies. Location: Brussels, Belgium. Contact: EFNS Head Office, Breite Gasse 4-8, 1070 Vienna, Austria; +43 1 889 05

03; fax: +43 1 889 05 03 13; e-mail: headoffice@efns.org; Web site: <http://efns2007.efns.org>.

October 7–10, 2007

132nd Annual Meeting of the American Neurological Association. Location: Washington, D.C. Contact: ANA, 5841 Cedar Lake Road, Suite 204, Minneapolis, MN 55416; (952) 545-6284; fax: (952) 545-6073; e-mail: julieratzloff@llmsi.com; Web site: www.aneuroa.org.

October 11–14, 2007

23rd Congress of the European Committee for Treatment and Research in Multiple Sclerosis. 12th Annual Conference of Rehabilitation in MS. Location: Prague, Czech Republic. Contact: AKM Congress Service, Clarastrasse 57, CH-4005, Basel, Switzerland; +41 61 686 77 11; Fax +41 61 686 77 88; e-mail: info@akm.ch; Web site: www.akm.ch/ectrims2007.

CMSC 2007 ANNUAL MEETING

The 21st Annual Meeting of the Consortium of Multiple Sclerosis Centers will take place May 30 to June 2, 2007 at the Washington Hilton Hotel and Towers in Washington, D.C. The theme is "The Challenges of Care and Research in Multiple Sclerosis." This year the CMSC Annual Meeting will be a collaborative effort. The first joint meeting with ACTRIMS (Americas Committee for Treatment and Research in Multiple Sclerosis) is scheduled to take place concurrently with the CMSC program on Saturday, June 2, 2007. For more information, please visit www.ms-care.org or call (201) 837-0727.

