



Hyatt Regency Chicago  
 Chicago, Illinois  
 June 5-9, 2002

## *Second International Multiple Sclerosis Week*

### **Multiple Sclerosis: A World View**

**M**ultiple sclerosis is the most common disorder affecting young adults in the prime of their lives. The new millennium brings a fresh perspective on MS care: a new vision of empowerment for patients and families and positive approaches to manage the disease, its symptoms, and its psychosocial implications. This new view of MS care has spanned the oceans and has resulted in the development of worldwide networks of health care providers in multiple sclerosis. The Consortium of Multiple Sclerosis Centers, RIMS (Rehabilitation in Multiple Sclerosis), LACTRIMS (Latin American Committee on Treatment and Research in Multiple Sclerosis), and IOMSN (International Organization of Multiple Sclerosis Nurses) have set global standards in MS care and research and have collaborated to organize and co-sponsor this meeting.

Multiple Sclerosis: A World View offers an international view on clinical and research issues in multiple

sclerosis. The opportunity to meet, confer and network with colleagues from nations located throughout the world make this annual meeting one you will not want to miss. This is the Second Annual International Multiple Sclerosis week (the first taking place in Basel, in 1999) featuring an integrated research track, numerous workshops, a day totally in Spanish for our Latin American delegates, satellite symposia, and an international database/registries meeting (ICODIMS).

**Conference Highlights:**

- Basic research and clinical trials
- Collaborative international approaches to managing multiple sclerosis
- Gender issues in multiple sclerosis
- Technological advances in clinical care and research
- Networking opportunities
- Exhibits with the latest in services and products
- Evening events in Chicago's "Magnificent Mile."



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## NONADHERENCE TO IMMUNOMODULATION IN MULTIPLE SCLEROSIS

**Purpose:** The primary objective of this study is to outline factors leading to nonadherence or cessation of immunomodulation therapy in a multiple sclerosis clinic population. The secondary aim is to provide related recommendations to MS patients and nurse educators.

**Rationale:** Nonadherence has been estimated at greater than 50%. Encouraging adherence to therapy is an integral part of the MS nurse's role. If only half of all patients starting therapy will succeed, we need to learn more about factors relating to unsuccessful therapy attempts.

**Methods:** A retrospective study of individuals attending a multiple sclerosis out-patient clinic (n = 1,000) will be conducted to identify patients who have received immunomodulating therapy. In addition, patients who have ceased or changed therapy will be identified. Key factors relating to nonadherence will be categorized and outlined as they correspond to individual medications. Resulting implications for MS patients and nurse educators will be presented.

Evelyn Vee McBride, RN, BScN, Kingston General Hospital, Kingston, Ontario, Canada

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## EVALUATION OF A NEW SENSORISED UPPER LIMB TREMOR MEASUREMENT SYSTEM IN MS

Developed under the EU programme TREMOR (DE3216) the system consists of linked movement sensors mounted on a lightweight frame. It measures angular direction, change, velocity and acceleration in 7 degrees of freedom (DOF) at the shoulder, elbow and wrist joints. It is the first system to simultaneously measure upper limb kinetic and intention tremor at all three joints and at full range of movement (ROM). Bespoke software allows the collection, storage, retrieval, and analysis of recorded signals. A graphic display enables the operator to see whole or part recordings and pinpoint the part of the movement trajectory where tremor occurs. Three movement tests were performed encompassing normal functional ROM the "finger to nose test", the "police, stop" test and the "OK" test. Reliability of the system was tested in 10 control subjects (mean age 45 years). Test-retest values for 10 control subjects showed, modest to good agreement for all movements and at all linkages. Movements at the wrist showed the poorest agreement. Level of tremor was measured in six MS patients (mean age 47 years, EDSS range 6.0 to 7.5). Subjects were clinically assessed using the Fahn tremor rating scale. Mean time taken to accurately perform each test was significantly longer in the patient group compared with the control group and longest in those with the greatest tremor (controls  $7.6 \pm 1.9$ s MS subjects  $12.4 \pm 6.2$ s). Recorded test time and frequency and amplitude of oscillations correlated well with the Fahn score. Whilst elements of the rig and linkage construction need to be improved these preliminary studies indicate that the evaluation of tremor at different angular velocities and limb positions is possible with this system. Such information will help to develop better therapeutic strategies.

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## THE PSYCHOLOGICAL AND EMOTIONAL EFFECT OF A STRESS MANAGEMENT PROTOCOL ON PERSONS WITH MULTIPLE SCLEROSIS

This study examined the effect of a behavioral stress management intervention, including relaxation and visualization components, on the psychological and emotional aspects of patients' response to MS. Subjects were randomly divided into treatment and control groups, which upon completion of the study had 227 subjects and 150 subjects respectively. The treatment group participated in a one-day workshop where they learned systematic relaxation techniques and a visualization exercise specific to the effects of MS on the participant's neural system and functioning. The treatment group was asked to practice these techniques on a regular schedule. Participation was monitored weekly via telephone contact or e-mail. Anxiety and depression were assessed using the State-Trait Personality Inventory (Spielberger, Ritterband, Sydeman, Reheiser & Unger, in Butcher, 1995), Self Efficacy was assessed with the Multiple Sclerosis Self Efficacy (MSSE) scale (Schwartz, Coulthard-Morris, Zeng, & Retzlaff, 1996) and the Attributional Style Questionnaire (ASQ-Peterson, et al, 1984). Pretesting of both groups was done immediately prior to the stress workshop and post-testing was 12 weeks later. Initial data analysis suggests self-efficacy is negatively correlated with depression and anxiety. Males tended to present themselves as more hostile than depressed and anxious.

Joan B. Read, PhD, and G. Dean Ericson, PhD, MS Center at Shepherd, Atlanta, GA

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## ACOUSTIC ANALYSIS :

### A PREDICTIVE INSTRUMENT FOR DIAGNOSIS AND CONTROL OF DYSARTHRIA IN MS

Acoustic analysis provides an interface between speech production and perception and can be used to detect and document the progressive course of motor speech disorders and identify subclinical manifestations.

**Material and Method:** All analyses are performed on the Computer Speech Lab (Model 43008) of Kay. Acoustic characteristics are identified in wide-band spectrograms, with frequency range from 0 to 50,000 Hz and time intervals of 3 sec. The linear predictive coding (LPC) method and the analysis of the variations of amplitude and fundamental frequency from cycle to cycle may detect symptoms such as phonatory instability and nasalisation. Additional acoustic data are obtained through the Multidimensional Voice Profile and the Motor Speech Program. These programs analyze the intonation variations, the diadochokinetic rate, the voice tremor and second formant variations during speech productions. All subjects had to sustain the vowel /a/ for at least 5 sec., to repeat the syllables /pa-ta-ka/ and /i-u/ as quickly as possible, and speak standard productions at "normal" rate without unnecessary pauses.

**Subjects:** All subjects performed a perceptual screening of dysarthria (Frenchay - Enderby); 20 normal adult subjects are defined as non dysarthric (10 males, 10 females) and 20 individuals with MS (10 males, 10 females) present dysarthria (spastic, spastic ataxic) at different grades (moderate, mild, severe).

**Discussion:** At this stage of the study, it seems that some acoustic parameters are sensitive to the fluctuations of voice and speech disorders in MS. Degree of voiceless, deviation of fundamental frequency, variations of amplitude, tremor, temporal deregulation (dysdiadochokinesy) and imprecise articulation could be considered as predictive parameters of specific voice and speech disorders in MS. Results of clinical cases will also be discussed.

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