Restorative Therapy Raised Motor, Sensory Scores

San Diego — Patients with chronic spinal cord injury regained physical integrity and demonstrated advances in neurologic functioning with intensive restorative therapy, John W. McDonald, M.D., Ph.D., reported during a poster presentation at the annual meeting of the American Neurological Association.

Dr. McDonald and his associates at Washington University in St. Louis and the Kennedy Krieger Institute in Baltimore studied 57 adults whose injuries occurred at least 1 year prior to enrollment. Complete data were available for a total of 48 patients who participated in therapy for at least 6 months.

Patients who received traditional therapy for 6 months or longer (n = 22) were compared with those who spent a similar length of time undergoing activity-based restorative therapy that included at least 3 hours a week of functional electrical stimulation cycle ergometry (n = 26).

Patients who participated in restorative therapy increased the muscle mass of their quadriceps an average of 30%, while muscle fat decreased by 44%. Stimulated muscle strength increased by 78%, and relative spasticity was reduced by 47%. These measurements were obtained using a Biodex machine to generate free movement and velocity-dependent resistance while measuring response. No differences were seen in nonstimulated muscles, Dr. McDonald reported.

One-third of patients undergoing traditional rehabilitation lost 10 or more points on the combined motor and sensory score (CMSS) of an impairment scale established by the American Spinal Injury Association. Just one patient receiving restorative therapy lost at least 10 CMSS points.

The 69% of patients who responded to restorative therapy (18 of 26) gained an average of 38 CMSS points over the course of the study. Eleven of the 26 patients undergoing restorative therapy also decreased their dose of the antispasmodic agent baclofen or discontinued it altogether. The same was true for just 3 of 22 patients receiving traditional therapy.

The positive results of this pilot study point to the need for the larger, randomized trial, which is scheduled to get underway in 2006 and will enroll 400 patients, Dr. McDonald said.