

ABSTRACTS

Haley S.M. Sequential analyses of postural reactions in nonhandicapped infants. *Phys Ther* 1986; 66(4): 531-536.

The purpose of this study was to identify an empirically validated sequence of automatic postural reactions in a sample of 40 nonhandicapped infants. Using a cross-sectional design, we tested infants between the ages of 2 and 10 months for the presence of full and partial righting, equilibrium and protective reactions. Two types of sequential analysis were performed. The Thurstone absolute scaling technique identified an age-related sequence, and the scalogram technique a measure of the variability of the sequence. The sequence of postural reactions defined in this study is in general agreement with the sequence reported in previous clinical reports, although some differences in ordering are noted. A consistency index of 727 indicated that the sequence of postural reactions had fairly good predictive ability. This study contributes a data-based sequential model of postural reactions and an indication of the degree of sequential variability in the order of emergence of postural reactions in nonhandicapped infants. Definition of the sequence and the observed variability in nonhandicapped infants is an initial step in the understanding of the processes underlying the development of postural reactions.

Author's Summary

Lloyd T. *et al.* A review of the use of electro-motor stimulation in human muscles. *Australian Journal of Physiotherapy* 1986; 32(1): 18-30.

The use of electrical stimulation in rehabilitation is a long established procedure for the management of a wide variety of musculo-skeletal problems. This paper reviews important findings from studies on the electro-motor stimulation (EMS) of human muscles. It is particularly concerned with the results of EMS in normal subjects and in the rehabilitation setting, focusing on the stimulus parameters and training protocols used by various authors. A brief account is also

given of some of the physiological effects of EMS on muscle. Attention is drawn to the urgent need for a more systematic approach to establish the optimal stimulation and training parameters. These factors must be considered when evaluating studies concerned with the efficacy of EMS-based rehabilitation programmes.

Authors' Summary

Chan C.W.Y. Some techniques for the relief of spasticity and their physiological basis. *Physiotherapy Canada* 1986; 38(2): 85-89.

A number of approaches have been advocated for the management of spasticity. The purpose of this review is to discuss the experimental studies that investigated the underlying mechanisms, as well as the clinical benefits, of three of these techniques: local cooling, vibration therapy, and electrical stimulation. First, prolonged local cooling of the spastic muscle has been found to relieve spasticity by reducing the hyperexcitability of tendon reflexes and ankle clonus. Of clinical significance is the long-term functional improvement demonstrated by an increase in range of movement and voluntary power of the antagonist. Second, low amplitude, high-frequency vibration of the paralytic antagonist of a spastic muscle is believed to reduce the hypertonus of the spastic muscle through reciprocal inhibition, while facilitating movement of the paralytic muscle through generation of the tonic vibration reflex conducted via spindle afferents. However, the long-term improvement in neuromuscular function has so far been found to be an increase in the active range of movement, without a significant increase in the voluntary power of either vibrated or nonvibrated muscles. Third, surface electrical stimulation of peripheral nerves, and of spastic or paralytic muscles, has been found to suppress spasticity. Of importance to the therapist is the long period of reduced spasticity observed after the stimulation.

Author's Summary