

Paralysed walk again

SIR – The report of leg movements in paralysed patients following spinal cord stimulation (November 1) is outstanding and the teams concerned are to be congratulated. But it needs to be seen in context.

The first report of humans with spinal cord injury making step-like movements induced by spinal cord stimulation was by Dimitrijevic and colleagues in *Spinal Cord* (2004).

However, the change in *neurological deficit* by external stimulation goes back even further: in 1902 Frolich and Sherrington reported that, in spinal-injured cat, dog and monkey, stimulation of the spinal cord produced immediate loss of spasticity. Sherrington was a Nobel Laureate.

The use of spinal cord stimulation in humans follows the seminal work of Melzack and Wall, who established the gate control theory of pain (1965).

The first person to demonstrate improvement in neurological deficit, as opposed to improvement in pain, in humans was A W Cook (*New York State Journal of Medicine*, 1973). Cook was carrying out this procedure for pain in a young sufferer from MS when, to his great surprise, he observed improvement in walking.

Cook was not aware of Sherrington's work. Cook contacted me following a paper in the *Lancet* (1973) in which I had suggested that experimental changes in the central nervous system following partial lesions and the effect of experimental repetitive stimulation (*Nature*, 1969) suggested an approach to neurological deficit via the intact, but altered, central nervous system.

Cook took his observations to the neurologists in his hospital and to the neurological societies in New York. They refused to investigate. I knew the chief of neurology in Cook's hospital, who told me the consensus was that Cook's observations were remarkable but "These things just don't happen." (Clearly they were not aware of Sherrington's work.)

Studies by myself and colleagues (*Spinal Cord Dysfunction*, Oxford, 1992) demonstrated for the first time reproducible neurophysiological changes with spinal cord stimulation in patients at spinal and brain-stem level. Eventually this led to the formation of the International Neuromodulation Society.

What Cook observed in humans was no more than the report of Frolich and Sherrington in animals in 1902. Cook deserves greater recognition, yet his observations are treated with calumny.

Lee Illis FRCP

Past President, International
Neuromodulation Society
Lymington, Hampshire

BRITISH MUSEUM ANTHROPOLOGY