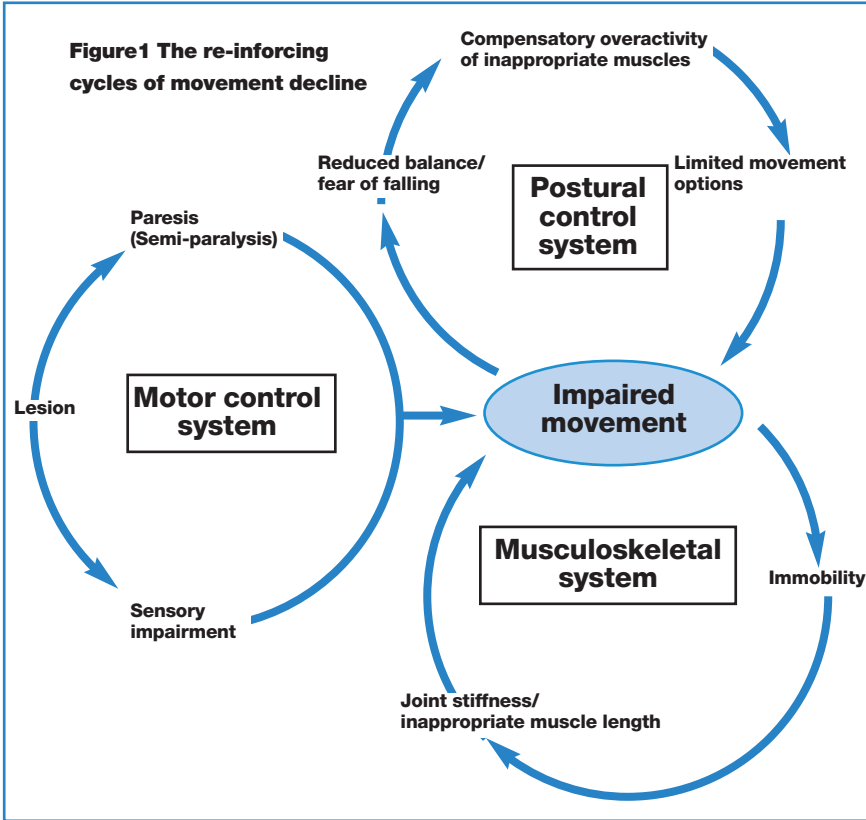


Neurological

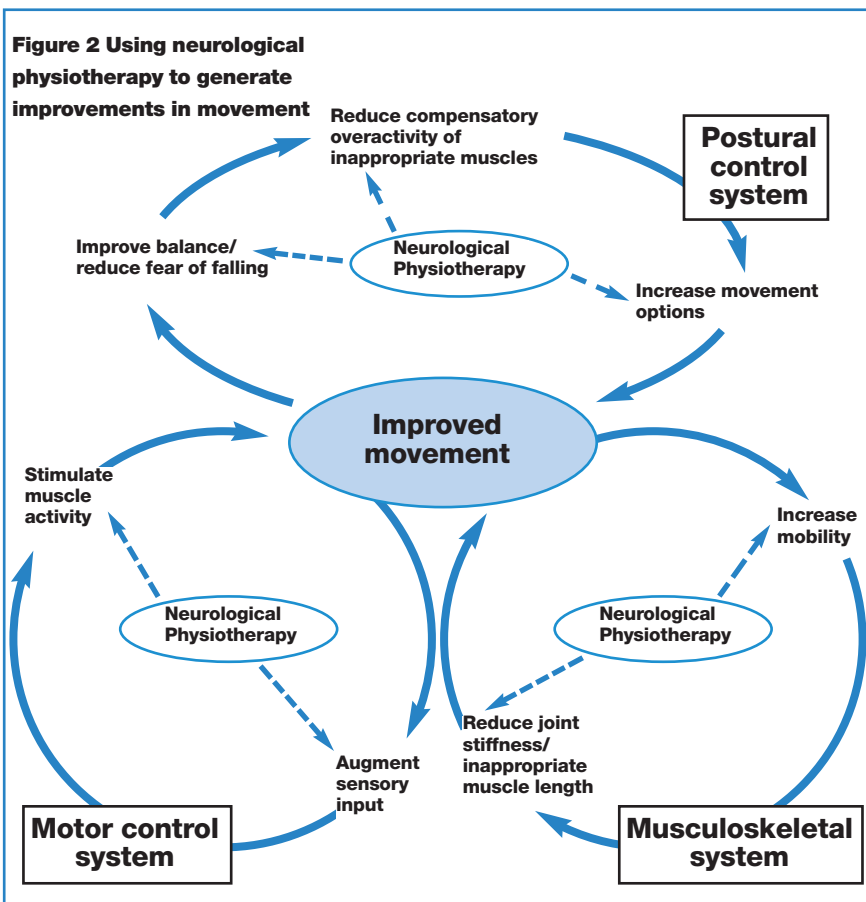


Neurological conditions which affect movement can have a serious impact on the quality of life of patients and their families.

In the UK currently, there are 250,000 people living with long-term disabilities resulting from a stroke, 120,000 people with Parkinson's Disease and 85,000 people with multiple sclerosis.

The aim of neurological physiotherapy is to help patients with neurological conditions recover as much movement as possible, or, where this isn't possible, to minimise the rate of deterioration. While some patients can make major improvements such as learning to walk again, for others small changes like becoming able to transfer out of bed or a wheelchair can still hugely improve their quality of life.

However there are many outdated assumptions surrounding neurological physiotherapy which can limit the amount of physiotherapy provided and cause patients to miss out on achieving their full potential.



Stroke

One common belief is that stroke patients only make progress in the first six months after their stroke. However our experience at heads up! shows that this simply isn't the case. To take just one example, a patient arrived at the practice six months after his stroke having been told that he would never walk again. He was unable to stand up on his own and relied on a wheelchair for mobility. However, after two years of physiotherapy and work with a personal trainer, he has just completed a mile walk for charity.

Another common belief is that the hemiplegic upper limbs of stroke patients recover less than their lower limbs. In hospital rehabilitation units, more intense therapy is given to patients' lower limbs and walking so that they are able to return home as soon as possible. Consequently many stroke patients leave hospital with arms that are not as functional as their legs, and a belief has developed that arms don't recover as well as legs.

However there is no physiological reason why there should be less progress occurring in upper limbs. One patient, who came to heads up! 12 months after his stroke, was ambulant but unable to use his arm at all. After only four sessions he was able to pick up small objects

Physiotherapy never assume

Carolyn Luke MCSP SRP and Anna Hamer MCSP SRP

and was starting to catch a ball two-handed.

There is also a belief that a patient's fixed limb posture cannot be changed because of muscle spasticity. Fixed limb postures can be due to muscle over-activity occurring because the body is trying to hold itself up against gravity without sufficient postural control. This is illustrated by the fact that flexion in the arm often increases during walking compared to when a person is lying on the bed.

Therefore, when neurological physiotherapy improves pelvic stability, the tone or flexed posture of the upper limb can decrease.

Multiple Sclerosis

It is often assumed neuro-physiotherapy only offers strengthening and stretching for patients with multiple sclerosis. However treatment can also include increasing active trunk mobility, postural stability and efficiency of movement, and these can generate significant improvements.

Neuro-physiotherapy can give patients experiences of new movement and balance reactions, reduce their fear of falling and improve the normality of their gait pattern.

Parkinson's Disease

There is an assumption that physiotherapy is only useful for progressive conditions when problems are encountered, and not at diagnosis or as a preventative or maintenance measure. However, maintaining efficiency of movement and postural stability is important from the onset of the condition.

Treatment options for Parkinson's Disease patients can include either regular visits (eg. six weekly) or a burst of 3 or 4 sessions with a review at longer intervals, perhaps six-monthly.

A recent patient shows how a short burst of treatment can help to increase mobility. The patient was assessed as being unable to maintain a sitting position on the edge of the bed. His feet lifted off the floor, his knees extended and his trunk

fell backwards almost immediately. After three treatment sessions working on desensitising his feet, activating the lumbar extensors, and the forward and lateral weight shift of his pelvis, he was able to sit on the edge of the bed with his feet on the floor for over half an hour.

The importance of neurological physiotherapy treatment

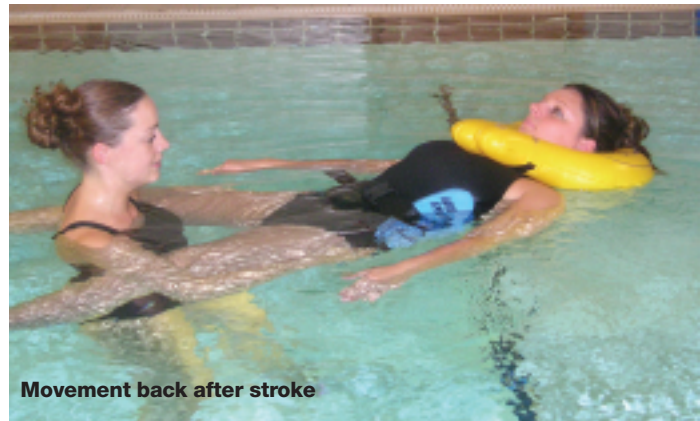
It is important to realise that it is not only the neurological condition which causes a patient's movement problems. A lesion can cause paresis and sensory impairment, which both lead to impaired movement. However this reduced movement then has knock-on effects on both the postural control and the musculo-skeletal systems to set up two re-inforcing cycles (see Figure 1).

With regard to postural control, the initial movement impairment leads to reduced balance and a consequent fear of falling. Due to the process of neuroplasticity, the brain then re-organises itself to compensate for this. As a result, patients have fewer movement options and this exacerbates their movement problems.

In addition, the movement problems increase a patient's immobility, which results in secondary musculo-skeletal changes such as joint stiffness and inappropriate muscle length. This again exacerbates the situation.

There is a belief that physiotherapy only makes use of natural recovery but this is not the case. The strength of neurological physiotherapy is that it can operate on all the components of the motor control, postural control and musculo-skeletal systems thereby stabilising or reversing the cycles of movement decline (see Figure 2).

Neuro-physiotherapy can work on the motor control system augmenting sensory input and stimulating muscle activity,



Movement back after stroke

thereby improving movement. For the postural control system, neuro-physiotherapy can improve a patient's balance and reduce their fear of falling, reduce the compensatory activity of inappropriate muscles and allow them to experience different movement options, all of which lead to improved movement.

For the musculo-skeletal system, physiotherapy can increase mobility, reduce joint stiffness and generate more appropriate muscles lengths, all of which again lead to improved movement.

As neurological physiotherapists, we help our patients realise that neurological disorder does not mean an end to their lives and that new challenges can bring new rewards. We teach them to understand how and why their neurological pathology is interfering with their ability to move and balance. Then by working with them to maximise their movement potential, we help them to lead as full and as satisfying lives as possible.

Carolyn Luke MCSP SRP and Anna Hamer MCSP SRP are physiotherapists at Heads Up!

Information is available at

www.parkside-hospital.co.uk

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