Stroke: Ankle Splints Improve Mobility

A new review shows that ankle and foot splints can help stroke patients regain the ability to walk and keep their balance. Wrist splints, however, do not lead to signs of improvement in the hands or arms.

Orthotics can help stroke patients moving - but some do better than others; © SXC

"A stroke causes weakness of one side of the body, making it difficult to move the affected arm and leg in everyday activities like walking or eating," said co-author Sarah Tyson. "One common way to manage this problem is using a splint – or orthotic - to control movement at weak joints. We undertook a review to clarify whether the splints were effective."

The reviewers analysed 14 clinical studies involving 429 participants. The leg splint studies looked for improvement in walking speed, balance and step/stride length. They also assessed foot drop during the swing phase of walking. The included studies only examined immediate effects of splints, rather than long-term impact.

"The results for lower-limb splints show that they can improve walking and balance, at least in the short term," Tyson said. "This is something of a surprise as, traditionally, physiotherapists have been reluctant to prescribe them, as it was felt orthotics may have a detrimental effect. However, views have been slowly shifting in the last few years as the body of evidence supporting their use has emerged."

For the most part, the ankle foot splints start around the ball of the foot and extend upwards to a few inches below the knee. Arm and hand splints most often include the palm to an inch or so above the wrist. Initially, these braces are used to increase the range of motion in fingers and hands that may have

been frozen into a fist or have muscles that are hard to control following a stroke. This is intended to help the patient regain use of their upper extremities to eat, write or pick things up more efficiently.

However, researchers saw no effect from wrist splints on the ability to use the arm, range of movement at the wrist, fingers or thumbs or pain. “This result was also surprising as the use of orthotics to prevent contractures, the loss of range of movement, is thought to be very important in restoring use of the arm after stroke,” said Tyson. “These results throw that belief into doubt; however, the results are based on a very small number of studies, so we need to do larger trials and look at the use of orthotics combined with other established treatments.”

Source: Health Behavior News Service at http://www.hbns.org/