MS SERVICES - SYMPTOMS SERIES

SPASTICITY

Multiple Sclerosis Society of SA & NT

Spasticity is one of the 3 most common problems experienced by people with Multiple Sclerosis (MS), along with fatigue and weakness. It is significant for about 60% of people with MS.

Spasticity is a general term used to describe a number of features characterized by muscle overactivity: either excessive muscle contraction or some sort of inappropriate muscle activity as in a spasm. It may result in involuntary movements and abnormal positioning of limbs. Spasticity may also produce feelings of pain or tightness in and around joints and can cause low back pain.

Resistance to movement and incoordination caused by spasticity can affect functions of everyday living, comfortable seating, personal care and hygiene. The increased stiffness in the muscles or frequent spasms also means that a greater amount of energy is required to perform daily activities.

If untreated, spasticity may lead to permanent shortening of muscles and tightening of joints called contractures which can lead to pain, discomfort and possible pressure areas. This can be avoided by early referral to a physiotherapist or occupational therapist for effective management strategies.

Spasticity may be a beneficial feature for some people in standing and transfers. In this case, the positive benefits outweigh the negative and no or minimal intervention may be required.

What causes spasticity?

MS is a disease that affects the central nervous system (CNS) - the brain and the spinal cord. Healthy nerve fibres of the CNS (axons) are insulated by myelin, a fatty white matter, which is essential for the normal conduction of messages along the nerves. In MS, damage may occur to either myelin or axons, or both, resulting in the disruption of the normal flow of messages. This affects messages between the brain and the muscles.

Healthy nerves of the CNS dampen brain electricity, which usually improves control over how and when muscles work. Spasticity occurs when nerves are damaged and this control short-circuits, resulting in muscles contracting involuntarily or excessively.

What triggers spasticity or makes it worse?

Spasticity can be triggered or worsened by:

- Local pain
- Infection
- Abnormal posture (poor seating) or positioning of arms and legs
- Sudden movement or a quick change in position
- Increased cold or heat
- Short muscles or tight joints
- Lack of movement
- Overexertion/increased anxiety or stress
- Fatigue
- Full bladder or bowel

When to seek treatment

The first step in managing spasticity is to identify the factors that trigger or aggravate the spasticity (see above). For the following common triggers, consultation with a health professional is recommended to treat the problem as early as possible:

- infection causing an increase in body temperature (urinary and respiratory tract infections)
- bowel disorders (eg constipation)
- skin irritation and/or breakdown (eg pressure sores, ingrown toenails)
- side effects from some medications (eg anti depressants Betaferon, Copaxone).

Spasticity does not always require treatment, but it needs to be addressed when it starts to interfere with independent functioning or personal care.

What can be done to manage spasticity?

a) Manage trigger factors

- identify trigger factors and manage them where possible
- consult your doctor immediately to treat any medical condition that may be making your condition worse
- discuss your medications with your doctor if they appear to be not working or making your spasticity worse. Medications may need to be changed or the dose adjusted to optimize spasticity reduction.

Improve seating and posture

A physiotherapist or occupational therapist can advise about good seating and positioning. This may avoid the development of some triggers such as pain or abnormal poses.

b) Perform regular exercises and stretches

A physiotherapist can help you by customizing an appropriate exercise program for you to improve muscle strength, prevent muscle shortening and maintain or improve fitness. Prolonged stretching and positioning, maintains a muscle in the lengthened position and also helps to prevent contractures. Stretching is only effective when done regularly. Stretches can be done actively by an individual or passively by positioning in a lengthened position for a prolonged period. Aids and equipment are sometimes useful to assist with stretching.

Strengthening of muscles helps to overcome the effects of spasticity and allow movement against gravity. Strong muscles are more effective and more resistant to fatigue than weak muscles when moving where there is spasticity.

c) Maintain independence

An Occupational Therapist can assist you with household and workplace modifications to make life with spasticity more comfortable. There are a number of ingenious gadgets available to help you maintain independence.

d) Treatment with relaxation and massage

Relaxation techniques and deep breathing as well as meditation, such as those used in yoga and tai chi can help.

Massage of the affected muscles can relieve tight muscles, but at times it can stimulate spasms.

e) Keeping cool/ getting warm

Some people find that cool temperatures makes their spasticity worse and for these people, exercising in a warm swimming pool may help with stretching and relaxing muscles.

If you are sensitive to heat or humidity then keeping cool strategies will assist.

For more information refer to **INFO14 CS MS Keeping Cool.**

f) Orthotic devices

Orthotic devices such as braces and splints can help maintain a limb in a more normal position, making it

easier to get around. Orthotic devices should be fitted by a health professional – over the counter devices can be ill fitting and can aggravate spasticity, cause pressure sores or pain.

g) Treatment with medication

If drugs are needed, there are 2 major antispasticity drugs with good safety records. However, neither cures spasticity or improves muscle strength and both have side effects. Options need to be discussed with your doctor.

The most commonly used drug is Baclofen which is a muscle relaxant that works on the nerves in the spinal cord. Common side effects are drowsiness and a feeling of muscle weakness. It can be taken orally or administered by an implanted pump where spasticity cannot be managed with oral medication.

Tizanidine works very quickly to calm spasms and relax tightened muscles. Whilst it doesn't produce muscle weakness it often causes sedation, a dry mouth and may lower blood pressure in some people.

Other medications that can be prescribed include Diazepam and Dantrolene.

Nerve blocks are used to reduce spasticity in specific isolated muscles. The nerve of a specific muscle is injected with phenol and desensitised leading to a short term reduction in spasticity.

Botulinum injections are given directly to the muscle for short term reduction in spasticity. This is effective for severe spasticity where only small or isolated muscles are affected.

h) Treatment with surgery

Surgical measures are usually a last resort for those rare cases of spasticity that defy all other treatments. Surgical cutting of a nerve root or muscle tendon may be performed.

Further information

If you have any questions or require further information about spasticity and its management please contact your GP or health professional at the MS Society.

If you are interested in finding out more information

The Society has more information sheets included in the symptom series as well as a Healthy Living and Managing MS Series. Please see the website for more details.

MS Society of Australia

Spasticity http://www.msaustralia.org.au/symptoms-spasticity.asp

MS Society (UK)

MS Essentials 19 Muscle spasms and spasticity
http://www.mssociety.org.uk/support_and_services/free_publications/ms_essentials_19.html

National MS Society (USA)

Controlling spasticity in MS http://www.nationalmssociety.org/about-multiple-sclerosis/what-we-know-about-ms/symptoms/spasticity/index.aspx

Multiple Sclerosis International Federation

In Focus Issue 12 Spasticity in MS
http://www.msif.org/en/resources/msif_resources/msif_publications/ms_in_focus/index.html

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