

# Getting the Balance Right Programme

*Physiotherapy Exercises for People with MS*



## Strand C

People who use a wheelchair.



**University of Limerick  
Physiotherapy Department**

This booklet is intended to be used by Chartered Physiotherapists to accompany a physiotherapy programme for non ambulatory people with MS. It is essential that people with MS are assessed and monitored by a Chartered Physiotherapist to ensure their safety and appropriateness of the programme.

Following individual assessment a treatment programme should be developed to meet that persons specific needs and may include a passive range of motion, and/or positioning programme.

The booklet can be used to document any treatment programmes, and as an education tool for both people with MS and their carers.

People who took part in the Getting the Balance Right programme and had 10 sessions of physiotherapy either intensively (once a day for 2 weeks) or standard (once a week for 10 weeks) had the following improvements. This was a pilot study of 20 people and further research is needed in this area:

- Persons with MS who are non-ambulatory perceive an improvement in their physical wellbeing, as measured by the MSIS-29, during and following physiotherapy intervention.
- Intensive therapy may have the benefit of improving muscle plasticity but this needs further study.
- Standard therapy appears to reduce Carer Burden over a longer time frame

We hope that this information is useful to you in implementing the programme in your area of clinical practice

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On behalf of the UL Physiotherapy Team

## **Contents**

<b>Overview of Multiple Sclerosis</b>	<b>p 2</b>
<b>Difficulties when a person becomes Immobile</b>	<b>p 3</b>
<b>What is Spasticity?</b>	<b>p 4</b>
<b>What is Contracture?</b>	<b>p 5</b>
<b>The Importance of positioning</b>	<b>p 6</b>
<b>Movement &amp; Exercise</b>	<b>p 8</b>
<b>Where are the muscles?</b>	<b>p 9</b>
<b>Individual Programme</b>	<b>p11</b>
<b>Photographs</b>	<b>p14</b>

## Overview of Multiple Sclerosis

*“Multiple sclerosis (MS) is a disease of the central nervous system (brain and spinal cord). The disease process is one of episodes where white matter within the brain or spinal cord becomes inflamed and then destroyed by the person’s own immune system. These inflamed areas become scarred, giving the disease its name: **multiple** areas of hardening (**sclerosis**) within the brain or spinal cord. Many of these episodes do not cause any symptoms, but when sudden symptoms occur the person is said to have had a relapse.*

*MS usually starts in early adult life. Once present the disease never goes; there is no cure and the person lives with the diagnosis for life. For many people with MS, the disease causes little trouble, but for others it causes problems that can affect all aspects of their own life and that of their family.”*

NICE guidelines, 2003

There are different types of MS including relapsing-remitting and progressive MS. These types of MS are diagnosed depending on how the disease affects a person. A person with MS may have very mild signs and symptoms whereas for others the symptoms may be more severe.

Healthcare for a person with MS usually has two priorities. One of these is to attempt to deal with the disease process itself and target the inflammatory element of the disease. The other is to deal with signs and symptoms that result from the scarring in the brain and its consequences. MS requires long term management.

Key persons involved in long term management are the person with MS, the GP and Neurologist, therapy staff, nursing and importantly the family caregiver or in the case of residential care, the employed caregiver. The role of this person is very important as it involves the day to day care of the person with MS. Caregivers are expected to operate competently as an extension of the healthcare system. A caregiver’s role includes helping with self-care tasks, adherence to behavioural regimes and carrying out therapy instructions in the home environment.

## **Difficulties When a person Becomes Immobile.**

If a person with MS there are a number of problems that may arise as a result of not being able to walk. These may include:

- Reduced fitness.
- Reduced muscle strength.
- Increased Spasticity.
- Risk of Contracture.
- Risk of Pressure Sores.
- Poor Diet.
- Increased risk of Urinary Tract Infections.
- More dependence on carers.
- Low Mood.

Awareness of these problems and potential problems will help the caregiver to look after a person with MS.

Problems that the physiotherapist can help the caregiver to address will be discussed further in this booklet.

## **What is Spasticity?**

Spasticity develops after brain or spinal lesions which involve the pathway that controls movement. Spasticity presents as an increase in the stiffness of a muscle. It may cause difficulty in moving a body part. Increased reflex activity and spasms are also associated with spasticity. In people with MS, spasticity usually follows a particular pattern. That is an increase in stiffness in the muscle which bend the arm and of the muscles that straighten the leg. If the person loses the capability to continue standing, the stiffness in the legs often changes to involve the muscle groups that bend the leg.

Spasticity and muscle weakness, although closely associated do not always happen at the same time. Spasticity is a separate entity to contracture. If a person with spasticity can optimise their treatment, ultimately their function will improve.

Spasticity is a direct result of an insult to the nerve pathways

## **What is Contracture?**

Contracture is a problem of the muscle and the joint. A person with increased spasticity may develop contracture. Likewise a person with weakness may develop a contracture. If a body part is held in a similar position for a long period of time, without being moved, the soft tissue will lose its flexibility. This means that the length of the muscle has changed and cannot be corrected with movement. Muscles, tendons, ligaments and joints all lose their flexibility. The development of contracture should be avoided as it makes it difficult for a person to move from one posture to another.

Contracture involves the muscle and soft tissue.

## **The Importance of Positioning.**

Good supportive positioning of all body parts in different postures will help to reduce “postural tone”. Postural tone can be explained as the readiness for movement. Consider the state of activity your body is in standing on a cliff edge as compared to the state readiness for movement while lying on a beach. The lower the postural tone the less influence of spasticity on the body. In each postural setting the maximum available support should be provided to the body.

### **24 hour positioning.**

Each individual person should be considered with regard to positioning in the day time and through the night. This may involve devising a schedule among family and caregiver so that a client is positioned on different sides in lying, positioned in a good sitting posture or participates in a standing programme.

### **Positioning in lying.**

The larger base of support for the body will lower the postural tone. Mechanical changes or contracture, however, may mean that the base of support i.e. the surface of the bed may have to be modified in some way to conform to the body. This may include the use of T-Rolls or other positioning equipment. Good alignment of body segments and symmetry are desired.

## **Positioning in Sitting.**

Wheelchairs and other forms of seating can no longer be viewed as just a means of transportation. Many people spend most of their time in a seated position and it essential that seating provision should be individually tailored to the clients needs to ensure maximum stability and comfort.

## **Individual Positioning Recommendations**

Please see individualised positioning plan if appropriate.

## **Movement & Exercise.**

Active and passive movement of a body part is encouraged to maintain range of motion. This will help prevent contracture. Passive movement involves the caregiver moving the body part without the client's participation. This may need to be done as the client may have no control over the muscles. However there are potential dangers with passive movements. Vigorous forceful movements carried out on people with severe spasticity may cause micro tears in the muscle which will contribute to further contracture.

Best practice should involve the patient being involved in the movement. If this is not possible inform the client that you are going to move his or her leg in a certain direction. Attention must be paid to the overall alignment of the body when you are moving a limb. For this reason it is generally easier to carry out passive movements with the client in a lying position. Muscles which act on more than one joint at a time deserve particular consideration.

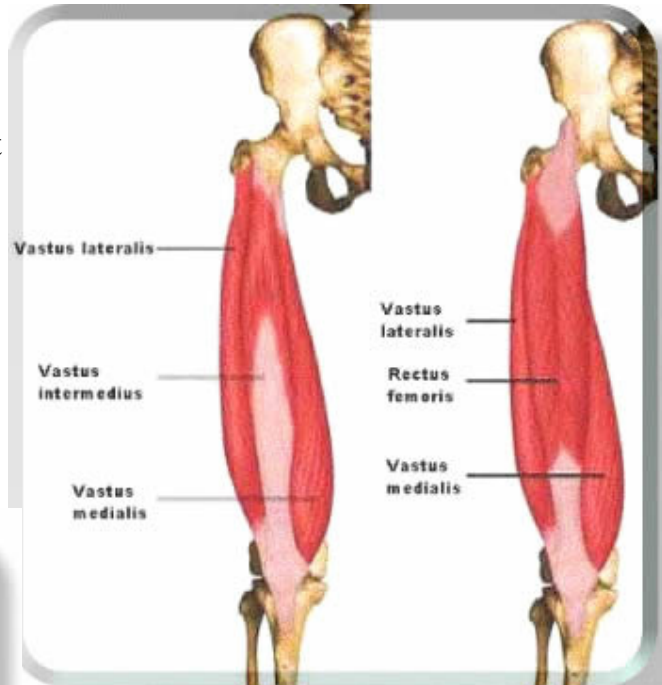
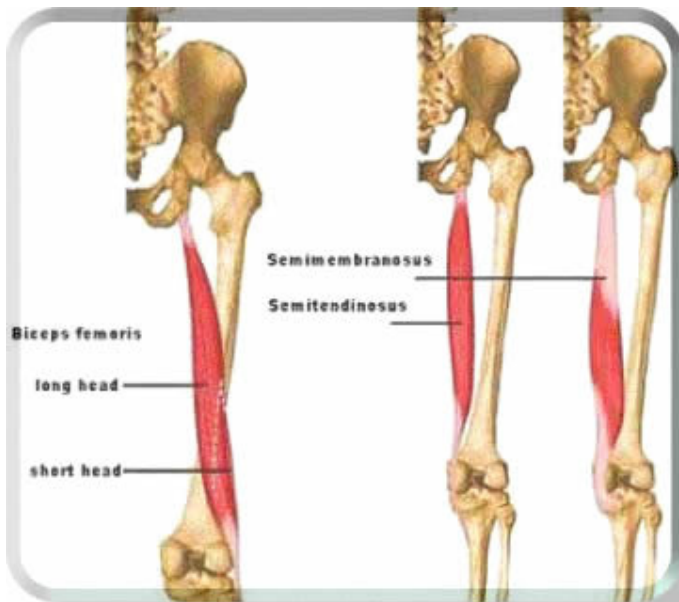
If a client is suitable a standing or weight bearing programme is very beneficial in reducing spasticity in the lower limb.

## Muscles of the leg

### 1. Quadriceps muscle.

Located on the front of the thigh.

Action: to straighten the knee. Part of this muscle is involved in bending the hip.



### 2. Hamstring Muscle.

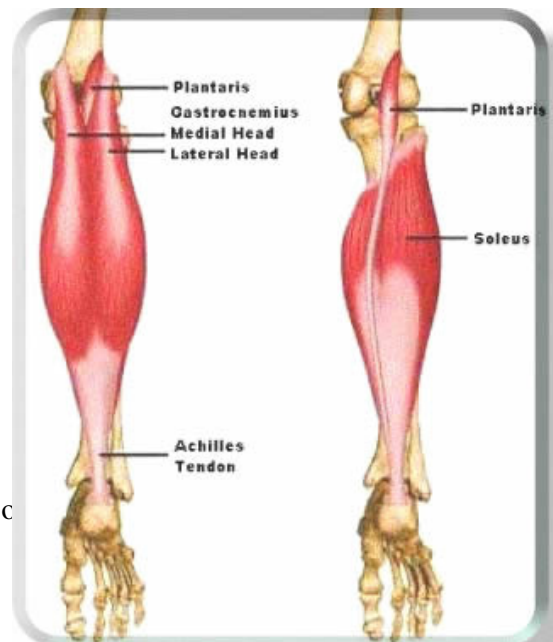
Located at the back of the thigh.

Action: to bend the knee, part of this muscle helps to extend the hip

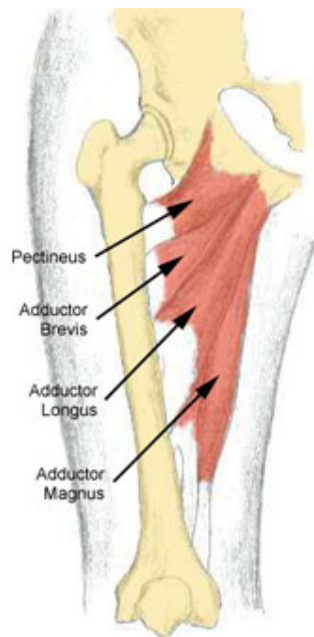
### 3. Calf Muscle.

Located at the back of the shin bone.

Action: To point the toes. Part of this muscle is involved in bending the knee.







#### 4. Adductor Muscle

Located on the inside of the thigh. Action: to pull the legs together.

## Individual Programme

### Stretching:

Muscle to be Stretched	Reason to be Stretched	Number of times	Duration of Hold
		5 times	30 seconds
		5 times	30 seconds
		5 times	30 seconds
		5 times	30 seconds

### Passive Movements:

Joint(s)	Movement	Position	Mode	Frequency

**Positioning:**

Individual positioning recommendations and timetable if appropriate.  
Provide positioning photographs and place in the carer's manual

Time:	Position:	Activity:
8:00		
10:00		
12:00		
14:00		
16:00		
18:00		
20:00		
22:00		

## Notes

## **Photographs**



## **Photographs**

