

EXERCISE AND MS: A Brief Review



Multiple Sclerosis (MS) is a degenerative disease in which a chronic inflammatory process attacks the central nervous system (CNS) (brain, spinal cord, and the optic nerve). In MS the immune system attacks the myelin sheath surrounding the axon, which is part of a neuron. Inflammation occurs in the locations of the attack, and the destruction of myelin causes plaques to form.

TYPES OF MS	DESCRIPTION	
Relapsing-remitting		Characterized by clearly defined attacks (relapses) followed by complete or partial recovery (remissions); most common form (75% at the time of diagnosis).
Primary-progressive		Less common (10 to 15% at time of diagnosis), people with this type of MS have a gradual worsening of MS from the beginning with no clear relapses or remissions.
Secondary-progressive		About half of people with relapsing-remitting MS start to worsen within 10 years of diagnosis, with possibility of increasing levels of disability.
Progressive-relapsing		Relatively rare and combines attacks with steady worsening from the onset of the disease.

CAUSES OF MS

The exact cause is not known, although there are several theories on the cause of the disease:

1. Immunological: Immune cells attack the myelin sheath, mistaking it for a foreign substance.
2. Environmental: Exposure to something in the environment before puberty may trigger MS.
3. Viruses: Viruses can cause inflammation and demyelination, and may trigger MS.
4. Genetics: MS is not hereditary, although if a close relative has MS, chances of getting it are increased.

MS SYMPTOMS

MS attacks the protective covering (myelin) of the brain and spinal cord nerves, causing inflammation and often damaging the myelin in patches. When this happens, the usual flow of nerve impulses along nerve fibers is interrupted or distorted. The result may be the wide variety of MS symptoms, depending upon what part or parts of the CNS are affected. MS symptoms are unpredictable and vary greatly from person to person – each person is unique. Symptoms may include:

fatigue • depressions • cognitive changes • pain • double vision • complete or partial loss of vision • dizziness • vertigo • weakness • numbness • pins and needles • bladder dysfunction • bowel problems • sexual dysfunction

MS AND EXERCISE (BENEFITS)

There are many benefits to exercising for persons with MS:

improves strength • improves posture • lessens fatigue • improves mood • self-confidence and general well-being • improves sleep and appetite • helps with weight loss • improves or maintains a level of independence

The effects of MS may vary greatly over time for different people. As a result, what may be a suitable exercise at one time may be inappropriate at another. Thus, exercise programs must be personalized and may need changing regularly.

RISKS OF PHYSICAL INACTIVITY

Being inactive can have damaging, often harmful consequences, not only for a person's motor skills and physical condition but also for their emotional state and social relationships. Inactivity can result in a variety of medical complications, some of which are:

impaired neuromuscular functions • infections of upper respiratory tract • peripheral circulation disorder • pressure sores • bowel and bladder problems • osteoporosis • contractures

MYTHS ABOUT MS AND EXERCISE

In the past, people with MS have been told to avoid physical stress and that exercise may worsen their MS. No studies have shown that regular exercise in moderation is harmful. Exercise in fact helps areas not affected or only partially affected by MS and helps to improve function and independence.

RULES TO REMEMBER ABOUT EXERCISING

- Only exercises approved by a physiotherapist or trained professional should be done and avoid exercise that causes pain.
- If fatigued, change exercises. Still feeling fatigue or symptoms worsen, rest for 15-30 minutes, then resume activity.
- If symptoms become worse for any reason and do not improve with rest, they should contact their doctor.
- Many exercises can be progressed with weights. However, it should be monitored. Why? ...weight training can make the arms or legs tighten up temporarily. Lifting too heavy a weight can lead to pain or fatigue.

IMPORTANT POINTS TO REMEMBER RELATED TO MS SYMPTOMS

'IT'S OKAY TO STOP AND START'

Try to be realistic about exercise. Know the limits of the person you are working with. It is okay to rest, it is okay to take a day off; it is okay to do only 15 minutes instead of 30 minutes. Do not begin an exercise program during the course of an MS attack. Also, after an attack, re-evaluate their exercise routine.

'FEELING HOT!'

Getting hot while exercising can temporarily increase MS symptoms such as spasticity and/or fatigue. It is better to pace and aim for slow, steady gains.

'KEEPING THE BALL ROLLING'

Exercise logs are important to success. If a setback occurs, it can be used to track improvements, fatigue, and MS attacks. Avoiding heat exhaustion is important to prevent appearances of MS symptoms—they need to stay cool! (i.e., drink fluids, wear comfortable clothing). Exercise should occur during specific times of the day (when the day is at its coolest and when the person typically has their highest energy level of the day).

'PAIN IS NOT GAIN'

Exercise programs should proceed slowly. If they feel any pain or discomfort during any exercise, it needs to be stopped immediately.

TYPES OF ACTIVITIES AND EXERCISES THAT BENEFIT PERSONS WITH MS

STRETCHING: Stretching exercises are very important for maintaining joint range of motion (ROM), decreasing spasticity of muscles, and preventing contractures. Stretching should be performed 1-2 times per day depending on level of activity and degree of spasticity. Most stretches should be held for 30 to 60 seconds, without bouncing, and repeated three to five times. Don't hold through the stretch if there is pain or discomfort. Individuals with severe spasticity or contractures may require stretching ranging from 20 minutes to several hours. Other exercises such as Tai Chi or yoga may also be effective in increasing ROM.

STRENGTH: Strength training exercises are important to include offsetting muscle weakness and allowing them to perform daily activities (i.e., dressing, cleaning). Exercises and length of sessions should be selected based on level of functioning and MS-specific symptoms (i.e., balance, coordination, & fatigue). Start simple with exercises that target specific areas of weakness using only bodyweight. If desired, progress to a more formal strength training program. Exercises should be performed through a full ROM, reaching moderate fatigue by the end of the session.

CARDIOVASCULAR: Activities such as walking, swimming, cycling, arm bike, and dancing are good. These types of activities increase heart and breathing rate, strengthen heart and lungs, and improve aerobic fitness. As aerobic fitness improves, the energy required to perform daily activities decreases allowing them to perform more work with less fatigue.

STRATEGIES FOR ADAPTING

To get the most out of an exercise program, adaptations are necessary. Some adapting strategies are:

- Use an assistant – A person can assist with getting into stretch positions. In a passive stretch, an assistant can stretch muscles for them. Be sure to talk to the person about how the stretch feels.
- Use a strap – Using a strap can help with stretching. A towel or thera-band works great (Avoid plastic or rubber, which could affect their circulation). A strap can be used to hold body parts in a certain position.
- Walls – A wall can be used to support their back or just something to hold on to when standing. It can be used to hold stretches. Doorways and exercise machines work as well.
- Is it naptime? – If the person is feeling unstable while doing stretches, prop pillows on either side of them. They provide stability and cushioning should they lose their balance.

NEED MORE INFORMATION

For more information on exercise and MS, contact your local chapter of the MS Society of Canada. This can be done by calling your local chapter or division (1-800-268-7582) or by accessing the MS ActiveNOW website <http://www.mssociety.ca/alberta/active.htm>.