



Physical Activity

GUIDE FOR PEOPLE WITH MS

© Multiple Sclerosis Society of Canada – Quebec Division

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Introduction

Fun. Energy. Physical activity. Do you find these words inspiring?

This guidebook was developed for people who have multiple sclerosis, and especially for people who are mobile or who use a manual wheelchair and who would like to start an exercise program.

It contains information that will help you manage your own physical activity program. It gives you the tools you need to make choices, move more, and move better, whether or not you use a technical aid. Thus, you'll be able to focus on your abilities while still taking the fact that you have multiple sclerosis (MS) into consideration.

The different sections of this guide were designed to help you understand the content of the exercise programs and discover concrete solutions for becoming active so you can break the vicious cycle of sedentary living.

The programs that are suggested take account of the importance—which science has now recognized—of including physical activity in your healthy lifestyle habits. This will have an impact on your autonomy. These programs were also inspired by recent studies proving that the use of training methods from the sports world allows for better results.

Maybe you don't know where to start, what exercises to do when, or how to do them. This guidebook was created to answer your questions. It presents the basic concepts that you should know and offers training programs that you can personalize based on your needs and interests.

If, in addition to becoming active, you would also like to learn more about physical activity, this guide provides detailed explanations that will enable you to understand the basis for a comprehensive, successful physical activity program.

We encourage you to familiarize yourself with these programs and make them your own. Exercising first and foremost for yourself, while bearing your multiple sclerosis in mind, will allow you to manage your energy and carry out your daily tasks more easily.

Have fun exercising!

Before You Begin

Before launching into one of the programs of physical activity presented in this document, it's important for you to read the following sections.

Consult your doctor

First of all, inform your neurologist or family doctor of your intention to start such a program. Give him or her this book and ask whether there are any medical contraindications or associated conditions that might limit the physical activities you can do. For example, do you have diabetes, a heart condition, tendinitis or any other kind of musculoskeletal injury?

Fatigue and MS

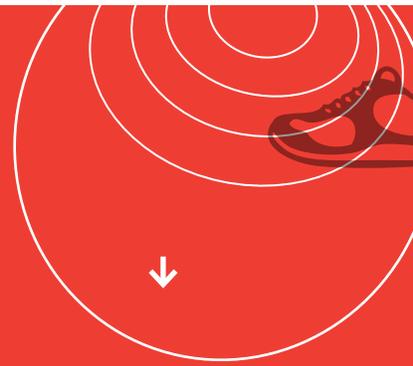
Fatigue may initially seem to represent a challenge, but being active can break the vicious cycle of sedentary living, which will actually reduce the fatigue resulting from physical deconditioning. When you establish your exercise program, you need to take your energy level into consideration and respect your limits. The ideal situation is for you to do your physical activities at the time of day when you have most energy and when you'll have time to rest or have a nap afterward.

You always need to keep some energy in reserve when you engage in physical activity so you'll be able to do your other tasks as well. If the recovery period after a series of exercises is very long, that's a sign that they were too intense, so you should make some changes in your exercise program.

Attacks

The relapsing-remitting form of MS is characterized by attacks and remissions; in other words, periods when the disease makes itself felt and other periods when symptoms are reduced. The average duration of an attack is eight weeks, although it may be shorter or longer. As soon as your symptoms are reduced, you are entering the remission phase.

Attacks very often appear gradually, so you can see them coming and adapt your way of life. At that time, you should get all the rest you need, especially if the attack is an acute one. When you feel better, you can gradually resume your activities. Learn to listen to your needs. Experience will teach you to know what's best for you.



During an attack, use your bodily sensations and mental state as guides to help you plan the best possible physical activity program for yourself. By adjusting your activity sessions as a function of your needs for recovery, you can continue to be active and enjoy moving around, despite the attack.

However, if you feel an overly strong increase in your fatigue while exercising, or your symptoms are aggravated, or you feel tense, you need to reduce the intensity, duration and frequency of your exercise sessions and prolong your rest periods. If, despite all your precautions, your fatigue remains intense, you may decide to opt for a complete rest period, without any physical activity, for a while, or simply continue your usual daily activities.

Uhthoff's phenomenon

Uhthoff's phenomenon refers to a temporary increase in MS symptoms that may occur when your body temperature rises due to a hot environment, fever, a hot bath, intense effort or an infection. In women, it can also appear immediately before or during the menstrual period. This phenomenon may make you feel as if you're having an attack but the symptoms last for only a short time and disappear completely when the physiological changes wear off. Thus, it's actually what is known as a pseudo-attack. For example, a person might feel numbness during a hot bath, but when she rests in a cool place the numbness disappears. Thus, it's important to learn to recognize the factors likely to trigger a pseudo-attack so you won't get anxious. An increase in body temperature of just 0.5°C is enough to trigger Uhthoff's phenomenon.

However, if the phenomenon occurs and the reason seems to be physical activity, start asking yourself some questions. Are you exercising too often? Have you planned for enough rest periods? Is the intensity of your efforts reasonable? Are you exercising for too long? Is the area where you do your exercises overheated? You will need to adjust your exercise program based on your physical condition.

Here are some ways to bring down your body temperature:

- Take a cool shower before starting your exercise session or soak your legs and feet in a cool water bath (20 minutes). If that isn't possible, run cold water over your wrists for 3 to 5 minutes.
- During exercise, wear cooling accessories such as a headband or neck wrap.
- Use a mister to cool down.
- Drink a few sips of cold water from time to time.

Muscle weakness

You may experience muscle weakness while exercising, possibly even accompanied by numbness. A break of 1 to 5 minutes is usually enough to make this symptom disappear. Then you can resume your activities.

Guidelines for Engaging in Physical Activity

The recommendation for the general population is 150 minutes of moderate- to high-intensity aerobic exercise and strength training exercises each week.

The Canadian physical activity guidelines for adults with MS are less demanding than those for the general population. Note that they are meant for

adults aged 18 to 64 years old who have a mild or moderate disability due to a relapsing-remitting or progressive form of multiple sclerosis.

Here are the guidelines for physical activity; note that they are ***minimum recommendations***.

TYPE

Aerobic activity involving arms and legs

Examples:

Walking, operating your wheelchair, swimming, cycling and rowing.

Frequency: Twice a week.

Time or duration: Gradually increase your activity level until you're doing at least 30 minutes of aerobic exercise at each exercise session.

Intensity: Aerobic exercises should be of moderate intensity.

TYPE

Muscle strength training

Frequency: Twice a week.

Rest: Take at least one day to rest your muscles between strength training sessions. Rest for 1 or 2 minutes after each set and each type of exercise.

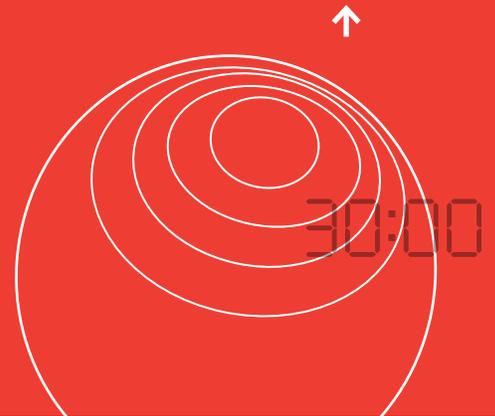
Time or duration: Two sets of 10 to 15 repetitions of each exercise.

Both kinds of activity can be done on the same day.

The ABCs of Physical Activity

Goal:

Acquire basic knowledge about engaging in physical activity.



People with multiple sclerosis generally have to reduce their physical activities. As a result, though, they are exposed to the harmful consequences of inactivity, which rapidly leads to deconditioning. The deterioration of your physical condition may cause a variety of complications and have a significant impact on your motor autonomy, and consequently your quality of life.

It is important for you to participate in physical activity to improve your physical fitness, which will have a direct impact on how tired you get. Without physical activity, your condition will deteriorate even beyond the effects of the disease. That's why exercise is so important, as it will allow you to:

- reduce the energy cost of your efforts, whether you're walking or operating your wheelchair;
- raise your fatigue threshold;
- shorten the time you take to recuperate after an effort.

To adopt an active lifestyle and maximize your chances of success, it is essential to master some basic elements.

As you work and play each day, you act unconsciously to perform your daily tasks. In this guide, we will refer to these routine, familiar actions as "motor actions." Among other things, you use your nervous, cardiovascular (aerobics) and muscle systems when you stand up, move around, dry your hair and cook.

In this guide, you will find the most effective exercise methods to target your motor actions and maximize your physical condition.

Your starting point is you, right now. To start off, determine what your current way of life is like. In other words, are you active? Do you exercise regularly? Are you passive or sedentary? How does your way of life affect your physical fitness?

Your lifestyle

To optimize your physical activity program, your first priority is to consider your lifestyle. By lifestyle we mean your habits related to eating, hydration, stress, sleep, smoking and alcohol consumption.

Here are a few of the questions you should ask yourself:

- Do you eat a healthy diet?
- Do you drink enough water?
- Do you drink alcohol?
- Do you smoke?
- Do you feel rested after a night's sleep?

Your lifestyle has a substantial impact on your energy level, which means it also has an impact on your ability to make the required effort to exercise.

The points raised by the questions above are what we sometimes call "invisible exercise." Don't try to change all your habits at the same time. Decide which ones you want to change and rank them in order of priority. If you realize that you have obstacles to overcome after reflecting on the questions above, ask for help from a health care professional. For questions about food, don't hesitate to consult *Canada's Food Guide* online (<http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index-eng.php>). Adopting a healthy lifestyle is good for everyone but it's especially important for people with multiple sclerosis, because health problems can limit their autonomy even more.

To get good results, you need to make an effort!

If you make a greater effort than you usually do when you engage in physical activities, you'll be able to maintain and develop your capacities. To ensure an appropriate quantity and quality of effort, we suggest that you remember the following five words.

- Frequency – F
- Recovery – R
- Intensity – I
- Time (or duration) – T
- Type (or kind) – T

To help you keep those five words in mind, just remember the first letter of each one. So think FRITT!

Thinking FRITT means that, when you do a physical activity, you need to ask yourself if you're respecting the guidelines for people with MS with regard to frequency, rest periods, intensity, time (or duration), and the type of activity.

To check your “FRITT,” we suggest that you answer the following questions. Answer them while thinking about the activities and exercises you did over the last month.

1. Do you do cardiovascular or aerobic exercises such as swimming, walking, aquafit, bicycling, etc.? If yes, which ones? How many times a week?
2. How do you recover after doing your exercises?
3. Do you do certain activities that are directly related to the motor actions that cause you problems in your daily life? For example, if you have problems climbing stairs, do you practise doing that?
4. How much time do you allow for a physical activity session?
5. Do you consciously breathe through your nose or your mouth? Do you pay particular attention to your posture?
6. Do you feel muscle tension or stiffness in certain parts of your body? If yes, which ones? Do you do stretching or other kinds of muscle exercises?

Now, combine your answers as shown by the examples below:

ACTIVITIES DONE (last month)

**Cardiovascular
exercises**

Motor actions

**Muscle
exercises**

FREQUENCY/ DURATION

E.g., swimming,
20 minutes, twice
a week

E.g., walking in the
park, 10 minutes,
once a week

E.g., 4 exercises a
week to strengthen
the leg muscles

At a glance, you can already see what physical activities you are or aren't doing. That way, you'll be able to more easily identify the aspects you shouldn't forget in future. Now, we suggest that you pay particular attention to your recovery (R) needs, which are different for everyone. It's recovery that allows you to progress and improve your abilities.

As you continue reading, you will learn how to plan your exercise program and change it to include exercises that target your nervous, cardiovascular and muscle systems. An exercise log can be found on page 40 of this guide. The log will allow you to customize your exercise program and track your progress.

To make an effort, you need to know your level of physical activity

Physical activity includes a multitude of activities, exercises and sports, so there are many choices available to you. You can keep active, do exercises or play individual or team sports. The important thing is to get moving. Everything counts! It's up to you to decide what you like and what you want to do. Of course, these different kinds of activities don't all have the same benefits.

Here is some information that will enable you to figure out where you are now.

You are active if you integrate some physical activities into your life each day, such as:

- gardening;
- housework;
- going to the convenience store on foot or by wheelchair;
- cooking (if you do it standing);
- yoga, sailing, fishing, Qigong, Holistic Gymnastics, etc.

The emphasis is on physical activity and health.

You exercise and are athletic if you systematically:

- do exercises planned on the basis of FRITT for your motor actions, cardiovascular system (aerobics) and muscles, and if you play individual or team sports such as dancing, basketball, badminton, etc.

Here, the emphasis is on training that targets your motor actions and has the aim of maximizing your physical condition, which will make or keep you more autonomous.

Now, here is a list of equipment you might need, depending on your choice of exercises:

- beach ball;
- light weights;
- exercise band;
- bar or broom handle;
- chair;
- stability ball;
- beanbag;
- towels;
- tennis balls.



Don't forget:

- "Healthy lifestyle" is synonymous with "energy" and "physical activity."
- To make progress and improve, think FRITT and identify your physical activity level.
- Use an exercise log. You'll find that you do more than you thought!

Posture and Breathing Programs

Depending on the course and progression of your disease, you may find that certain exercises are too difficult or even impossible for you to do. So you need to choose your exercises based on your abilities.

Goals:

Learn to observe your posture while sitting or standing based on your bodily sensations.

Become aware of your breathing in your daily life and while engaging in physical activity.

We should mention that the posture and breathing programs presented here are suitable as beginning programs for people with MS. They can be particularly useful—even necessary—for people who have little or no experience with physical training.

These programs include exercises that will allow you to get into contact with your own body, because you'll need to pay attention to your bodily sensations.

Forget any idea of performance or achieving results; instead, think about learning and self-discovery.

As you develop your ability to feel your body's sensations, you'll find it easier to adjust the way you do certain activities of daily living, as well as

the exercises suggested later in this guide. By learning to decode your body's signals, you'll also find it easier to recognize the signs of fatigue, which will enable you to take breaks at the right time and thus avoid draining your "energy bank."

When you exercise, it's important to respect your limits. To assess your effort, we suggest you do the conversation test. It's a way of verifying the intensity of the efforts you make while doing aerobic exercise.

All it means is limiting your effort so that you can still hold a conversation. If you're out of breath and can't talk any more, that means you're working too hard.

And now, it's time to start exercising!



Posture awareness exercises

GOAL

Learn to observe your posture in a sitting or standing position based on your bodily sensations.

FREQUENCY

Once a day or whenever the opportunity arises.

Posture awareness while standing

A

Stand against a wall. Don't force your back against the wall. Ideally, use a full-length mirror to check your positioning.

B

Become aware of the body area or areas that are in contact with the wall.

C

Concentrate on your breathing without changing it. Note what moves in your chest and abdomen when you breathe and how it moves. It's essential to pay attention to your bodily sensations, in the areas where your respiratory movements have an effect.

D

Pay attention to the different parts of your body:

- How are your feet positioned on the floor? Observe how far away from the wall you have placed them.

- Do you feel that the points of contact under your feet are identical on both sides?
- How far apart are your legs? Is one of your legs more turned out than the other?
- Concentrate on the points of contact or lack of contact with the wall at the level of your buttocks, lower back, mid-back and upper back.
- How would you describe the position of your shoulders? How far from the wall are they? Observe the position of your shoulders in relation to each other.
- How are your arms positioned in relation to the wall and your body? Compare the sensations in your two arms.
- Observe the position of your head against the wall in relation to your shoulders.

E

Now that you have become aware of your standing position against the wall, we suggest that you move around while trying to maintain contact with the wall.

- Safely vary the distance between your feet and the wall and again observe how the sensations change at your points of contact.
- Observe how far you can move your feet while still keeping your back and pelvis in contact with the wall.
- Observe the new position of your feet.
- Are you breathing freely, in a way that feels natural to you?

F

Stop moving. Stand against the wall again.

G

Observe your posture again. Note any differences you may feel between now and the start of the exercise.

H

How do you feel after this posture awareness exercise?

Posture awareness while sitting**A**

Sit in a straight chair or your wheelchair, with your feet on the floor or on the wheelchair's footrests. Don't change your usual position at all.

B

Just observe yourself. How are you sitting?

C

Pay particular attention to your breathing. Observe what moves in your chest and abdomen when you breathe naturally and how it moves.

D

Gradually become aware of the position of your body in space.

E

Ask yourself the following questions:

- What are the points of contact between your body and the chair?
- How are your feet touching the floor or the footrests?

- How far apart are your legs?
- How is your pelvis positioned? Is your weight evenly distributed or is it more on one side or the other?
- How is your back positioned in relation to your chair's backrest?
- Do you have points of contact at the level of your buttocks, lower back, mid-back and upper back?
- Do you tend to position your trunk toward the front, centre or back of your pelvis?
- How would you describe the positioning of your shoulders? How far from your ears are they? Is the position of your shoulders identical on both sides?
- How are your arms positioned? Compare your left arm and your right arm.
- How does your head feel? Is it leaning a bit forward, backward, to one side or the other?

F

Now that you have become aware of your seated position with the help of the questions above, we suggest that you move around in your chair.

- Try to sit on the bones of your buttocks (these bones are called the ischia).
- Then place the back of your pelvis in contact with the chair back; repeat this exercise several times.
- Stop moving and again observe your posture on your chair.
- After this pelvic movement, do you feel any differences in your posture?
- How do you feel after this posture awareness exercise?

Rootedness

The term “rootedness” refers to good contact with the ground or your wheelchair. Rootedness is an indicator of your posture and the elongation of your spinal column. To optimize the contact of your feet with the ground (for mobile people) or the contact of your feet with the footrests and the contact of your pelvis with the chair (for people in wheelchairs), you need to improve your rootedness. Your feet and pelvis have the function of helping you to maintain your position. Whether you are standing or seated, here are the elements you need to master.

To promote good contact with the ground, your chair or your wheelchair, you just have to observe and change the position of your feet and buttocks. You need to train yourself to feel what is happening underneath these body parts. The exercises presented below are done in a seated position. Some can also be done standing with one hand supported on a wall or on the back of a chair, if necessary.

Repeat the whole set of exercises as often as possible rather than trying to do the same exercise for several minutes. If some of the exercises feel too easy for you, try them with your eyes closed!

To be sure of doing the exercises safely, please follow these codes:

 **INITIAL POSITION**

 **EXERCISE**

GOAL

Improve your feelings of rootedness in the ground.

FREQUENCY AND LENGTH

Once a day, for 5 minutes.

A

 Sit on a chair or manual wheelchair with your back not touching the chair back or stand barefoot (with one hand supported on a wall **or on a chair back** for greater safety, if necessary), looking straight in front of you.

 Become aware of the points of contact between your feet and the floor or the footrests. Compare the sensations you feel in each foot.

If you're sitting, become aware of the points of contact between your buttocks and the chair.



B1

 **Seated** position.

 Roll a tennis ball all around under one foot. Breathe freely.

After rolling the ball under one foot only, compare the sensations you feel under that foot with its initial sensations and the sensations in the other foot, which hasn't yet made that movement.

Make the same movement again with the other foot.

End by comparing the sensations in both feet on the floor before and after the exercise. Also pay attention to the sensations under your buttocks.

**B2**

 Standing position, with one hand supported on a wall or on a chair back for more safety, if necessary.

 Roll a tennis ball all around under one foot. Breathe freely.

After rolling the ball under one foot only, compare the sensations you feel under that foot with its initial sensations and the sensations in the other foot, which hasn't yet made that movement.

Make the same movement again with the other foot.

End by comparing the sensations in both feet on the floor before and after the exercise.



C

- Seated position.
- Observe the sensations of both feet on the floor (or on the footrests).

Place your fingers between your toes at the level of the joints and pull your toes up, then down. Spread your toes.

Breathe freely.

Stop the exercise.

Compare the sensation of your feet on the floor before and after the exercise.

After doing this exercise with one foot, compare the sensations you feel in this foot with those in the other foot. Once you've done the same exercise with the other foot, compare the sensations you feel in both feet.

**Don't forget:**

- Respect your own rhythm and take frequent breaks.
- Don't hesitate to ask for advice.

Breathing awareness exercises

GOAL

Develop your capacity to observe your respiratory movements during your daily activities and during exercise.

FREQUENCY AND LENGTH

From 1 to 3 minutes, as soon as you feel the need.

During relaxation periods after your exercise programs.

Sitting or lying down

A

Lie down (with cushions under your knees for comfort, if necessary) or sit on a straight chair or your manual wheelchair.

B

Breathe through your nose, if possible, as you usually do, without effort.

C

Place one hand on your abdomen and the other on your chest (put cushions under your elbows to increase your comfort, if necessary).

- Without changing anything, pay particular attention to what you feel under your hands when you breathe in and breathe out. How long does each breath in and out last? Are they identical?



D

Breathe in through your nose and out through your mouth.

Take a few breaths as you breathe in through your nose and out through your mouth. If you want to experiment, change the opening of your mouth to feel something different.

E

Resume breathing through your nose alone, maintaining your initial position with one hand on your abdomen and the other on your chest. Again observe what moves and how it moves under your hands.

F

Compare what you feel now as you breathe in and out with what you felt at the beginning.

G

What do you feel after this breathing awareness exercise?

**Don't forget:**

- Being aware of your posture and breathing is an essential starting point.

Programs for Mobile People and People Using a Manual Wheelchair

Goal:

Use an exercise method borrowed from the world of sports to target motor actions and maximize your physical fitness whether you are mobile or use a manual wheelchair.

It is important to understand that you will often have to make adjustments so your training includes the nervous system (by means of motor actions) as well as the muscle system and the cardiovascular system (with aerobics). All three systems have been included in the training circuits presented below.

The proposed exercise program is composed of two circuits for mobile people and one circuit for people who use a manual wheelchair. These circuits include a choice of exercises that will enable you to customize your training.

Note that this circuit training method is one of many ways of exercising.

Circuit training¹

Physical circuit training is particularly suitable for people with MS because not only can it be adapted to each individual's abilities and needs but it can also be done in a variety of places, such as a gym with training equipment, a park, or at home with affordable equipment.

Circuit training includes a certain number of stations for strength-training exercises that you visit one after the other. Between the strength-training (S) exercises, it is suggested that you do a cardiovascular exercise in the intervals (I); you can do these by walking, using aerobic equipment in a gym, or moving around in your manual wheelchair.

1. LAROCHE, Jean, and Jacques VANDEN-ABEELE. *L'entraînement en circuit pour les personnes avec limitations motrices: fondements théoriques et principes méthodologiques*, 2nd ed., revised and augmented. Sherbrooke: Université de Sherbrooke, FEPS, griÉPSA, 2004.

A combined effort (cardiovascular and muscular) will raise your heart rate, which allows you to increase your endurance. Your breathing rate will also increase. Don't worry about that! To find out if the increase in your heart rate is appropriate, use the conversation test. Simply limit your efforts so that you are able to hold a conversation. If you're out of breath and you can't talk, that means that you're working too hard. The conversation test is a way of checking the intensity of the efforts you make while doing aerobic exercises.

Here's the plan for a session divided into four stages.

1. To start an exercise session, always do a WARM-UP

- Walk or move your wheelchair slowly for a distance of about 20 metres, for 1 to 10 minutes, in a straight line, back and forth, to prepare your body to make an effort.
- If you're at a gym, use the aerobic equipment (stationary bike, treadmill, elliptical trainer, etc.).

2. The training circuit

Muscle-training exercises

Choose the number of muscle-training stations based on your physical condition. You might only be able to do a few exercise stations and not do the cardiovascular intervals between stations. Respect your energy level, rest, and then start the same circuit again.

For each muscle-training exercise, choose the number of repetitions you want to do: 5, 10, 15 or 20 repetitions. Beginners should start without weights and just try to do the movement. The number of repetitions may vary from one exercise to another and for the same exercise from one set to another. Take your time.

- Use light weights when you are doing a higher number of repetitions and slightly heavier weights if you are doing only a few repetitions. Use your judgment. You need to calibrate each exercise based on your own abilities.
- Do two sets of the desired number of repetitions (maximum of 10 to 15). You can take a rest between the two sets.
- Be careful not to hold your breath while exercising. Breathe naturally.

Cardiovascular intervals

After two stations of strength-training exercises, it is recommended that you do a cardiovascular interval. These include walking, moving around in your manual wheelchair, and exercises on aerobic equipment (stationary bike, treadmill, elliptical trainer, etc.). You should cover a distance of 20 metres or move for 1 to 3 minutes. Use the conversation test to gauge the intensity of your efforts.

Your abilities will improve from one week to the next. As you get stronger, add stations, start using light weights, or replace the weights with exercise bands. Progress means variation. The essential point is to alternate strength-training stations and cardiovascular exercises.

The exercises in the circuit will allow you to successively mobilize different parts of your body, as well as demanding an overall effort, which is achieved by accumulating the efforts you make at all the different stations. The duration of this overall effort improves your general endurance.

Pay attention! Your exercise sessions must be adjusted if:

- you feel pain during your exercise session;
- you need more than 48 hours to recover from your session.

3. Walk or roll your wheelchair continuously, maintaining a constant speed

After your circuit, continue your training session by walking or moving your wheelchair for 5 to 10 minutes. This will help you improve your endurance.

4. Return to rest

Sit on a chair or wheelchair. Do the stretching exercises, relax and breathe. The return to rest is a good time to take a few seconds to check your posture.

During this step, you can do the breathing exercises described above.



Don't forget:

- If you choose physical activities you enjoy, you'll perform better and keep up your efforts longer.
- Set realistic goals and work to achieve them gradually. Remember that regularity and frequency are more important than duration.

Circuit for mobile people

This circuit includes nine stations, which gives you a lot of flexibility, whether you are sedentary, active or athletic. Several choices are available to you, so you can adapt the circuit to suit you, as you progress. If you can't do some of the exercises, just skip them! Don't forget to think about your posture and do the exercises without holding your breath.

To be sure of doing the exercises safely, please follow these codes:

-  **INITIAL POSITION**
-  **EXERCISE**
-  **SUGGESTION**

Station 1

-  Seated position on a chair with its back against a wall, with a ball in your hands. Your shoulders should be relaxed.
-  Lift the ball upward until it's above your head.
-  Reduce the amplitude of your movements or bring the ball closer to you by bending your elbows, if necessary.



Station 2

-  Seated position on a chair with its back against a wall, with a ball or a weight in your hands. Your shoulders should be relaxed.
-  Move the ball horizontally, from left to right and right to left (while looking at the ball).
-  Reduce the amplitude of your movements or bring the ball closer to you by bending your elbows, if necessary.



Interval: Slowly walk back and forth for a distance of 20 metres or a period of 1 to 3 minutes.

Station 3

-  Seated position with an exercise band in your hands. The band should pass underneath your feet. Your shoulders should be relaxed.
-  Flex your elbows (raise your hands up to your shoulders).



Station 3 (continued)

-  Standing position with an exercise band in your hands. The band should pass underneath your feet. Your shoulders should be relaxed.
-  Flex your elbows (raise your hands up to your shoulders).



Station 4

-  Standing position with support in front of a step or without support in front of a sidewalk.
-  Step up onto the step and down from it again.



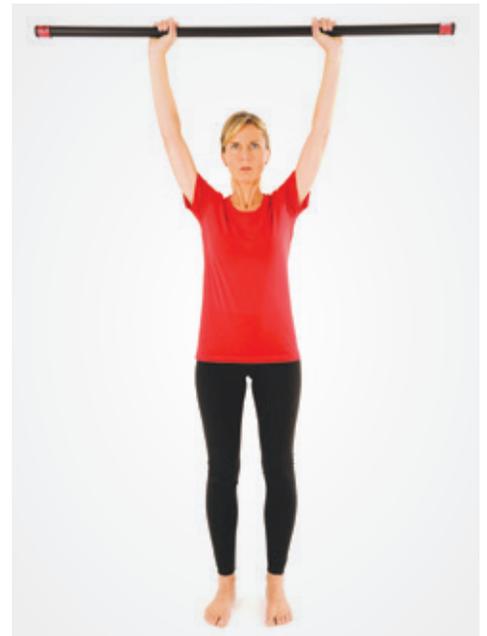
Interval: Quickly walk back and forth for a distance of 20 metres or a period of 1 to 3 minutes.

Station 5

-  Seated position with a bar in front of your shoulders. Your shoulders should be relaxed.
-  Raise the bar above your head.
-  This exercise can be done without the bar.



-  Standing position with a bar in front of your shoulders. Your shoulders should be relaxed.
-  Raise the bar above your head.
-  This exercise can be done without the bar.



Station 6

 Standing position with your feet shoulder width apart, facing a wall, using your hands for support, with a chair placed behind you.

 Leg flexions and extensions (squats).



Interval: Slowly walk back and forth for a distance of 20 metres or a period of 1 to 3 minutes.

Station 7

 Seated position, with a light weight in each hand, if desired. Your shoulders should be relaxed.

 Lateral arm raises.



 Standing position, with a light weight in each hand, if desired. Your shoulders should be relaxed.

 Lateral arm raises.



Station 8

-  Standing position supported on the palms of your hands, with your feet far enough away that you are leaning forward: like doing push-ups.
-  Arm flexions and extensions with your hands at chest height.



Station 9

-  Seated position on a chair, with a ball between your feet.
-  While looking at the ball, move it around with your feet (like passing in soccer).



Interval: Walk back and forth for a distance of 20 metres or a period of 1 minute.

Circuit for people using a manual wheelchair

This circuit includes eight stations, which gives you a lot of flexibility, whether you are sedentary, active or athletic. Several choices are available to you, so you can adapt the circuit to suit you, as you progress. If you can't do some of the exercises, just skip them! Don't forget to think about your posture and do the exercises without holding your breath.

To be sure of doing the exercises safely, please follow these codes:

-  **INITIAL POSITION**
-  **EXERCISE**
-  **SUGGESTION**

Station 1

-  Seated position with a ball or weight in your hands. Your shoulders should be relaxed.
-  Lift the ball upward until it's above your head.
-  Reduce the amplitude of your movements or bring the ball closer to you by bending your elbows, if necessary.



Station 2

-  Seated position with your arms raised in front of you and a ball or a weight in your hands. Your shoulders should be relaxed.
-  Move the ball horizontally, from left to right and right to left.
-  Reduce the amplitude of your movements or bring the ball closer to you by bending your elbows, if necessary.



Interval: Move the wheelchair slowly back and forth for 20 metres or for 1 to 3 minutes.

Station 3

-  Seated position, with an exercise band in your hands. The band should pass underneath your feet. Your shoulders should be relaxed.
-  Flex your elbows (raise your hands up to your shoulders).



Station 4

-  Seated position, with your arms bent. Hold a ball or a weight close to the nape of your neck.
-  Swing your hands forward and then back again.
-  Pay particular attention to the weight and to the amplitude of your movement so you don't tip over backward.



Interval: Move the wheelchair quickly back and forth for 20 metres or for 1 to 3 minutes.

Station 5

-  Seated position, with a stick or bar held in front of your shoulders. Your shoulders should be relaxed.
-  Raise the stick or bar upward, above your head.
-  This exercise can be done without a bar.



Station 6

-  Seated position, with a light weight in each hand, if desired. Your shoulders should be relaxed.
-  Lateral arm raises.



Interval: Move the wheelchair slowly back and forth for 20 metres or for 1 to 3 minutes.

Station 7

-  Seated position.
-  Use both hands to raise your left thigh, flexing your hip.
Do the same exercise with the other leg.



Station 8

-  Seated position, with a ball between your feet.
-  While looking at the ball, move it around with your feet (like passing in soccer).



Interval: Move the wheelchair in a slalom motion for 20 metres or for 1 minute.

Super circuit for mobile people, promoting body stability

Warm-up: Walk (5 minutes)
Number of repetitions per exercise: 5 to 10.
The number of repetitions may vary from one exercise to another.
Between stations: rest for 1 or 2 minutes.

To be sure of doing the exercises safely, please follow these codes:

-  **INITIAL POSITION**
-  **EXERCISE**
-  **SUGGESTION**

Station 1

Body stabilization while rotating the upper body in relation to the lower body.

-  Seated position on a stability ball, with a ball between your hands.
-  Move the ball horizontally, from left to right and right to left.

Variants:

- Sitting on a stool (or chair).
- Sitting on the floor.
- Standing.



Station 1 (continued)

-  Seated position on a stability ball.
-  Dribble the ball around your body with one hand. Change hands.

Variants:

- Sitting on a stool (or chair).
- Standing.

**Station 2**

Body stabilization while rotating the lower body in relation to the upper body.

-  Standing position in front of a cone or other small, stable object (e.g., bottle of water, large can, etc.).
-  Raise your right leg, move it to the left, then rotate it clockwise over the object. Then raise your left leg, move it to the right, then rotate it counter-clockwise over the object.



Station 3

Body stabilization while throwing and picking up objects in a squatting position; you could use beanbags or horseshoes, for example.

-  Standing position with five beanbags in your hands.
 -  Throw the beanbags at a target on the floor. Move over to the target. Pick up the five beanbags. Return to the pitching line.
- Repeat the exercise twice.



Station 4

Body stabilization while walking and stepping up and down.

-  Standing position.
-  Walk forward and step up onto a step or a sidewalk. Turn around and step back down.
-  The step can be a different height each time you do this exercise.



Stretching

Stretching exercises are very important. They are a means of improving your mobility, which is essential to your coordination. Stretching provides numerous benefits in an exercise program. Among other things, it allows you to reduce muscle tension and enhance the fluidity of your movements.

So stretches have many benefits but you still need to be careful when you do them.

Principles you should respect while doing stretches:

- Do them slowly and be aware of your breathing.
- Stop if you feel any pain or numbness.
- Hold the position for 30 seconds to 1 minute.

To be sure of doing the exercises safely, please follow these codes:

 **INITIAL POSITION**

 **EXERCISE**

Arms and neck

 Seated position, with your shoulders low and relaxed, sideways to a wall.

 Raise your right arm to shoulder height and bend your elbow 90 degrees (right angle). Support your hand and arm on the wall, then gently turn your trunk in the opposite direction until you feel a pull in your chest and arm. Repeat with your left arm.



Arms and neck (continued)

-  Standing position against a wall.
-  Raise your left arm to shoulder height and bend your elbow 90 degrees (right angle). Support your hand and arm on the wall, then gently turn your trunk in the opposite direction until you feel a pull in your chest and arm. Repeat with your right arm.



Arms and neck

-  Seated position, with your shoulders low and relaxed.
-  Lean your head to one side, bringing your ear close to your shoulder, until you feel a pull in your neck and shoulder on the opposite side. Repeat on the other side.



Arms and neck (continued)

-  Standing position, with your shoulders low and relaxed.
-  Lean your head to one side, bringing your ear close to your shoulder, until you feel a pull in your neck and shoulder on the opposite side. Repeat on the other side.



Trunk

-  Seated position, with your shoulders low and relaxed.
-  Raise your right arm above your head, while keeping your shoulders low and relaxed. Support yourself on the edge of the seat with your left hand. Stretch your right arm up while bending your trunk to the left. Repeat on the other side.



Legs

-  Lying down.
-  Grab the back of one knee. Raise your leg and pull it toward your chest until you feel a pull in the back of your leg and your lower back. Change legs.



Legs

-  Seated position, with both feet on the floor.
-  Move your buttocks forward so you're sitting on the edge of the chair. Stretch one leg out in front of you, with the heel supported on the floor. Flex your toes, moving them toward you. Keep your back straight. Lean forward, bending at the hips (not your upper body). Repeat on the other side.



Exercise Log

You can get an accurate idea of your overall exercise activity if you complete your training log. To do this, make a note of all your physical activities. Think FRITT! Write down the frequency, rest periods, intensity, time (duration) and type of activity that you do.

Rest promotes recovery. It is therefore recommended that you take a nap after an exercise session, if you need to. As well, it's important to plan for 24 to 48 hours of complete rest, depending on your needs, after each exercise session. This will allow you to exercise again without any difficulty on other days and to continue your daily activities.

Week 1: From _____ to _____

TYPE OF ACTIVITY	INTENSITY	TIME	FREQUENCY	REST
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				

Week 2: From _____ to _____

TYPE OF ACTIVITY	INTENSITY	TIME	FREQUENCY	REST
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				

Week 3: From _____ to _____

TYPE OF ACTIVITY	INTENSITY	TIME	FREQUENCY	REST
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				

Bibliography

Basse, H., F. Cousin, F. Larronde, and Y. Roca. "Fatigue et kinésithérapie dans le cadre de la sclérose en plaques." *Kinésithérapie Scientifique* 530 (2012), pp. 13–19.

Béthoux, F. "Fatigue and multiple sclerosis." *Annales de réadaptation et de médecine physique* 49, 6 (2006), pp. 355–360.

Canadian Society for Exercise Physiology. *The Canadian Physical Activity, Fitness and Lifestyle Approach (CPAFLA)*. Ottawa: Canadian Society for Exercise Physiology, 2004.

Canadian Society for Exercise Physiology. *Canadian Physical Activity Guidelines for Adults with Multiple Sclerosis* [online]. [<http://www.csep.ca/english/view.asp?x=943>].

Dalgas, U., E. Stenager, and H. T. Ingemann. "Multiple sclerosis and physical exercise: Recommendations for the application of resistance, endurance and combined training." *Multiple Sclerosis* 14, 1 (2008), pp. 35–53.

Durstine, J. L., G. E. Moore, P. L. Painter, and S. O. Roberts, with American College of Sports Medicine. *Exercise Management for Persons with Chronic Diseases and Disabilities*. Champaign, IL: Human Kinetics, 2009.

Harvey, J.-F. *L'entraînement spinal: 80 exercices pour en finir avec les maux de dos*. Montreal: Les Éditions de l'Homme, 2011.

Laroche, J., and J. Vanden-Abeelee. *L'entraînement en circuit pour les personnes avec limitations motrices: fondements théoriques et principes méthodologiques*, 2nd ed., revised and augmented. Sherbrooke: Université de Sherbrooke, FEPS, griÉPSA, 2004.

Motl, R. W., E. McAuley, and E. M. Snook. "Physical activity and quality of life in multiple sclerosis: Possible roles of social support, self-efficacy, and functional limitations." *Rehabilitation Psychology* 52, 2 (2007), pp. 143–151.

Petajan, J. H., E. Gappmaier, A. T. White, M. K. Spencer, L. Mino, and R. W. Hicks. "Impact of aerobic training on fitness and quality of life in multiple sclerosis." *Annals of Neurology* 39, 4 (1996), pp. 432–441.

Richards, C., F. Malouin, and C. Dean. "Gait in stroke: Assessment and rehabilitation." *Clinics in Geriatric Medicine* 15, 4 (1999), pp. 833–855.

Schapiro, R. T., J. H. Petajan, D. Kosich, B. Molk, and J. Feeney. "Role of cardiovascular fitness in multiple sclerosis: A pilot study." *Journal of Neurological Rehabilitation* 2, 2 (1998), pp. 43–49.

Tétreault, L. *Respirer des pieds à la tête avec la Gymnastique Holistique*. Montreal: Institut International de Gymnastique Holistique, 2013.

Vanden-Abeelee, J., and M. Vanden-Abeelee. "Les conséquences néfastes de l'inactivité physique et comment les combattre." *SP Québec* (November 2000), pp. 12–14, (February 2001), pp. 12–13.

Vanden-Abeelee, J., and M. Vanden-Abeelee. *Les programmes d'entraînement de la personne avec la sclérose en plaques: l'expérience sherbrookoise*, 2nd ed. Sherbrooke: Université de Sherbrooke, Faculté d'éducation physique et sportive, griÉPSA, 2004.

Weineck, J. *Manuel d'entraînement*, 4th ed. Paris: Vigot, 1997.

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