



UNIVERSITY OF OTTAWA
HEART INSTITUTE
INSTITUT DE CARDIOLOGIE
DE L'UNIVERSITÉ D'OTTAWA

CARDIAC REHABILITATION: PHYSICAL ACTIVITY

A Guide for Patients and Families



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The Heart Institute Prevention and Rehabilitation Exercise Program

Congratulations on taking the first step towards becoming a life-long exerciser. The following pages are a tool for you to use to help you establish a regular exercise program.

The key is to start today. You should make a plan to exercise regularly in your community along with your program at the Heart Institute. This way, by the time you finish the rehabilitation program, exercise will already be part of your routine. This book, along with your physiotherapist, will help guide you in finding and planning an appropriate program.

If you are participating in the onsite exercise program, most of the information provided in this booklet will be explained to you in short presentations at the end of each of your classes. Please bring the booklet home: you do not need to bring it to each class. It is meant to be a resource for you to consult at home, a reminder of what you have learned in class.



It is never too late to start being active and get fit. Exercise can add years to your life and improve your quality of life.

Whether you participate in the onsite or brief program, your exercise prescription and progression will be provided by a physiotherapist.* Physiotherapists are university graduates of recognized university-based physiotherapy programs and are licensed by the Ontario College of Physiotherapists to practice physiotherapy in Ontario.

*Physiotherapist and related words are official marks used with permission by registered physiotherapists

Planning Your Exercise Program

Step 1: Your Personal Benefits of Exercise

A: Knowing why you exercise is an important part of developing your plan and sticking to it.

Review these possible benefits of exercise. Indicate those that are important to you. Be sure these are the real reasons you want to exercise, not why others have said you should exercise. You won't make long-term changes unless the motivation comes from within you

If you become more physically active, do you believe you will:

	Yes	Somewhat	No
Improve your health?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improve your fitness level?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improve your self-confidence?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meet new people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lose weight/shape up?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Build muscle strength?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feel more relaxed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feel less down?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improve your mood?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Perform your job better?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improve your mobility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improve your bone density?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improve flexibility, agility, and coordination?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other

B: List three reasons why exercise is important to you

1. _____

2. _____

3. _____

The longer you are active, the more benefits you will enjoy. And, the more benefits you enjoy, the more likely you are to stay active for a lifetime. Continue to add to your list of benefits while you participate in the program.

C: List the benefits to exercise here

-
-
-
-
-
-
-
-
-

Step 2: Possible Barriers to Exercise

A: Indicate which of the following factors may be a problem or barrier to increasing your level of physical activity. Be honest in your answers.

	Yes	Somewhat	No
Feeling self-conscious about how I look when I exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of interest in physical activity/exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of knowledge about exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of self-discipline	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of exercise companion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of enjoyment/fun from physical activity/exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Getting discouraged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fear of fatigue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of appropriate clothing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of good weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fear of injury	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling self-conscious about exercise abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other

B: Write down the barriers identified above which may prevent you from exercising regularly.

Think of ways to overcome each of your problems or barriers.

Example	
Barriers or Problems	Ways to Overcome Barriers
I'm too tired to exercise	→ Start at an easy pace
I don't have time	→ Walk during my lunch break
My Personal Barriers	
Barriers to Exercise	Ways to Overcome Barriers
	→
	→
	→
	→
	→

Step 3: Your Exercise Habits

A: Consider your physical activity during the last month and think about how often, long and hard you have been exercising.

How many times per week? _____

How long is each session? _____

How hard? _____

B: How Long, How Often and How Hard Should You Exercise?

How Long: Try to exercise without stopping, including time for warm-up and cool-down. Your long-term goal is to exercise for a total of 30 to 60 minutes per session.

While continuous exercise is the optimum for achieving all the benefits, exercise sessions of as little as 10 minutes can be added up throughout the day.

How Often: Physical activity on most days of the week is recommended.

How Hard: It is best to exercise at a moderate intensity where you can carry on a conversation but are still exerting some effort.

Aim for 200 to 400 minutes of aerobic exercise per week

Step 4: What, Where and When

A. What Kind of Exercise Is Best For You?

Regular exercise sessions should include aerobic exercise.

Aerobic exercise:

- Uses large muscles
- Increases your heart rate for a continuous period of time
- Burns calories and is critical for losing fat and keeping it off
- Examples include brisk walking, jogging, swimming, cycling, skating, cross-country skiing, use of treadmill or stationary bicycle, dancing and aerobic classes

Walking Can Be the Perfect Aerobic Exercise

- It can be done almost anywhere
- You only need a pair of comfortable shoes
- No special skills are required
- Risk of injury is very low
- 10,000 steps each day is a great way to achieve a healthy exercise goal

B. Where and When

Indoor Options

Home

- Convenient, allowing you to fit exercise in while doing something else— watching TV, reading or even supervising children
- If you prefer independent exercise, this is an excellent choice
- Do you need to purchase equipment? See our equipment suggestions on page 13.

Malls

- Free, safe and climate-controlled setting for you to walk
- Independent or group options
- You may need to drive to get there. Is this always possible?

Health or Fitness Club

- Group/class setting, or independent exercise, or both
- Variety for your exercise sessions
- An exercise leader or personal trainer may be able to help you implement your program and incorporate the guidelines given to you by the Heart Institute
- May require a membership fee
- Is it close to you? Do the hours suit you?

Outdoor Options

Neighbourhood

- Streets or local paths and trails
- Allows for different sports (skating, skiing, walking, etc.)
- Group (a club or group of friends) or independent
- Consider whether it is safe at the time of day you would like to exercise
- Will you exercise here year round?
- Air quality may be a consideration

School Track

- Provides a more structured place to walk outdoors
- May only be available when schools are closed

Outdoor Walking Clubs

- If you prefer a group setting, these can be enjoyable and motivating

In our region, because of hot summers and variable winters it is important to have MORE than one place to exercise!

Things to Consider When Choosing Your Activity

- Make it **convenient** for yourself. The key to your success will be choosing a place that is easy for you to access and fits well into your regular routine.
- Make it as **enjoyable** as you can. Involve a friend, colleague or spouse. Take up a new sport or activity.
- Make it **safe**. Start any new exercise program by gradually building up your frequency, time and intensity.

At the Heart Institute, you will be given exercise guidelines that will help you decide where and when, as well as how often, how long and how hard to exercise.

Step 5: Your Personal Exercise Plan

It is best to build exercise into your daily routine. Think of your exercise session as an important appointment or date that you wouldn't miss or cancel. Make a goal for your first week, for example to exercise at least four times.

My goal for this week is: _____

Now use the grid below to plan your own personal schedule for the next week to help achieve this goal.

Day	When (time of day)	What (type of exercise)	Where
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

Once you have successfully met your Week 1 goal, use the grid again for Week 2. As you continue to exercise, you will be able to achieve more and more. Think about what exercise goals you would like to achieve by three months.

My three-month exercise goals are:

When you think about exercise for the whole year, it may be necessary to have a different exercise plan for the summer and the winter months. In our region, because of our hot summers and variable conditions in the winter, many people need to have a plan for indoor exercise.

Consider your seasonal exercise plan, and where to find places to exercise all year long. My seasonal exercise plan is:

Summer	Winter

See page 23 for seasonal considerations.

Exercise Options in the Community

It is most ideal to have an exercise option in your community to supplement your Heart Institute exercise classes and to have an exercise plan in place before you have graduated from our program.

Heart Wise Exercise

Web site: www.heartwiseexercise.ca

Phone: 613-798-5555 x18691

Email: heartwise@ottawaheart.ca



Heart Wise Exercise is a specialized program designed to provide exercise activities that are safe and appropriate for people with heart problems. The main purpose of Heart Wise is to provide you with ongoing exercise options in a safe environment with staff who are comfortable working with heart patients.

Each Heart Wise agency must attend specialized training at the Heart Institute and meet specific criteria before being designated as a Heart Wise program. Ideally, this program works along with your formal cardiac rehabilitation.

Heart Wise Exercise is available in Ottawa and throughout the Eastern Ontario region. Our designated programs are offered in a variety of facilities including fitness centres, high schools, and shopping malls. Costs of enrolment vary but many of them are free of charge including walking programs in some shopping malls or in local high schools.

For more information or for assistance in locating a program please contact us at the number or email listed above.

You can also look at a list of other community resources to find out which options are available close to you. This list is available in paper format at the track of the Minto Prevention and Rehabilitation Centre as well as on the Heart Institute web site:

www.ottawaheart.ca/patients_family/community-fitness.htm

Exercise Equipment

Shoes for Exercise

Shoes are the single most important piece of equipment you will need to begin your exercise program. They provide the extra support and cushioning needed to make your exercise more enjoyable. There are many types of shoes and many of them are for a specific sport or purpose.

Tips for Buying Athletic Shoes

- Shop for shoes at the end of the day when your feet are likely to be larger.
- Take along the type of sock you will wear with that shoe. Take orthotics with you if you use them.
- Bring in your old pair so that an experienced sales person can look at it and see what type of wear pattern you have, this can tell them a lot and help them show you the right type of shoe to buy.
- Spread and wiggle your toes while standing to ensure there is enough room in the toe.
- Lace your shoes and check the space between the lace holes and across the tongue of the shoe. There should be 2.5 cm (1 inch) for a good fit.
- The arch of the shoe should support the arch of your foot.
- Walk or jog around the store to test for comfort and cushioning.

Important Information for Diabetics

You may be more susceptible to foot problems if you have diabetes. Looking after your feet everyday is very important. Remember to:

- Trim nails carefully
- Always wear socks and shoes
- Wash and dry feet daily
- Check your feet daily for blisters, cuts and sores
- Use water shoes around pools or beach areas

How to Buy Exercise Equipment for Your Home

Things to Consider

- Your budget: How much can you spend?
- What type of equipment will you enjoy using?
- How much space do you have for your new equipment?
- Is the equipment under warranty, and are you buying it from a centre that may offer you a service agreement for repairs and replacement parts?
- Can you try out the equipment and return it if you are not completely satisfied?

Type of Equipment	Advantages	Disadvantages	Features to Consider
Treadmill	<ul style="list-style-type: none"> • Easy to learn to use • Motorized treadmills absorb approximately 40% of the impact when compared to the road. (This may vary greatly from one treadmill to another, depending on the suspension system. Ask the salesperson for specifics.) 	<ul style="list-style-type: none"> • Expensive • May be noisy • Requires large amount of floor space 	<ul style="list-style-type: none"> • Motorized vs. manual (manual is not recommended) • Size of the motor • Variable speed • Variable incline • Safety features • Size of the belt • Cushioning on the deck (top surface). If you plan to run, you need a sturdy belt.
Stationary Bicycle	<ul style="list-style-type: none"> • Good choice for people with knee or back problems or those who are overweight • Less expensive • Less amount of floor space used • Some bicycles have features that allow you to use your arms and legs simultaneously 	<ul style="list-style-type: none"> • Seats may be uncomfortable or take some time to get used to, although there are gel seats on the market. • Dual action cycles can be noisy 	<ul style="list-style-type: none"> • Adjustable intensity or resistance • Easily-adjusted seat and handlebars • Comfortable seat • Dual action (arm and leg motions)

Type of Equipment	Advantages	Disadvantages	Features to Consider
Recumbent Bicycle	<ul style="list-style-type: none"> • Good choice for people with knee or back problems or those who are overweight 	<ul style="list-style-type: none"> • May be more expensive than a regular bicycle • Requires more floor space 	<ul style="list-style-type: none"> • Easily adjustable seat • Dual action (arm and leg motions)
Rowing Machine	<ul style="list-style-type: none"> • Excellent for overall fitness • Dual action (arm and leg motions) 	<ul style="list-style-type: none"> • Requires very long floor space • With improper technique, may cause low back strain • Piston-driven machines do not last and produce awkward rowing motion • Requires a fair amount of flexibility 	<ul style="list-style-type: none"> • Look for variable resistance and intensity • Smooth sliding/rolling seat (such as a Concept II)
Elliptical Trainer	<ul style="list-style-type: none"> • Can pedal forward and backwards, thus using both major muscle groups in the legs • More comfortable than a stair climber • Burns more calories than level walking at the same speed 	<ul style="list-style-type: none"> • Requires more vertical space (ceiling height), especially for tall individuals 	<ul style="list-style-type: none"> • Non-slip pedals • Variable speed and resistance • Handlebars for dual action (arm and leg motions)
Stair climbers	<ul style="list-style-type: none"> • Burns more calories than level walking at the same speed 	<ul style="list-style-type: none"> • Avoid air-filled shocks because they heat up quickly and this may result in cylinder damage • Not a good choice for individuals with knee problems 	<ul style="list-style-type: none"> • Adjustable step height & resistance • Smooth and quiet operation • Independent vs. linked pedal options

Warm Up and Cool Down

Your exercise session should include a warm up, an aerobic training period and a cool down.

Warming Up

A warm up includes any light exercise—ideally a light version of your intended exercise. If you are walking, do light walking or if you are swimming, do light swimming. You should warm up for up to 10 minutes, leading up to your intended exercise level. If you get angina when you exercise, you may even want a longer warm up.

Why Warm Up

- To slowly increase your heart rate to an aerobic level of exercise
- To prepare your heart and muscles for exercise
- To reduce symptoms when you exercise
- To decrease the chance of irregular heartbeats
- To help prevent injury

Aerobic Exercise Session

Aerobic activities challenge the heart, lungs and muscles to improve their function. Walking, cycling and swimming are just a few examples of aerobic activities you could do. During this session, your heart rate should be elevated or you should feel you are exercising at a moderate intensity or more for a sustained period of time. Ideally, your session should last 30 minutes or longer.

Cooling Down

A cool down should be a similar type of exercise as your warm up, for five to ten minutes, or until your breathing pattern has returned to normal. This is also an ideal time to do some light stretching.

Why Cool Down

- To gradually slow down your body's systems, especially your heart rate and blood pressure
- To help reduce the likelihood of symptoms and irregular heartbeats
- To help prevent injuries

Aim for 10 minutes of warm up, 30 to 60 minutes of aerobic exercise and 5 to 10 minutes of cool down on most days of the week.

Exercising at the Right Level

Exercising at the right level means that you are exercising at a moderate intensity. At this level, you are improving the strength and circulation of your heart. There are several ways to determine your intensity or level of activity. These include taking your pulse, using the rating of perceived exertion (RPE) scale and using a talk test described below.

How to Take Your Pulse

1. Place your index and middle fingers on the thumb side of your wrist just below the creases. Press lightly, and feel the beat in the artery running down that side of your wrist.
2. Look at a clock or watch with a second hand or second counter. Starting with zero, count the number of beats you feel in 10 seconds.

Multiply this number by 6 and you will have your resting pulse.

Repeat this after exercise. You should have increased your pulse by 20 to 30 beats per minute (BPM) during the exercise.

Number of Beats	
In 10 seconds =	In 1 minute
10 beats	60 beats per minute
11 beats	66 beats per minute
12 beats	72 beats per minute
13 beats	78 beats per minute
14 beats	84 beats per minute
15 beats	90 beats per minute
16 beats	96 beats per minute
17 beats	102 beats per minute
18 beats	108 beats per minute
19 beats	114 beats per minute
20 beats	120 beats per minute

While participating in the cardiac rehabilitation program, you may be given a target heart rate that is more specific to you so that you can work at your optimal intensity level.

Many cardiac patients are on a type of medication which slows the heart down. This type of medication is called a beta-blocker (for example, metoprolol, atenolol, sotalol).

Generic heart rate charts found in most fitness clubs use a formula based on your age. These charts should NOT be used for cardiac patients especially those who take beta-blockers.

Heart Rate Monitors

Your heart rate is one of the most reliable indicators of fitness level yet some people have difficulty feeling their pulse. In this case you can buy a heart rate monitor which involves wearing a flexible strap around your chest which houses a sensor that is then placed over your heart. You also wear a watch, which will continuously tell you your heart rate while you exercise.

A heart rate monitor will let you know when you've done too much, or too little. There are many web sites devoted to heart rate monitors. Also, you can visit your local sports store to learn more about this type of monitor.

Rating of Perceived Exertion Scale (RPE)

Choose a number that represents how you feel your level of effort was overall during your exercise session. You want to aim to be between levels 3 and 5 (a moderate to difficult exertion).

Rating of Perceived Exertion (RPE) Scale	
0	Nothing at all
1	Very easy
2	Easy
3	Moderate
4	Somewhat difficult
5	Difficult
6	More difficult
7	Very difficult
8	
9	Very, very difficult
10	Almost maximal

How to Know If You Are Exercising Too Hard

The Talk Test

If you can't talk, you're probably working too hard. If you can sing, you could probably work a little harder.

Signs of Overexertion

Any of these symptoms are warning signs that you're exercising too hard. Slow down and give your body more time to adapt.

- Being unable to exercise and talk at the same time
- Prolonged fatigue 30 to 60 minutes after exercise
- Continuous muscle or joint soreness
- Lightheadedness
- Nausea
- Pounding in your head
- Heart rate after cool-down that is more than 20 beats per minute above your resting heart rate



Abnormal Responses to Exercise

These symptoms require medical attention. Stop immediately if you experience:

- Pain or pressure in the chest, arm, teeth, jaw, or neck
- Dizziness or fainting

Abnormal heart action, such as palpitations or an irregular heartbeat. Angina is discomfort in the chest, neck, jaw, back, shoulder or arm(s). Angina is caused by a lack of oxygen to the heart. It is usually brought on by activity and relieved with rest. In some people, angina can occur when exercising

Stop exercising if you get angina!

If you get angina while exercising:

- Stop and rest for 5 minutes.
- If the angina lasts more than **5 minutes**, use a nitroglycerine tablet or spray. Then, wait **5 more minutes**.
- If the pain is still there, use another nitroglycerine tablet or spray. Wait another **5 minutes**. If the pain is still present, call **911**, and take **3rd spray of nitroglycerine**.

Exercise and Illness or Injury

If You Are Sick

If you have a fever you should not exercise. Allow your body to rest and heal. Once the illness is over, you may start your exercise again. Wait until you have been free of fever for at least 48 hours before starting to exercise again.



Never try to sweat out a fever. Fever and exercise are a bad combination. They can make the infection worse and even cause a potentially fatal condition of the heart muscle called myocarditis.

If you exercise when you are sick, your body may have to work harder than when you are well.

If You Have Unusual Symptoms

It is important to know what is normal and what is not normal with exercise. Pain is not normal. When something is different or not normal, **stop**. If you think you have a problem, get help.

When you start exercising again after an illness, you will need to reduce the amount and intensity of your exercise.

What Is Normal	What You Should Be Concerned About
Faster heart rate	<ul style="list-style-type: none">• Chest pain or discomfort down arm• Heaviness in your chest• New episode of irregular heart beats
Breathing deeply	<ul style="list-style-type: none">• Extreme breathlessness with light to moderate activity
Breathing faster	<ul style="list-style-type: none">• Wheezing• Inability to catch breath
Sweating	<ul style="list-style-type: none">• Lightheadedness• Nausea• Extreme Fatigue• Numbness• Pain of any kind

Learn to Treat Minor Injuries Early

The RICE Method

R – Rest the injured area. The amount of rest depends on how badly you are hurt. With most minor injuries, it is safe and actually helpful to continue a low level of activity. Use pain as your guide.

I – Ice should be applied to the injured area. Cold reduces swelling, bleeding and pain. Don't apply ice directly to your skin. Wrap the ice or ice pack in a wet cloth. A general rule is to apply ice for 15 minutes followed by 45 minutes without the ice pack. Repeat this process for the first 3 hours. After that, two 15 minutes ice treatments each day will be enough. Don't apply heat during the first 24 to 36 hours. Heat tends to increase swelling.



C – Compression or gentle pressure used with the ice can limit swelling. Apply compression evenly by wrapping an elastic bandage around the injured part. Do not wrap the bandage too tightly; you don't want to cut off blood flow. If the bandage is too tight or if you experience numbness, cramping or pain, or if swelling is severe, loosen the wrap then reapply.

E – Elevate the injured part above the level of the heart, even while sleeping if possible. Gravity prevents pooling of blood and other fluids, improves blood flow and reduces swelling.

See a doctor immediately if:

- The pain or swelling is severe
- You can't move the injured part
- The injury doesn't seem to get better
- Home treatment hasn't helped after a reasonable period of time

If in doubt, play it safe and see a doctor.

Tips for Staying Active

While aerobic exercise is a key part of adopting a healthy lifestyle, making active living a part of your life is also important. Here are two ways to achieve this.

1. Look for ways to burn extra calories through lifestyle activities. It's not difficult to do. Opportunities are all around you:

- Take the stairs instead of the elevator so long as this does not give you angina
- Park farther away from the store and walk the extra distance
- Cut the grass
- Work in the garden
- Walk the dog instead of watching TV
- Play ball with your children or grandchildren
- Walk to lunch instead of riding in a car
- Play golf walking the course, instead of using a cart
- Take up a new, active hobby, such as ballroom dancing or lawn bowling

2. Make exercise a regular part of your daily routine. Here are some ways to help you do this:

- Plan to exercise with a friend, colleague, neighbour, spouse or children—anyone to help you stick to it!
- Carry your workout bag, especially your athletic shoes, with you in the car at all times.
- Put on your exercise clothes and don't take them off until you have exercised.
- Place home exercise equipment in a pleasant location in your home.
- Lay out your exercise clothes the night before for an early morning exercise session.
- Ask someone to remind you to exercise.



Part of adopting an active lifestyle is being able to adapt to changes in your routine and overcoming situations which may make it difficult to continue with your regular exercise session. Having a plan in place will help you maintain your routine.

Remember that some exercise is better than no exercise!

Ways to Maintain Active Living Despite Changes to Your Routine

Business Travel and Vacations

- Walk instead of taking taxis.
- Take a brisk walk before breakfast or at the end of the day.
- Explore a new city by walking, jogging or cycling to see the sights.
- Include active recreation—hiking, fishing, bird watching, horseback riding or canoeing.

Work Responsibilities

- Fit in short bouts of brisk walking several times during the day.
- Discuss work issues with coworkers while walking.
- Stretch during your breaks to improve productivity and concentration.

Special Occasions/Holidays

- Let others know exercise is a priority for you and ask for their support
- Combine social activities with exercise, such as dancing, ice skating, hiking, cycling.

Injuries and Sickness

- Look for a substitute activity—water aerobics, stationary cycling, chair aerobics.
- Don't break your routine. Continue to set aside time for exercise.
- Never exercise when you have a fever.
- Gradually build back up once you are well.

Family Responsibilities

- Find opportunities for you and your family to exercise together.
- Go for a walk together and use the time to talk.
- Serve as an active role model for other family members.

Seasonal Considerations

Winter – Snow Shoveling

One of the pleasures of living in a climate such as ours is the ever-changing seasons. At times, however, we may not feel quite so appreciative of Mother Nature, particularly when faced with a driveway full of snow. Snow shoveling is hard work and can be harmful to your heart for a number of reasons.

The Workload

There are many factors to consider when assessing your shoveling workload, such as:

- The type of snow: dry and light vs. wet and heavy
- The size of the shovel
- The weight of the snow
- The rate at which you work—moderate to very heavy energy levels are required.
- Shoveling can also place higher demands on your heart because your blood pressure may climb to dangerous heights to maintain blood flow to your heart muscle.

MET (metabolic equivalent of a task) is a measure of physical exertion. At rest, you exert 1 MET. The effort needed for different levels of shoveling are:

Comparable Workloads		
Moderate Snow Shoveling (5–7 METS)	Heavy Snow Shoveling (7–9 METS)	Very Heavy Snow Shoveling (10 METS)
Comparable to climbing stairs at a fairly fast pace of 4.5–5 mph	Jogging 5 mph	Running more than 6 mph
Comparable to digging in the garden	Sawing wood	Carrying loads up stairs

Cold Exposure

Cold air causes the skin's blood vessels to constrict to prevent heat loss. This increases your blood pressure and hence the work your heart must do.

When we exercise in the cold we usually breathe through our mouth. The nerves in the air passages may tighten and cause a reflex spasm or tightening of the coronary vessels.

Circumstances

For most heart patients, snow shoveling is not recommended. If you are going to shovel snow, consider the following guidelines to make the activity safer:

- Warm up before the activity
- Allow plenty of time to avoid rushing and stress
- Wait one hour after a meal before snow shoveling
- Use a small size shovel
- Don't lift the shovel too high
- Use lower body muscles to assist in the activity
- Arrange someone else to do the snow shoveling



Summer Heat

Exercising in the heat can put a lot of stress on your cardiovascular system to maintain a core body temperature and fluid balance. As you exercise, more heat is generated and your body temperature increases. In order to compensate, blood flow is directed to the skin and sweat at the skin surface evaporates and cools the body.

In this way, body temperature returns to normal. However, environmental factors such as bright sunlight, high humidity and lack of wind challenge your body's ability to dissipate heat and maintain a normal body temperature.

Heat Injury

Heat Rash

Heat rash appears as areas of small red pimples or blisters. This condition is usually not uncomfortable, but severe enough to cause itching or burning.

Heat Exhaustion

Heat exhaustion is caused by excessive exercise in high temperatures, such that your body's cooling mechanism becomes overwhelmed. Symptoms include chills, nausea, dizziness, weakness, loss of coordination and profuse sweating. The skin may also become pale and cool or clammy.

Heat Stroke

Heat Stroke is a more serious form of heat injury that requires immediate medical attention. Many of the symptoms are similar to heat exhaustion but also include disorientation, loss of consciousness and seizures. Sweating is generally absent, but the skin may also be moist from earlier sweat production.

Should you experience any of the symptoms of heat injury, be sure to stop exercise immediately, find a cool shaded area and drink plenty of fluids.

Tips for Exercising in Warm Weather

Stay Hydrated

Simply drinking water when you are thirsty is not enough to offset the fluid lost during exercise. The general recommendation is 1-2 cups prior to exercise, 1 cup every 15 minutes during exercise and 2-3 cups after exercise.



Choose Your Timing

Avoid exercising in the heat of the day. Instead, choose to exercise early in the morning or in the evening during the coolest part of the day.

Clothing

Clothes should be light coloured, loose and comfortable. There are unique fabrics that offer UV protection and are lightweight and breathable. Some other fabrics are designed to keep you cool and dry; these include Dri-Fit™ and Omni-Dry™. Wear a hat to limit sun exposure.

Wear Sunscreen

Apply sunscreen to prevent sunburn. A sunburn can decrease the body's ability to cool itself.

Reduce Your Pace

You may need to reduce your pace for the first few weeks when the weather is warm. It generally takes 7 to 14 days to acclimatize to the heat. There may be times when the heat and humidity are too high to exercise outdoors. Make sure you have an indoor option for exercise at these times. You can even stroll around an air-conditioned mall.

Medication

Certain chronic diseases such as high blood pressure, diabetes and heart disease can impair your body's ability to regulate temperature, thereby increasing your risk of heat injury. Some medications can also impair your body's ability to regulate body temperature. Examples include beta blockers, diuretics, vasodilators and anti-depressants.

Be sure to ask your physician if any of your medications affect your ability to exercise in the heat. Exercise should **not** be avoided entirely if you are on these medications, but it will help you to better select an appropriate place and time to exercise.

Stretching: The Truth

Facts

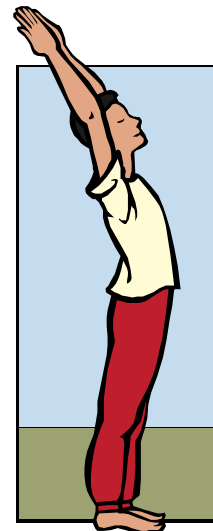
- Stretching completes fitness programs and augments their benefits.
- Anyone can stretch at any age.
- Anytime is a good time to stretch. The best time is after a workout when muscles and tendons are warmed up. They can stretch more easily.
- Easy aerobic physical activity is a more effective warm up, rather than stretching.
- No special equipment or clothing is required for stretching.

Why Stretch

- As the body ages, muscles and tendons stiffen gradually, resulting in loss of flexibility and reduced function.
- Wear and tear of everyday stressors causes tension and stiffness in the muscles and joints, reducing the normal movement range and causing poor posture.
- Muscle tension can also be a reason for aches and pains throughout the body.

Benefits

- Improved muscle and joint flexibility
- Improved mobility
- Better alignment and balance of the body
- Better posture
- Reduced risk of injury
- Reduction in muscle tension and stress
- Increased energy
- Improved mental clarity



How to Stretch

- Do 10 to 15 minutes of stretching daily. Hold each stretch for 15 to 60 seconds, repeat up to 3 times
- Easy physical activity and deep breathing before stretching help to warm up the muscles.
- Breathing deeply during stretching further promotes relaxation of the muscles.

- Wear comfortable clothing.
- Allow ample time to make the stretching period relaxing.
- Stretching should **not** be painful. You are aiming for a comfortable pulling sensation.

Talk To Your Physiotherapist

- To find out if yoga or pilates are the right types of exercise for you.
- To design a stretching program that meets your specific needs.
- Try our chair yoga classes to see if yoga might be right for you

Getting Stronger and Leaner

You have learned about the benefits of aerobic exercise. There is another type of exercise that is important for good health and quality of life: muscle strengthening or strength training

Understand the Role of Body Composition in Health-Related Fitness

Body composition describes the makeup of the body in terms of muscle and fat. Muscle cells are metabolically active and burn calories even while you are at rest. In contrast, fat cells are metabolically inactive. Good body composition results from:

- Aerobic exercise
- Healthy eating
- Strength training



The more muscle you have, the more calories you will burn throughout the course of a day. Unfortunately, when you eat fewer calories without exercising, you usually lose both fat and muscle. Losing muscle causes the body's metabolism to slow down. This makes it harder for you to lose weight and to keep it off.

Strength training helps maintain muscle while losing fat, making it an important part of a weight management program. It helps prevent your metabolism from slowing down and may even cause it to speed up.

Positive benefits of strength training include:

- Improved posture
- Better protection against injury
- Less pain in the back and joints
- Improved confidence
- Better self-image
- Stronger bones
- Improved function, especially in the older years
- Improved body composition (helps with long-term weight management)

Know the F. I. T. T. Prescription for Strength Training Exercises

F – Frequency refers to how often you exercise. You should do eight to ten different strength building exercises involving the major muscle groups on two or three days a week. There should be at least 48 hours of rest between strength training sessions to allow the muscles to rest and recover. The same muscle groups shouldn't be exercised heavily for two days in a row.

I – Intensity refers to how hard you are working. You can use the RPE scale to judge the intensity of your strength workout. You should strive for an RPE of 3 to 5. During the first few weeks of your strength training program, don't exceed an RPE of 4. After that period, you may work up to a level of 5.

T – Time refers to the number of times you repeat the exercises. You should aim for 10 to 15 repetitions of each exercise. You should allow a brief period of rest (15 to 60 seconds, longer if necessary)

Repetitions (reps) – the number of times an exercise or lift is repeated during a set.

Set – the number of times you repeat the whole sequence of exercises. A brief period of rest is allowed between sets for muscles to recover.

You can increase the intensity of your strength training workout in two ways:

- Increase the number of repetitions of an exercise. Start with 10 repetitions and work up to 15.
- Increase the weight or resistance of the exercise while doing the same number or fewer repetitions of the exercise. For example, when you can do 15 repetitions with a three pound weight, do ten repetitions with a five pound weight.
- Do two or three sets of exercises. Time may be a limiting factor.

Note: If your RPE is above 5, the weight or resistance is probably too much for you. Try either fewer repetitions or a lighter weight or resistance.

T – Type refers to the type of resistance you will use for your strengthening session. Examples are: free weights, resistance bands, and machine weights.

Remember to maintain a normal breathing pattern throughout (no breath holding) and to perform both the lifting and lowering part of the resistance exercises in a controlled manner.

Getting and Staying Motivated

It is never too late to start being active and get fit. Exercise can add years to your life and life to your years. Exercise is an integral part of healthy living and we need to make room for it every day, just as we make room for eating and brushing teeth.

As you build exercise into your every day routine and exercise becomes more and more part of your identity you will find that fitting it in is less of an effort.

Tips for Getting Motivated

- Choose a place and time that is **convenient** to you and is accessible daily. You will want to have a year-round plan, so you may have separate places for warm and cold months.
- Make it as **enjoyable** as you can! Involving a friend or your spouse can help. You could also take up a new sport or activity and meet new people.
- Make it **safe**. Start any exercise program by gradually building up your time, then increasing your intensity.
- Make sure you add **variety**. Have options for days when the weather conditions are not ideal.

Tips for Making It Stick

Set Goals

Set a daily, short term, long term and dream goal. Make a goal for your first week, for example, to exercise at least four times for a total of 200 minutes. When you think about exercise for the whole year, it may be necessary to have different exercise goals for the warm and cold months. In our region, because of our hot summers and variable conditions in the winter, you need to have a plan for indoor exercise. The ultimate goal is 200 to 400 minutes of regular exercise each week.

Incorporate Variety

Choose different activities depending on the season to add variety to your program. You could train in the off-season for the activity you enjoy most.

Monitor Yourself

Pedometers measure your steps taken throughout the day. Attempt to reach 10,000 steps per day. A heart rate monitor is another tool which can be used to ensure you are exercising at an appropriate training level.

Keep a Log

Use your appointment calendar and record the date, time, and place of your exercise. You can make it as detailed as you like.

Believe in Yourself

Know that you can do it. Believe in yourself. People who believe that they have the skills and knowledge to exercise will stick to it.

Reward Yourself

When you have reached milestones or achieved your short or long term goal, reward yourself.

Eliminate Barriers

Identify the barriers and temptations that prevent you from staying fit and actively work to eliminate them. Let the rehabilitation professionals help you, if needed.

Know Yourself

Physical activity has been touted as the single most effective lifestyle behaviour for promoting better health. Are you a self starter, a socialite or a competitor? Finding out which group you relate to will help you to stay motivated.

Self-starters

- Exercise independently
- Do it because they enjoy it
- Prefer an individual activity like biking, hiking, strength training, running
- Are organized, have their gear ready ahead of time

Socialites

- Prefer groups such as aerobics, water aerobics, step classes, tai chi, team sports
- Use friends to motivate them
- Usually exercise to improve appearance
- Want to exercise for fun

Competitors

- Need to have a training goal to work toward or a performance benchmark
- Will exercise if it helps them be a better player, i.e., "I will exercise if it improves my golf game."
- Generally like a lot of variety in their training program

The top four reasons people participate in fitness training are fitness, weight management, improved appearance and fun.



The physiotherapists from the Ottawa Heart Institute wish you success in setting up a lifetime habit of fitness, flexibility, and strengthening. Please do not hesitate to ask for assistance in accessing community resources.

- Physiotherapy Staff

Appendices

Prevention and Rehabilitation Exercise Classes

What to Bring

- Comfortable clothes and clean indoor walking or running shoes.
- Your own lock, for use with the change room lockers during your class.
- Your own toiletries and towel, if you wish to have a shower after class.
- A water bottle, which you can refill at the water fountain.

Important Information

- Check the white board for exercise class cancellations.
- If you are sick, please do not come to class. Call your physiotherapist to discuss.
- The Heart Institute is a scent-free environment. Please do not wear cologne or perfume in the track area.

If You Are Diabetic

- Bring your glucometer to class if you are taking medication for your diabetes. We will ask you to measure your blood sugar before and after exercise for at least two classes.

What to Expect on Your First Day

- After changing, come to the desk on the track to meet your physiotherapist who will explain the class routine, show you around and discuss your exercise plan with you.
- You will have an exercise record which your physiotherapist will show you how to fill out. It will be kept in a brown file folder and will remain at the track.
- You will be provided with a name tag. Please wear it at all times during classes for safety purposes.
- Classes begin with a warm-up. Depending on the class, this may be slow walking on the track or group exercise led by the physiotherapist. This is a very important part of your exercise routine. All classes end with a group cool-down led by the physiotherapist.
- There are heart rate monitors available for use during class. Speak to your physiotherapist if you would like to try one.

- If you are interested in improving your muscle strength, speak to your physiotherapist about our strength training workshops.

UOHI Track Rules

1. Before exercise class, you must tell the staff if you have had:
 - New or changing symptoms
 - An admission to the hospital
 - An assessment in the emergency department
 - Medication or dosage changes
 - Any change in your medical condition
2. During class, stop your exercise and inform staff immediately if you experience any of the following:
 - Angina or any other discomfort
 - Light-headedness or dizziness
 - Shortness of breath
 - Any other unusual signs or symptoms
3. Speak to staff before using nitroglycerin.
4. Do not come to class if you are sick.
5. Warm up and exercise only during your one-hour class time.
6. Speak to your physiotherapist before using any exercise equipment for the first time.
7. After using a piece of exercise equipment, please wipe down the seat, handles and display with the disinfectant wipes provided.
8. Use of hand sanitizer is recommended to disinfect your hands before class and after using the exercise equipment.
9. Cell phones must be turned off during exercise classes.



UNIVERSITY OF OTTAWA
H E A R T I N S T I T U T E
 INSTITUT DE CARDIOLOGIE
 DE L'UNIVERSITÉ D'OTTAWA

Minto Prevention and Rehabilitation Centre

Weekly Physical Activity Log

For each day, record the date, type of activity and the total minutes per day you did the activity. If you did not exercise one day, leave that line blank. Each block represents one week. Total your minutes at the end of each week to determine if you are reaching your weekly activity goal.

Week 1

Date	Activity	Minutes
Total minutes per week		
Your goal		

Week 2

Date	Activity	Minutes
Total minutes per week		
Your goal		

Week 3

Date	Activity	Minutes
Total minutes per week		
Your goal		

Week 4

Date	Activity	Minutes
Total minutes per week		
Your goal		

Week 5

Date	Activity	Minutes
Total minutes per week		
Your goal		

Week 6

Date	Activity	Minutes
Total minutes per week		
Your goal		

Week 7

Date	Activity	Minutes
Total minutes per week		
Your goal		

Week 8

Date	Activity	Minutes
Total minutes per week		
Your goal		



PATIENT ALUMNI
ASSOCIATION DES
ANCIENS PATIENTS

40, rue Ruskin Street, Ottawa, ON, K1Y 4W7
TEL 613-761-4370 WEB www.ottawaheartalumni.ca

CONNECTING UNIVERSITY OF OTTAWA HEART INSTITUTE PATIENTS, THEIR FAMILIES AND FRIENDS
RALLIER LES PATIENTS, LES FAMILLES ET LES AMIS DE L'INSTITUT DE CARDIOLOGIE DE L'UNIVERSITÉ D'OTTAWA

Now that you have benefitted from the world class care delivered by the Heart Institute, whether on a planned or an emergency basis, you are invited to join a unique group of patients known as the UOHI Patient Alumni. We, like you, are grateful for the excellent care received and want to give back to the Institute and help reduce heart disease.

- If you happened to be a patient in Intensive Care, did you notice the special beds there that help to keep you comfortable?
- If you had open heart surgery, did you fall in love with the cough pillow that you received?
- If you participated in the Cardiac Rehab program, did you notice the professional quality of the oval walking track that is the focal point of the facility?

These are examples that we, the Patient Alumni, have chosen to fund on your behalf when you contribute specifically to the Heart Institute Foundation's "Alumni Fund."

There are other benefits to you when you join us. Your annual membership dues of just \$15.00 cover all our operating costs, including our website at www.ottawaheartalumni.ca, where you will find more information. Your benefits also include three issues of the *Bulletin* that we publish and mail exclusively to members. It focuses on the latest developments at the Institute in the prevention and treatment of heart disease, along with helpful tips from doctors, other patients, recipes, and Patient Alumni news. We also solicit your ideas for feedback to the UOHI.

By joining the Patient Alumni, you can demonstrate your appreciation of the care you receive at the Institute. Please complete the attached application form today. Your heart will be better for it!

**THE OTTAWA HEART INSTITUTE ALUMNI INC.
Membership Application**

(Please print)

Preferred Correspondence: English French

Title: (Mr., Ms., Mrs.) Name: _____

Apt.#: _____ Address: _____

City: _____ Prov.: _____ Postal Code: _____

Telephone: _____ Email: _____

\$15 Membership fee Cheque or money order payable to: The Ottawa Heart Institute Alumni Inc.

Additional donation of \$ _____ to the Ottawa Heart Institute Foundation or OHI Alumni Inc.

Charge my: Visa Mastercard - Number: _____ Expiry date: _____

Signature: _____

Would you like to volunteer? Yes No, thanks. Please remove my name from mailing list