Chapter # 7
Exercise & Hot Weather

Know how to exercise safely in hot weather

You Will Learn:

1) How your body responds to exercise in hot weather
2) How to exercise safely in hot weather
3) About places where you can exercise indoors
How Your Body Responds To Exercise In Hot Weather

When you exercise, your working muscles create heat. This heat is carried around your body through your blood. As your body temperature goes up, the blood vessels near your skin open up and your sweat glands work harder. When your blood vessels open up, it causes more blood to move toward the surface of your skin to release heat from your blood to the air.

When heat is released and sweat moves away from your body, your body temperature drops. This is how your body tries to cool down and maintain a healthy temperature of 37°C.

When you exercise in hot weather 2 things can happen that can cause your heart to work too hard:

1) The blood close to the surface of your skin cannot release heat because the air is too hot
2) When the air is humid (full of water), it is harder for sweat to move away from your body.

Your body will keep sweating to try and cool you down. When you sweat a lot, you lose fluid from your blood. Less fluid in your blood makes your heart work harder to pump blood and oxygen to your working muscles.

When your blood cannot release heat, and sweat cannot move away from your body, you may overheat (raise your body temperature too high) and become dehydrated (lack fluid in your body).

Overheating

Symptoms of overheating include:

- Increased heart rate
- Undue fatigue
- Irregular (skipped) beats
- Feeling dizzy
Dehydration

Dehydration can occur in 3 stages. The third stage is the most severe. The following provides information on the signs and symptoms of each stage:

<table>
<thead>
<tr>
<th>Stage of Dehydration</th>
<th>Signs and Symptoms</th>
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<tbody>
<tr>
<td>Stage 1—Heat cramps</td>
<td>• Cramps occur in your calves and/or abdomen</td>
</tr>
<tr>
<td>• Can occur when you loose too much sodium (salt) from your muscle cells</td>
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</tr>
<tr>
<td>Stage 2—Heat exhaustion</td>
<td>• Early symptoms include fatigue and weakness leading to feeling dizzy, shortness of breath, nausea (feeling queasy) and vomiting</td>
</tr>
<tr>
<td>• Can occur when you are exposed to high temperatures and you do not replace fluids</td>
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<tr>
<td>Stage 3—Heat stroke</td>
<td>• You may not be able to sweat</td>
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<tr>
<td>• Occurs when your body temperature has risen 39°C or higher</td>
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<tr>
<td>• This is a medical emergency</td>
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<tr>
<td>• Call 911 if you have heat stroke</td>
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</tbody>
</table>

Know How To Exercise Safely In Hot Weather

Follow these 8 safety tips when you are exercising in hot weather.

1) Check the Weather Report

Check the local weather report at the time of your exercise, and note the temperature, humidity and the air quality (smog alerts and the air quality health index).
Check the Heat Safety Index

The Heat Safety Index can help you decide if it is safe to exercise and go outdoors. This index uses temperature and percentage of humidity (how much water is in the air) to create four safety zones: safe, alert, danger and emergency.

To use this index:

- Find the current local temperature along the bottom of the scale
- Find the current percentage of humidity along the left hand border of the scale
- Find the point on the graph where these two points come together. See what safety zone this point is found in
- Follow the instructions in the ‘what you do for each heat safety zone’ chart

Take Heart, 2004; Dr. T. Kavanagh
What You Do For Each Safety Zone

<table>
<thead>
<tr>
<th>Safe</th>
<th>Alert</th>
<th>Danger</th>
<th>Emergency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise as usual</td>
<td>Decrease your exercise intensity</td>
<td>No outdoor exercise</td>
<td>Avoid going outdoors</td>
</tr>
<tr>
<td>Safe to exercise outdoors</td>
<td>Watch for symptoms</td>
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</tbody>
</table>

Check the Air Quality

It is important that you check the air quality before you exercise outdoors. When you check the air quality you are seeing how much air pollution there is. Air pollution happens when many pollutants (a substance that is harmful to your health) are in the air.

Air pollution is a health concern for all people. It is an even greater concern for people living with heart or lung disease, older people and younger children.

When you check the weather report for air quality, look for:

- The Air Quality Health Index (AQHI)

Air pollution can be measured by the AQHI. This index tells you the level of common air pollutants.

In Ontario, the range for the index is 0 to 10. The lower the number, the better the air quality. If you live outside of Ontario, go to your local public health website to find out how your area lists the air quality index.
Check the air quality index before you exercise outdoors then follow the instructions in the ‘what you do for each air quality category’ chart.

What You Do For Each Air Quality Category?

<table>
<thead>
<tr>
<th>Low Risk 1 to 3</th>
<th>Moderate Risk 4 to 6</th>
<th>High Risk 7 to 10</th>
<th>Very High Risk above 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Exercise as usual</td>
<td>• Decrease your exercise intensity</td>
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</tr>
<tr>
<td></td>
<td>• Consider rescheduling your outdoor exercise</td>
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</table>

- **Smog Alerts**

Smog is a mix of air pollutants that often create a haze in the air. Smog can bother your eyes, nose and throat and cause coughing, wheezing and chest tightness.

Environment Canada provides two levels of smog alerts:

- A smog watch - issued when there is at least a 50% chance that smog will occur within the next 3 days
- A smog advisory (warning) – issued when there is a high chance that smog will occur within the next 24 hours

Check for smog alerts prior to exercising outdoors. In Canada, smog is often worse between noon and early evening on hot, sunny days between May and September. Do not exercise outdoors during the late afternoon and early evening when smog is at its worst.

2) **Dress for the Hot Weather**

Wear light-coloured and loose fitting clothing to help prevent overheating.

- Choose a fabric that helps sweat move away from your body. Dry wick (synthetic man-made) fabrics work best
3) **Do Your Warm Up and Cool Down**
Warming up and cooling down for 5-10 minutes will reduce your chance of getting symptoms such as angina, chest pain, feeling dizzy, irregular (skipped) beats and shortness of breath.

4) **Drink Water**
Drink water before, during and after your exercise. If you exercise for up to 1 hour, follow the guidelines below:
- Drink 6-8 ounces of water (about 175 to 240mL) before exercise
- Drink 6-8 ounces of water (about 175 to 240mL) every 20 minutes during exercise and after you cool down
- Do not wait until you feel thirsty
- Speak to your doctor if you have limits on how much fluid you can have each day

If you exercise for longer than 1 hour, talk to your Cardiac Rehab team about how much fluid you should drink.

5) **Reduce your Speed and Distance**
- Give your body time to get used to the hot weather. When the outdoor temperature goes up quickly, exercise at a slower pace and for a shorter distance for at least one week
- Use your heart rate and the rating of perceived exertion (RPE) scale to help you adjust how hard you are working while you exercise
- Plan your outdoor route to be a short “out and back” route

6) **Check Your Medicines**
Your medicines may need to be changed when the weather becomes hot and humid.
- Some beta blockers may make it harder for you to sweat
• Diuretics (water pills) may cause a loss of a substance called potassium from your body. Potassium is also lost in sweat. Too much or too little potassium can cause irregular (skipped) beats
• Diabetes medicines may not work as well in hot weather leading to hypoglycemia (low blood sugar level) or hyperglycemia (high blood sugar level)

Ask your doctor or pharmacist if your medicines should be changed in hot weather.

7) Do Not Drink Alcohol Before You Exercise
Alcohol acts as a diuretic (makes you pee more often). Peeing often can lower the amount of fluid in your body. With less fluid in your body, there is less blood for your heart to pump to the rest of your body so your heart has to work harder.

8) Watch For Symptoms
Be aware of any angina, chest pain, feeling dizzy, irregular (skipped) beats or shortness of breath. If you feel any of these symptoms, slow down your exercise at once. If you have angina, follow the steps to manage your angina (See Chapter 4—Angina). Speak with your Cardiac Rehab team to see if your exercise prescription needs to be changed.

Places Where You Can Exercise Indoors

1) At a Health Club or Fitness Centre
Health clubs and fitness centres provide indoor exercise equipment such as treadmills, stationary cycles and elliptical machines. Most health clubs and fitness centres allow you to enrol part-time or yearly. Talk to your Cardiac Rehab team for instructions on how to use indoor exercise equipment safely and to get an exercise prescription to use with these machines.

2) At Home
You can purchase exercise equipment to use at home. Talk to your Cardiac Rehab team if you plan to use home exercise equipment. Your Cardiac Rehab team can provide you with an exercise prescription to follow when you use your equipment.
3) **At the Mall**
Mall walking is a free option to exercise indoors.

4) **Community Centre Indoor Tracks**
Many community centres have indoor tracks that you can use.

5) **Heart Wise Exercise-Approved Programs**
Heart Wise Exercise lists fitness centres that offer exercise programs that are safe and well-suited for people living with heart disease or a chronic health problem. Many centres are now approved by Heart Wise Exercise. A fitness centre that has been approved will have people working there who know how to help people, like you, exercise safely.

6) **Take A Rest Day**
If no indoor options are available, take a rest day.

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**Your Resources**

1) Heart Wise exercise facilities – Look online to find a centre/facility in your community.
   
   www.heartwiseexercise.ca

2) The Weather Network or Environment Canada can give you up to date weather conditions (including the air quality) for the day:
   
   www.theweathernetwork.com, or www.weather.gc.ca/forecast or www.airqualityontario.com

3) If walking in a mall, find the mall map on our website at:
   
   http://www.takechargeonline.ca/resources/alumni-exercise/walking-maps/

4) See the Tool Box section of this workbook for more information about “Where Can You Do Your Exercise”.

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