

## Session 5: Risk Factors

Cardiac **risk factors** are qualities, characteristics or exposures of an individual that increases the chance of developing heart disease. They can also increase the chance of heart disease becoming worse. There are some risk factors that cannot be controlled. These are called **non-modifiable risk factors**. Refer to the following table for a better understanding on each of these factors.

### Non-Modifiable Risk Factors

Risk Factor	Why?
Age	Your risk of heart disease increases as you get older. Heart disease becomes a greater risk after the age of 55 for men and 65 for women.
Sex	Generally, men are at a greater risk (about 3 to 5 times) of heart disease than women. However, the risk of heart disease is about the same for both men and women after the age of 65 when other risk factors are similar.
Family History	Family history is a strong indicator of your own risk of heart disease because you and your blood relatives share the same genes. Specifically, you may be at a greater risk of heart disease if you have a close family member who has developed heart disease before the age of 55 if male or 65 if female.
Ethnicity	Ethnicity refers to a group of people of the same cultural or geographical background. Family history and ethnicity are closely related because people of the same ethnicity share similar genes and may pass down the same genetic mutations. Specifically, First Nations people and people of African or Asian descent are at a greater risk of heart disease.

\*Adapted from the Ottawa Heart Institute.

Throughout the Cardiac Rehab Program, we won't be spending a lot of time on non-modifiable risk factors because there is nothing that we can do to change them. However, it's important to understand that there are many risk factors that we can change. These are called **modifiable risk factors**. Part of the program will be helping you to identify the **modifiable risk factors** that you can change by altering your lifestyle (e.g., exercise, healthy eating).

Heart disease is a progressive disease. This means that the likelihood of it becoming worse is higher if you cannot get your modifiable risk factors under control. It's important to keep track of all of your potential risk factors and take steps toward making positive changes. The more risk factors that you have under control means the better chance you have of preventing another heart event and living a longer life.

In order to control your modifiable risk factors:

- Know what your risk factors are
- Identify which factors are under control and which are not
- Learn what you need to do in order to get those risk factors under control

### Modifiable Risk Factors

Take a look at the following table. This is an overview of the modifiable risk factors, what makes them a risk, and the desirable level of each factor.

Risk Factor	Why?	Desirable Level
<b>Smoking</b>	All of the harmful chemicals in cigarette smoke increase your blood pressure, makes your heart work harder, and causes damage to your blood vessels. The damage contributes to plaque formation in the blood vessels, which reduces blood flow to the heart. Continued smoking can both cause and worsen heart disease.	Non-smoking
<b>High Blood Pressure</b>	Blood pressure is the force of the heart pumping blood against the artery walls. If your blood pressure is too high then it can damage the walls of the arteries over time. This can cause plaque formation, which reduces blood flow to the heart.	< 140/90 < 130/80 if diabetic
<b>Physical Inactivity</b>	Physical inactivity plays a big role in promoting several other risk factors including high blood pressure, high cholesterol levels, diabetes, obesity, and plaque formation. All of which can lead to heart disease on their own.	<b>Aerobic Exercise:</b> Moderate to vigorous intensity, 20-60 minutes, 3-7 days per week <b>Resistance Exercise:</b> Moderate intensity, 10-15 reps, 2-3 non-consecutive days per week
<b>Obesity (BMI)</b> <b>Large Waist Size</b>	Having too much fat, especially around the waist close to the organs, contributes to other risk factors, including high blood pressure, high cholesterol levels, and diabetes.	<b>BMI &lt; 27 (minimum)</b> <b>BMI &lt; 25 (optimal)</b> <b>Men: &lt; 102 cm (40")</b> <b>Women: &lt; 88 cm (35")</b>
<b>Unhealthy Eating</b>	Just like physical inactivity, unhealthy eating promotes several other risk factors, including high blood pressure, high cholesterol levels, diabetes, obesity, and plaque formation.	A heart healthy diet intended to prevent or manage heart disease

<p><b>Psychosocial Factors</b></p>	<p>Psychosocial factors such as stress, anxiety, and depression are associated with heart disease. Stress is your body's response to change. Stressors are the events that cause the change. There are various stressors, both good and bad. However, common examples include changes in health, family, relationships, work, lifestyle, and finances. If you have difficulty coping with these events, your body may begin to negatively respond to them (e. g., anxiety, depression), which in turn may negatively impact your health. If this trend continues, it could increase your overall stress level and potentially increase your chance of having a heart event.</p>	<p>Developing supports and strategies to cope with all heart related stressors</p>
<p><b>High Cholesterol Levels</b></p>	<p>Cholesterol (LDL, HDL, and Triglycerides) is a type of fat in the blood that the body needs. However, having too much LDL cholesterol contributes to plaque formation in the arteries of the heart. This reduces blood flow to the heart, which can lead to heart disease. HDL cholesterol helps to remove LDL cholesterol from the arteries. So, having too little HDL cholesterol can also increase your risk of heart disease.</p>	<p><b>Total Cholesterol:</b> &lt; 4.5 mmol/L  <b>LDL:</b> &lt; 2.0 mmol/L  <b>HDL:</b> &gt; 1.0 mmol/L  <b>Triglycerides:</b> &lt; 1.7 mmol/L</p>
<p><b>Diabetes</b></p>	<p>High levels of blood glucose (sugar) in the body can increase your risk of diabetes and heart disease. Your body produces a hormone called insulin to lower blood sugar levels in the body. Diabetes causes "insulin resistance," which means that your body can no longer use insulin to lower blood sugar levels and use it as energy. This abnormality can cause damage to your blood vessels and contribute to plaque formation.</p>	<p><b>Fasting Glucose (amount of sugar in your blood after fasting for 8 hours):</b> 4 – 5.6 mmol/L if non-diabetic and 4 – 7.0 mmol/L if diabetic  <b>A1C (average level of blood sugar over the past 3 months):</b> &lt; 6.5% if non-diabetic and &lt; 7.0% if diabetic</p>
<p><b>Alcohol</b></p>	<p>Drinking too much of any type of alcohol may also increase your risk of high blood pressure and contribute to the development of heart disease.</p>	<p><b>Men:</b> 3 drinks per day, most days, up to a weekly max of 15 drinks  <b>Women:</b> 2 drinks per day most days, to a weekly max of 10 drinks</p>

\*Adapted from the Cardiac College of the Toronto Rehabilitation Institute.

\*\*Please note that the desirable levels for physical activity are guidelines only. Be sure to follow your personalized exercise prescription.

## Session 5: What Have I Learned So Far?

1. What are cardiac risk factors?

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2. What are non-modifiable risk factors?

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3. What are modifiable risk factors?

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4. What are the 9 modifiable risk factors that can be changed by altering your lifestyle:

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5. What is the desirable level of physical activity?

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