

For almost everyone, the benefits of physical activity far outweigh any risks. However, specific advice from a qualified exercise professional (QEP)\* or medical clearance by a health care provider (HCP)\*\* is advisable. Although, often people will seek advice from their HCP regardless. Medical screening (which may include a physical exam, resting ECG or an exercise stress test depending on situation) and/or functional testing may provide reassurance of physical fitness status and may act as a confidence building experience to previously inactive adults.

Screening Level	Selection Criteria	
<b>Self-screening</b>	<b>Criteria.</b> Most people can safely take up light to moderate activity without medical clearance and without undue risk.	
	<b>Action.</b> An easy to self-administer evidence-informed tool is the Canadian Society for Exercise Physiology (CSEP) <i>Get Active Questionnaire</i> (GAQ). The GAQ was designed to identify individuals who should see an appropriate exercise professional or health care provider before becoming more physically active.	
<b>Screening and/or Advice with a Professional</b>	<b>Criteria.</b> Individuals who have any significant health concerns, or answered 'yes' to questions from the GAQ, may require guidance from the following:	
	*QEP	<b>Qualified Exercise Professional</b> – Has post-secondary education in exercise sciences and advanced certification in area of chronic conditions.
	**HCP	<b>Health care provider</b> – A physician, nurse practitioner, or allied health professional.
	<b>Action.</b> <ul style="list-style-type: none"> <li>▪ Individuals seek advice from a QEP or health care provider</li> <li>▪ An individual is referred to a QEP by their health care provider</li> </ul>	
<b>Medical Clearance</b>	<b>Criteria.</b> Screening guidelines for determining if medical clearance from a health care provider is recommended are based on: <ul style="list-style-type: none"> <li>▪ Current physical activity level</li> <li>▪ History and symptoms of cardiovascular, metabolic, respiratory or renal disease</li> <li>▪ Individual plans to engage in high-intensity physical activity or plans to drastically increase the amount of physical activity they engage in.</li> </ul>	
	<b>Process.</b> Medical clearance typically includes: <ul style="list-style-type: none"> <li>▪ Health history</li> <li>▪ Physical examination</li> <li>▪ Exercise stress testing</li> <li>▪ More extensive diagnostic testing</li> </ul>	

## Medical Clearance Process

<p><b>Health History</b></p>	<p>Includes a review of symptoms such as chest pain or pressure, unusual shortness of breath, palpitations or abrupt tachycardia, syncope at rest or during strenuous activity and family history of heart disease.</p>
<p><b>Physical Examination</b></p>	<p>Will focus on concerning clinical signs, such as:</p> <ul style="list-style-type: none"> <li>▪ Heart murmur and/or arrhythmia</li> <li>▪ Congestive heart failure</li> <li>▪ Pulmonary overload</li> <li>▪ Severe hypertension (resting blood pressure &gt;200/110 mm Hg), which can indicate heightened cardiovascular incident risk.</li> </ul> <p>Individuals with unstable angina, uncharacterised arrhythmias or decompensated heart failure should <b>not</b> perform vigorous exercise before their conditions are stabilized.</p>
<p><b>When is an Exercise Stress Test Needed?</b></p>	<p>Exercise stress testing prior to beginning a <b>vigorous exercise program</b> should be considered in:</p> <ul style="list-style-type: none"> <li>▪ Individuals with known or suspected coronary heart disease (e.g., symptomatic, history of diabetes).</li> <li>▪ Patients with atypical chest pain and faintness at rest or during exertion.</li> <li>▪ Those who complain of palpitations.</li> </ul> <p>Potential exercise-induced adverse events include increased risk of cardiac events, such as sudden cardiac death, acute myocardial infarction, angina and arrhythmias.</p> <p>The absolute event rate appears to be very low (~1 per 1-2 million hours in healthy individuals and 1 per 100,000 individuals with CV or metabolic disease doing vigorous exercise) and the increased risk is primarily associated with highly vigorous exercise, particularly when sudden and unfamiliar.</p> <p>Most guidelines recommend that low-to-moderate physical activity is ok unless multiple comorbidities and very low fitness is present.</p> <p><b>Note:</b> It is unclear if exercise stress testing can prevent acute cardiovascular events at rest or during exercise in asymptomatic subjects since most acute coronary syndromes that occur are due to vulnerable plaque disruption that may not be found from diagnostic exams.</p>

## Physical Activity and Medication Considerations

A primary concern for providers and patients may be the influence of medications on heart rate blood pressure response and exercise capacity. Below is a brief summary of these potential interactions.

Condition	Factors Affecting Activity	Counselling Notes
<b>Cardiovascular</b>		
Beta Blockers	Suppress heart rate and blood pressure at rest and during exercise (i.e., as exercise stimulus does not completely override the inhibitory effects of beta blockers). The appropriate 'HR training zone' will very likely be lower; than those not using.	Using a Rating of Perceived Exertion is an alternative method to determine intensity.
Diuretics	Have no effect on heart rate and may have little effect on blood pressure. They may, however, increase fluid loss.	Proper hydration should therefore be emphasized.
ACE Inhibitors	Lower resting blood pressure and inhibit blood pressure response to exercise They do not, however, suppress heart rate response to exercise. They also have no effect on exercise tolerance (except Benazepril-Lotensin).	Important to have a gradual cool-down to limit post-exercise hypotension.
Calcium Channel Blockers	Decrease resting and exercise heart rate and may slightly decrease resting and exercise blood pressure. May increase exercise tolerance in exertional angina.	Extend cool down after higher intensity exercise
<b>Diabetes</b>		
Oral Hypoglycemics (e.g., Sulphonylureas)	May increase risk of developing hypoglycemia during or following exercise, similar to insulin treatment.	Medications and dosage schedules may require modification depending on individual exercise responses.  Those on insulin may need to supplement with carbohydrate as necessary to prevent a drop in blood glucose to <5-6 mmol/L during and after exercise.
Insulin	Knowledge of time and dosage is important as blood glucose response may be augmented by exercise.  Heart rate and blood pressure responses may be blunted in diabetes patients.  Patients not using insulin are unlikely to experience hypoglycemia related to exercise.	
<b>Cancer</b>	A number of common treatments for cancer may affect an individual's ability to engage in exercise (causing fatigue, severe anemia, loss of ability to coordinate muscle movement) and some medications may alter a patient's response to exercise (e.g., by damaging the heart muscle).	Client may need to exercise in a medically-supervised context.
<b>Anti-depressants</b>	May cause drowsiness and a client's capacity to engage in physical activity. However, there is no known impact on heart rate, blood pressure at rest or in response to exercise, nor do they affect exercise tolerance.	Many anti-depressants can also cause weight gain, which makes regular physical activity even more important.
<b>Musculoskeletal Conditions</b>	NSAIDs and disease modifying drugs generally have no significant effects on response, tolerance, or heart rate and blood pressure at rest or during exercise, but may mask pain.	Slow progression of exercise is recommended

## For more information:



### Counselling

Safe participation in physical activity is an important part of counselling. In discussions regarding safety, promote a prescription that:

- Encourages sedentary individuals to regularly engage in movement such as walking, so as to move them out of the least physically active cohort and establish a baseline of fitness,
- Include appropriate warm-up and cool-down procedures,
- Promotes education of warning signs/symptoms (e.g. chest pain or pressure, light-headedness, heart palpitations/arrhythmias, unusual shortness of breath),
- Progresses gradually in duration and intensity over a period of two to three months, and
- Counsels inactive individuals to avoid unaccustomed vigorous physical activity.



### Physical Activity and Chronic Conditions

Recommendations for patients with health issues are generally consistent with the *Canadian 24-Hour Movement Guidelines* for the general population. However, individuals with musculoskeletal complaints or known chronic conditions may require modifications to a standard exercise prescription.

For your patients/clients with conditions, "Chronic Disease and Exercise Fact Sheets" on prescription modifications are available from Exercise is Medicine® Canada for:

Anxiety & Depression	Dyslipidemia	Osteoporosis
Asthma	Multiple Sclerosis	Type 2 Diabetes
Cancer	Osteoarthritis	...and many more.

<https://exerciseismedicine.org/canada/eimc-in-action/eimc-professional-network/health-professionals/acsm-eim-rx-for-health-series/>



### Find Qualified Exercise Professionals

A qualified exercise professional can extend the reach of your care by providing the expertise, supervision and motivation that will help patients/clients adopt and maintain a habit of regular physical activity.

Links to Resources:

Exercise is Medicine® Canada: <https://www.exerciseismedicine.org/canada/>

Canadian 24-Hour Movement Guidelines for Adults ages 65 years and older: [www.csepguidelines.ca](http://www.csepguidelines.ca)

CSEP's Get Active Questionnaire: <https://store.csep.ca/pages/getactivequestionnaire>

Qualified Exercise Professional: Consult the Canadian Society for Exercise Physiology (CSEP) online member directory to find a CSEP Clinical Exercise Physiologist™ (CSEP-CEP) or a CSEP Certified Personal Trainer® (CSEP-CPT): [www.csep.ca](http://www.csep.ca)