HEARTWISE WEBINAR SERIES

Exercise and Cardiovascular Disease

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WHAT YOU WILL LEARN

1. What we need to know about your clients before prescribing exercise

2. Understanding the guidelines and principles for exercise in the cardiovascular population

3. Applying the FITT(T) principal in the cardiovascular population

4. What about symptomatic clients
CR is recognized as a **core component** of the continuum of comprehensive care for CVD in Canada.

- Identify and provide strategies for managing CVD risk factors
- Exercise, Nutrition, psychosocial health
- Ensure appropriate medical assessment
- Find a program near you: [http://www.cardiachealth.ca/cardiac-rehab/locate-cardiac-rehab-centre](http://www.cardiachealth.ca/cardiac-rehab/locate-cardiac-rehab-centre)

*Canadian Heart Health Strategy & Action Plan 2009*
GETTING TO KNOW OUR CLIENTS

- **Cardiovascular History**
  - Events and timelines

- **Co-morbidities**
  - Factors affecting exercise
TIMELINES FOR RESUMING EXERCISE AFTER A CARDIAC EVENT

Begin with low intensity, or easy exercise, as soon as it feels comfortable to do so.

Progress to moderate intensity once 30 minutes of easy exercise is achievable, but not before 3 weeks.

Sternal precautions for 6-8 weeks post-coronary artery bypass graft surgery (CABG), valve surgery or transplant (due to the sternotomy incision).

Patients with a pacemaker or ICD are advised not to lift their arm above shoulder height for 2 weeks & not to lift items over 10lbs for 4 weeks.
Goal setting is an area where, as fitness professionals, we can do a great job by making this a focus.

If you enjoy exercise or a certain type of exercise, the benefits are even greater.

**Exercise Goals**

- **Specific**
- **Measurable**
- **Achievable**
- **Results focused**
- **Time sensitive**
HEART WISE EXERCISE

GUIDELINES FOR AEROBIC EXERCISE
30-60 minutes of aerobic **exercise** most, preferable all days of the week.

“Scientific literature is now rich with reports, trials, and meta-analyses identifying physical inactivity does as one of the primary initiators of not only vascular disease, but also site specific cancers, type II diabetes, osteoporosis, hypertension, dyslipidemia, obesity and osteoarthritis.”

CACR Guidelines 3rd ed.
Warm-up and cool-down are essential.

- Injury prevention
- Cardiovascular optimization
- Reduces arrhythmias (irregular heart beats)
Warm-up and cool-down surround the conditioning phase.

- Aerobic exercise can retard the progression of CAD
- Steady state and interval training can be effective
CASE STUDY: JIM

Cardiovascular History

- 62 year old man
- 2002 – CAD diagnosed – 2 stents inserted; attended CR with good response
- 2014 – Heart Attack
- 2 stents put in to open arteries that were 95% blocked

Once the procedure was complete, tests showed good blood flow with no heart damage.
CASE STUDY: JIM

Risk Factors

• Family history
• Diabetes
• High cholesterol
• High blood pressure
• Anxiety

Jim’s Goal

• Long walking excursions
F.I.T.T. - 
- **F** - Frequency 
- **I** - Intensity 
- **T** - Type 
- **T** - Time 
- (T) - Timing
PRESCRIBING INTENSITY

Moderate intensity is the goal for most.

- 20-30 beats above resting HR
- RPE 3-5 or 12-15:
  - Moderate to somewhat difficult exercise intensity is recommended for most

- Talk Test
- Using a Stress Test (exercise specialist)
RATING OF PERCEIVED EXERTION (R.P.E)

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<th>Description</th>
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<td>Nothing at all</td>
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<tr>
<td>0.5</td>
<td>Very, very easy</td>
</tr>
<tr>
<td>1</td>
<td>Very easy</td>
</tr>
<tr>
<td>2</td>
<td>Easy</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
</tr>
<tr>
<td>4</td>
<td>Somewhat difficult</td>
</tr>
<tr>
<td>5</td>
<td>Difficult</td>
</tr>
<tr>
<td>6</td>
<td>More difficult</td>
</tr>
<tr>
<td>7</td>
<td>Very difficult</td>
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<tr>
<td>8</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Very, very difficult (almost maximal)</td>
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</table>

The Borg® Rated Perceived Exertion Scale helps you to rate your level of level of exertion and fatigue.

Rating of Perceived Exertion
Échelle de perception de l'effort

<table>
<thead>
<tr>
<th>Scale Rating</th>
<th>Description</th>
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<td>Pas de fatigue du tout</td>
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<tr>
<td>7</td>
<td>Extrêmement léger</td>
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<tr>
<td>8</td>
<td>Très léger</td>
</tr>
<tr>
<td>9</td>
<td>Léger</td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Un peu fatigant</td>
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<tr>
<td>14</td>
<td></td>
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<tr>
<td>15</td>
<td>Fatigant</td>
</tr>
<tr>
<td>16</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Très fatigant</td>
</tr>
<tr>
<td>18</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Extrêmement fatigant</td>
</tr>
<tr>
<td>20</td>
<td>Fatigue maximale</td>
</tr>
</tbody>
</table>
F.I.T.T.

- **F** - Frequency
- **I** - Intensity
- **T** - Type
- **T** - Time
- **(T)** - Timing
F.I.T.T. FOR JIM

Aerobic Prescription:
- **F** - 5-7 times per week
- **I** - Resting HR+20-30 bpm
- **T** - Walking
- **T** - 30-60 minutes
- **(T)** - Meds / meals

Strength Training:
- 2-3 times per week
SIGNS OF OVEREXERTION

• Being unable to exercise and talk at the same time
• Prolonged fatigue 30-60 minutes after exercise
• Continuous muscle and joint soreness
• Lightheadedness
• Nausea
• Pounding in your head or headache
• HR after cool-down that is more than 20 beats above resting level
• Prolonged periods of irregular heart beats (‘palpitations’)
GUIDELINES FOR RESISTANCE TRAINING

HEART WISE EXERCISE
Resistance training of each major muscle group

2-3 days per week with at least 48 hours rest for each muscle group

- Each muscle group should be trained for a total of 2-4 sets
- Allow individual to complete 8-12 reps (10-15 for older adults)
- Rest interval of 2-3 min between sets
RESISTANCE TRAINING GUIDELINES

“For older adults and very deconditioned individuals, ≥ 1 set of 10-15 repetitions of moderate intensity resistance is recommended.”

- Unilateral exercise
- Sitting reduces energy use by 25%

ACSM Guidelines 9th ed.
Clients can **safely** resume strength training programs

**Once aerobic exercise is comfortable for 2-4 weeks**

**6-8 weeks post-surgery (CABG/Valve/transplant)**

**5 weeks post-heart attack**
HEART WISE EXERCISE

SYMPTOMATIC CLIENTS
WHAT IS ANGINA?

Myocardial Ischemia

- Lack of oxygen to the heart muscle
- Occurs when clinically significant atherosclerotic lesions result in inadequate blood flow to meet myocardial oxygen demand
STABLE ANGINA

• Occurs with **progressive exercise** at approximately the same exercise heart rate

• Exercise training is indicated as long as the training intensity remains **below** the level at which angina occurs
STABLE ANGINA SYMPTOMS

- Pain
- Discomfort
- Heaviness
- Squeezing

Some patients have shortness of breath, lightheadedness, weakness, nausea, sweating or fainting.

Women often have vague symptoms which may also occur in different locations.
STABLE ANGINA SYMPTOMS

Symptoms are typically triggered by:

- Physical activity
- Emotional stress
- Exposure to cold
- Consuming a heavy meal
- Smoking

Discomfort is resolved after lowering exercise intensity, rest &/or Nitroglycerin.
PAIN OR DISCOMFORT IS NOT LIKELY ANGINA IF...

- It is localized
- Palpation makes it worse
- It gets worse with deep breathing, coughing or movement
- Exercise does not make it worse or may even reduce the pain
UNSTABLE ANGINA

• Chest discomfort occurs with increasing frequency and severity with progressively less activity or at rest
• Contraindication to exercise training
• Requires medical attention
Exercise Recommendations for Angina

- Training heart rate should be at least 10 beats/min below angina symptom/ischemic threshold.
- ↓ intensity or stop exercise if angina symptoms occur.
- Training may be resumed if angina symptoms subside with ↓ intensity, rest or Nitro, **but** when resuming training, intensity should be decreased.
THANK YOU!

HEART WISE EXERCISE