General guide for physical activity or exercise for stable cardiovascular disease outpatients

Cardiovascular diseases: Hypertension, coronary artery disease and peripheral arterial disease. First is a referral to an Exercise specialist appropriate?

**Contraindications:**

- Unstable angina, uncontrolled hypertension, uncontrolled diabetes mellitus, recent embolism, active pericarditis or myocarditis, acute thyroiditis, uncontrolled arrhythmias, significant aortic stenosis, uncompensated heart failure, metabolic conditions (e.g. acute thyroiditis, hypokalemia etc.), acute thrombophlebitis, 3rd degree AV Block without pacemaker and severe orthopedic condition.

**Use of FITT Framework:**

- **Frequency:** 3-5 days/week
- **Intensity:** moderate, exercise not at maximal capacity, ensure adequate rest after exercise in patient with angina pectoris
- **Type:** arm ergometer, rower, stair climbing, treadmill walking, gardening, shopping, house chores, walking etc.
- **Time:** 30min/day= 3000steps; (this may be in 10min bouts).

**Considerations:**

- **Baseline physical fitness level** is important in determining: exercise tolerance, patient’s motivation, symptoms/changes in clinical status (such as dyspnea at rest, dizziness, palpitations, irregular pulse & chest discomfort), medications (or changes in medication), cognitive impairment and musculoskeletal limitations in patients.
- Start with **supervised physical activity** (PA)/exercise before independent self-monitoring PA/exercise. ECG monitoring is encouraged.
- **Discourage vigorous intensity** activity, as this may lead to acute MI and sudden cardiac death.
- Individuals with unstable coronary artery disease and significant aortic stenosis should be discouraged from exercise or vigorous intensities.
- Exercise with a **partner/friend** when you can. It is better to exercise in a facility with professionals that can manage cardiac emergencies.

*These recommendations are mostly based on American College of Sports Medicine guidelines.*
General guide for physical activity
or exercise for patient with obesity

Use of FITT Framework:

- **Frequency:** Light to moderate intensity 5-7 d/week.
- **Intensity:** Start from moderate to vigorous intensity.
- **Time:** 30-60min/day (this may be in 10min bouts), meaning approximately 150-300min/week.
- **Type:** It is advisable to involve large muscle group (at the back, legs and chest) in rhythmic and continuous fashion. E.g.: squats, pull-ups, push-ups, bench press and lunges.
- **For class III obesity:** Exercise should be progressive based on what the subject can manage. Usually, individuals with larger weights can only tolerate lower amount of exercise.

Considerations:

- **Goal:** The primary goal of increasing physical activity (PA) is to improve health and wellbeing rather than weight loss. SMART goals related to PA should focus on actual behaviors rather than specific weight-loss targets.
- **Attitude:** Many overweight and obese individuals may have had negative experiences related to sports and PA in the past (e.g. gym class). Prior experience and self-efficacy regarding PA should be explored and considered when making recommendations.
- **Setting:** Ensure that the physical space is accessible and appropriate for larger individuals. This includes considerations for accommodation with regard to changing rooms, washrooms (e.g. floor mounted toilets), showers, etc.
- **Equipment:** Ensure that seating and exercise equipment meets weight and size specifications for heavier and larger individuals.
- **Clothing:** Oversize sports clothing (e.g. bathing suits, training apparel, etc.) is expensive and may pose a barrier to participation for larger patients. Clothing should prevent chaffing, promote air circulation and absorb moisture.
- **Footwear:** Individuals with obesity are more likely to have problems with their feet (e.g. Pes planus, plantar fasciitis etc.). Appropriate footwear with adequate support and shock absorption is highly recommended. Elastic shoelaces or Velcro closures make it easier to take shoes on and off by reducing the need to tie up laces.
- **Activities:** Individuals with obesity are carrying a considerable amount of weight and may have issues with coordination and balance. In addition, range of motion and range of view (e.g. seeing their feet or stairs) may be significantly impaired. This places them at greater risk of falls and strain injuries. Excess body fat and skin folds can cause chaffing. Lighter weight-bearing and lower impact activities (e.g. walking, floor exercises, aquasize, swimming, etc.) should be prioritized. Resistance training can help increase and sustain muscle mass. A patient who uses a mobility devise such as a cane or walker should use the device when participating in any exercises that involve walking or changing positions.

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General guide for physical activity or exercise for patient with osteoarthritis

Physical activity (PA) and exercise are an important treatment for people with osteoarthritis. Regular PA/exercises builds up muscle, strengthens the joints, improves sleep, and improves symptoms of OA. PA and exercise are also good for relieving stress, losing weight and improving posture. Is a referral to an Exercise specialist appropriate?

Use of FITT Framework:

- **Frequency:** Aerobic exercise 3-5 days/week, resistance exercise 2-3 days/week
- **Intensity:** Start with low weights and intensity, then 10% increase per week. Rating of perceived exertion 2-3 out of 10.
- **Time:** short bouts 5-10 mins to accumulate 20-30 min/day with the goal of getting to 150 min/week moderate intensity exercise.
- **Type:** Walking, dog walking, swimming, Sit to stand, step-ups, cycling, yoga, dancing, gardening, washing, floor mopping, vacuum cleaning, Pilates and Tai chi.

Considerations:

- Vigorous intensity and strenuous exercise are **contraindicated** when there is acute inflammation.
- Use **pain medication** 20 minutes prior to exercising
- Mode of exercise should be the **least painful** e.g. Treadmill walking and arm ergometry.
- Allow ample time for **warm ups** at low intensity before increased intensity.
- **Discomfort** during and after exercise is normal. If pain continues after 2 hours, intensity should be reduced in future sessions.
- **Encourage activity** at the time of the day week pain is least severe, after warm shower/bath or in conjunction with peak medication activity.
- **Shoes** that absorb shocks and stability should be used. Proper footwear should be worn, with laces and strap properly secured. If feet are swollen consider extra depth footwear.
- For those that prefer water PA, **warm water** (about 30°C) exercise is encouraged; this relaxes muscle and reduces pain.
- **Exercise with a partner or friend** when you can.

Prompt Questions:

- Do you like exercise or own a gym membership?
- Do you like swimming?
- Do you use pain medications?

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