Nursing and Exercise Physiologist Guidelines for Cardiovascular Rehabilitation (CR) #3

Title:	**Exercise Prescription for Phase II Cardiac patients in the CR Program**
Responsibility:	Cardiovascular Rehabilitation Personnel
Purpose of Guidelines:	To ensure that all patients in the UTMC Cardiovascular Rehabilitation Program are exercising in a safe and effective manner.

Procedure:

I. The five components of the exercise prescription include: frequency, intensity, duration, type (mode) and progression. In most cases, a patient's exercise prescription is based on the results of a cardiopulmonary exercise test (CPX) or other appropriate graded exercise test and is a developed through a combined effort of the medical director and clinical exercise physiologist. Key variables to consider in the development of an exercise prescription for cardiovascular patients include diagnosis, clinical status, exercise capacity, ischemic/angina threshold, changes in medications and musculoskeletal/orthopedic limitations.

II. Frequency

A. Patients are prescribed and encouraged to undergo three (3) Cardiovascular Therapy Sessions (CTS) each week.

B. A total of 36 sessions are usually prescribed (or approved session amount per insurance).

III. Exercise intensity may be prescribed using one or more of the following methods:

A. Rating of Perceived Exertions (RPE) of 11-15 on the Borg Scale of 6-20

B. 20 - 40 beats per minute above resting heart rate if no exercise test available

C. 40-85% of exercise capacity using Heart Rate Reserve (HRR) or Karvonen method, percent oxygen uptake reserve(VO_2R) or %VO_2

D. Exercise intensity should be prescribed at a heart rate (HR) 10 beats per minute below the ischemic threshold

IV. Duration

A. Each CTS will be consisting of 30-60 minutes.

B. Sessions are comprised of a warm-up, conditioning, and cool-down phase.

1. Warm-up and cool-down activities include low intensity aerobic activities and/or range of motion and static stretching.
2. The conditioning phase will vary from patient to patient depending on diagnosis, clinical status, functional capacity, and ability of the patient to maintain the prescribed training intensity.

C. Patients may rest at any time during the session and rest time is included in the total session time.

V. Type or mode of the cardiovascular conditioning portion of the CTS should include rhythmic, large muscle group activities. The different types of exercise equipment may include:

A. Motorized treadmill, arm ergometers, ellipticals, rowing ergometers, stepping ergometers, indoor track, upright and recumbent cycle ergometers, and combination upper/lower extremity ergometers (eg. NuStep)

B. To improve muscular strength and endurance, exercises that include free weights and weight machines should be incorporated into CTS.

VI. Progression of exercise will vary from patient to patient

A. Patients will begin with 5-15 minute sessions with a gradual progression of 1-5 additional minutes per session.

1. There is no set format for the rate of progression in exercise duration or intensity.
2. Progression in duration and intensity should be individualized to patient tolerance. In the absence of clinical symptoms and problems, factors to consider regarding a patient's progression include initial fitness level, motivation and goals, symptoms, and musculoskeletal limitations.

B. CTS may include continuous or intermittent exercise.

C. When progressing a patient's exercise prescription, evaluate the patient to be sure that they are tolerating the increase in work rate. Optimally the patient will be able to perform these increases without exceeding their target heart rate, target MET level, or a RPE of 15.

D. Patient will be observed for signs or symptoms of over-exertion such as excessive dyspnea or fatigue. The exercise physiologist will evaluate the patient to be sure that the patient is clinically able to tolerate increases in workload.

VII. Documentation of Exercise Prescription and CTS will be done in the CR telemetry monitoring system.

A. Each patients' initial exercise prescription and progress with be documented in the UTMC Cardiovascular Rehabilitation Exercise Prescription Individual Treatment Plan.

B. Each patient's CTS, including workloads on each exercise modality, heart rates, blood pressures, pain level, dyspnea level, RPE, resting ECG, exercise ECG, recovery ECG, and symptoms will be documented in the telemetry monitoring system's Cardiovascular Rehabilitation Session Report for Phase II patients.

VIII. In addition to CTS, each patient should be encouraged to gradually return to activities of daily living and other sports/recreational activities as evaluated and appropriately modified by cardiovascular rehabilitation staff.

References:

American College of Sports Medicine; ACSM's Guidelines for Exercise Testing and Prescription; Eleventh Edition; 2021.

Reviewed by: Angela Petree, B.S., ACSM-CEP
Initiated: 5/2019
Reviewed: 6/2019, 5/2021
Revised: 6/2021