



## Nursing and Exercise Physiologist Guidelines for Cardiovascular Rehabilitation (CR) #4

**Title:** **Phase II Cardiac Rehabilitation Sessions (CRS) and Supervised Exercise Therapy (SET) for PAD**

**Responsibility:** Cardiovascular Rehabilitation Personnel

**Purpose of Guidelines:** To ensure that each UTMC cardiac rehab staff member performs the daily duties associated with the Phase II CRS and SET cardiac rehab program in a uniform fashion to provide optimum care for the patients.

### **Procedure:**

#### I. Procedure

The following outline reviews the procedures to conduct Phase II CRS and SET at UTMC. The staff to patient ratio will be no more than 1:5. Each CRS/SET is up to 90 minutes long. CRS/SET will be offered on a three times per week schedule.

#### A. Opening Procedures

1. The exercise area and exercise equipment are to be checked prior to class to assure safe patient care.
2. Staff responsibilities for set-up include:
  - (a) Staff members should be available 15 minutes prior to the start of each class
  - (b) Code cart and defibrillator are checked on each day of department operation according to Policy # 3364-100-45-10
  - (c) Check the glucometer for accuracy
  - (d) Prepare the ECG-telemetry monitoring system
  - (e) Be familiar with emergency roles based on the complement of staff

#### B. Performing a 6 Minute Walk Test

1. If the patient is able to ambulate, they will be asked to perform a 6 minute walk test on the Morse Center basketball court or aerobics room during one of their first 6 CRS/SET and during one of their last 6 CRS/SET. Patients that are

symptomatic and patients with musculoskeletal or orthopedic problems may be excluded at the staff member's discretion.

- (a) Prior to performing the 6 minute walk, the patient will sit quietly for 5 minutes. After 5 minutes, resting heart rate, blood pressure, and oxygen saturation are recorded.
  - (b) The patient will be moved to the starting cone on the basketball court/aerobics room.
2. The patient will be given the following instructions: "The purpose of this test is to walk as far as possible for 6 minutes. Please do not run or jog. You will start from this cone and walk down and pivot around the other cone. If you need to stop and rest, just remain where you are or have a seat in one of the chairs until you can go on again. However, the most important thing about the test is that you walk as far as you possibly can during the six minutes. I will tell you how many minutes have elapsed, and I will inform you when the six minutes are up. When I say 'stop', please stand right where you are.
- (a) Ask the patient to begin walking and start the timer. Inform the patient when each minute has elapsed and click the lap counter every time they reach a cone.
  - (b) Patients who become symptomatic (e.g. angina or extremely SOB) will be asked to stop walking and the 6 minute walk will be discontinued.
  - (c) Do not walk with or pace the patient.
  - (d) When the 6 minute walk is completed, walk over to the patient and take their blood pressure and oxygen saturation. Heart rate will be obtained from the ECG-telemetry monitor.
  - (e) Calculate and record their distance walked by multiplying the number on the lap counter by 50 and adding the remaining distance walked to the nearest ten feet.

### C. Patient Check-in/Warm-Up

1. The patient's weight will be obtained and the staff will record it in telemetry monitoring system.
2. The patient will be hooked up to the telemetry device if applicable by a CR staff member.
  - (a) Patients that are deemed low risk by most recent ejection fraction may be intermittently monitored.
  - (b) Patients that are deemed low risk by most recent ejection fraction may have an unmonitored exercise session.
  - (c) See section F below.
3. A CR staff member will ask the patient if they have taken their medications as prescribed and whether they are having any symptoms.

4. Blood pressure will be obtained and recorded by a CR staff member.
  - (a) If a patient's resting SBP is > 200 mmHg, or if the DBP is > 110 mmHg, the patient will sit for 5 minutes and have their BP rechecked.
  - (b) If BP is still elevated, the patient will sit for another 5 minutes.
  - (c) If their BP is still elevated after 10 minutes, the patient will not be allowed to exercise (See section G below).
5. Resting HR's will be determined by reviewing an ECG rhythm strip from the ECG telemetry system.
  - (a) If the resting HR is 20 beats above normal, the patient will sit for 5 minutes and be rechecked.
  - (b) If the HR is still elevated, the patient will sit for another 5 minutes.
  - (c) If their HR is still elevated after 10 minutes, the patient may not be allowed to exercise if deemed unsafe.
  - (d) Patient's physician, cardiology fellow, nurse practitioner, and/or medical director may be consulted for further instruction.
6. Pre-exercise ECG rhythm strips are checked daily for new arrhythmias.
7. Any changes in a patient's status (i.e. medications, weight, BP, symptoms, ECG) are documented and followed-up by contacting the referring physician as needed.
8. Each patient will perform 5 — 10 minutes of an active warm-up by either walking laps around the track or exercising at a low level on an exercise modality.

#### D. Cardiovascular Conditioning Phase

1. Patients will be instructed to exercise on 2 to 3 pieces of equipment or walk the track for 30-60 minutes based on the intensity, duration, and mode of their exercise prescription.
2. During the conditioning phase, CR staff members will be checking workloads, measuring and recording BP's, checking patients for signs and symptoms of cardiac intolerance and answering any of the patients' questions.
3. Each patient's workloads on each exercise modality, exercise and recovery heart rates, exercise and recovery blood pressures, RPE (rating of perceived exertion), exercise and recovery ECGs and symptoms will be obtained and documented in the telemetry-monitoring system and reported on the daily session report.
4. Guidelines for responding to abnormal responses to exercise will be followed at all times during the CRS/SET.

5. CR staff will alert the Medical Director to any problems that relate to his/her responsibility in conducting a safe program.

#### E. Cool-Down Phase and Closing Procedures

1. Patients will be instructed to cool-down by exercising at a lower intensity for 3 to 5 minutes or walking slowly for 1 to 2 laps around the track. They are also able to perform stretching and strength training exercises.
2. Cardiac rehab staff members are to make sure each patient's heart rate, cardiac rhythm and BP have returned to baseline normal.
3. Cardiac rehab staff members are to make sure each patient is not exhibiting any signs or symptoms of post-exercise intolerance (e.g. extreme fatigue, dizziness, or hypotension).
4. As soon as the patient is assessed to have returned to baseline BP and HR, they can be excused from the CRS/SET. All responsibility for the patient by the CR staff ends at this time.
5. Take down and store all ancillary equipment (ECG telemetry & BP cuffs).

#### F. Guidelines/Procedures for ECG Monitoring During CRS/SET

1. Patients who have been continuously ECG-monitored but who have been stable may be considered for intermittent monitoring by the medical director.
2. Discontinuation of continuous monitoring for high-risk patients must be documented in the Individualized Treatment Plan and approved by the medical director.
3. All patients will be continuously ECG-monitored for at least the first 6 CRS/SET.
4. For continuous ECG monitoring, the patient's skin is prepared and three electrodes are applied to the skin surface.
5. The CR staff are responsible for monitoring each patient's ECG during the CRS/SET.

#### G. Guidelines for Managing Abnormal Responses and Medical Emergencies During CRS/SET

1. The CR staff is to respond appropriately to any patient whose medical status before, during, or after a CRS/SET is abnormal. Examples of such events are as follows:

(a) Hypertension

- i. If resting DBP is  $\geq 100$  mmHg, check BP after warm-up. If DBP doesn't exceed 110 mmHg, continue with exercise.
- ii. If resting DBP is  $\geq 110$  mmHg, do not exercise patient until DBP is  $< 110$  mmHg. CR staff will report elevated DBP to cardiology fellow on call and/or referring physician.
- iii. If DBP is  $\geq 120$  mmHg on two separate readings 15 minutes apart, call the cardiology fellow on call and/or referring physician and if necessary transport the patient to the ER.
- iv. If resting SBP is  $\geq 200$  mmHg on two separate readings 15 minutes apart, call the cardiology fellow on call and/or the referring physician and if necessary transport the patient to the ER.
- v. If exercise SBP is  $\geq 250$  mmHg or DBP is  $\geq 115$  mmHg, stop exercise, re-evaluate BP as needed, discontinue exercise for the session if appropriate. Consult cardiology fellow and/or referring physician as needed
- vi. Post exercise BP for discharge from CRS/SET is SBP  $< 180$  mmHg or  $\geq 60$  mmHg and DBP  $< 110$  mmHg. Consult cardiology fellow and/or referring physician as needed.

(b) Hypotension

- i. If resting SBP  $\leq 60$  mmHg on two separate readings 15 minutes apart, call the cardiology fellow on call and/or the referring physician.
- ii. Transport the patient to the ER if necessary.

(c) Hyperglycemia

- i. Patients with diabetes will have finger stick blood sugars (FSBS) assessed pre- and post-exercise for their first six (6) CRS or SET (per Cardiovascular Rehabilitation Physician Order). Pre- and post-exercise FSBS checks will continue if values of  $< 80$  mg/dl or  $> 300$  mg/dl are persistently recorded. A cardiac rehab staff member will obtain and record the pre- and post-exercise FSBS.
- ii. Patients with Type I diabetes who have a FSBS  $\geq 300$  will not be allowed to exercise.
- iii. Patients with Type II diabetes should exercise with caution if FSBS are 300 mg/dl or higher. Consult with referring physician if needed.

(d) Hypoglycemia

- i. If a patient's FSBS is  $\leq 80$  prior to exercise, 20 grams of carbohydrate should be ingested. Goal is for FSBS to be  $> 80$  mg/dl prior to starting exercise.
- ii. If a patient's post blood sugar is  $< 70$  mg/dl, the patient will be given 15 grams of carbohydrates and FSBS will be re-checked after 15 minutes.
  - a. The cardiology fellow or referring physician will be consulted for patients that are symptomatic.

- b. Patient will be transported to the ER if recommended by the cardiology fellow or referring physician.
  - iii. Patients should be encouraged to test their FSBS one hour after exercise and to be aware of a potential hypoglycemic response for 24-48 hours after exercise.
- (e) Angina, acute dyspnea, or other indications of cardiac compromise
- i. Decrease workload or terminate exercise
  - ii. Assess heart rate and cardiac rhythm on the patient's ECG.
  - iii. Assess blood pressure.
  - iv. If symptoms persist, the RN will administer one 0.4 mg nitroglycerin tablet sublingual per Cardiovascular Rehabilitation Physician Order. Re-check blood pressure 5 minutes after administering NTG. If symptoms persist and blood pressure is stable: repeat NTG in 5 minute intervals two times.
  - v. If the angina persists and the blood pressure is not stable, transport patient to the emergency room.
- (f) Bradycardia and Tachycardia
- i. Recognition of patient problem and terminate exercise
  - ii. Assess heart rate and cardiac rhythm on the patient's ECG
  - iii. Assess blood pressure
  - iv. If the patient is alert, awake and asymptomatic, page the cardiology fellow.
  - v. If the patient is alert, awake and symptomatic, a CR staff member transports the patient to Emergency Room.
  - vi. If the patient is unresponsive, initiate CPR, and have a staff member call X77 for a Code Blue.
- (g) Cardiopulmonary Arrest
- i. If the patient is unresponsive and pulseless, initiate CPR, get the defibrillator and have a staff member call X77 for a Code Blue. Other staff member(s) will remove patients from the immediate area.

**Reviewed by: Angela Petree, B.S., ACSM-CEP**

**Initiated: 5/2019**

**Reviewed: 6/2019, 5/2021**

**Revised: 6/2021**