

## **Therapist Guide**

### **Training Protocol for Peripheral Arterial Disease Rehabilitation**

**Warm UP:** The warm up consists of gentle stretching of all muscle groups, particular emphasis is placed on the thigh and calf muscles, followed by 2-3 minutes of slow low level walking either on the treadmill or in the hall ways.

#### **Setting the Initial Workloads:**

**Stress test available:** The initial workload is determined from the patient's symptom limited maximum stress test. The intensity of the initial treadmill exercise is set at the level achieved on the stress test that first brings on *moderate* claudication pain. This level may be presented on the order as a MET level or may be given as an intensity level (mph/grade). The initial workload may have to be adjusted up or down depending if the patient was able to reach onset of claudication pain in three-five minutes. If onset of claudication pain is not reached by 3-5 minutes the work level will need to be increased the next bout; if the onset of claudication is reached before 3-minutes the workload will need to be decreased the next bout.

#### **Stress test not available:**

Throughout the initial evaluation, it is a good idea to assess how much walking the patient is currently able to tolerate. Using that information gathered, the treadmill workload is set to achieve the *onset* of claudication pain in three-five minutes. It truly is trial and error. It is best to initially error on the light side and increase the work levels the second bout. It helps to keep the patient more positive.

#### **Workout goals:**

- ❑ The workloads should be set to achieve onset of claudication pain in 3-5 minutes.
- ❑ Moderate claudication pain achieved before 10 minutes.
- ❑ If able to walk 3-bouts of 10 minutes, the workout should be adjusted up for the next session. Initially, the training sessions may be 20-30 minutes this includes the rest periods. The training sessions will continue to increase up toward the 30-45 minute session. The goal for exercise bouts only is 30 minutes.
- ❑ Rest periods should be kept to 2-3 minutes. The patient should be able to tell you when the claudication pain is back to baseline. Try not engaging in too much conversation or the rest periods become too lengthy. If a patient needs too rest longer than 2-3 minutes the work levels need to be adjusted down and the claudication pain scale should be revisited.

#### **Documentation:**

- ❑ The onset of claudication pain per bout.
- ❑ Onset of moderate pain per bout.
- ❑ Stop time per bout.
- ❑ Length of rest period per bout.

There is a form that is available for use or you can customize the computer to reflect the above information.

**Cool down:** The cool down consists of walking slowly for 3-5 minutes either on the treadmill/hall walking plus stretching and flexibility routine emphasis placed on the thighs and calves.

**MONITORING:** Monitor and document the initial session only unless the patient has a history of heart disease, stable angina or a + stress test for possible CAD

- ❑ **Pre:** rhythm strip, HR, BP and if needed BG, O2 levels.
- ❑ **Exercise:** rhythm strip, HR, BP, O2 levels.
- ❑ **Post exercise:** rhythm strip, HR, BP, BG, and O2 levels.
- ❑ **Symptoms of intolerance.**

**PROGRESSION:**

**Initially:** Gradually increase the patients walking speed to 2.0 mph/0% grade. Remember, the goal is to exercise the patient to achieve onset of claudication pain between the first 3-5 minutes of walking. Once the patient is walking at 2mph and can achieve 3 bouts of 10 min then increase the patient's grade in 1% increments up to 5%. Once at 5%, start increasing the speed by .1-.5mph at a time. Keep in mind with each adjustment the goal is to achieve the onset of claudication between the first 3-5minutes and the rest periods to achieve baseline-resting claudication in 2-3 minutes.

**REMEMBER:** You want the patient to reach moderate claudication pain before stopping to rest. Moderate claudication pain means the pain is significant, but it is possible to distract oneself from the pain and keep walking. Severe pain cannot be walked through, but will not injure the patient. In fact, a highly motivated patient may improve faster if they do walk at a higher pain threshold, but many patients may give up if subjected to this amount of pain. (see claudication pain scale)

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