

# Segmental with Toe Examinations with simpleABI Cuff-Link™ Systems

**Please Read the Users Manual First:** This is a quick reference guide.

**Contraindications:** Do not perform the exam on someone suspected of having acute deep venous thrombosis, and do not take an arm pressure in an arm with a shunt or dialysis graft.

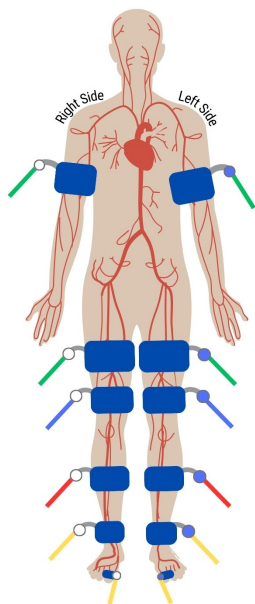
**Background:** A segmental exam of the leg is an extension of the ABI exam. In this test, you can attempt to localize the site of an occlusion by taking the pressures and waveforms at more locations on the leg. Pressures and PVR waveforms are taken just as in the ABI exam. The Doppler probe location remains at the ankle – usually the PT.

## The Segmental with Toe Procedure

### Setting up

**Opening the exam** On the computer desktop, double click the simpleABI icon. When the program opens select *File* → *New* → *3 cuff with Toe Segmental Report* (or 4 cuff). The report will open and you can enter patient information, risk factors, symptoms, ICD codes, etc.

**Attaching cuffs** Wrap appropriate cuffs at each site. Attach the hoses from the Cuff-Link control unit to cuffs as shown below. The green connectors go to the arm (or thigh) cuffs, red to the calves, blue to above the knee cuffs, and yellow to the ankles (or toes). White hoses go to the patient's right side, blue to the left. \*NOTE\* the image is reversed as if you are looking at the patient lying down



Cuff-Link Control Unit  
with tubing properly attached



### Brachial Pressure

1. Begin with the right brachial. Place the Doppler probe at a 45 degree angle to the skin over the radial or brachial artery. Use plenty of gel and slowly move the probe laterally until the best signal is obtained.
2. Press and hold **Inflate** on the Cuff-Link Remote (shown above) and inflate the cuff until you no longer hear the signal - continue for an additional 10-20 mmHg.
3. Release **Inflate** and the cuff will automatically deflate at the suggested rate of 2mmHg/second.
4. When you hear the Doppler signal return, pressing **Pressure** will be store the pressure value in the exam.

### Ankle Pressures

1. Press **Next** on the remote and the system will move to the Dorsalis Pedis (DP) site. Find the arterial signal using the Doppler probe on the dorsalis pedis artery on top of the foot. Obtain the arterial pressure in the same manner you did on the arm. (Hold **Inflate** until occlusion, release **Inflate**, press **Pressure** on Doppler signal return)
2. Press **Next** and the system will move to the posterior tibial (PT) site. Find the Doppler signal on the posterior tibial artery. Obtain the arterial pressure. (Hold **Inflate** until occlusion, release **Inflate**, press **Pressure** on Doppler signal return)

### Ankle Waveform

1. Press **Next** and the system will move to the waveform site. Press and release the button with the **Waveform** image on the top right of the remote. The cuff will inflate to roughly 85mmHg and deflate to the proper pressure (65mmHg) and hold that while the waveform is obtained. The waveform will start to appear when the cuff has reached 65mmHg. The patient should remain as still as possible during the measurement.

*Continued on next side...*

# The Segmental with Toe Procedure (continued)

**Leave the Doppler probe on the posterior tibial (PT) for all upper level site pressures, if upper pressures will be taken. See notes on efficient protocols below.**

## **Calf Pressure & Waveform**

1. Press **Next** on the remote and the system will move to the calf site. Obtain the arterial pressure and waveform in the same manner you did on the ankles.

## **Above Knee Pressure & Waveform**

1. Press **Next** on the remote and the system will move to the above knee site. Obtain the arterial pressure and waveform in the same manner you did on the ankles.

## **Thigh Pressure & Waveform (4-cuff)**

1. Press **Next** on the remote and the system will move to the thigh site. Obtain the arterial pressure and waveform in the same manner you did on the ankles.

## **Toe Pressure**

1. Press **Next** on the remote and the system will move to the toe site. Obtain the arterial pressure in the same manner you did on the arm and ankles or using the PPG sensor. \*NOTE\* digit cuffs inflate very quickly a light tap on the inflate button will often suffice (Hold **Inflate** until occlusion, release **Inflate**, press **Pressure** on Doppler signal return)

## **Toe Waveform**

1. Press **Next** and the system will move to the waveform site. Press and release the button with the **Waveform** image on the top right of the remote.

## **Left Side**

1. Repeat the above pressures and waveform sequence for the left side of the patient.

**When finished, save or print the exam.**

## Helpful Hints

### **Cuff techniques:**

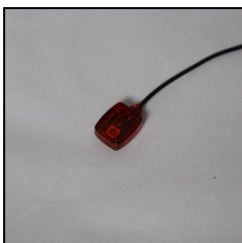
- Wrap the cuff snugly.
- Cuffs may be placed over thin clothing or stockings.
- Don't let the patient try to help by lifting their leg - as they relax their muscles the cuff will become loose.
- Placing a pillow under the patients heels may aid the examination.
- If the patient has tremors that interfere with the waveform, having them perform a few dorsiflexions with their toes before taking the waveform may help.

### **Doppler techniques:**

- Hold the probe like you would a pencil, close to the end.
- Move the probe back and forth laterally over the artery to obtain the best signal.
- Support the probe with your hand resting on the patient so that the probe does not move as the cuff is inflated and deflated.

### **Efficient Protocol:**

- Current clinical and CPT guidelines for code 93923 do not require that pressures be obtained at upper sites on the leg if the exam is performed using both ankle pressures and **PVR waveforms**.
- This may significantly reduce the time necessary for this exam while maintaining clinical value.
- This efficient protocol **significantly** increases patient comfort.
- Clinically, if the ankle ABI is unequivocally normal, the upper leg pressures will be normal as well.



PPG



PPG & cuff on Toe