PURPOSE:
To be used to screen patients for evidence of significant arterial insufficiency and to identify patients who require further work up.

CONSIDERATIONS:
1. Typically recommended for those age 50 or older and who have any of these risk factors for peripheral artery disease:
   a. A current or former smoker.
   b. Diabetes.
   c. Overweight. (a body mass index of 25 or greater)
   d. High blood pressure.
   e. High cholesterol.
2. To be performed by clinician trained in this procedure.
3. Ankle-Brachial Index (ABI) is a simple bedside test which compares perfusion pressure in the lower leg with that in the upper arm.
4. It provides only an indirect measure of peripheral perfusion and cannot be considered accurate in patients with non-compressible vessels e.g. the diabetic patient with vessel calcification.
5. ABI is performed to distinguish between arterial and venous stasis disease and to determine appropriateness of compression therapy.
6. See the table below with listed values to interpret ABI results.
7. Values outside the normal range should be reported to the physician and consultation with the physician should occur before proceeding with compression therapy.

EQUIPMENT:
Sphygmomanometer
Stethoscope
Doppler
Acoustic gel
Tissue/paper towel
Non-sterile gloves

PROCEDURE:
1. Adhere to Standard Precautions.
2. Remove sock, shoes and restricting clothing on patient.
   a. Place patient in a supine position for 5 to 15 minutes with feet externally rotated and covered to maintain warm temperature before the test for a resting blood pressure reading.
3. Obtain the brachial systolic pressure in each arm using standard technique. Record the highest brachial systolic pressure.
4. Place an appropriately sized cuff around the affected lower leg just above the ankle.
5. Apply acoustic gel over the pedal pulse location.
6. Hold the Doppler probe touching the skin over the dorsalis pedal pulse location very lightly on the affected extremity according to manufacturer's instructions.
7. Inflate the cuff to a level 20 to 30 mm Hg higher than the brachial systolic pressure.
8. Slowly deflate the cuff while monitoring for the return of the pulse signal. The point at which the arterial systolic pressure signal returns is recorded as the ankle pressure.
9. Repeat this procedure to obtain the ankle systolic pressure over the other pedal pulse on the affected extremity. The higher of the two values is used to determine the ABI.
10. Perform this procedure on both extremities if compression therapy is ordered for both extremities.
11. Calculate the ABI by dividing the higher of the two brachial systolic pressures by the higher of the two ankle systolic pressures on the involved extremity. If only one pedal pressure could be obtained, then that value is used. Document pedal pulse used.

AFTER CARE:
1. Document in Patient's record:
   a. Date, time, procedure and observations.
   b. Instructions given to patient and care giver.
   c. Communication with physician.

RESOURCES:


Interpretation of Ankle Brachial Index (ABI Results)

<table>
<thead>
<tr>
<th>ABI Value</th>
<th>Interpretation</th>
<th>Clinical Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater than 1.30</td>
<td>Rigid arteries</td>
<td>Refer for follow-up and monitoring may be indicative of calcification of the vessel wall which will require ultrasound test to check for peripheral artery disease. Renders ABI test invalid as a measure of peripheral perfusion.</td>
</tr>
<tr>
<td>1.0 to 1.29</td>
<td>Normal/No blockage</td>
<td></td>
</tr>
<tr>
<td>0.90 to 0.99</td>
<td>Borderline</td>
<td>Borderline perfusion which may or may not impact wound healing. Refer for follow-up and monitoring may be an early indicator or the beginnings of peripheral artery disease.</td>
</tr>
<tr>
<td>0.41 to 0.89*</td>
<td>Mild to Moderate blockage</td>
<td>Perfusion is impacted and wound healing will be affected. Refer for follow-up and monitoring may be indicative of significant blockage of ankle and leg arteries Patient may experience pain legs or buttocks when exercising.</td>
</tr>
<tr>
<td>0.00 to 0.4</td>
<td>Severe blockage</td>
<td>Severe ischemia, wound healing unlikely unless revascularization can be accomplished. Refer for follow-up and monitoring may be indicative of severe peripheral artery disease. Patient may experience pain in legs when resting.</td>
</tr>
</tbody>
</table>

*Do not use compression bandaging systems on patients with an ankle brachial pressure index (ABPI) of less than 0.8, or on diabetic patients with advanced small vessel disease.*