



CLINICAL POLICY

Ankle Brachial Index Policy

Non-Invasive Physiologic Study of the Lower Extremity Arterial System

A. EFFECTIVE DATE :

April 7, 2021

B. PURPOSE :

1. To determine the presence, severity, and general location of peripheral arterial occlusive disease.
2. Treadmill Exercise Testing is an adjunctive test to a basic Ankle Brachial Index (ABI) study which includes thigh and ankle segmental pressures, Brachial pressures, toe pressures as needed, thigh and ankle Continuous Wave (CW) Doppler waveforms, thigh and ankle Pulse Volume Recordings (PVRs) and digit Photo Plethysmography (PPG) waveforms if needed.

C. POLICY :

Ankle Brachial Index with or without Exercise

Indications:

- Consider Lower Extremity Arterial Disease (LEAD) in any patient with a lower extremity wound.
- Establish diagnosis of arterial disease in patients with suspected LEAD.
- Intermittent claudication.
- Over 50 years of age with a history of tobacco use or diabetes.
- Determine adequate arterial blood flow in lower extremities prior to compression therapy, or wound debridement.
- Ischemic rest pain
- Foot or toe ulcer gangrene/infection.
- Following revascularization or intervention, stent placement.
- Surveillance of known PAD (peripheral arterial disease).

Contraindications:

- Excruciating pain in lower legs/feet.
- Deep vein thrombosis, which could lead to dislodgement of the thrombus, where referral would be indicated for a duplex ultrasound test.
- Severe pain associated with lower extremity wound(s).
- Recent surgery, ulcers, casts or dressings that cannot or should not be compressed by pressure cuffs.
- Patients with incompressible vessels due to medial calcifications.
- Morbidly obese patients in whom high thigh pressure may be not obtainable due to limb girth.
- Patients who have significant tremors or involuntary movements may render waveforms collection unreliable or suboptimal.

D. SCOPE :

ABI is a non-invasive testing performed in the outpatient Calhoun Cardiovascular Center. It is performed by a certified vascular sonographer and is read by a physician (MD).

E. DEFINITIONS :

None

F. MATERIAL(S) NEEDED :

1. Portable Doppler with 8-10 MHz probe.
2. Use a 5 MHz probe if a large amount of edema is present at the ankle.
3. Aneroid sphygmomanometer.
4. Ultrasound transmission gel.
5. Alcohol pads to clean the Doppler.
6. Gauze, tissue or pads to remove transmission gel from patient's skin.
7. Towels, sheets, or blankets to cover trunk and extremities.
8. Paper and pen for recording test results; calculator.
9. Inspect equipment for damage and check batteries if a battery-operated Doppler is used.
10. Replace equipment if damaged or not properly calibrated.

G. PROCEDURE:

1. Obtain a thorough history and physical exam addressing relevant factors in assessment and performing the ABI.
2. Gather equipment and supplies necessary to perform test.
3. Introduce yourself to the patient.
4. Verify patient identity with 2-factor authentication (full name, DOB, T#)
5. Prepare patient and environment.
6. Ankle Brachial Index (ABI)
 - i. Measure brachial pressure with Doppler.
 - ii. Measure segmental thigh and ankle pressures with Doppler.
 - iii. Calculate the ABI.
 - iv. Document the ABI values and the interpretation of perfusion status.
7. Ankle Brachial Index with Treadmill Exercise
 - i. Blood Pressure cuffs should remain around both ankles and the arm with highest pressure throughout test.
 - ii. Have the patient walk on the treadmill for at least 6 minutes or until the patient develops chest pain, shortness of breath or severe leg pain.
 - iii. Documentation:
 1. Record resting ABI and Post Exercise ABI readings. Document incline settings, the speed settings and how long the patient walked.
 2. Document any variations from the protocol to accommodate patient's particular needs.

H. ATTACHMENTS :

None

I. REFERENCES :

None

J. SEARCH WORDS :

ABI, Ankle, Brachial, Index,

K. ENFORCEMENT:

Violations of this policy or associated procedures may result in appropriate disciplinary measures in accordance with University By-Laws, General Rules of Conduct for All University Employees, applicable collective bargaining agreements, the University of Connecticut Student Code, other applicable University Policies, or as outlined in any procedures document related to this policy.

L. STAKEHOLDER APPROVALS :

On File

M. COMMITTEE APPROVALS :

None

N. FINAL APPROVAL :

- | | |
|---|---------------------------|
| 1. <u>Andrew Agwunobi (Signed)</u>
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UConn Health Chief Executive Officer | <u>04/16/2021</u>
Date |
| 2. <u>Anne Horbatuck (Signed)</u>
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O. REVISION HISTORY :

Date Issued: 01/2008

Date Revised: 4/2021

Reviewed: 7/2010, 10/2014, 2/2015, 11/2017