PLETHYSMOGRAPHY (NCD 20.14)

Guideline Number: MPG250.06  Approval Date: November 11, 2020

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See Related Medicare Advantage Reimbursement Policy
- Multiple Procedure Payment Reduction (MPPR) on Diagnostic Cardiovascular and Ophthalmology Procedures Policy

See Related Medicare Advantage Coverage Summary
- Cardiovascular Diagnostic Procedures

POLICY SUMMARY

Overview

Plethysmography involves the measurement and recording (by one of several methods) of changes in the size of a body part as modified by the circulation of blood in that part. Plethysmography is of value as a noninvasive technique for diagnostic, preoperative, and postoperative evaluation of peripheral artery disease in the vascular surgery practice or internal medicine. Also it is a useful tool for the preoperative podiatric evaluation of the diabetic patient or other signs or symptoms indicative of peripheral vascular disease, or one who has intermittent claudication which have a bearing on the patient's candidacy for foot surgery.

A form of plethysmography is the venous occlusive pneumoplethysmography. In the setting of the hospital vascular laboratory, this technique is considered a reasonable and necessary procedure for the diagnostic evaluation of suspected peripheral arterial disease. It is unsuitable for routine use in the physician's office.

A number of other plethysmographic methods have been developed which make use of phenomena such as changes in electric impedance or changes in segmental blood pressure at constant volume to assess regional perfusion. Several of these methods have reached a level of development, which makes them clinically valuable.

Guidelines

Medicare coverage is extended to those procedures listed in Category I below when used for the accepted medical indications mentioned above. The procedures in Category II are still considered experimental and are not covered.

Category I - Covered
- Segmental Plethysmography - Included under this procedure are services performed with a regional plethysmograph, pulse volume recorder, recording oscillogram, and a differential plethysmograph.
- Ultrasonic Measurement of Blood Flow (Doppler) - While not strictly a plethysmographic method, it is also a useful tool in the evaluation of suspected peripheral vascular disease or preoperative screening of podiatric patients with suspected peripheral vascular compromise.
- Electrical Impedance Plethysmography.
- Strain Gauge Plethysmography - This test is based on recording the non-pulsatile aspects of inflowing blood at various points on an extremity by a mercury-in-silastic strain gauge sensor. The instrument consists of a chart recorder, a recording manometer and an automatic cuff inflation and deflation system.

Category II - Experimental

The following methods have not yet reached a level of development to allow their routine use in the evaluation of suspected peripheral vascular disease.
- Mechanical Oscillography - This is a non-standardized method, which offers poor sensitivity and is not considered superior to the simple measurement of peripheral blood pressure.
- Photoelectric Plethysmography - This method is considered useful only in determining whether a pulse is present and does not provide reproducible measurements of blood flow.
- Inductance Plethysmography - This method is considered experimental and does not provide reproducible results.
- Capacitance Plethysmography - This method is considered experimental and does not provide reproducible results.

Differential plethysmography, is a system, which uses an impedance technique to compare pulse pressures at various points along a limb, with a reference pressure at the wrist level or mid-brachial. Usually performed in the physician’s office, it is not clear whether this technique, meets the definition of plethysmography because quantitative measurements of blood flow are usually not made. The differential plethysmography system is a blood pulse recorder of undetermined value, which has the potential for significant overutilization. Reimbursement for studies done by techniques other than venous occlusive pneumoplethysmography should be denied, at least until additional data on these devices, including controlled clinical studies, become available.

**APPLICABLE CODES**

The following list(s) of codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this guideline does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>94726</td>
<td>Plethysmography for determination of lung volumes and, when performed, airway resistance</td>
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<tr>
<td>94729</td>
<td>Diffusing capacity (e.g., carbon monoxide, membrane) (List separately in addition to code for primary procedure)</td>
</tr>
<tr>
<td>94750</td>
<td>Pulmonary compliance study (e.g., plethysmography, volume and pressure measurements)</td>
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**Codes Not Exclusive to this NCD**

<table>
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<tr>
<th>CPT Code</th>
<th>Description</th>
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<tr>
<td>93922</td>
<td>Limited bilateral noninvasive physiologic studies of upper or lower extremity arteries, (e.g., for lower extremity: ankle/brachial indices at distal posterior tibial and anterior tibial/dorsalis pedis arteries plus bidirectional, Doppler waveform recording and analysis at 1-2 levels, or ankle/brachial indices at distal posterior tibial and anterior tibial/dorsalis pedis arteries plus volume plethysmography at 1-2 levels, or ankle/brachial indices at distal posterior tibial and anterior tibial/dorsalis pedis arteries with, transcutaneous oxygen tension measurement at 1-2 levels)</td>
</tr>
<tr>
<td>93923</td>
<td>Complete bilateral noninvasive physiologic studies of upper or lower extremity arteries, 3 or more levels (e.g., for lower extremity: ankle/brachial indices at distal posterior tibial and anterior tibial/dorsalis pedis arteries plus segmental blood pressure measurements with bidirectional Doppler waveform recording and analysis, at 3 or more levels, or ankle/brachial indices at distal posterior tibial and anterior tibial/dorsalis pedis arteries plus segmental volume plethysmography at 3 or more levels, or ankle/brachial indices at distal posterior tibial and anterior tibial/dorsalis pedis arteries plus segmental transcutaneous oxygen tension measurements at 3 or more level(s), or single level study with provocative functional maneuvers (e.g., measurements with postural provocative tests, or measurements with reactive hyperemia)</td>
</tr>
<tr>
<td>93924</td>
<td>Noninvasive physiologic studies of lower extremity arteries, at rest and following treadmill stress testing, (i.e., bidirectional Doppler waveform or volume plethysmography recording and analysis at rest with ankle/brachial indices immediately after and at timed intervals following performance of a standardized protocol on a motorized treadmill plus recording of time of onset of claudication or other symptoms, maximal walking time, and time to recovery) complete bilateral study</td>
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*CPT® is a registered trademark of the American Medical Association*
PURPOSE

The Medicare Advantage Policy Guideline documents are generally used to support UnitedHealthcare Medicare Advantage claims processing activities and facilitate providers’ submission of accurate claims for the specified services. The document can be used as a guide to help determine applicable:

- Medicare coding or billing requirements, and/or
- Medical necessity coverage guidelines; including documentation requirements.

UnitedHealthcare follows Medicare guidelines such as LCDs, NCDs, and other Medicare manuals for the purposes of determining coverage. It is expected providers retain or have access to appropriate documentation when requested to support coverage. Please utilize the links in the References section below to view the Medicare source materials used to develop this resource document. This document is not a replacement for the Medicare source materials that outline Medicare coverage requirements. Where there is a conflict between this document and Medicare source materials, the Medicare source materials will apply.

REFERENCES

CMS National Coverage Determinations (NCDs)
NCD 20.14 Plethysmography
Reference NCDs: NCD 220.5 Ultrasound Diagnostic Procedures
NCD 160.26 Cavernous Nerves by Electrical Stimulation with Penile Plethysmography
NCD 20.17 Noninvasive Tests of Carotid Function (NCD 20.17)
NCD 20.16 Cardiac Output Monitoring by Thoracic Electrical Bioimpedance (TEB)

CMS Local Coverage Determinations (LCDs) and Articles

<table>
<thead>
<tr>
<th>LCD</th>
<th>Article</th>
<th>Contractor</th>
<th>Medicare Part A</th>
<th>Medicare Part B</th>
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<tr>
<td>L33627 (Non-Invasive Vascular Studies)</td>
<td>A56758 (Billing and Coding: Non-Invasive Vascular Studies)</td>
<td>NGS</td>
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<td>L33696 (Noninvasive Physiologic Studies of Upper or Lower Extremity Arteries)</td>
<td>A57126 (Billing and Coding: Noninvasive Physiologic Studies of Upper or Lower Extremity Arteries)</td>
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<td>A55863 (Non-invasive physiologic studies of upper or lower extremity arteries revision to the Part A and Part B LCD)</td>
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<td>A57127 (Billing and Coding: Pulmonary Diagnostic Services)</td>
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<td>A58260 (Pulmonary diagnostic services – revision to Part A and Part B LCD/billing and coding article)</td>
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Plethysmography (NCD 20.14)
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Approved 11/11/2020
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**CMS Claims Processing Manual**  
Chapter 32; § 130.1 Billing and Payment Requirements

**GUIDELINE HISTORY/REVISION INFORMATION**

Revisions to this summary document do not in any way modify the requirement that services be provided and documented in accordance with the Medicare guidelines in effect on the date of service in question.

<table>
<thead>
<tr>
<th>Date</th>
<th>Action/Description</th>
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| 11/11/2020 | **Supporting Information**  
  - Updated References section to reflect the most current information; no change to guidelines  
  - Archived previous policy version MPG250.05 |

**TERMS AND CONDITIONS**

The Medicare Advantage Policy Guidelines are applicable to UnitedHealthcare Medicare Advantage Plans offered by UnitedHealthcare and its affiliates.

These Policy Guidelines are provided for informational purposes, and do not constitute medical advice. Treating physicians and healthcare providers are solely responsible for determining what care to provide to their patients. Members should always consult their physician before making any decisions about medical care.

Benefit coverage for health services is determined by the member specific benefit plan document* and applicable laws that may require coverage for a specific service. The member specific benefit plan document identifies which services are covered, which are excluded, and which are subject to limitations. In the event of a conflict, the member specific benefit plan document supersedes the Medicare Advantage Policy Guidelines.

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You are responsible for submission of accurate claims. Medicare Advantage Policy Guidelines are intended to ensure that coverage decisions are made accurately based on the code or codes that correctly describe the health care services provided. UnitedHealthcare Medicare Advantage Policy Guidelines use Current Procedural Terminology (CPT®), Centers for Medicare and Medicaid Services (CMS), or other coding guidelines. References to CPT® or other sources are for definitional purposes only and do not imply any right to reimbursement or guarantee claims payment.

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*For more information on a specific member's benefit coverage, please call the customer service number on the back of the member ID card or refer to the Administrative Guide.