Policy Number	**MED202.050**
Policy Effective Date	**12/15/2025**

External Counterpulsation (ECP) Therapy for Severe Angina

Table of Contents
Coverage
Policy Guidelines
Description
Rationale
Coding
References
Policy History

Related Policies (if applicable)
None

Disclaimer

Carefully check state regulations and/or the member contract.

Each benefit plan, summary plan description or contract defines which services are covered, which services are excluded, and which services are subject to dollar caps or other limitations, conditions or exclusions. Members and their providers have the responsibility for consulting the member's benefit plan, summary plan description or contract to determine if there are any exclusions or other benefit limitations applicable to this service or supply. If there is a discrepancy between a Medical Policy and a member's benefit plan, summary plan description or contract, the benefit plan, summary plan description or contract will govern.

Coverage

External counterpulsation (ECP) **may be considered medically necessary** for individuals who meet **ALL** the following criteria:

1. Have been diagnosed with disabling angina (New York Heart Association Class III or IV, Canadian Cardiovascular Society Classification, or equivalent classification), AND
2. In the opinion of a cardiologist or cardiothoracic surgeon,
   a. Are not readily amenable to surgical intervention, such as percutaneous transluminal coronary angioplasty (PTCA) or cardiac bypass because of any of the following:
   a. The individual's condition is inoperable, or at high risk of operative complications or postoperative failure; or
   b. The individual's coronary anatomy is not readily amenable to such procedures; or
   c. The individuals have co-morbid states that create excessive risk.

NOTE 1: A full course of therapy usually consists of 35 one-hour treatments, which may be offered once or twice daily, usually 5 days per week.

NOTE 2: This procedure must be done under direct supervision of a physician.

The use of ECP **is considered experimental, investigational and/or unproven** for all other cardiac indications not otherwise specified.

Policy Guidelines

None.

Description

External counterpulsation (ECP), commonly referred to as enhanced external counterpulsation, is a noninvasive outpatient treatment for coronary artery disease refractory to medical and/or surgical therapy. Although ECP devices are cleared by the U.S. Food and Drug Administration (FDA) for use in treating a variety of cardiac conditions, including stable or unstable angina pectoris, acute myocardial infarction and cardiogenic shock, the use of this device to treat cardiac conditions other than stable angina pectoris is not covered, since only that use has developed sufficient evidence to demonstrate its medical effectiveness. Non-coverage of hydraulic versions of these types of devices remains in force.

The patient is placed on a treatment table where their lower trunk and lower extremities are wrapped in a series of three compressive air cuffs which inflate and deflate in synchronization with the patient's cardiac cycle.

During diastole the three sets of air cuffs are inflated sequentially (distal to proximal) compressing the vascular beds within the muscles of the calves, lower thighs and upper thighs. This action results in an increase in diastolic pressure, generation of retrograde arterial blood flow and an increase in venous return. The cuffs are deflated simultaneously just prior to systole, which produces a rapid drop in vascular impedance, a decrease in ventricular workload and an increase in cardiac output.

The augmented diastolic pressure and retrograde aortic flow appear to improve myocardial perfusion, while systolic unloading appears to reduce cardiac workload and oxygen requirements. The increased venous return coupled with enhanced systolic flow appears to increase cardiac output. As a result of this treatment, most patients experience increased time until onset of ischemia, increased exercise tolerance, and a reduction in the number and severity of anginal episodes. Evidence was presented that this effect lasted well beyond the immediate post-treatment phase, with patients symptom-free for several months to two years. This procedure must be done under direct supervision of a physician.

Table 1. New York Heart Association and Canadian Cardiovascular Society Functional Classifications (2)

Class	New York Heart Association Functional Classification	Canadian Cardiovascular Society Functional Classification
I	Patients with cardiac disease but without resulting limitations of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, dyspnea or anginal pain.	Ordinary physical activity, such as walking and climbing stairs, does not cause angina. Angina with strenuous or rapid prolonged exertion at work or recreation.
II	Patients with cardiac disease resulting in slight limitation of physical activity. They are comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnea or anginal pain.	Slight limitation of ordinary activity. Walking or climbing stairs rapidly, walking uphill, walking or stair climbing after meals, in cold, in wind, or under emotional stress, or only during the few hours after awakening. Walking more than two blocks on the level and climbing more than one flight of ordinary stairs at a normal pace and in normal conditions.
III	Patients with cardiac disease resulting in marked limitation of physical activity. They are comfortable at rest. Less than ordinary physical activity causes fatigue, palpitation, dyspnea, or anginal pain.	Marked limitation of ordinary physical activity. Walking one to two blocks on the level and climbing one flight in normal condition.
IV	Patients with cardiac disease resulting in inability to carry on any physical activity without discomfort. Symptoms of cardiac insufficiency or of the anginal syndrome may be present even at rest. If any physical activity is undertaken, discomfort is increased.	Inability to carry on any physical activity without discomfort, anginal syndrome may be present at rest.

Adapted from Predictors of survival in heart failure with reduced ejection fraction in UpToDate. (42)

Regulatory Status

A variety of ECP devices have been cleared for marketing by the U.S. Food and Drug Administration (FDA) through the 510(k) process. Examples of ECP devices with FDA clearance are outlined in Table 2. FDA product code: DRN.

Table 2. FDA-Cleared ECP Devices (3)

Device	Manufacturer	Cleared	Indications

External Counterpulsation System	Vamed Medical Instrument	Sept 2019	• Chronic stable angina refractory to optimal anti-anginal medical therapy and without options for revascularization • In healthy patients to improved vasodilation, increase Vo2, and increase blood flow
Pure Flow External Counter-Pulsation Device	Xtreem Pulse	May 2018	• Chronic stable angina refractory to optimal anti-anginal medical therapy and without options for revascularization • In healthy patients to improved vasodilation, increase Vo2, and increase blood flow
Renew® NCP-5 External Counterpulsation System	Renew Group	Dec 2015	• Chronic stable angina refractory to optimal anti-anginal medical therapy and without options for revascularization • In healthy patients to improve vasodilation, increase Vo2, and increase blood flow
ECP Health System Model	ECP Health	Aug 2005	• Stable or unstable angina pectoris • Acute myocardial infarction • Cardiogenic shock • Congestive heart failure
CardiAssist™ Counter Pulsation System	Cardiomedics	Mar 2005	Ischemic heart disease by increasing perfusion during diastole in people with chronic angina pectoris, congestive heart failure, myocardial infarction, and cardiogenic shock
ACS Model NCP-2 External Counterpulsation Device	Applied Cardiac Systems	Aug 2004	• Stable or unstable angina pectoris • Acute myocardial infarction • Cardiogenic shock • Congestive heart failure
EECP® Therapy System	Vasomedical	Mar 2004	• Stable or unstable angina pectoris • Acute myocardial infarction • Cardiogenic shock • Congestive heart failure

ECP: enhanced external counterpulsation; FDA: Food and Drug Administration; Vo2: oxygen consumption.

Rationale

This policy is based on a review of coverage guidance from the Centers for Medicare and Medicaid Services (CMS) specific to external counterpulsation (ECP) therapy for severe angina.

Coding

Procedure codes on Medical Policy documents are included **only** as a general reference tool for each policy. **They may not be all-inclusive.**

The presence or absence of procedure, service, supply, or device codes in a Medical Policy document has no relevance for determination of benefit coverage for members or reimbursement for providers. **Only the written coverage position in a Medical Policy should be used for such determinations.**

Benefit coverage determinations based on written Medical Policy coverage positions must include review of the member's benefit contract or Summary Plan Description (SPD) for defined coverage vs. non-coverage, benefit exclusions, and benefit limitations such as dollar or duration caps.

CPT Codes	92971
HCPCS Codes	G0166

*Current Procedural Terminology (CPT®) ©2024 American Medical Association: Chicago, IL.

References

National Coverage Determination:

1. Center for Medicare & Medicaid Services (CMS). National coverage determination for external counterpulsation (ECP) therapy for severe angina (20.20). 2006. Available at: <https://www.cms.gov> (accessed November 5, 2025).

Other:

2. Colucci WS, Borlaug BA. Heart failure: clinical manifestations and diagnosis in adults. In: UpToDate, Gottlieb SS (Ed), UpToDate, Waltham, MA. Available at: <https://www.uptodate.com> (accessed November 5, 2025).
3. U. S. Food and Drug Administration 510(k) Premarket Notification Database Summary. Available at: <https://www.accessdata.gov> (accessed November 5, 2025).

Centers for Medicare and Medicaid Services (CMS)

The information contained in this section is for informational purposes only. HCSC makes no representation as to the accuracy of this information. It is not to be used for claims adjudication for HCSC Plans.

The Centers for Medicare and Medicaid Services (CMS) does have a national Medicare coverage position. Coverage may be subject to local carrier discretion.

A national coverage position for Medicare may have been changed since this medical policy document was written. See Medicare's National Coverage at <https://www.cms.hhs.gov>.

Policy History/Revision	
Date	**Description of Change**
12/15/2025	Document updated. Coverage revised without change to intent. Added reference 2, 3; others updated; others removed. Title changed from Enhanced External Counterpulsation (EECP).
11/01/2024	Document updated with literature review. The following change was made to coverage: Added long COVID to the list procedures that are experimental, investigational or unproven for Enhanced External Counterpulsation. References 12, 27-30, 35 and 42 added; others updated and two removed.
09/15/2023	Reviewed. No changes.
12/01/2022	Document updated with literature review. Coverage unchanged. No new references added; others removed.
07/01/2021	Reviewed. No changes.
10/01/2020	Document updated with literature review. Coverage unchanged. Added reference 42.
08/01/2019	Reviewed. No changes.
10/15/2018	Document updated with literature review. Coverage unchanged. Added reference 42.
08/15/2017	Reviewed. No changes.
10/01/2016	Document updated with literature review. Coverage unchanged.
06/01/2015	Reviewed. No changes.
08/01/2014	Document updated with literature review. Coverage unchanged.
08/15/2013	Document updated with literature review. The following was added: Enhanced External Counterpulsation (EECP) may be considered medically necessary for patients who meet all the following criteria: 1) Have been diagnosed with disabling angina (New York Heart Association Class III or IV, or equivalent classification) 2) In the opinion of a cardiologist or cardiothoracic surgeon, are refractory to maximum medical therapy, and 3) Are not readily amenable to surgical intervention, such as PTCA or cardiac bypass because of any of the following: Their condition is inoperable, at high risk of operative complications or postoperative failure, their coronary anatomy is not readily amenable to such procedures, or they have co-morbid states that create excessive risk. In addition, the following was added: The use of EECP is considered experimental, investigational and unproven for all other indications including but not limited to class II angina, arrhythmia, aortic insufficiency, peripheral vascular disease or phlebitis, severe hypertension, acute retinal artery occlusion, acute myocardial infarction, erectile dysfunction, ischemic stroke, cardiogenic shock, or heart failure.
08/15/2010	Revised/Updated Entire Document. Document updated with literature review. Coverage unchanged and remains experimental, investigational and unproven for all indications. An additional two indications (erectile dysfunction and ischemic stroke) added under examples of experimental, investigational, and unproven indications.

06/15/2008	Revised/Updated Entire Document
04/15/2006	Revised/Updated Entire Document
12/01/2003	Revised/Updated Entire Document
11/01/2000	Revised/Updated Entire Document
05/01/2000	Revised/Updated Entire Document
03/01/2000	Revised/Updated Entire Document
08/01/1999	Revised/Updated Entire Document
06/01/1999	Revised/Updated Entire Document
08/01/1998	New Medical Document