



## Hyperoxemic Reperfusion Therapy

Published: 09/01/2023

Next Review: 05/2024

Last Review: 07/2023

Medicare Link(s) Revised: N/A

### IMPORTANT REMINDER

*The Medicare Advantage Medical Policy manual is not intended to override the member Evidence of Coverage (EOC), which defines the insured's benefits, nor is it intended to dictate how providers are to practice medicine. Physicians and other health care providers are expected to exercise their medical judgment in providing the most appropriate care for the individual member, including care that may be both medically reasonable and necessary.*

*The Medicare Advantage medical policies are designed to provide guidance regarding the decision-making process for the coverage or non-coverage of services or procedures in accordance with the member EOC and Centers of Medicare and Medicaid Services (CMS) policies and manuals, along with general CMS rules and regulations. In the event of a conflict, applicable CMS policy or EOC language will take precedence over the Medicare Advantage Medical Policy. In the absence of a specific CMS coverage determination for a requested service, item or procedure, the health plan may apply CMS regulations, as well as their Medical Policy Manual or other applicable utilization management vendor criteria developed with an objective, evidence-based process using scientific evidence, current generally accepted standards of medical practice, and authoritative clinical practice guidelines.*

*Some services or items may appear to be medically indicated for an individual, but may be a direct exclusion of Medicare or the member's benefit plan. Medicare and member EOCs exclude from coverage, among other things, services or procedures considered to be investigational (experimental) or cosmetic, as well as services or items considered not medically reasonable and necessary under Title XVIII of the Social Security Act, §1862(a)(1)(A). In some cases, providers may bill members for these non-covered services or procedures. Providers are encouraged to inform members in advance when they may be financially responsible for the cost of non-covered or excluded services. Members, their appointed representative, or a treating provider can request coverage of a service or item by submitting a pre-service organization determination prior to services being rendered.*

## DESCRIPTION

Hyperoxemic reperfusion therapy is a treatment where supersaturated oxygen is reinfused into a person's blood stream at the location of a cardiac injury. It may also be referred to as supersaturated oxygen infusion therapy, intracoronary hyperoxemic perfusion, and aqueous oxygen therapy.

## MEDICARE ADVANTAGE POLICY CRITERIA

**CMS Coverage Manuals\***

None (See Policy Guidelines for Medicare-approved Investigational Device Exemption [IDE] studies and

---

*Cross References for members who may be enrolled in applicable IDE studies.)*

---

**National Coverage Determinations (NCDs)\***      None

---

**Noridian Healthcare Solutions (Noridian) Local Coverage Determinations (LCDs) and Articles (LCAs)\***      None

---

**Medical Policy Manual**      *Medicare coverage guidance is not available for hyperoxemic reperfusion therapy. Therefore, the health plan's medical policy is applicable.*

---

Hyperoxemic Reperfusion Therapy, Medicine,  
[Policy No. 173](#) (see "NOTE" below)

---

**NOTE:** If a procedure or device lacks scientific evidence regarding safety and efficacy because it is investigational or experimental, the service is noncovered as not reasonable and necessary to treat illness or injury. ([Medicare IOM Pub. No. 100-04, Ch. 23, §30 A](#)). According to Title XVIII of the Social Security Act, §1862(a)(1)(A), only medically reasonable and necessary services are covered by Medicare. In the absence of a NCD, LCD, or other coverage guideline, CMS guidelines allow a Medicare Advantage Organization (MAO) to make coverage determinations, applying an **objective, evidence-based process, based on authoritative evidence**. ([Medicare IOM Pub. No. 100-16, Ch. 4, §90.5](#)). The Medicare Advantage Medical Policy - Medicine Policy No. M-149 - provides further details regarding the plan's evidence-assessment process (see Cross References).

---

## POLICY GUIDELINES

### REGULATORY STATUS

The U.S. Food and Drug Administration (FDA) granted premarket approval for the TherOx Downstream<sup>®</sup> System manufactured by TherOx Inc. in April of 2019.<sup>[1]</sup> According to the FDA PMA letter, the TherOx Downstream System is indicated "for the preparation and delivery of SuperSaturated Oxygen Therapy (SSO2 Therapy) to targeted ischemic regions perfused by the patient's left anterior descending coronary artery immediately following revascularization by means of percutaneous coronary intervention (PCI) with stenting that has been completed within 6 hours after the onset of anterior acute myocardial infarction (AMI) symptoms caused by a left anterior descending artery infarct lesion."

The TherOx Downstream<sup>®</sup> System is the topic of investigation of the Medicare-approved Category A Investigational Device Exemption (IDE) study, *Evaluation of Intracoronary Hyperoxemic Oxygen Therapy in Anterior Acute Myocardial Infarction Patients (IC-HOT) (IC-HOT), G120029*.<sup>[2]</sup> The estimated study completion date was June 2018, but the clinicaltrials.gov registry entry for this study has not been updated since 2017.<sup>[3]</sup>

---

Note, the fact a new service or procedure has been issued a CPT/HCPCS code or is FDA approved for a specific indication does not, in itself, make the procedure medically reasonable and necessary. The FDA determines safety and effectiveness of a device or drug, but does not establish medical necessity. While Medicare may adopt FDA determinations regarding safety and effectiveness, Medicare or Medicare contractors evaluate whether or not the drug or device is reasonable and necessary for the Medicare population under §1862(a)(1)(A).

**CROSS REFERENCES**

[Investigational \(Experimental\) Services, New and Emerging Medical Technologies and Procedures, and Other Non-Covered Services](#), Medicine, Policy No. M-149

[Clinical Trials and Investigational Device Exemption \(IDE\) Studies](#), Medicine, Policy No. M-150

**REFERENCES**

1. FDA Premarket Approval (PMA) TherOx Downstream System. [Last cited 06/25/2023]. Available at: <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpma/pma.cfm?id=P170027>
2. Medicare Approved IDE Studies web page for NCT02603835 / G120029. [Last cited 06/25/2023]. Available at: <https://www.cms.gov/Medicare/Coverage/IDE/Approved-IDE-Studies-Items/G120029-NCT02603835>
3. <https://clinicaltrials.gov/ct2/show/NCT02603835>

**CODING**

Codes	Number	Description
CPT	0659T	Transcatheter intracoronary infusion of supersaturated oxygen in conjunction with percutaneous coronary revascularization during acute myocardial infarction, including catheter placement, imaging guidance (eg, fluoroscopy), angiography, and radiologic supervision and interpretation
HCPCS	None	

**\*IMPORTANT NOTE:** Medicare Advantage medical policies use the most current Medicare references available at the time the policy was developed. Links to Medicare references will take viewers to external websites outside of the health plan's web control as these sites are not maintained by the health plan.