



Pulmonary Artery Denervation (PADN) – Single Service

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

Specialty Area: Cardiology

Guideline Name: Pulmonary Artery Denervation (PADN) - Single Service

Literature review current through: 9/21/2023

Document last updated: 9/21/2023

Type: ☒ Adult (18+ yo) | ☐ Pediatric (0-17yo)

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Medical Necessity Criteria

Service: Pulmonary Artery Denervation (PADN)

General Guidelines

- **Units, Frequency, & Duration:** When medical necessity is met based on described clinical criteria, and exclusionary criteria are absent, pulmonary artery denervation may be approved as a single service.
- **Criteria for Subsequent Requests:** Approval when medical necessity criteria below are met.
- **Recommended Clinical Approach:** Pulmonary artery denervation (PADN) is a catheter based procedure to reduce pulmonary artery pressure in patients with pulmonary arterial hypertension (PAH). The most common method of PADN is catheter-directed thermal ablation.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

- **Pulmonary Artery Denervation (PADN)** is considered appropriate if **ANY** of the following is **TRUE**:¹⁻⁴
- ◆ Currently, there are no evidence-based indications for this service in the peer-reviewed, published literature.

Non-Indications

- **Pulmonary Artery Denervation (PADN)** is not considered appropriate if **ANY** of the following is **TRUE**:¹⁻⁴
- ◆ Service is considered experimental/investigational for pulmonary arterial hypertension (PAH) of any type.

Level of Care Criteria

Inpatient.

Procedure Codes (HCPCS/CPT)

| HCPCS/CPT Code | Code Description |
|-----------------------|--|
| 0793T | Percutaneous transcatheter thermal ablation of nerves innervating the pulmonary arteries, including right heart catheterization, pulmonary artery angiography, and all imaging guidance |
| 0632T | Percutaneous transcatheter ultrasound ablation of nerves innervating the pulmonary arteries, including right heart catheterization, pulmonary artery angiography, and all imaging guidance |

Medical Evidence

Zhang et al. (2022) performed a randomized control trial (RCT) to evaluate the efficacy of pulmonary artery denervation (PADN) for patients with group 1 pulmonary arterial hypertension (PAH) not on baseline medications. A total of 128 patients were included. The study was conducted in China. At six-month follow-up, patients reported improved exercise capacity, hemodynamic status, and clinical outcomes. Additional studies are needed to determine long-term outcomes of PADN for the population.¹

Davies et al. (2022) and Xie et al. (2022) also note the potential of PADN as a treatment for patients with PH and PAH; however, additional research is needed.²⁻³

National and Professional Organizations

The **European Society of Cardiology (ESC)** and the **European Respiratory Society (ERS)** published guidelines for the *Diagnosis and Treatment of Pulmonary Hypertension (PH)*. A lack of evidence exists from RCTs regarding the efficacy of PADN for the treatment of PH. The guidelines are endorsed by the **International Society for Heart and Lung Transplantation (ISHLT)** and the **European Reference Network on Rare Respiratory Diseases (ERN-LUNG)**.⁴

References

1. Zhang H, Wei Y, Zhang C, et al. Pulmonary artery denervation for pulmonary arterial hypertension: A sham-controlled randomized PADN-CFDA trial. JACC Cardiovasc Interv. 2022 Dec 12;15(23):2412–2423. doi: 10.1016/j.jcin.2022.09.013. PMID: 36121246.
2. Davies MG, Miserlis D, Hart JP. Current status of pulmonary artery denervation. Front Cardiovasc Med. 2022 Oct 3;9:972256. doi: 10.3389/fcvm.2022.972256. PMID: 36262207; PMCID: PMC9573987.
3. Xie Y, Liu N, Xiao Z, et al. The progress of pulmonary artery denervation. Cardiol J. 2022;29(3):381–387. doi: 10.5603/CJ.a2020.0186. PMID: 33438182; PMCID: PMC9170319.
4. Humbert M, Kovacs G, Hoeper MM, et al. 2022 ESC/ERS Guidelines for the diagnosis and treatment of pulmonary hypertension. Eur Respir J. 2023 Jan 6;61(1):2200879. doi: 10.1183/13993003.00879-2022. PMID: 36028254.

Clinical Guideline Revision History/Information

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