

Medical Coverage Policy | Adrenal-to-Brain Transplantation



EFFECTIVE DATE: 02|06|2010

POLICY LAST REVIEWED: 02|18|2026

OVERVIEW

The transplantation of adrenal medullary tissue to the corpus striatum is intended to ameliorate the motor and postural dysfunctions of Parkinson's disease. Striatal dopamine is depleted in Parkinson's disease patients. The rationale for the procedure is that adrenal tissue may restore dopamine activity in the corpus striatum. Adrenal-to-brain transplantation can involve either autografts or fetal allografts.

MEDICAL CRITERIA

Not applicable.

PRIOR AUTHORIZATION

Not applicable.

POLICY STATEMENT

Medicare Advantage Plans

Adrenal-to-brain transplantation with autograft or fetal allograft is not covered as the evidence is insufficient to determine the effects of the technology on health outcomes.

Commercial Products

Adrenal-to-brain transplantation with autograft or fetal allograft is considered not medically necessary as the evidence is insufficient to determine the effects of the technology on health outcomes.

COVERAGE

Benefits may vary between groups/contracts. Please refer to the appropriate Benefit Booklet, Evidence of Coverage, or Subscriber Agreement for applicable not medically necessary/not covered benefits/coverage.

BACKGROUND

The transplantation of adrenal medullary tissue to the corpus striatum is intended to ameliorate the motor and postural dysfunctions of Parkinson's disease. Striatal dopamine is depleted in Parkinson's disease patients. The rationale for the procedure is that adrenal tissue may restore dopamine activity in the corpus striatum. Adrenal-to-brain transplantation can involve either autografts or fetal allografts.

Autotransplantation entails simultaneous adrenalectomy and craniotomy with subsequent implantation of adrenal medullary tissue. Adrenal tissue is usually implanted in fragments into the caudate nucleus at the margin of the lateral ventricle, such that the tissue is exposed to cerebrospinal fluid (CSF). Tissue fragments can be anchored in place with surgical staples or with Gelfoam®. Besides the caudate nucleus, the putamen has also been used as an implantation site. Open microsurgical insertion of the tissue has been used in addition to stereotactic localization and implantation using a cannula.

Allografting involves harvesting adrenal tissue from an aborted fetus. The surgical techniques are the same as autotransplantation, with the exception of the adrenalectomy.

There are scarce data in the published, peer-reviewed scientific literature regarding the current clinical use of adrenal-to-brain transplantation in humans for any indication. In a systematic review of the literature, the Agency for Healthcare Research and Quality (AHRQ, 2003) noted that there is a lack of efficacy and substantial morbidity associated with the procedure for the treatment of Parkinson's disease.

The American Academy of Neurology (1999) recommended that adrenal-to-brain transplantation for the treatment of Parkinson's disease is not acceptable for safety reasons.

CODING

The following code is not covered for Medicare Advantage Plans and not medically necessary for Commercial Products:

S2103 Adrenal tissue transplant to brain

RELATED POLICIES

None

PUBLISHED

Provider Update, April 2026

Provider Update, March 2025

Provider Update, March 2024

Provider Update, March 2023

Provider Update, May 2022

REFERENCES:

1. Agency for Healthcare Research and Quality, US Dept. of Health and Human Services. Diagnosis and Treatment of Parkinson's Disease: A Systematic Review of the Literature. Evidence Report/Technology Assessment No 57, 2003. Available at URL address:
<http://archive.ahrq.gov/downloads/pub/evidence/pdf/parkinsons/parkinsons.pdf>
2. Hallet M, Litvan I. Evaluation of Surgery for Parkinson's Disease: A report of the therapeutics and technology assessment subcommittee of the American Academy of Neurology. Neurology. 1999; 53 (9):1910-1921.

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