Medical Policy

BlueCross BlueShield Kansas
An Independent licensee of the
Blue Cross Blue Shield Association

Title: Rethymic

Professional / Institutional
Original Effective Date: December 26, 2025
Latest Review Date:
Current Effective Date: December 26, 2025

State and Federal mandates and health plan member contract language, including specific provisions/exclusions, take precedence over Medical Policy and must be considered first in determining eligibility for coverage. To verify a member's benefits, contact Blue Cross and Blue Shield of Kansas Customer Service.

The BCBSKS Medical Policies contained herein are for informational purposes and apply only to members who have health insurance through BCBSKS or who are covered by a self-insured group plan administered by BCBSKS. Medical Policy for FEP members is subject to FEP medical policy which may differ from BCBSKS Medical Policy.

The medical policies do not constitute medical advice or medical care. Treating health care providers are independent contractors and are neither employees nor agents of Blue Cross and Blue Shield of Kansas and are solely responsible for diagnosis, treatment and medical advice.

If your patient is covered under a different Blue Cross and Blue Shield plan, please refer to the Medical Policies of that plan.

POLICY AGENT SUMMARY – MEDICAL PRIOR AUTHORIZATION

Indication	Dose
Congenital Athymia	Administer in a single surgical session via implantation into a healthy bed of muscle tissue in one or both quadriceps muscles under general anesthesia. • The dosage is determined by the total surface area of the Rethymic slices and the recipient BSA. Rethymic slices are variable in size and shape and the dose of manufactured Rethymic will be calculated at the facility to correspond to the patient's calculated dose. The recommended dose range is 5,000 to 22,000 mm^2 of Rethymic/m^2 recipient BSA – up to 42 cultured Rethymic slices will be provided for each patient. • Immunosuppressive therapy is recommended for patients receiving Rethymic based on evidence of maternal engraftment or an elevated response to phytohemagglutinin (PHA) depending on phenotype. • Rethymic is surgically implanted at a single site in Durham, N.C.

Indication	Dose
	– *Store at room temperature in the polycarbonate container in the insulated shipping box until ready for use. Do not refrigerate, freeze, agitate, or attempt to sterilize.* – *Manufacturing personnel record which slices are used during the surgery. If any slices are not administered to the patient, manufacturing personnel return this tissue to the manufacturing facility and dispose of this tissue as biohazardous waste in accordance with local requirements. Manufacturing personnel calculate the total dose that was administered to the patient.* – *Use Rethymic prior to the time and date of expiration printed on the polycarbonate container.* – *Monitoring parameters include, but are not limited to, phytohemagglutinin (PHA) response, CD3+ naïve T-cells, CD4+ T-cell count, IgG trough, infections, GvHD, & autoimmune disorders.*

PRIOR AUTHORIZATION CLINICAL CRITERIA FOR APPROVAL

I. Length of Authorization

Coverage will be provided for 1 dose only

II. Dosing Limits

A. Quantity Limit (max daily dose) [NDC Unit]:

- Rethymic slices: Up to 42 slices (approximately 55,000 mm^2 of Rethymic)

B. Max Units (per dose and over time) [HCPCS Unit]:

- Up to 42 slices (approximately 55,000 mm^2) of Rethymic

III. Initial Approval Criteria

Submission of medical records (chart notes) related to the medical necessity criteria is REQUIRED on all requests for authorizations. Records will be reviewed at the time of submission. Please provide documentation related to diagnosis, step therapy, and clinical markers (i.e. genetic and mutational testing) supporting initiation when applicable. Please provide documentation via direct upload through the PA web portal or by fax.

Coverage is provided in the following conditions:

Congenital Athymia † Φ [1,3]

- Used for immune reconstitution in pediatric patients; **AND**
- Patient has a diagnosis of congenital athymia based on flow cytometry documenting fewer than 50 naïve T cells/mm^3 (CD45RA+, CD62L+) in the peripheral blood or less than 5% of total T cells being naïve in phenotype *(Note: Requests for naïve T-cell counts ≥50 cells/mm^3 will be handled on a case-by-case basis)*; **AND**
  - Patient has athymia with a diagnosis of FOXN1 deficiency; **OR**
  - Patient has complete DiGeorge syndrome (cDGS), also referred to as complete DiGeorge anomaly (cDGA)**§**; **AND**

- Will not be used for the treatment of patients with severe combined immunodeficiency (SCID); **AND**
- Will not be used in patients with any of the following:
  - Heart surgery anticipated within 4 weeks prior to, or 3 months after, the planned Rethymic treatment date
  - Human immunodeficiency virus (HIV) infection
  - Deemed to be poor surgical candidates; **AND**
- Benefits and risks of treatment have been discussed with patients who have a pre-existing CMV infection or who have renal impairment; **AND**
- Patient has been screened for anti-HLA antibodies *(Note: Patients who have previously received a hematopoietic cell transplant with a mismatched allele require HLA matching of the thymus to that allele);* **AND**
- Patient will receive IVIG replacement and prophylactic antimicrobials prior to and after transplant until immune reconstitution (according to infection control protocols) occurs *(Note: Immune reconstitution sufficient to protect from infection is unlikely to develop prior to 6-12 months after treatment with Rethymic)*; **AND**
- Patient will not receive live or inactivated vaccines until IVIG/immunosuppressive therapy is discontinued and immune reconstitution has occurred; **AND**
- Patients with elevated baseline T cell proliferative response to PHA ≥ 5,000 cpm or > 20-fold over background or have evidence of maternal engraftment will receive combination therapy with immunosuppressive agents (e.g., rabbit antithymocyte globulin with or without calcineurin inhibitors and/or steroids)

§ Definition of complete DiGeorge syndrome (cDGS) or complete DiGeorge anomaly (cDGA) [1,3]
Athymia plus one of the following criteria: – Congenital heart defect – Hypoparathyroidism (or hypocalcemia requiring calcium replacement) – 22q11 hemizygosity – 10p13 hemizygosity – CHARGE (coloboma, heart defect, choanal atresia, growth and development retardation, genital hypoplasia, ear defects including deafness) Syndrome – CHD7 mutation

† FDA Approved Indication(s); ‡ Compendia Recommended Indication(s); Φ Orphan Drug

IV. Renewal Criteria [1]

Coverage cannot be renewed.

Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

CLINICAL RATIONALE

See package insert for FDA preshttps://dailymed.nlm.nih.gov/dailymed/index.cfm

CODING

The following codes for treatment and procedures applicable to this policy are included below for informational purposes. This may not be a comprehensive list of procedure codes applicable to this policy.

Inclusion or exclusion of a procedure, diagnosis or device code(s) does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

The code(s) listed below are medically necessary ONLY if the procedure is performed according to the "Policy" section of this document.

HCPCS code:

- J3590 – Unclassified biologics
- C9399 – Unclassified drugs or biologicals

NDC(s):

- Rethymic single-dose unit supplied with up to forty-two ready-to-use slices of processed thymus tissue: 72359-0001-xx

REVISIONS	
Posted: 11-26-2025 Effective: 12-26-2025	New medical policy added to the bcbsks.com web site. Policy is maintained by Prime Therapeutics LLC.

REFERENCES

1. Rethymic [package insert]. Marlborough, MA; Sumitomo Pharma America, Inc.; July 2023. Accessed December 2023.
2. Collins C, Sharpe E, Silber A, Kulke S, Hsieh EWY. Congenital athymia: genetic etiologies, clinical manifestations, diagnosis, and treatment. J Clin Immunol. 2021;41(5):881-895. doi.org/10.1007/s10875-021-01059-7.
3. Markert ML, Gupton SE, McCarthy EA. Experience with cultured thymus tissue in 105 children. J Allergy Clin Immunol. Published online August 3, 2021. doi:10.1016/j.jaci.2021.06.028