

PHARMACY POLICY STATEMENT

Indiana Medicaid

DRUG NAME	Crysvita (burosumab-twza)
BILLING CODE	J0584
BENEFIT TYPE	Medical
SITE OF SERVICE ALLOWED	Office
COVERAGE REQUIREMENTS	Prior Authorization Required (Non-Preferred Product) QUANTITY LIMIT— see “dosage allowed” sections
LIST OF DIAGNOSES CONSIDERED NOT MEDICALLY NECESSARY	Click Here

Crysvita (burosumab-twza) is a **non-preferred** product and will only be considered for coverage under the **medical** benefit when the following criteria are met:

Members must be clinically diagnosed with one of the following disease states and meet their individual criteria as stated.

X-LINKED HYPOPHOSPHATEMIA (XLH)

For **initial** authorization:

1. Member is 6 months old or older; AND
2. Medication must be prescribed by or in consultation with an endocrinologist, nephrologist, or rheumatologist; AND
3. Member has a diagnosis of XLH confirmed by **at least one** of the following:
 - a) PHEX (Phosphate regulating gene with homology to endopeptidases located on the X chromosome) mutation per genetic testing;
 - b) Family history positive for XLH (first-degree relative);
 - c) Elevated plasma levels of intact fibroblast growth factor 23 (FGF23); AND
4. Lab results show fasting serum phosphorus level **BELOW** the reference range for age; AND
5. Member has chart notes documenting the following:
 - a) Pediatric: Radiographic evidence of active bone disease including rickets and/or lower extremity bowing;
 - b) Adult: Persistent bone and/or joint pain due to XLH and/or osteomalacia that limits daily activities; pseudofractures or osteomalacia-related fractures; AND
6. Member is refractory to or develops complications from conventional treatment with phosphate and active vitamin D (e.g., calcitriol, paricalcitol, doxercalciferol, calcifediol); AND
7. Member does not have ANY of the following:
 - a) Concurrent use of oral phosphate and active vitamin D analogs;
 - b) Severe renal impairment or ESRD.
8. **Dosage allowed:** Adult XLH (18 years of age and older): 1 mg/kg to the nearest 10 mg up to a maximum dose of 90 mg subQ every four weeks.

Pediatric XLH (6 months to 17 years): For members who weigh < 10 kg, starting dose is 1 mg/kg to the nearest 1 mg, subQ every two weeks. For members who weigh 10 kg or greater, starting dose is 0.8 mg/kg to the nearest 10 mg, subQ every two weeks. The minimum starting dose is 10 mg up to a maximum dose of 90 mg.

Dose may be increased up to approximately 2 mg/kg (maximum 90 mg), every two weeks.

If member meets all the requirements listed above, the medication will be approved for 6 months.

For **reauthorization**:

1. Lab results show an improved serum phosphorus level compared to baseline; AND
2. Chart notes have been provided that show the member has improvement of signs and symptoms of disease (e.g. severity of rickets, linear growth, reduced pain/stiffness, fracture healing, physical function [6MWT]); AND
3. Member is not taking oral phosphate or active vitamin D analogs; AND
4. Member does not have severe renal impairment or ESRD.

If member meets all the reauthorization requirements above, the medication will be approved for an additional 12 months.

TUMOR-INDUCED OSTEOMALACIA (TIO)

For **initial** authorization:

1. Member is 2 years old or older; AND
2. Medication must be prescribed by or in consultation with an endocrinologist, nephrologist, or rheumatologist; AND
3. Member has chart notes showing a diagnosis of FGF23-related hypophosphatemia in tumor-induced osteomalacia (TIO); AND
4. The tumor is not amenable to surgical excision or cannot be located; AND
5. Chart notes show elevated fibroblast growth factor 23 (FGF23); AND
6. Lab results show fasting serum phosphorus level BELOW the reference range for age; AND
7. Member does not have ANY of the following:
 - a) Concurrent use of oral phosphate and active vitamin D analogs (eg, calcitriol, paricalcitol, doxercalciferol, calcifediol);
 - b) Severe renal impairment or ESRD.
8. **Dosage allowed:** See package insert for titration details. Adult= Starting dosage: 0.5 mg/kg, rounded to nearest 10 mg, up to a max of 180mg subQ every 4 weeks; Maximum dosage: 2 mg/kg not to exceed 180 mg every 2 weeks. Pediatric= Starting dosage: 0.4 mg/kg, rounded to nearest 10 mg, up to 180mg subQ every 2 weeks; Maximum dosage: 2 mg/kg not to exceed 180 mg every 2 weeks.

If member meets all the requirements listed above, the medication will be approved for 6 months.

For **reauthorization**:

1. Lab results show an improved serum phosphorus level compared to baseline; AND
2. Chart notes demonstrate improvement of signs and symptoms of disease compared to baseline (e.g. bone pain, muscle weakness, fractures); AND
3. Member is not taking oral phosphate or active vitamin D analogs; AND
4. Member does not have severe renal impairment or ESRD.

If member meets all the reauthorization requirements above, the medication will be approved for an additional 12 months.

CareSource considers Crysvita (burosumab-twza) not medically necessary for the treatment of the diseases that are not listed in this document.

DATE	ACTION/DESCRIPTION
05/16/2018	New policy for Crysvita created.
09/26/2019	Kainos assay requirement for XLH diagnosis was removed. RSS score requirement was replaced with clinical finding requirement. Criteria about HIV presence, presence of hypocalcemia or hypercalcemia were removed.
09/21/2020	Added criteria for new indication of TIO. Revised XLH criteria: added rheumatology as an acceptable specialist, edited diagnostic confirmation to match clinical guideline by Haffner et al (added FGF23),

simplified/summarized the section on radiologic and clinical findings, added trial of conventional therapy per guideline, changed exclusions to match TIO section, simplified and made slight correction to dosing, changed initial auth duration to be 6 months, modified the re-auth criteria to more closely match TIO.

References:

1. Crysivita [package insert]. Novato, CA: Ultragenyx Pharmaceutical Inc.; June 2020.
2. ClinicalTrials.gov. Identifier: NCT 02163577. Study of KRN23, a Recombinant Fully Human Monoclonal Antibody Against FGF23, in Pediatric Subjects With X-linked Hypophosphatemia (XLH). Available at: <https://clinicaltrials.gov/ct2/show/NCT02163577?term=02163577&rank=1>.
3. ClinicalTrials.gov. Identifier: NCT 02750618. Study of the Safety, Pharmacodynamics (PD) and Efficacy of KRN23 in Children From 1 to 4 Years Old With X-linked Hypophosphatemia (XLH). Available at: <https://clinicaltrials.gov/ct2/show/NCT02750618?term=02750618&rank=1>.
4. ClinicalTrials.gov. Identifier: NCT 02526160. Study of KRN23 in Adults With X-linked Hypophosphatemia (XLH). Available at: <https://clinicaltrials.gov/ct2/show/NCT02526160?term=02526160&rank=1>.
5. ClinicalTrials.gov. Identifier: NCT 02537431. Open Label Study of KRN23 on Osteomalacia in Adults With X-linked Hypophosphatemia (XLH). Available at: <https://clinicaltrials.gov/ct2/show/NCT02537431?term=02537431&rank=1>.
6. Carpenter TO, Whyte MP, Imel EA, et al. Burosumab Therapy in Children with X-Linked Hypophosphatemia. *N Engl J Med* 2018; 378:1987-1998. DOI: 10.1056/NEJMoa1714641.
7. Linglart A, Bioso-Duplan M, Briot K, et al. Therapeutic management of hypophosphatemic rickets from infancy to adulthood. *Endocr Connect*. 2014;3(1):R13-R30. doi:10.1530/EC-13-0103
8. Carpenter TO. New perspectives on the biology and treatment of X-linked hypophosphatemic rickets. [Review] [109 refs]. *Pediatr Clin North Am*. 1997;44(2):443-466.
9. Foster BL, Ramnitz MS, Gafni RI, et al. Rare Bone Diseases and Their Dental, Oral, and Craniofacial Manifestations. *J Dent Res*. 2014;93(7):7S-19S. doi:10.1177/0022034514529150
10. Linglart A, Dvorak-Ewell M, Marshall A, Martin JS, Skrinar A. Impaired mobility and pain significantly impact the quality of life of children with X-linked hypophosphatemia (XLH). *Int Conf Child Bone Heal*. 2015:P198. doi:10.1530/boneabs.4.P198
11. Skrinar A, Marshall A, Martin JS, Dvorak-Ewell M. X-Linked hypophosphatemia (XLH) impairs skeletal health outcomes and physical function in affected adults. *Endocr Soc Meet*. 2015:SAT-244. doi:doi:10.1210/endo-meetings.2015.BCHVD.11.SAT-244
12. Veilleux LN, Cheung M, Amor M Ben, Rauch F. Abnormalities in muscle density and muscle function in hypophosphatemic rickets. *J Clin Endocrinol Metab*. 2012;97(8). doi:10.1210/jc.2012-1336
13. Looser zones. Radiopaedia Website. <https://radiopaedia.org/articles/looser-zones-1>. Accessed October 9, 2017.
14. Ultragenyx Pharmaceutical Inc. UX023-CL201. Study of KRN23, a Recombinant Fully Human Monoclonal Antibody Against Fibroblast Growth Factor 23 (FGF23), in Pediatric Subjects With X-linked Hypophosphatemia (XLH) [NCT02163577]. <https://clinicaltrials.gov/ct2/show/NCT02163577>.
15. Ultragenyx Pharmaceutical Inc. UX023-CL301. Efficacy and Safety of KRN23 Versus Oral Phosphate and Active Vitamin D Treatment in Pediatric Patients With X Linked Hypophosphatemia (XLH) [NCT02915705]. <https://clinicaltrials.gov/ct2/show/NCT02915705>.
16. Beck-Nielsen SS, Mughal Z, Haffner D, et al. FGF23 and its role in X-linked hypophosphatemia-related morbidity. *Orphanet J Rare Dis*. 2019;14(1):58. doi:10.1186/s13023-019-1014-8.
17. Linglart A, Bioso-Duplan M, Briot K, et al. Therapeutic management of hypophosphatemic rickets from infancy to adulthood. *Endocr Connect*. 2014;3(1). doi:10.1530/EC-13-0103.
18. FDA approval documentation. Available at: https://www.accessdata.fda.gov/drugsatfda_docs/nda/2018/761068Orig1s000MultidisciplineR.pdf. Accessed 11/16/19.
19. Study of Burosumab (KRN23) in Adults With Tumor-Induced Osteomalacia (TIO) or Epidermal Nevus Syndrome (ENS). Clinicaltrials.gov identifier: NCT02304367. Updated August 10, 2020. Accessed September 21, 2020. <https://www.clinicaltrials.gov/ct2/show/NCT02304367>.
20. A Study of KRN23 in Subjects With Tumor-Induced Osteomalacia or Epidermal Nevus Syndrome. Clinicaltrials.gov identifier: NCT02722798. Updated September 3, 2020. Accessed September 21, 2020. <https://clinicaltrials.gov/ct2/show/NCT02722798>.
21. Oncogenic osteomalacia. Genetic and Rare Diseases Information Center. <https://rarediseases.info.nih.gov/diseases/9652/tumor-induced-osteomalacia>. Published October 19, 2017. Accessed September 22, 2020.

22. Zuo QY, Wang H, Li W, et al. Treatment and outcomes of tumor-induced osteomalacia associated with phosphaturic mesenchymal tumors: retrospective review of 12 patients. *BMC Musculoskelet Disord*. 2017;18(1):403. Published 2017 Sep 21. doi:10.1186/s12891-017-1756-1
23. Ruppe MD. X-Linked Hypophosphatemia. 2012 Feb 9 [Updated 2017 Apr 13]. In: Adam MP, Ardinger HH, Pagon RA, et al., editors. GeneReviews® [Internet]. Seattle (WA): University of Washington, Seattle; 1993-2020. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK83985/>
24. Whyte MP, Carpenter TO, Gottesman GS, et al. Efficacy and safety of burosumab in children aged 1-4 years with X-linked hypophosphataemia: a multicentre, open-label, phase 2 trial. *Lancet Diabetes Endocrinol*. 2019;7(3):189-199. doi:10.1016/S2213-8587(18)30338-3
25. Portale AA, Carpenter TO, Brandi ML, et al. Continued Beneficial Effects of Burosumab in Adults with X-Linked Hypophosphatemia: Results from a 24-Week Treatment Continuation Period After a 24-Week Double-Blind Placebo-Controlled Period. *Calcif Tissue Int*. 2019;105(3):271-284. doi:10.1007/s00223-019-00568-3
26. Insogna KL, Briot K, Imel EA, et al. A Randomized, Double-Blind, Placebo-Controlled, Phase 3 Trial Evaluating the Efficacy of Burosumab, an Anti-FGF23 Antibody, in Adults With X-Linked Hypophosphatemia: Week 24 Primary Analysis. *J Bone Miner Res*. 2018;33(8):1383-1393. doi:10.1002/jbmr.3475
27. Imel EA, Glorieux FH, Whyte MP, et al. Burosumab versus conventional therapy in children with X-linked hypophosphataemia: a randomised, active-controlled, open-label, phase 3 trial [published correction appears in *Lancet*. 2019 Jul 13;394(10193):120]. *Lancet*. 2019;393(10189):2416-2427. doi:10.1016/S0140-6736(19)30654-3
28. Haffner D, Emma F, Eastwood DM, et al. Clinical practice recommendations for the diagnosis and management of X-linked hypophosphataemia. *Nature Reviews Nephrology*. 2019;15(7):435-455. doi:10.1038/s41581-019-s0152-5

Effective date: 04/01/2021

Revised date: 09/21/2020