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Clinical Policy Document: Radiation Therapy, Particle Beam	**Date Approved:** 09/10/25
Reference #: MC/L024	**Replaces Effective Clinical Policy Dated**: 09/28/24

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PLANS IN SCOPE

Aspirus Health Plan

BACKGROUND & PURPOSE:

Particle beam therapy is a form of radiotherapy where beams of protons or neutrons are used for cancer treatment. Proton therapy is the most common type of particle beam therapy. At this time neutron beam therapy has extremely limited applications.

Proton Beam

Proton beam therapy (PBT) is a type of cancer treatment that uses protons (positively charged particles found in the nucleus of an atom) to target tumors in the body. PBT delivers radiation to a tumor with less collateral damage than traditional radiation therapy. The majority of the energy is delivered just below the tissue surface and the remainder delivered across the beam path to the target and then out of the body. PBT can be scattered (broadened beam energy) or scanning (swept laterally). Scanning can be combined with magnets to vary the energy and extent of the beam, and this is called Intensity Modulated Proton Therapy (IMPT).

Neutron Beam

Neutron beam therapy is a radiotherapy that uses neutrons (neutrally charged particles) to target tumors. Neutrons beam therapy is used for tumors with low oxygen levels and a slower cell division cycle. Neutrons produce 20-100 times more energy than photon radiation but may cause more damage to surrounding tissues than traditional photon (x-ray) radiation.

Studies have shown that better local control of salivary cancers was achieved from neutron vs photon therapy; however, the risk of late effects is high and increases over time. Neutron therapy is no longer routinely recommended for treatment of salivary gland cancers and there is only one center in the United States that continues to offer this treatment.

The intent of this policy is to provide coverage guidelines for PBT and NBT.

Please refer to the member's benefit document for specific information. To the extent there is any inconsistency between this policy and the terms of the member's benefit plan or certificate of coverage, the terms of the member's benefit plan document will govern.

COVERAGE INDICATIONS:

General coverage indications

- All healthcare services must be ordered by a provider
- All healthcare services must be medically necessary
- All applicable conservative treatments must have been tried

Proton Beam Therapy

PBT is appropriate for multiple body sites (head and neck, breast, thoracic, abdominal, liver, genitourinary, and pelvic) and should be used in cases when sparing surrounding normal tissue provides extra clinical benefit. Populations must meet one of the following (I-III):

I. The target volume is near one or more critical structures AND a steep dose gradient is needed to avoid exceeding the tolerance dose to the critical structure(s).
II. A proton-based technique would reduce the total radiation dose delivered to the target and lowering the dose would place the target or organs at risk and/or a higher dose would be associated with toxicity.
III. The same or an immediately adjacent area has been previously irradiated, and the dose distribution must be adjusted to avoid exceeding the cumulative tolerance dose of nearby normal tissue

Exclusions

Cases are dependent on location and potential toxicity. There is inadequate safety or efficacy information in lymphoma at this time.

Neutron Beam Therapy

Treatment with neutron beam therapy is only medically necessary for any of the following salivary gland tumors:

I. Inoperable tumor
II. Locally advanced tumor especially in persons with gross residual disease
III. Recurrent neoplasms
IV. Unresectable tumor

Exclusions

There is inadequate safety and/or efficacy data in the following populations:

I. Colon cancer
II. Dermatofibrosarcoma protuberans
III. Ghost cell odontogenic carcinoma
IV. Glioma
V. Kidney cancer
VI. Laryngeal cancer
VII. Lung cancer
VIII. Pancreatic cancer
IX. Prostate cancer
X. Rectal cancer
XI. Soft tissue sarcoma.

Medical Records Documentation

Benefit coverage is determined by review of member specific benefit plan information and all applicable laws. Medical records documentation may be required to assess if the member meets criteria; however, provision of records does not guarantee coverage.

DEFINITIONS

Cumulative tolerance dose: The maximum amount of radiation that tissue can tolerate without damage across the planned treatments or exposure

Radiation therapy: Use of high-energy particles or waves to destroy or damage cancer cells. Radiation therapy works by injuring DNA inside the cancer cells to keep them from growing and dividing. Radiation therapy can also damage surrounding normal or healthy cells.

APPLICABLE CODES

Note: The code list below is provided for guidance. Not all procedures will contain these codes. Code coverage will depend on coverage guidelines above. All intrauterine procedure coverage requests will require medical review.

Proton Beam Therapy

Code Type	Code	Description
77014	CPT	Computed tomography guidance for placement of radiation fields
77263	CPT	Therapeutic Radiology Treatment Planning; complex
77290	CPT	Therapeutic radiology simulation-aided field setting; complex
77293	CPT	Respiratory motion management simulation (List separately in addition to code for primary procedure) .
77321	CPT	Special teletherapy port plan, particles, hemi body, total body
77295	CPT	Therapeutic radiology simulation-aided field setting; 3-dimensional
77301	CPT	Intensity Modulated Radiation Therapy (IMRT) plan, including dose-volume histograms for target and critical structure partial tolerance specifications.
77338	CPT	Multi-leaf collimator (MLC) device(s) for intensity modulated radiation therapy (IMRT), design and construction per IMRT plan.
77387	CPT	Guidance for localization of target volume for delivery of radiation treatment delivery, includes intrafraction tracking, when performed
G6001	HCPCS	Ultrasonic guidance for placement of radiation therapy fields
G6002	HCPCS	KV imaging- Stereoscopic X-ray guidance for localization of target volume for the delivery of radiation therapy
G6017	HCPCS	Intra-fraction localization and tracking of target or patient motion during delivery of radiation therapy (e.g., 3-D positional tracking, gating, 3-D surface tracking), each fraction of treatment

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Neutron Beam Therapy

Code Type	Code	Description
61796	CPT	Stereotactic radiosurgery (particle beam, gamma ray or linear accelerator); 1 simple cranial lesion
61797	CPT	each additional cranial lesion, simple (List separately in addition to code for primary procedure)
61798	CPT	1 complex cranial lesion
61799	CPT	each additional cranial lesion, complex (List separately in addition to code for primary procedure)
77423	CPT	High energy neutron radiation treatment delivery, 1 or more isocenter(s) with coplanar or non-hyphencoplanar geometry with blocking and/or wedge, and/or compensator(s)

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POLICY/REVISION HISTORY

Date	Summary of Changes	Approval By
09/10/25	Initial Policy Development	Optum Medical and Pharmacy Subcommittee

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Southampton, PA 18966-9998
Phone: 1-866-631-5404 (TTY: 711)
Fax: 763-847-4010
Email: customerservice@aspirushealthplan.com

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U.S. Department of Health and Human Services
200 Independence Avenue, SW
Room 509F, HHH Building
Washington, D.C. 20201
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