

POLICY TITLE	CRYOSURGICAL ABLATION OF PRIMARY OR METASTATIC LIVER TUMORS
POLICY NUMBER	MP- 1.121

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I. POLICY

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Cryosurgical ablation of either primary or metastatic tumors in the liver may be considered medically necessary when **ALL** of the following are met:

- Tumor must be unresectable by open surgical means or member is not surgical candidate; **AND**
- Tumor must be of primary hepatocellular carcinoma or hepatic metastases from either primary colorectal cancer or neuroendocrine cancer; **AND**
- Tumor measures less than five (5) cm in diameter; **AND**
- There is no evidence of extrahepatic malignancy; **AND**
- Tumor is amenable to cryosurgical ablation.

Cross-references:

- MP-1.088** Cryosurgical Ablation of Miscellaneous Solid Tumors other than Liver, Prostate or Dermatologic Tumors
- MP-1.055** Radiofrequency Ablation of Primary or Metastatic Liver Tumors
- MP-1.084** Radiofrequency Ablation of Miscellaneous Solid Tumors, Excluding Liver Tumors

II. PRODUCT VARIATIONS

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This policy is only applicable to certain programs and products administered by Capital BlueCross please see additional information below, and subject to benefit variations as discussed in Section VI below.

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FEP PPO- Refer to FEP Medical Policy Manual MP-7.01.75, Cryosurgical Ablation of Primary or Metastatic Liver Tumors. The FEP Medical Policy Manual can be found at: <https://www.fepblue.org/benefit-plans/medical-policies-and-utilization-management-guidelines/medical-policies>.

III. DESCRIPTION/BACKGROUND

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Liver Metastases

Hepatic tumors can due to primary liver cancer or metastases to the liver from nonhepatic primary tumors. Primary liver cancer can arise from hepatocellular tissue (hepatocellular carcinoma [HCC]) or intrahepatic biliary ducts (cholangiocarcinoma). Multiple tumors metastasize to the liver, but there is particular interest in the treatment of hepatic metastases from colorectal carcinoma (CRC) given the propensity of CRC to metastasize to the liver and the high prevalence of CRC. Liver metastases from neuroendocrine tumors present a unique clinical situation. Neuroendocrine cells produce and secrete a variety of regulatory hormones, or neuropeptides, which include neurotransmitters and growth factors. Overproduction of the specific neuropeptides by cancerous cells causes various symptoms, depending on the hormone produced.

Treatment

Treatment of liver metastases is undertaken to reduce endocrine-related symptoms, in addition to prolonging survival and reducing symptoms related to the hepatic mass.

Surgical resection with tumor-free margins or liver transplantation are the primary treatments available that have curative potential. Many hepatic tumors are unresectable at diagnosis, due either to their anatomic location, size, number of lesions, or underlying liver reserve. Local therapy for hepatic metastasis is indicated only when there is no extrahepatic disease, which rarely occurs for patients with primary cancers other than CRC or certain neuroendocrine malignancies. For liver metastases from CRC, postsurgical adjuvant chemotherapy has been reported to decrease recurrence rates and prolong time to recurrence. Combined systemic and hepatic arterial chemotherapy may increase disease-free intervals for patients with hepatic metastases from CRC but apparently is not beneficial for those with unresectable HCC.

Various locoregional therapies for unresectable liver tumors have been evaluated: cryosurgical ablation (cryosurgery); radiofrequency ablation; laser ablation; transhepatic arterial embolization, chemoembolization, or radioembolization with yttrium-90 microspheres; microwave coagulation; and percutaneous ethanol injection. Cryosurgical ablation occurs in tissue that has been frozen by at least 3 mechanisms: (1) formation of ice crystals within cells, thereby disrupting membranes and interrupting cellular metabolism among other processes; (2) coagulation of blood, thereby interrupting blood flow to the tissue, in turn causing ischemia and apoptosis (cell death); and (3) induction of apoptosis.

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Recent studies, including a small randomized controlled trial and case series, have reported on experience with cryosurgical and other ablative methods used in combination with subtotal resection and/or procedures such as transarterial chemoembolization.

Regulatory Status

Several cryosurgical devices have been cleared by the U.S. Food and Drug Administration. For example, in 1996, the Endocare™ Cryocare System (Endocare) was cleared for marketing through the 510(k) process for "use in general surgery, dermatology, neurology, thoracic surgery, ENT [ears, nose, throat], gynecology, oncology, proctology and urology for the ablation of tissue, including liver metastases, skin lesions, warts, and removal of prostate tissue." U.S. Food and Drug Administration product code: GEH.

IV. RATIONALE

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SUMMARY OF EVIDENCE

For individuals who have unresectable primary hepatocellular carcinoma amenable to locoregional therapy who receive Cryosurgical Ablation, the evidence includes a randomized controlled trial (RCT), several nonrandomized comparative studies, and multiple noncomparative studies. Relevant outcomes are overall survival, disease-specific survival, and treatment-related mortality and morbidity. The available RCT comparing cryoablation with radiofrequency ablation demonstrated lower rates of local tumor progression with cryoablation, but no differences in survival outcomes between groups. Although this trial provided suggestive evidence that cryoablation is comparable with radiofrequency ablation, trial limitations would suggest findings need to be replicated.

For individuals who have unresectable liver metastases from neuroendocrine tumors amenable to locoregional therapy who receive Cryosurgical Ablation, the evidence includes a Cochrane review and case series. Relevant outcomes are overall survival, disease-specific survival, symptoms, and treatment-related mortality and morbidity. The available evidence base is very limited.

For individuals who have unresectable liver metastases from colorectal cancer amenable to locoregional therapy who have Cryosurgical Ablation, the evidence includes an RCT, several nonrandomized comparative and noncomparative studies, and systematic reviews of these studies. Relevant outcomes are overall survival, disease-specific survival, and treatment-related mortality and morbidity. The available RCT comparing surgical resection with cryoablation was judged at high risk of bias. Some nonrandomized comparative studies have reported improved survival outcomes for patients managed with cryotherapy compared with those managed with resection alone; however, these studies were subject to bias in the selection of patients for treatments.

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V. DEFINITIONS

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DENATURATION refers to a change in conditions (temperature, addition of a substance) that causes irreversible change in a protein's structure, usually resulting in precipitation of the protein.

EXTRAHEPATIC refers to outside or unrelated to the liver.

HEPATIC pertains to the liver.

HYPERTHERMIA refers to the use of microwave or radiofrequency energy to increase body temperature.

METASTASIS is the movement of body cells (esp. cancer cells) from one part of the body to another.

NEUROENDOCRINE MALIGNANCIES refer to a diverse group of tumors, such as carcinoid, islet cell tumors, neuroblastoma, and small-cell carcinomas of the lung.

PERCUTANEOUS refers to that which is passed or affected through the skin.

VI. BENEFIT VARIATIONS

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The existence of this medical policy does not mean that this service is a covered benefit under the member's health benefit plan. Benefit determinations should be based in all cases on the applicable health benefit plan language. Medical policies do not constitute a description of benefits. A member's health benefit plan governs which services are covered, which are excluded, which are subject to benefit limits and which require preauthorization. There are different benefit plan designs in each product administered by Capital BlueCross. Members and providers should consult the member's health benefit plan for information or contact Capital BlueCross for benefit information.

VII. DISCLAIMER

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Capital BlueCross's medical policies are developed to assist in administering a member's benefits, do not constitute medical advice and are subject to change. Treating providers are solely responsible for medical advice and treatment of members. Members should discuss any medical policy related to their coverage or condition with their provider and consult their benefit information to determine if the service is covered. If there is a discrepancy between this medical policy and a member's benefit information, the benefit information will govern. If a provider or a member has a question concerning the application of this medical policy to a specific member's plan of benefits, please contact Capital BlueCross' Provider Services or Member Services.

Capital BlueCross considers the information contained in this medical policy to be proprietary and it may only be disseminated as permitted by law.

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VIII. CODING INFORMATION

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Note: This list of codes may not be all-inclusive, and codes are subject to change at any time. The identification of a code in this section does not denote coverage as coverage is determined by the terms of member benefit information. In addition, not all covered services are eligible for separate reimbursement.

Covered when medically necessary:

CPT Codes®							
47371	47381	47383					

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ICD-10-CM Diagnosis Codes	Description
C22.0	Liver cell carcinoma
C22.1	Intrahepatic bile duct carcinoma
C22.2	Hepatoblastoma
C22.3	Angiosarcoma of liver
C22.4	Other sarcoma of liver
C22.7	Other specified carcinomas of liver
C22.8	Malignant neoplasm of liver, primary, unspecified as to type
C22.9	Malignant neoplasm of liver, not specified as primary or secondary
C78.7	Secondary malignant neoplasm of liver and intrahepatic bile duct
C7B.02	Secondary carcinoid tumors of liver

IX. REFERENCES

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X. POLICY HISTORY

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MP 1.121	CAC 4/26/11 Adopt BCBSA. Extracted information regarding cryosurgical ablation from MP 1.055 and created a separate policy. Changed cryosurgical ablation policy statement from medically necessary to investigational.
	CAC 6/26/12 Consensus review. No changed in policy statement. References updated.
	CAC 9/24/13 Consensus review. References updated but no changes to the policy statements. FEP variation added. No coding changes.
	CAC 7/22/14 Consensus review. No change to policy statements. References updated. Rationale section added.

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	01/2015 New 2015 CPT codes added to policy
	CAC 7/21/15 Consensus review. No change to the policy statement. References and rationale updated. Codes reviewed.
	CAC 7/26/16 Consensus review. No change to policy statements. Background/Description, rationale and references updated. Coding updated.
	11/23/16 Administrative Update Variation section reformatted.
	CAC 9/26/17 Consensus review. No change to policy statements. References and rationale updated. Coding Reviewed.
	10/12/18 Consensus review. No change to the policy statement. References reviewed. Rationale revised.
	7/16/19 Consensus review. No change to policy statements. Reviewed Background, rationale and references.
	6/26/20 Minor Review. Changed Cryosurgical ablation from investigational to medically necessary with criteria added. Description, Rationale and References updated.

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