

## Corporate Medical Policy

# Bone Marrow Transplant for Germ Cell Tumors

**File Name:** bone\_marrow\_transplant\_for\_germ\_cell\_tumors  
**Policy Number:** SUR6090.11  
**Origination:** 2/2001  
**Last Review:** 11/2008  
**Next Review:** 11/2010

### Description of Procedure or Service

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This policy addresses high-dose chemotherapy with [hematopoietic stem-cell](#) support as a treatment of germ cell tumors. Bone marrow transplants typically include high-dose chemotherapy (HDC).

"High-dose chemotherapy" (HDC) involves the administration of [cytotoxic agents](#) for the treatment of cancer. It uses doses several times greater than the standard therapeutic dose. In some cases, whole body or localized radiotherapy is also given and is included in the term HDC. The rationale for HDC is that many [cytotoxic agents](#) act according to a [steep dose-response curve](#). Thus, small increments in dosage will result in relatively large increases in tumor cell kill. Increasing the dosage also increases the incidence and severity of adverse effects related primarily to bone marrow [ablation](#) (e.g., [opportunistic](#) infections, hemorrhage, organ failure).

Various techniques have been developed to counter the [myelosuppressive](#) effects, and secondary susceptibility to infections of HDC regimens. The main technique is the infusion into the patient of [hematopoietic stem cells](#) to repopulate the bone marrow. [Hematopoietic stem cells](#) are primitive cells capable of replication and formation into mature blood cells. [Stem cells](#) can be [harvested](#) from three sources:

1. Bone marrow cells: Bone marrow [stem cells](#) can be [harvested](#) from a related or unrelated donor.
2. Peripheral [stem cells](#): [Stem cells](#) may be [harvested](#) from the peripheral blood circulation. This may involve several pheresis procedures. Pheresis involves withdrawing blood from a donor in which a portion containing [stem cells](#) is separated and retained with the remainder retransfused back to the donor.
3. [Umbilical cord](#): Blood [harvested](#) from the [umbilical cord](#) and [placenta](#) shortly after the delivery of neonates contains [stem cells](#). Although cord blood is an [allogeneic](#) source, these [stem cells](#) are associated with a lower incidence of rejection or graft versus host disease.

When [harvested](#) from and infused back into the same patient, [stem cells](#) are referred to as [autologous](#). [Stem cells harvested](#) from a healthy, [histocompatible](#) donor and infused into a patient are referred to as [allogeneic](#).

The majority of germ cell tumors are [testicular](#) neoplasms. However, germ cell tumors can arise in the ovaries and in other gonadal locations such as the retroperitoneum or mediastinum.

## Policy: Bone Marrow Transplant for Germ Cell Tumors

### Policy

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BCBSNC will provide coverage for Bone Marrow Transplant, high dose chemotherapy and stem cell support for Germ Cell Tumors when it is determined to be medically necessary because the medical criteria and guidelines shown below are met.

Some patients may be eligible for coverage under clinical trials. Refer to the policy on Clinical Trial Services for Life-Threatening Conditions.

### Benefits Application

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Please refer to certificate for availability of benefits. This policy relates only to the services or supplies described herein. Benefits may vary according to benefit design, therefore certificate language should be reviewed before applying the terms of the policy.

There may be certificates which exclude benefits for transplantation or for specific diagnoses.

Services for or related to the search for a donor are not covered.

### When Bone Marrow Transplant for Germ Cell Tumors are covered

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**Note: The clinical indications and discussion of Bone Marrow Transplant for Germ Cell Tumors are complex and technical. If you have any questions concerning this treatment, please talk with your physician.**

**Germ cell tumors (e.g., testicular, mediastinal, retroperitoneal, ovarian)**

1. HDC and [autologous stem cell](#) support may be considered medically necessary as salvage therapy for patients with germ cell tumors that do not achieve a complete remission after primary chemotherapy with or without surgery. (i.e., [refractory](#) germ cell tumors or those exhibiting a partial response or less to standard chemotherapy).
2. HDC and [autologous stem cell](#) support may be considered medically necessary as a treatment of patients in second complete remission or in second relapse.

### When Bone Marrow Transplant for Germ Cell Tumors are not covered

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**Germ cell tumors (e.g., testicular, mediastinal, retroperitoneal, ovarian)**

1. HDC and [autologous stem cell](#) support is considered investigational as a component of first-line treatment of poor risk germ cell tumors or as initial treatment of a first relapse (i.e., in lieu of a course of conventional chemotherapy).
2. [Tandem](#) HDC and [autologous stem cell](#) support is considered investigational as a treatment of germ cell tumors of any stage.
3. HDC and [allogeneic stem cell](#) support is considered investigational as a treatment of germ cell tumors, including but not limited to its use as therapy after a prior failed HDC with [autologous stem cell](#) support.

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### Policy Guidelines

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Refer to the individual certificate for prior approval/precertification requirements.

Refractory is defined as less than 50% reduction in tumor burden measured by serial computed tomography (CT) scans or levels of circulating tumor markers, such as alpha fetoprotein.

Partial response is defined as least a 50% reduction in tumor burden.

While some HDC protocols can be administered on an outpatient basis, typically the patient is hospitalized for management of the marrow ablative complications of the therapy. All patients receiving whole body radiotherapy, typically those receiving an [allogeneic](#) transplant (from donor to patient), will require prolonged hospitalization.

### Billing/Coding/Physician Documentation Information

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This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at [www.bcbsnc.com](http://www.bcbsnc.com). They are listed in the Category Search on the Medical Policy search page.

*Applicable codes: 38205, 38206, 38230, 38240, 38241, 38242, S2150*

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

### Policy Key Words

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Key Words: High Dose Chemotherapy, HDC, Stem Cell Support, SCS, Germ Cell Tumors, Testicular, Medastinal, Retroperitoneal, Autologous, Allogeneic, Bone Marrow Transplant, BMT, SUR6090.11

### Medical Term Definitions

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#### **Ablation**

the removal of tissue or an abnormal growth, usually by cutting; may also refer to a very high dose of treatment that is calculated to kill a tumor.

#### **Allogeneic**

genetically dissimilar - involves a donor and a recipient; genes are not identical in each organism.

#### **Autologous**

derived from the same organism, i.e., self donation.

#### **Cytotoxic agents**

drugs which possess a specific destructive action on certain cells; often used to refer to drugs used to fight cancer, such as chemotherapy.

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### **Harvesting**

to remove tissues or cells from a donor and preserve for transplantation.

### **Hematopoietic**

pertaining to or effecting the formation of blood cells.

### **Histocompatible**

tissue compatible; donor and recipient are well enough matched that a transplant will be easily accepted.

### **Mediastinal**

pertaining to the mediastinum, which is the mass of tissues and organs separating the two lungs. It contains the heart and its large vessels, the trachea, esophagus, thymus, lymph nodes and other structures and tissues.

### **Myelosuppressive**

something that inhibits bone marrow activity, resulting in decreased production of blood cells and platelets.

### **Opportunistic**

a microorganism that does not usually cause disease but that, under certain circumstances such as impaired immune system due to other diseases or drug treatment becomes pathogenic.

### **Placenta**

Temporary organ formed from both fetal and maternal tissues that provides nutrients and oxygen to the developing fetus, carries away fetal metabolic wastes, and produces the hormones of pregnancy.

### **Refractory**

not responding to treatment.

### **Retroperitoneal**

behind the peritoneum (the serous membrane lining the abdominal and pelvic walls and forming a sac that houses the internal organs).

### **Steep dose response curve**

a theory in delivery of cytotoxic agents that small increments in dosage will result in relatively large increases in tumor cell kill.

### **Stem cells**

immature generic blood cells that will mature into the various types of blood cells in the body.

### **Tandem bone marrow transplants**

two planned courses of high dose chemotherapy and stem cell support. Tandem transplants are typically administered at intervals of 2-6 months, contingent on recovery from prior toxicity.

### **Testicular**

refers to the male testes.

### **Umbilical cord**

a flexible structure through which the umbilical arteries and vein pass and which connects the fetus to the placenta.

## Policy: Bone Marrow Transplant for Germ Cell Tumors

### Scientific Background and Reference Sources

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TEC Assessment, July, 1999; Volume 14, No. 11  
BCBSA Medical Policy Reference Manual, 4/30/2000  
Specialty Matched Consultant Advisory Panel - 11/2002  
BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.34, 4/29/2003  
Specialty Matched Consultant Advisory Panel - 11/2004  
BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.34, 7/20/06  
Specialty Matched Consultant Advisory Panel - 11/2006  
BCBSA Medical Policy Reference Manual [Electronic Version]. 8.01.34, 9/18/2007  
Specialty Matched Consultant Advisory Panel - 11/2008

### Policy Implementation/Update Information

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1/01 Specialty Matched Consultant Advisory Group.  
2/01 Original policy issued.  
7/01 Statement removed under when not covered section, "It should be noted that ovarian germ cell tumors must be distinguished from the far more common epithelial ovarian cancers. High-dose therapy for ovarian epithelial cancer is considered investigational." Refer to policy on Epithelial Ovarian Cancer. Removed "ovarian" from key words and medical term definitions.  
2/03 Specialty Matched Consultant Advisory Panel review 11/2002. No change in criteria. Codes 86812-86822 removed; codes 38231 and 86915 deleted and codes 38242, 38205 and 38206 added to the Billing/Coding section. System coding changes.  
1/04 Benefits Application and Billing/Coding sections updated for consistency.  
2/04 Individual CPT codes listed for CPT code ranges 38240-38242 under Billing/Coding section.  
7/29/04 HCPCS code S2150 added to Billing/Coding section.  
12/23/04 Specialty Matched Advisory Consultant Panel review 11/29/04. No changes to criteria. Revised Description of Procedure or Service section. Added information to Policy Guidelines section to provide additional information related to "refractory" and "partial response". Policy number added Policy Key Words section. "Hematopoietic" and "Opportunistic" added to Definitions. References added.  
12/11/06 Specialty Matched Advisory Consultant Panel review 11/6/2006. Added statement regarding clinical trials to "Policy" section. Clarified the first bullet under the "When Covered" section from "HDC and autologous stem cell support may be considered medically necessary as a treatment of germ cell tumors that do not achieve a complete remission. (i.e., refractory germ cell tumors or those exhibiting a partial response to standard chemotherapy)." to "HDC and autologous stem cell support may be considered medically necessary as salvage therapy for patients with germ cell tumors that do not achieve a complete remission. (i.e., refractory germ cell tumors or those exhibiting a partial response or less to standard chemotherapy)." References added.  
12/22/08 Specialty Matched Consultant Advisory Panel review 11/13/08 . Added additional wording in the "When Not Covered" section, no change in policy intent. References added.

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Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.