

## Evidence Based Guideline

### Donor Leukocyte Infusion

<b>File Name:</b>	donor_leukocyte_infusion
<b>Origination:</b>	1/2001
<b>Last CAP Review:</b>	3/2012
<b>Next CAP Review:</b>	3/2013
<b>Last Review:</b>	3/2012

#### Description of Procedure or Service

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Donor lymphocyte infusion (DLI), also called donor leukocyte or buffy-coat infusion, is a type of therapy in which T lymphocytes from the blood of a donor are given to a patient who has already received a hematopoietic stem cell transplant (HSCT) from the same donor. The DLI therapeutic effect results from a graft-versus-leukemic or graft-versus-tumor effect due to the recognition of certain antigens on the cancer cells by the donor lymphocytes and the resultant elimination of the tumor cells. Approximately 40-60% of patients who receive a DLI develop graft-versus-host disease (GVHD), and the development of GVHD predicts a response to the DLI. A Blue Cross and Blue Shield Technology Evaluation Assessment on this subject was published in 1997. Treatment-related mortality after DLI is 5-20%. There does not seem to be a correlation between the type of hematologic malignancy for which the DLI was given and the development of GVHD. The risk of development of GVHD is related, in part, to DLI dose and therapy prior to DLI.

The timing of the use of DLI depends upon the disease indication and may be used in the setting of relapse after an allogeneic HSCT, as a planned strategy to prevent disease relapse in the setting of T cell depleted grafts or non-myeloablative conditioning regimens, or as a method to convert mixed to full donor chimerism. Management of relapse, which occurs in approximately 40% of all hematologic malignancy patients, is the most common indication for DLI.

The literature is heterogeneous for reporting methods of cell collection, timing of infusion (e.g., after chemotherapy, in early relapse), cell dose infused and cell subtype used. In addition, many studies include multiple diseases with little information regarding disease-specific outcomes; however, DLI is used in nearly all hematologic malignancies for which allogeneic HSCT is performed, including chronic myeloid leukemia, acute myeloid and lymphoblastic leukemias, myelodysplastic syndromes, multiple myeloma and Hodgkin's (HL) and non-Hodgkin's lymphoma (NHL).

**\*\*\*Note: This Evidence Based Guideline is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.**

#### Evidence Based Guideline for Donor Leukocyte Infusion

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Donor lymphocyte infusion may be appropriate following allogeneic-hematopoietic stem cell transplantation (HSCT) that was originally considered medically necessary for the treatment of a hematologic malignancy that has relapsed or is refractory, to prevent relapse in the setting of a high risk of relapse or to convert a patient from mixed to full donor chimerism.

Settings considered high risk for relapse include T cell depleted grafts or nonmyeloablative (reduced-intensity conditioning) allogeneic HSCT.

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## Medical Evidence regarding Donor Leukocyte Infusion indicates it is not recommended in the following situations

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Donor lymphocyte infusion is not recommended as a treatment of nonhematologic malignancies following a prior allogeneic HSCT.

Genetic modification of donor leukocytes is not recommended. The use of genetically modified donor leukocytes continues to be investigated for more efficient gene transfer protocols as well as for its potential use in the treatment of a range of hematological malignancies.

## Benefits Application

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This evidence based guideline relates only to the services or supplies described herein. Please refer to the Member's Benefit Booklet for availability of benefits. Member's benefits may vary according to benefit design; therefore member benefit language should be reviewed before applying the terms of this guideline.

## Billing/Coding/Physician Documentation Information

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This guideline 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: 38242, 86950*

## Scientific Background and Reference Sources

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BCBSA Medical Policy Reference Manual, 1/30/1998  
Specialty Matched Consultant Advisory Panel - 6/2001  
BCBSA Medical Policy Reference Manual, 2/15/2002; 2.03.03  
BCBSA Medical Policy Reference Manual, 12/18/02; 2.03.03  
Specialty Matched Consultant Advisory Panel - 6/2003  
Specialty Matched Consultant Advisory Panel - 4/2005  
BCBSA Medical Policy Reference Manual [Electronic Version]. 2.03.03, 4/1/2005  
BCBSA Medical Policy Reference Manual [Electronic Version]. 2.03.03, 9/27/05  
Specialty Matched Consultant Advisory Panel - 4/2007  
BCBSA Medical Policy Reference Manual [Electronic Version]. 2.03.03, 5/12/2011  
Specialty Matched Consultant Advisory Panel – 3/2012

# Donor Leukocyte Infusion

## Policy Implementation/Update Information

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- 2/01 Original Policy Issued.
- 6/01 Specialty Matched Consultant Advisory Panel review. No change in criteria.
- 5/02 Policy criteria revised. Added indication under when it is covered to include acute myelogenous leukemia. Removed indications under when it is not covered to include acute myeloid leukemia and chronic lymphocytic leukemia as no longer investigational. Added statement that genetic modification of donor leukocytes is considered investigational.
- 6/03 Specialty Matched Consultant Advisory Panel review. No criteria changes. Code 36520 deleted and code 38242 added to Billing/Coding section.
- 3/04 Benefits Application and Billing/Coding sections updated for consistency.
- 5/5/05 Specialty Matched Consultant Advisory Panel review 4/14/2005. "Description of Procedure or Service" section updated. Under the "When covered" section removed "in the chronic phase" from statement. Under the "When not covered" section added diagnosis "chronic lymphocytic leukemia", no change in statement intent. Added rationale to "Policy Guidelines" section. Key words added. References added.
- 6/2/05 References added.
- 5/21/07 Specialty Matched Consultant Advisory Panel review 4/25/2007. Revised "Description" section. Medical policy changed to evidence based guideline. Status changed to Active guideline, no longer scheduled for routine literature review. (btw)
- 6/22/10 Policy Guideline Number(s) removed (amw)
- 4/17/12 Policy returned to active review status. Description revised. Removed the following statement from the Evidence Based Guideline section; "Donor leukocyte infusion may be appropriate as treatment for a patient with a hematologic malignancy who has relapsed after a prior allogeneic bone marrow transplant for Acute Myelogenous Leukemia, Hodgkin's Disease, Chronic Myelogenous Leukemia, and Acute Lymphocytic Leukemia." Added the following statements to the Evidence Based Guideline section; "Donor lymphocyte infusion may be appropriate following allogeneic-hematopoietic stem cell transplantation (HSCT) that was originally considered medically necessary for the treatment of a hematologic malignancy that has relapsed or is refractory, to prevent relapse in the setting of a high risk of relapse, or to convert a patient from mixed to full donor chimerism. Settings considered high risk for relapse include T cell depleted grafts or nonmyeloablative (reduced-intensity conditioning) allogeneic HSCT." Removed the following statement from the When Not Recommended section; "Donor leukocyte infusion is not recommended as a treatment for other malignancies that have relapsed after prior allogeneic bone marrow (or stem cell) transplant." Added the following statements to the When Not Recommended section; "Donor lymphocyte infusion is not recommended following allogeneic-hematopoietic stem cell transplantation (HSCT) that was originally considered investigational for the treatment of a hematologic malignancy. Donor lymphocyte infusion is not recommended as a treatment of nonhematologic malignancies following a prior allogeneic HSCT." Specialty Matched Consultant Advisory Panel review 3/21/2012. Reference added. (btw)

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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.

