

Ready to start planning your care? Call us at [800-525-2225](tel:800-525-2225) to make an appointment.

×



Memorial Sloan Kettering
Cancer Center

[Make an Appointment](#)

[Back](#)

[Program Components](#)

[Learn About Our Treatment](#)

[Refer a Patient](#)

[Pediatric BMT Service](#)

ABOUT US

[Our mission, vision & core values](#)

[Leadership](#)

[History](#)

[Equality, diversity & inclusion](#)

[Annual report](#)

[Give to MSK](#)

- differences and indications of autologous and allogeneic stem cell transplantation;
- differences between the different types of sources of hematopoietic stem cells, including marrow, peripheral blood, and cord blood;
- basic principles of human leukocyte antigens (HLA) and histocompatibility testing, i.e., searches for unrelated bone marrow donors;
- differences and indications for the different donors used for stem cell transplantation, including HLA-matched sibling-derived marrow or peripheral blood; HLA-matched sibling-derived cord blood; HLA-compatible unrelated marrow or peripheral blood donors; HLA-mismatched related marrow or peripheral blood donors;
- differences between unmodified and T cell-depleted stem cell transplants.

Understand the major issues associated with stem cell transplantation, including the pathophysiology, clinical features, prevention, and treatment of:

- graft-versus-host disease;
- graft rejection;
- organ toxicity, including venoocclusive disease of the liver; cardiac complications; pulmonary complications, including interstitial pneumonia, central nervous system (CNS) complications (i.e., leukoencephalopathy and BMT-associated seizure disorders); and renal complications;
- infectious complications, including bacterial, fungal, viral, and parasitic infections, as well as their association with the immune deficiency post-BMT;
- relapse post-BMT.

Indications, applications, and results of stem cell transplantation for the different diseases, including:

- acute lymphoblastic and myelogenous leukemia;
- chronic myelogenous leukemia;
- Myelodysplastic Syndrome;
- non-Hodgkin's lymphoma and Hodgkin's disease;
- acquired aplastic anemia;
- constitutional bone marrow failure syndromes (including Fanconi Anemia);

congenital cytopenias (amegakaryocytic thrombocytopenia, congenital agranulocytosis, Diamond-Blackfan Anemia);
severe combined immune deficiency, Wiscott-Aldrich syndrome and other lethal genetic immune disorders;
selected metabolic diseases.

Application of novel biologicals and cellular therapies to enhance immune reconstitution and resistance to malignancy. These include:

antigen-specific T cells;
alloresponsive NK cells;
cytokines;
tumor-targeted antibodies and antibody conjugates.

The Pediatric Bone Marrow Transplant Service

The Pediatric Bone Marrow Transplant Service is composed of the director of the BMT Service (also the chairman of the Department of Pediatrics) and five attendings, each with a different subspecialty expertise area, which includes at the present time:

unrelated marrow and cord blood donor transplants, i.e., searches and overall results at the national level;
immune reconstitution and infectious complications following BMT; BMT for the treatment of immune deficiencies;
stem cell transplantation for leukemias and lymphomas, hemoglobinopathies, and bone marrow failure syndromes; late effects of stem cell transplantation;
the major histocompatibility complex; major and minor antigens;
molecular studies for the definition of minimal residual disease in leukemias, as well as evidence of Epstein-Barr virus-related diseases post-BMT.

The Bone Marrow Transplant Service is also in direct collaboration with different research laboratories for the development of programs, such as in gene therapy and for the development of vaccines for the treatment of leukemias and solid tumors.

At the clinical level, the Pediatric Bone Marrow Transplant Service also includes two full-time pediatric nurse practitioners, who rotate through the inpatient and outpatient department and have now acquired expertise in the field of stem cell transplantation. A nurse clinician is also part of the team with a role that includes:

patient and nursing education;
coordination of patient care with the medical staff, nursing staff, and the patients;
hospital discharge planning.

Approximately 25 to 40 allogeneic and 20 to 30 autologous stem cell transplants are performed for pediatric patients yearly at Memorial Sloan Kettering Cancer Center. There are approximately 300 pediatric long-term survivors of stem cell transplantation, the majority of whose progress is followed at our outpatient Pediatric Day Hospital.

Inpatient Rotation (BMT)

During the inpatient rotations, the fellows take active care of the stem cell transplant patients. The BMT team includes one attending physician, three to four rotating residents, one pediatric nurse practitioner, and one pediatric nurse clinician.

During these rotations, the fellows learn the basic principles of BMT mentioned above. They take active part of the inpatient care, including:

- daily review of problems, recognition of minor and major BMT-associated problems;
- daily physical examination, recognition, diagnosis, and treatment of mucositis, graft-versus-host disease, and specific organ complications;
- review of medications, and the discussion of side effects of certain BMT-related medications;
- review of laboratory results with the BMT attending physician and radiological results with the radiology attending physician; and
- daily treatment plan.

A manual of standard of care and BMT-related guidelines is available for reference for all BMT-specific related issues.

The fellows also learn to review BMT protocols. This includes the review of the background, the concept, and specific aims of the various BMT protocols and their application to the different patients entered on the protocols.

Depending on the various pathologies seen during their rotation, specific literature pertinent to these pathologies is reviewed with the fellows BMT-reviewed publications are also distributed to the fellows during their rotation.

Outpatient Rotation (BMT)

Fellows can elect to rotate through our BMT clinic during their second and/or third years of training. The list of patients, their diagnoses, complications, and treatments are discussed one day prior to the clinic visit. Patients are seen by the fellows. History, physical examination, and a review of medications and of laboratory results are done with the attending physician and the nurse practitioner. Treatment plans are then developed for each patient.

Acute care issues are discussed for patients, who are early in their post-transplant period, with regard to graft-versus-host disease, infections, and organ toxicity levels.

Long-term care issues are discussed for patients, who are long-term post-BMT, including neuropsychological issues, growth, thyroid function, gonadal function, immune reconstitution, and re-immunization post-BMT.

PREVIOUS

[Pediatric Hematology Service](#)

NEXT

[NYPH-WMC's Pediatric Oncology Service](#)

Connect

Contact us

Locations

APPOINTMENTS

800-525-2225

▾ About MSK

[About us](#)

[Careers](#) ■

[Giving](#) ■

▾ Cancer Care

[Adult cancer types](#)

[Child & teen cancer types](#)

[Integrative medicine](#)

[Nutrition & cancer](#)

[Find a doctor](#)

▾ Research & Education

[Sloan Kettering Institute](#)

[Gerstner Sloan Kettering Graduate School](#) ■

[Graduate medical education](#)

[MSK Library](#) ■

[Communication preferences](#)

[Cookie preferences](#)

[Legal disclaimer](#)

[Accessibility statement](#)

[Privacy policy](#)

[Price transparency](#)

[Public notices](#)

© 2024 Memorial Sloan Kettering Cancer Center