

Adult Post Hematopoietic Cell Transplant Vaccine Guidelines

9 months	DTaP, HiB, IPV, Prevnar, Shingrix
12 months	DTaP, HiB, IPV, Prevnar, Menactra, Twinrix, Shingrix
14 months	Hep B, Menactra
18 months	DTaP, HiB, IPV, Prevnar, Twinrix
24 months	MMR, Pneumovax

Vaccine	Comments
Diphtheria/Tetanus/ Pertussis (DTaP; Daptacel)	<ul style="list-style-type: none"> • Inactivated; Given IM • May be initiated as early as 6 months post HSCT * • Do not confuse with Tdap – Patients should be vaccinated with Tdap every 10 years
Haemophilus Influenzae type B (HiB; ActHiB)	<ul style="list-style-type: none"> • Inactivated; Given IM • Haemophilus is bound to tetanus toxoid. Tetanus component of this vaccine is not a therapeutic substitution for tetanus vaccine (only contains 24mcg of tetanus toxoid). • May be initiated as early as 6 months post HSCT * • Product diluent may contain LATEX
Pneumococcal conjugate 13-valent (Prevnar; PCV13)	<ul style="list-style-type: none"> • Inactivated; Given IM • May be initiated as early as 3-6 months post HSCT * • Patients with cGVHD should consider fourth dose of PCV13 in place of PPSV23
Hepatitis A (Havrix)	<ul style="list-style-type: none"> • Inactivated; Given IM • May be initiated as early as 6 months post HSCT *
Hepatitis B (Engix B)	<ul style="list-style-type: none"> • All products may contain LATEX (individual and combo vaccines) <i>Hep A+ Hep B (Twinrix)</i>
Meningococcal conjugate (Menactra)	<ul style="list-style-type: none"> • Inactivated; Given IM • May be initiated as early as 6 months post HSCT *
Influenza (Fluzone)	<ul style="list-style-type: none"> • Inactivated; Given IM annually • May be given as early as 3-6 months post-transplant. (If given at <6 months, then second dose needs to be given after 6 months if still during flu season) • Refer to institution's annual flu policy
Pneumococcal polysaccharide 23-valent (Pneumovax; PPSV23)	<ul style="list-style-type: none"> • Inactivated; Can be given IM or SC • May be initiated as early as 12 months post HSCT if no GVHD* or ongoing immunosuppression • Patients with cGVHD should consider fourth dose of PCV13 in place of PPSV23
Poliovirus (IPOL / IVP)	<ul style="list-style-type: none"> • Inactivated; Can be given IM or SC • May be initiated as early as 6 months post HSCT *
Measles/Mumps/Rubella a (MMR)	<ul style="list-style-type: none"> • LIVE VIRUS- Administer immediately; Given SC • Light protect at all times; vaccine can be inactivated with light exposure • Caution in egg allergy • Do not give if patient has active GVHD or ongoing immunosuppression
Subunit Varicella Zoster vaccine (Shingrix)	<ul style="list-style-type: none"> • Subunit adjuvanted vaccine (not a live vaccine); Given IM. • Continue HSV prophylaxis for at least 1 month after 2-dose series is complete • 2-dose series post-transplant should occur 2-6 months apart

* This is **NOT** a routine recommendation. Early administration may be considered on case by case basis using best clinical judgment.

- Patients likely have GVHD or ongoing immunosuppression if receiving IVIG, tacrolimus, sirolimus, steroids, etc
- Live vaccination should be separated by 8-11 months from last IVIG administration.
- Vaccination may be postponed if patient is receiving >20mg of prednisone or equivalent for ≥2weeks
- Consider administration of 3 doses of human papilloma virus (HPV) series in female and male patients ages 11-26. Series should be initiated at least 6-12 months post-transplant.

References: 1. Rubin LG et al. 2013 IDSA clinical practice guideline for vaccination of the immunocompromised host. *Clin Infect Dis* 2014;58:309-18; 2. Cheng MP et al. Safety and immunogenicity of conjugate quadrivalent meningococcal vaccination after hematopoietic cell transplantation. *Blood Adv* 2018;2:1272-6; 3. Chong PP et al. A Comprehensive Review of Immunization Practices in Solid Organ Transplant and Hematopoietic Stem Cell Transplant Recipients. *Clin Ther* 2017;39:1581-98; 4. Issa NC et al. Seroprotective titers against 2009 H1N1 influenza A virus after vaccination in allogeneic hematopoietic stem cell transplantation recipients. *Bio Blood Marrow Transplant* 2011;17:434-8; 5. De la serna et al. Abstract # LBA2, BMT Tandem meeting, Salt Lake City Feb 2018. Paper is submitted not published yet. 6. Pandit A et al. Safety of live-attenuated measles-mumps-rubella and herpes zoster vaccination in multiple myeloma patients on maintenance lenalidomide or bortezomib after autologous hematopoietic cell transplantation. *Bone Marrow Transplant* 2018;53:942-5; 7. NCCN Guidelines: Prevention and Treatment of Cancer-Related Infections v1.2018