

CAR-T Cell Therapy Vaccinations

Pre-CAR-T

- Every effort should be made to vaccinate patients >14 days **before** CAR-T, when they are more likely to form response to vaccine. If not previously received, please give the following vaccines at pre-CAR-T visits (in order of priority):

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| Annual Flu shot |
| COVID-19 vaccine series |
| Pevnar 15 |
| Shingrix (2 dose series) |
| Tdap |
| Pneumovax 23 (cannot give until 8 weeks after Pevnar) |
| Hep B* |

**If Hep B S Ab negative, Hep B core Ab negative*

Post-CAR-T

- Retention of immunity to prior vaccines after CAR-T is not well known; there is not enough data to establish guidelines on re-vaccination of all patients. Additionally, some patients may experience prolonged lymphopenia and B cell aplasia that limits ability to respond to vaccines, and may benefit from antibody titer-based approach to vaccines. Please refer to Infectious Disease in such cases.
- If not received prior to CAR-T, please give the following vaccines, in order of priority:

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| Annual Flu shot | >4 weeks after CAR-T |
| COVID-19 vaccine (boosters if not yet completed) | > 4 weeks after CAR-T |
| Pevnar 15 | Once CD4 >200, CD19 >20, or at 6 months post CAR-T (whichever is earliest) |
| Pneumococcal 23 (cannot give until 8 weeks after Pevnar) | |
| Shingrix (2 dose series, 2 mos apart) | |
| Tdap | |
| Hep B* | |

**If Hep B S Ab negative, Hep B core Ab negative*

References:

- Wudhikarn K, Perales MA. Infectious complications, immune reconstitution, and infection prophylaxis after CD19 chimeric antigen receptor T-cell therapy. Bone Marrow Transplant. 2022 Oct;57(10):1477-1488. doi: 10.1038/s41409-022-01756-w. Epub 2022 Jul 15. PMID: 35840746; PMCID: PMC9285870.
- Hill JA, Seo SK. How I prevent infections in patients receiving CD19-targeted chimeric antigen receptor T cells for B-cell malignancies. Blood. 2020 Aug 20;136(8):925-935. doi: 10.1182/blood.2019004000. PMID: 32582924; PMCID: PMC7441168.
- Walti CS, Loes AN, Shuey K, et al. Humoral immunogenicity of the seasonal influenza vaccine before and after CAR-T-cell therapy: a prospective observational study. Journal for ImmunoTherapy of Cancer 2021;9:e003428. doi:10.1136/jitc-2021-003428