

## INFLUENZA IMMUNIZATION INFORMATION FOR ADULT AND PEDIATRIC CANCER PATIENTS

**Live** influenza immunizations are contraindicated for all adult and pediatric cancer patients.

Patients with a severely weakened immune system (**hospitalized, and in protective isolation**) should avoid contact with those who received the live nasal spray influenza immunization for a period of two weeks.

### Timing of Influenza Immunization:

- **Ideal:** Influenza immunization should be administered to the patient a minimum of two weeks before the start of immune-suppressing cancer treatment to allow adequate antibody production.
- **Next Best:** If early immunization is not possible, administration of the inactive vaccine between chemotherapy cycles when therapy is at the lowest level is recommended, although the efficacy of the vaccine may be reduced in this situation.
- **Exceptions:**
  - Patients who are treated with rituximab or other B-cell depleting antibodies should have all immunizations postponed until at least six months after the last dose of rituximab.
  - Given the lack of safety information and the potential risk of a significant immune response, patients treated with CTLA-4 inhibitors (e.g., ipilimumab) alone or in combination with other anti-cancer agents and those who have discontinued treatment with CTLA-4 inhibitors in the past six months should not receive the influenza vaccine.
  - Patients treated with PD-1 and PD-L1 inhibitors (e.g., nivolumab, pembrolizumab) and those who have discontinued treatment with PD-1 and PD-L1 inhibitors in the past six months may receive the inactivated influenza vaccine one week post-administration of these agents so as not to mask any immune related effects related to administration of cancer therapies.

## INFLUENZA IMMUNIZATION INFORMATION FOR ADULT AND PEDIATRIC PATIENTS RECEIVING HEMATOPOIETIC STEM CELL TRANSPLANT (HSCT)

If the patient is at least six months post HSCT, they may receive the non-live (inactivated) influenza immunization. Influenza immunization recommendations are the same for autologous and allogeneic transplants, as well as adult and pediatric populations.

The patient is responsible to make their influenza immunization appointment at their local public health unit, or attend an influenza immunization clinic, or receive their influenza immunization at their family physician's office.

### Dosing Information (applies to yearly immunization):

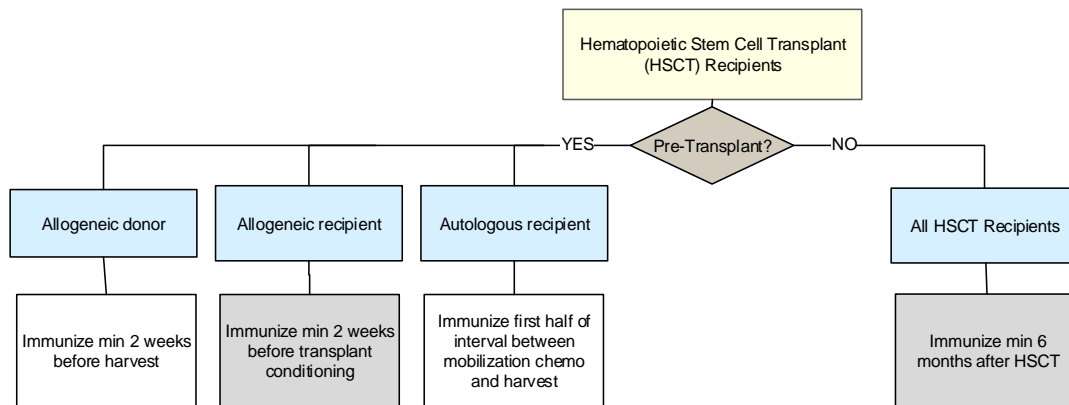
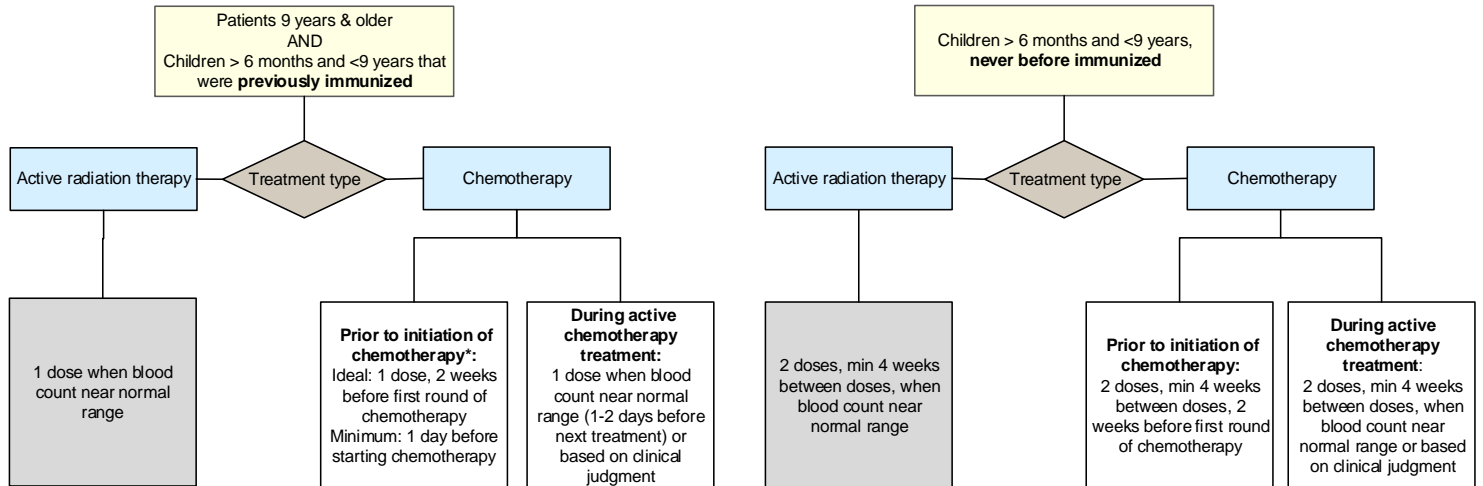
Age	Previously Immunized	Never Before Immunized
6 months up to and including 8 years of age	One dose	Two doses, 4 weeks apart
Children 9 years and older	One dose	One dose
Adults	One dose	One dose

**Note:** A full dose (0.5 mL) of influenza vaccine should be used for all people receiving the influenza immunization, including children 6 to 35 months of age. (i.e., there are no dose modifications based on weight or size).

**For more information on influenza immunization in patients with cancer, please see the full guideline:**

<http://www.albertahealthservices.ca/assets/info/hp/cancer/if-hp-cancer-guide-supp002-vaccination.pdf>

**Decision Making Algorithm:**  
**Influenza Immunization for Patients with Cancer**



**Notes:**

\* Patients treated with rituximab or other B-cell depleting antibodies should have all immunizations postponed until at least 6 months after the last dose of rituximab. Patients treated with CTLA-4 inhibitors (e.g., ipilimumab) alone or in combination with other anti-cancer agents and those who have discontinued treatment with CTLA-4 inhibitors in the past six months should not receive the influenza vaccine. Patients treated with PD-1 and PD-L1 inhibitors (e.g., nivolumab, pembrolizumab) and those who have discontinued treatment with PD-1 and PD-L1 inhibitors in the past six months may receive the inactivated influenza vaccine one week post-administration of these agents so as not to mask any immune related effects related to administration of cancer therapies.

All patients receive the INACTIVATED (non-live) vaccine.

A full dose (0.5 mL) of influenza vaccine should be used for all people receiving the influenza immunization, **including children 6 to 35 months of age**. (i.e., there are no dose modifications based on weight or size).