Second dose considerations for those who received AstraZeneca or COVISHIELD for first dose COVID-19 immunization

Updated January 21, 2022

The following Q&A is intended for health care professionals.

1. **What are the recommendations on the interchangeability of COVID-19 vaccines?**
2. **What is the recommendation for the second dose for those who received the AstraZeneca/COVISHIELD vaccine as their first dose?**
3. **Can Janssen be given as a second dose to AstraZeneca recipients if the AstraZeneca vaccine is not available?**
4. **What interval should be used for a mixed COVID-19 vaccine schedule?**
5. **Are other countries offering mixed dose schedules for COVID-19 vaccines?**
6. **What is the current rate and risk of Thrombosis with Thrombocytopenia Syndrome with AstraZeneca COVID-19 vaccines? Why is it changing?**
7. **If an individual received an mRNA vaccine for dose 1, do they have the option to receive AstraZeneca for dose 2?**
1. What are the recommendations on the interchangeability of COVID-19 vaccines?

NACI’s recommendations on the interchangeability of COVID-19 vaccines are based on current evidence and expert opinion. Recent studies on the safety and immune responses produced by mixed COVID-19 vaccine schedules provide the evidence for vaccine interchangeability. An observational study of healthcare workers in Germany\(^i\) and the Com-COV randomized clinical trial from the United Kingdom\(^ii\) report on the safety of mixed schedules, and the Spanish CombiVacS trial reports\(^iii\) \(^iv\), on both the safety and immune responses produced from mixed COVID-19 vaccine schedules. Current evidence suggests a first dose of the AstraZeneca vaccine followed by a second dose of an mRNA vaccine (Pfizer-BioNTech was used in studies) has a good safety profile at shorter (4 week) and longer (8 to 12 week) intervals. There is a possibility of increased short-term side effects with mixed COVID-19 vaccine schedules, especially with shorter intervals. These side effects are temporary and resolve without complications.

NACI also considered the risk of Thrombosis with Thrombocytopenia Syndrome (TTS) associated with the AstraZeneca vaccine, Canada’s current and projected mRNA vaccine supply and principles of ethical decision-making.

The rate of TTS after the second dose of AstraZeneca vaccine appears to be lower than with the first dose with current estimates of approximately 1 per 600,000 people vaccinated.

More results from ongoing studies on mixed COVID-19 vaccine schedules, can be found from the UK Com-COV trial\(^v\). NACI continues to closely monitor evolving evidence on mixed COVID-19 vaccine schedules and will update recommendations as needed.

2. What is the recommendation for the second dose for those who received the AstraZeneca/COVISHIELD vaccine as their first dose?

While either the AstraZeneca COVID-19 vaccine or an mRNA COVID-19 vaccine may be offered for the subsequent dose in a vaccine series started with the AstraZeneca/COVISHIELD vaccine, an mRNA COVID-19 vaccine is preferred as a subsequent dose. NACI states that an mRNA COVID-19 product is preferred as a subsequent dose, due to better effectiveness of mRNA vaccines and the rare risk of certain serious adverse events with viral vector vaccines, such as TTS as well as the safety of heterologous schedules shown in recent studies. \(^vi\) In making this recommendation, NACI considered:

- The risk of TTS associated with viral vector vaccines but not seen with mRNA (Pfizer-BioNTech and Moderna) vaccines;
• The possibility of increased short-term side effects of mixed COVID-19 vaccine schedules; and
• Available data on the immune responses produced by a first dose of the AstraZeneca vaccine followed by a second dose of the Pfizer-BioNTech vaccine.

For information regarding booking a second dose, go to the Get Your Second Vaccine Dose webpage on the BC Government website.

3. Can Janssen be given as a second dose to AstraZeneca recipients if the AstraZeneca vaccine is not available?

Janssen COVID-19 vaccine may be given as a second dose if AstraZeneca/COVISHIELD vaccine is not available. However, recipients should be advised that mRNA vaccine is preferable for a second dose for those without a contraindication to an mRNA vaccine because of improved protection against SARS-CoV-2 and better safety profile.

4. What interval should be used for a mixed COVID-19 vaccine schedule?

In B.C., the recommended interval between dose 1 and 2 is 8 weeks for COVID-19 mRNA vaccines. Therefore, individuals who received AstraZeneca/COVISHIELD for dose 1 and choose to receive an mRNA vaccine for dose 2 should follow the same interval as those who received an mRNA vaccine for dose 1 (i.e., 8 weeks).

5. Are other countries offering mixed dose schedules for COVID-19 vaccines?

Following the emergence of TTS, several European countries, including Denmark, Finland, France, Germany, Sweden, Norway and Spain began offering a second dose of an mRNA vaccine (Pfizer-BioNTech or Moderna) to those who received a first dose of the AstraZeneca/COVISHIELD vaccine. Other countries are also considering the option to implement mixed vaccine schedules.

6. What is the current rate and risk of Thrombosis with Thrombocytopenia Syndrome with AstraZeneca COVID-19 vaccines? Why is it changing?

Canada is continuing to monitor and assess reports of rare but serious medical events involving blood clots (thrombosis) with low blood platelets (thrombocytopenia) following COVID-19 immunization, referred to as Thrombosis with Thrombocytopenia Syndrome (TTS).

The rate of TTS is about 1 per 50,000 cases in persons vaccinated with a first dose of AstraZeneca/COVISHIELD vaccine. The rate of TTS after the second dose of the
AstraZeneca/COVISHIELD vaccine appears to be lower than with the first dose but has increased over time, with current estimates of approximately 1 per 600,000 (17 cases out of 10.7 million second doses administered). Rates of TTS continue to evolve as cases continue to be reported and investigated, and varies between countries.

7. If an individual received an mRNA vaccine for dose 1, do they have the option to receive AstraZeneca for dose 2?

A vaccine series initiated with either Pfizer-BioNTech or Moderna vaccine should be completed with either mRNA vaccine due to the increased protection against SARS-CoV-2 with these vaccines. However, if a second dose of an mRNA vaccine is contraindicated (e.g., due to a serious allergic event such as an allergy to a component in the mRNA vaccines) or the Medical Health Officer and/or allergist has recommended that they not receive a subsequent dose of an mRNA vaccine, AstraZeneca vaccine may be offered as a second dose with a prolonged period of observation for at least 30 minutes after immunization.
REFERENCES:


iii Instituto de Salud Carlos III. El uso combinado de las vacunas de AstraZeneca y Pfizer contra el SARS-CoV-2 ofrece una potente respuesta inmunitaria [Internet]. Instituto de Salud Carlos III: Madrid; 2021 May 18 [cited 2021 May 30]. Available from: https://www.isciii.es/Noticias/Noticias/Paginas/Noticias/Presentaci%c3%b3n-resultados-preliminares-CombivacS.aspx.

