Coronavirus (COVID-19) - Vaccine Questions and Reactions

DEFINITION

- Patient believes they are having a reaction to a COVID-19 vaccination (immunization).
- Questions about the COVID-19 vaccine.

Notes:

- Local injection site symptoms such as pain, redness, and swelling usually last 1 to 3 days.
- Systemic reaction symptoms such as chills, fatigue, fever, joint pain, headache, muscle aches usually last 1 to 2 days.
- Vaccine reaction symptoms may rarely last up to a week.
- The following symptoms are NOT from a vaccine reaction: cough, difficulty breathing, loss of taste or smell, runny nose, sore throat.

This guideline was **last updated** 12/31/2020.

TRIAGE ASSESSMENT QUESTIONS

Call EMS 911 Now

- Difficulty breathing or swallowing and starts within 2 hours after injection

  R/O: anaphylactic reaction

- Sounds like a life-threatening emergency to the triager

See More Appropriate Protocol

- [1] COVID-19 exposure AND [2] no symptoms

  Go to Protocol: Coronavirus (COVID-19) - Exposure (Adult)

- [1] Typical COVID-19 symptoms AND [2] symptoms that are NOT expected from vaccine (e.g., cough, difficulty breathing, loss of taste or smell, runny nose, sore throat)

  Go to Protocol Coronavirus (COVID-19) - Diagnosed or Suspected

- [1] Typical COVID-19 symptoms AND [2] started > 3 days after getting vaccine

  Go to Protocol Coronavirus (COVID-19) - Diagnosed or Suspected

Go to ED/UCC Now (or to Office with PCP Approval)

- Fever > 104 F (40 C)

  R/O: severe reaction

- [1] Fever > 101 F (38.3 C) AND [2] age > 60 AND [3] started > 48 hours after getting vaccine

  R/O: bacterial infection

- [1] Fever > 100.0 F (37.8 C) AND [2] bedridden (e.g., nursing home patient, CVA, chronic illness, recovering from surgery) AND [3] started > 48 hours after getting vaccine

  R/O: bacterial infection

- [1] Fever > 100.0 F (37.8 C) AND [2] diabetes mellitus or weak immune system (e.g., HIV positive, cancer chemo, splenectomy, organ transplant, chronic steroids) AND [3] started > 48 hours after getting vaccine

  R/O: bacterial infection

- Sounds like a severe, unusual reaction to the triager

See Today in Office

- Fever > 100.0 F (37.8 C) present > 3 days (72 hours)

  R/O: bacterial superinfection or other acute illness. Note: COVID-19 vaccine related fever occurs most often during the first 2 days after the vaccination.

- [1] Pain, tenderness, or swelling at the injection site AND [2] over 3 days (72 hours) since vaccine AND [3] getting worse

  R/O: low-grade infection

- [1] Redness or red streak around the injection site AND [2] started > 48 hours after getting vaccine (Exception: red area < 1 inch or 2.5 cm wide)

  R/O: bacterial superinfection, cellulitis

Call Local Agency Today

- [1] Fever > 100.0 F (37.8 C) AND [2] healthcare worker

  Reason: healthcare worker should contact employee health. May need to be excluded from work pending further evaluation, including consideration for SARS-CoV-2 testing.

See Within 3 Days in Office

- [1] Pain, tenderness, or swelling at the injection site AND [2] lasts > 7 days

  R/O: low-grade infection

See Within 2 Weeks in Office

- [1] Requesting COVID-19 vaccine AND [2] healthcare worker (e.g., EMS first responders, doctors, nurses)

  Reason: healthcare workers have a high priority for getting the COVID-19 vaccine (Phase 1a vaccine distribution).

- [1] Requesting COVID-19 vaccine AND [2] resident of a long-term care facility (e.g., nursing home)

  Reason: residents of long-term care facilities have a high priority for getting the COVID-19 vaccine (Phase 1a vaccine distribution).

- [1] Requesting COVID-19 vaccine AND [2] vaccine available in the community for this patient group

  Note: Phase 1a vaccination includes healthcare workers and residents of long-term care facilities. Phase 1b is frontline essential workers and people 75 years and older. Phase 1c is people 16 to 64 years old with higher-risk medical conditions; and people 65 years and older; and other essential workers.

Home Care

- COVID-19 vaccine, injection site reaction (e.g., pain, redness, swelling), question about
- COVID-19 vaccine, systemic reactions (e.g., fatigue, fever, muscle aches), questions about
- COVID-19 vaccine, Frequently Asked Questions (FAQs)
- COVID-19 Prevention and Healthy Living, questions about

  Note: How to protect you and your family; how to reduce anxiety and stress.

HOME CARE ADVICE

COVID-19 Vaccine - Injection Site Reactions

1. **Cold Pack for Local Reaction at Injection Site:**
   - Apply a cold pack or ice in a wet washcloth to the area for 20 minutes. Repeat in 1 hour.
   - Then apply as needed for the first 48 hours after the injection. (Reason: reduce the pain and swelling.)
2. **Pain Medicines:**
   - For pain relief, you can take either acetaminophen, ibuprofen, or naproxen.
   - They are over-the-counter (OTC) pain drugs. You can buy them at the drugstore.
   - **Acetaminophen - Regular Strength Tylenol:** Take 650 mg (two 325 mg pills) by mouth every 4 to 6 hours as needed. Each Regular Strength Tylenol pill has 325 mg of acetaminophen. The most you should take each day is 3,250 mg (10 pills a day).
   - **Acetaminophen - Extra Strength Tylenol:** Take 1,000 mg (two 500 mg pills) every 8 hours as needed. Each Extra Strength Tylenol pill has 500 mg of acetaminophen. The most you should take each day is 3,000 mg (6 pills a day).
   - **Ibuprofen (e.g., Motrin, Advil):** Take 400 mg (two 200 mg pills) by mouth every 6 hours. The most you should take each day is 1,200 mg (six 200 mg pills), unless your doctor has told you to take more.
   - **Naproxen (e.g., Aleve):** Take 220 mg (one 220 mg pill) by mouth every 8 to 12 hours as needed. You may take 440 mg (two 220 mg pills) for your first dose. The most you should take each day is 660 mg (three 220 mg pills a day), unless your doctor has told you to take more.
3. **Pain Medicines - Extra Notes and Warnings:**
   - Use the lowest amount of medicine that makes your pain better.
   - Acetaminophen is thought to be safer than ibuprofen or naproxen in people over 65 years old. Acetaminophen is in many OTC and prescription medicines. It might be in more than one medicine that you are taking. You need to be careful and not take an overdose. An acetaminophen overdose can hurt the liver.
   - McNeil, the company that makes Tylenol, has different dosage instructions for Tylenol in Canada and the United States. In Canada, the maximum recommended dose per day is 4,000 mg or twelve Regular-Strength (325 mg) pills. In the United States, the maximum dose per day is ten Regular-Strength (325 mg) pills.
   - Bayer, the company that makes Aleve, has different dosage instructions for Aleve in Canada and the United States. In Canada, the maximum recommended dose per day is 440 mg (2 pills or caplets). In the United States, the maximum dose per day is 660 mg (3 pills or caplets).
   - **Caution:** Do not take acetaminophen if you have liver disease.
   - **Caution:** Do not take ibuprofen or naproxen if you have stomach problems, kidney disease, are pregnant, or have been told by your doctor to avoid this type of anti-inflammatory drug. Do not take ibuprofen or naproxen for more than 7 days without consulting your doctor.
   - *Before taking any medicine, read all the instructions on the package.*

4. **Call Back If:**
   - Fever lasts over 3 days
   - Pain at injection site not improving after 3 days
   - You become worse.

COVID-19 Vaccine - Questions About Reactions

1. **Note to Triager - Discussing Common vs. Rare Reactions:**
   - Discuss the **Common Reactions** with the caller. Reassure the caller that these reactions are generally harmless.
   - Discuss **Rare Reactions** only if the caller specifically asks.

2. **COVID-19 Vaccine - Common Reactions:**
   - Local pain, redness, or swelling at injection site
   - Feeling tired (fatigue)
   - Fever
   - Headache
   - Muscle aches or joint pains
   - *Symptoms usually last 1 to 2 days.*

3. **COVID-19 Vaccine - Rare Reactions:**
   - Rarely, a **severe allergic reaction** (anaphylactic reaction) of the body's immune system may occur after a COVID-19 vaccination. This is a severe and sometimes life-threatening overreaction (allergic reaction) of the body's immune system.
   - *Symptoms*: Symptoms of an anaphylactic reaction include breathing difficulty, dizziness, face and throat swelling, fast heart beating, rash all over the body, and weakness.
   - *Onset*: Most allergic reactions to vaccines occur within minutes to two hours of getting the vaccine injection.

4. **Pain and Fever Medicines:**
   - For pain or fever relief, take either acetaminophen or ibuprofen.
   - They are over-the-counter (OTC) drugs that help treat both fever and pain. You can buy them at the drugstore.
   - Treat fevers above 101° F (38.3° C). The goal of fever therapy is to bring the fever down to a comfortable level. Remember that fever medicine usually lowers fever 2 degrees F (1 - 1 1/2 degrees C).
   - **Acetaminophen Regular Strength Tylenol:** Take 650 mg (two 325 mg pills) by mouth every 4-6 hours as needed. Each Regular Strength Tylenol pill has 325 mg of acetaminophen. The most you should take each day is 3,250 mg (10 pills a day).
   - **Acetaminophen - Extra Strength Tylenol:** Take 1,000 mg (two 500 mg pills) every 8 hours as needed. Each Extra Strength Tylenol pill has 500 mg of acetaminophen. The most you should take each day is 3,000 mg (6 pills a day).
   - **Ibuprofen (e.g., Motrin, Advil):** Take 400 mg (two 200 mg pills) by mouth every 6 hours. The most you should take each day is 1,200 mg (six 200 mg pills), unless your doctor has told you to take more.

5. **Pain and Fever Medicines - Extra Notes and Warnings:**
   - Use the lowest amount of medicine that makes your pain or fever better.
   - Acetaminophen is thought to be safer than ibuprofen or naproxen in people over 65 years old. Acetaminophen is in many OTC and prescription medicines. It might be in more than one medicine that you are taking. You need to be careful and not take an overdose. An acetaminophen overdose can hurt the liver.
   - McNeil, the company that makes Tylenol, has different dosage instructions for Tylenol in Canada and the United States. In Canada, the maximum recommended dose per day is 4,000

mg or twelve Regular-Strength (325 mg) pills. In the United States, the maximum dose per day is ten Regular-Strength (325 mg) pills.

- **Caution:** Do not take acetaminophen if you have liver disease.
- **Caution:** Do not take ibuprofen if you have stomach problems, kidney disease, are pregnant, or have been told by your doctor to avoid this type of anti-inflammatory drug. Do not take ibuprofen for more than 7 days without consulting your doctor.
- *Before taking any medicine, read all the instructions on the package.*

6. **Call Back If:**
   - Fever lasts over 3 days
   - Pain at injection site lasts over 3 days
   - You become worse.

COVID-19 Vaccine - Frequently Asked Questions (FAQs)

1. **Note to Triager - Frequently Asked Questions (FAQs):**
   - Select the FAQ(s) that best addresses the caller's main question or concern.
   - Briefly provide this care advice and health information to the caller.
   - You can direct the caller to national, state, or province websites for additional information.
   - *US Centers for Disease Control and Prevention (CDC):* Frequently Asked Questions about COVID-19 Vaccination. https://www.cdc.gov/coronavirus/2019-ncov/vaccines/faq.html.
   - *Public Health Agency of Canada (PHAC):* COVID-19 Drugs and Vaccines. https://www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19.html.

2. **FAQ - Why Should I Get the COVID-19 Vaccine?**
   - **Protect Yourself:** Getting a COVID-19 vaccine will help prevent you from getting COVID-19. Getting a COVID-19 vaccine will prevent you from getting severely sick and having complications from COVID-19.
   - **Protect Others:** You can help protect your family and your community by getting the COVID-19 vaccination.

3. **FAQ - How Is the Vaccine Given?**
   - The vaccine is given as an injection (shot) into the muscle of the upper arm.
   - All but one of the vaccines being developed need two doses 21 to 28 days apart to work best. For example, for the Pfizer vaccine you will need two shots 21 days apart. The exact timing of the second dose depends on which vaccine you get.
   - Write down the following information when you get your first dose: (1) the name of the vaccine, (2) the date you got it, (3) when you are due for your next dose.

4. **FAQ - Is the COVID-19 Vaccine Safe?**
   - Yes. The vaccine is safe.
   - The side effects are similar to other vaccines, such as the flu shot (influenza), tetanus, or shingles.
   - Like all vaccines there is always a chance of a more serious side effect. However, serious side effects, such as an allergic reaction, are rare.

5. **FAQ - What Are the Most Common Side Effects of the COVID-19 Vaccine?**
   - The most common side effects are feeling tired, fever, headache, muscle aches, and pain at the site of the injection.
   - Side effects are normal. They mean your immune system is working and building antibodies.
   - While they can be unpleasant, they are not serious. They do not lead to any risks to your health.
   - Side effects usually last 1 to 3 days.
   - Side effects may be worse after the second vaccine shot.

6. **FAQ - What Are the Symptoms of a Severe Reaction to the COVID-19 Vaccine?**
   - Serious side effects, such as an allergic reaction, are rare.
   - Severe allergic reactions to vaccines occur within minutes to two hours of getting the vaccine injection.
   - Symptoms of a severe allergic reaction include breathing difficulty, dizziness, face and throat swelling, fast heart beating, rash all over the body, and weakness.

7. **FAQ - When Can I Get the COVID-19 Vaccine?**
   - The Pfizer - BioNTech and the Moderna COVID-19 vaccines were approved for use in December 2020. Many other vaccines are in development.
   - Other vaccines (e.g., AstraZeneca, Johnson & Johnson) are being developed and will soon become available.
   - Vaccines will first be offered to healthcare workers and residents of long-term care facilities.

8. **FAQ - Where Can I Get the COVID-19 Vaccine?**
   - Eventually you will be able to get the COVID-19 vaccine at all the same places you currently get your immunization shots.
   - This includes doctors' offices, retail pharmacies, hospitals, and federally qualified health centers.

9. **FAQ - Who Should Get the COVID-19 Vaccine?**
   - The Pfizer vaccine is approved for use in people 16 years and older.
   - The Moderna vaccine is approved for use in people 18 years and older.

10. **FAQ - Who Should NOT Get the COVID-19 Vaccine?**
    - **Prior Severe Reaction:** You should not get the COVID-19 vaccine if you have had a severe allergic reaction after the first dose of this vaccine. Tell your healthcare provider if you have ever had a bad allergic reaction to a vaccine or other injected medicine. Your healthcare provider will advise you if it is OK.
    - **Current COVID-19 Infection:** Vaccination should be **postponed** until you are feeling well and the isolation period is over.
    - **Recent Exposure:** Vaccination should be **postponed** until after the quarantine period is over.
    - **Antibody Therapy:** If you had antibody therapy for COVID-19, the vaccine should be postponed at least 90 days. Discuss this with your healthcare provider.

11. **FAQ - Who Should Have Priority for Getting the COVID-19 Vaccine?**
    - At first, there will be a limited supply of COVID-19 vaccine.
    - **Phase 1a:** Healthcare workers and residents of long-term care facilities have priority for getting the COVID-19 vaccine. They should get it first.
    - **Phase 1b:** Essential frontline workers such as teachers, police, fire fighters, utilities, etc.); and people 75 years and older
    - **Phase 1c:** People 16 to 64 years old with higher-risk medical conditions; and people 65 years and older; and other essential workers.
    - Eventually, there will be enough vaccine for everyone.

12. **FAQ - Can I Get the COVID-19 Vaccination if I Am Pregnant or Breastfeeding?**
    - **Pregnancy:** There is limited research to be able to answer this question fully. Experts believe that the COVID-19 vaccine is probably safe in pregnancy. There is no live virus in the vaccine. Healthcare workers who are pregnant should be offered this vaccine because of their risk of getting the COVID-19 infection while working. Talk with your healthcare provider.
    - **Breastfeeding:** There is no research data to answer the question of whether the COVID-19 vaccine is safe in breastfeeding women. Experts believe that there should be no risks to the breastfeeding infant. Healthcare workers who are breastfeeding should be offered this vaccine because of their risk of getting the COVID-19 infection while working. Talk with your healthcare

provider.

13. **FAQ - Can I Get My Child Vaccinated Against COVID-19?**
    - The Pfizer COVID-19 vaccine has been approved for those 16 years and older.
    - The COVID-19 vaccine has not been tested in babies, infants, and children. More research is needed to make certain that it is safe.
    - Therefore, the COVID-19 vaccine is not yet available for children.

14. **FAQ - Which COVID-19 Vaccine Should I Get?**
    - Any COVID-19 vaccine that has been approved means it is effective and safe.
    - Follow the recommendation of your healthcare provider (doctor, NP, PA) or drug store pharmacist.

15. **FAQ - Can I Get COVID-19 From the Vaccine?**
    - No.
    - There is no living COVID-19 virus in the vaccine. It is impossible to get COVID-19 from the vaccine.

16. **FAQ - If I Already Had COVID-19, Should I Get the Vaccine?**
    - Yes. A test for prior infection is not needed to decide if you should get the vaccine.
    - The CDC states that the vaccines should be offered to those with a history of COVID-19 infection.
    - If you are sick with COVID, the vaccination should be postponed until you are feeling well and the isolation period is over.
    - You are unlikely to catch COVID-19 again within 90 days of a proven prior infection (tested positive). Therefore, you may choose to postpone the vaccine until after this 90 day period.

17. **FAQ - How Can I Report a Bad Reaction to the COVID-19 Vaccine?**
    - Anyone, including parents and patients, can report a bad reaction.
    - **Canada:** In Canada use the **Reporting Adverse Events Following Immunization** (AEFI) system. The reporting form can be found at: https://www.canada.ca/en/public-health/services/immunization/reporting-adverse-events-following-immunization/form.html.
    - **United States:** The best way to report is to use the **Vaccine Adverse Event Reporting System** (VAERS) website. There is an online form at: https://vaers.hhs.gov/reportevent.html.

18. **FAQ - Can the COVID-19 Vaccine Change My DNA (Genes)?**
    - No.
    - None of the COVID-19 vaccines work by entering the nucleus (where your DNA is located).
    - They cannot change a person's DNA. Instead they work with a person's immune system to fight the virus.

19. **FAQ - Do I Need to Still Wear a Mask After I Have Received the COVID-19 Vaccine?**
    - Yes.
    - The COVID-19 vaccine is highly effective. However, no vaccine is perfect.
    - Protect yourself and others. Wear a mask when you are outside your home and in any indoor space or public place.

20. **Call Back If:**
    - You have more questions.

COVID-19 Prevention and Healthy Living

1. **COVID-19 - How to Protect Your Family and Yourself From Getting Sick:**
    - *Avoid close contact with people known to have this new coronavirus infection.*
    - *Avoid close contact with people outside your family unit.*

- Avoid closed spaces (indoors) when possible and all crowds (even outdoors).
- When you must leave your home, wear a mask and observe social (safe) distancing.
- Try to stay at least 6 feet (2 meters) away from anyone who is coughing.
- Wash hands often with soap and water.
- Alcohol-based hand cleaners are also effective.
- Avoid touching the eyes, nose or mouth. Germs on the hands can spread this way.
- Do not share eating utensils (e.g., spoon, fork).

2. **COVID-19 - Face Masks for Prevention:**
   - Face masks are essential for reducing the spread of COVID-19. They will also reduce the spread of influenza. Wearing a mask means you care about other people.
   - **Sick Patients:** People who are sick with COVID-19 must always wear a face mask if they need to leave the home. Example: for medical visits. *Exception:* patients with trouble breathing (CDC). Consider a loose face covering such as a bandana.
   - **Well People:** When community spread is high, the CDC also recommends face masks or coverings for everyone going outside the home. They are critical if entering a public building, such as a grocery store. *Reason:* Many people with COVID-19 have no symptoms but can spread the virus. *Exceptions:* Face mask or covering is optional if outdoors and you can avoid being within 6 feet (2 meters) of other people. Some examples are an outdoor walk or run.
   - **Age Limits:** Face coverings also are not recommended for children under 2 years (CDC).
   - More information on how to make and use a cloth face mask at: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-to-make-cloth-face-covering.html.

3. **Keep Your Mind Positive:**
   - **Live in the Present:** Live in the present, not the future. The future is where your needless worries live.
   - **Think Positive:** Use a mantra to reduce your fears, such as "I am strong". Stay positive.
   - **Get Outdoors:** Take daily walks. Go to a park if you have one. Being in nature is good for your immune system.
   - **Stay in Touch With Your Friends and Family:** Use regular phone calls and video chats to stay in touch with those you love. Schedule virtual video dinners with friends and family!

4. **Keep Your Body Strong:**
   - Get your body ready to fight the COVID-19 virus.
   - Get enough sleep.
   - Stay physically active. Walk or exercise every day. Take the stairs.
   - Stay well hydrated.
   - Eat healthy meals. Avoid overeating to deal with your fears.
   - Avoid the over-use of anti-fever medicines. Fever helps fight infections and ramps up your immune system.

5. **Ask for Help:**
   - If you feel so sad or worried that you cannot function, reach out to your health care provider, local mental health center, or national helpline.
   - **Canada:** In Canada, crisis and mental health support is available at: https://www.canada.ca/en/public-health/services/mental-health-services/mental-health-get-help.html.
   - ***United States - SAMHSA:*** 1-800-662-HELP (4357). Website: www.samhsa.gov/find-help/national-helpline.

6. **Call Back If:**
   - You have more questions.

FIRST AID

FIRST AID ADVICE for Anaphylaxis - Epinephrine

- If the patient has an epinephrine autoinjector, **give it now**. Do not delay.
- Use the autoinjector on the upper outer thigh. You may give it through clothing if needed.
- Give epinephrine first, then call 911.

Epinephrine is available in autoinjectors under trade names: *EpiPen*, *EpiPen Jr*, and *Auvi-Q* (Allerject in Canada). Auvi-Q has an audio chip and talks patients and caregivers through injection process.

You may give a second (repeat) dose of epinephrine 10-15 minutes later, IF the person with anaphylaxis does not respond to the first dose AND ambulance arrival takes longer than 10 minutes.

FIRST AID ADVICE for Anaphylaxis - Benadryl

- Give antihistamine by mouth now if able to swallow.
- Use Benadryl (diphenhydramine; adult dose 50 mg) or any other available antihistamine.

BACKGROUND INFORMATION

Key Points

- Vaccines are generally safe and effective.
- Side effects such as local pain, fever, fatigue are common after any vaccination. They are normal symptoms after a vaccination.
- Serious reactions, such as anaphylaxis, are very rare.
- The Pfizer - BioNTech and the Moderna COVID-19 vaccines were approved for use in December 2020. Many other vaccines are in development.

Types of COVID-19 Vaccines

Several COVID-19 vaccines have been approved or are nearing approval for use in Canada and the United States:

- AstraZeneca (Oxford)
- Janssen
- Johnson & Johnson (single shot)
- *Moderna:* https://www.modernatx.com/cove-study. Approved for use in Canada and US, December 2020. For people 18 years and older.
- Novavax
- *Pfizer - BioNTech:* https://www.cvdvaccine.com/. Approved for use in Canada and US, December 2020. For people 16 years and older.

There are many COVID-19 vaccines still in development.

COVID-19 Vaccine Reactions

Three types of reactions can occur after any type of vaccination: *local*, *systemic*, and *anaphylactic*.

A **local reaction** can occur at the injection site after a COVID-19 vaccination. These symptoms usually last 1 to 3 days. Side effects are more frequent after the second vaccine shot.

- Lymph node swelling in armpit of injection (12%)
- Pain at injection site (84-92%)
- Redness at injection site (6%)
- Swelling at injection site (9%)

Symptoms from a **systemic reaction** are common and normal after a COVID-19 vaccination. These symptoms usually last 1 to 2 days. Side effects are more frequent after the second vaccine shot.

- Chills (32-43%)
- Fatigue (63-69%)
- Fever (14-15%)
- Headache (55-63%)
- Joint pain (24-45%)
- Muscle pain (38-60%)

Rarely, a **severe allergic reaction** (anaphylactic reaction) of the body's immune system may occur after a COVID-19 vaccination. This is a severe and sometimes life-threatening overreaction (allergic reaction) of the body's immune system.

- *Symptoms*: Symptoms of an anaphylactic reaction include breathing difficulty, dizziness, face and throat swelling, fast heart beating, rash all over body, and weakness.
- *Onset*: Most allergic reactions to vaccines occur within minutes to two hours after getting the vaccine injection.

The following are NOT side effects of the COVID-19 vaccine: cough, loss of taste or smell, runny nose, shortness of breath, and sore throat. Instead, they may be symptoms of a COVID-19 or another infection.

Internet Resources

- *Centers for Disease Control and Prevention (CDC):* Frequently Asked Questions about COVID-19 Vaccination. https://www.cdc.gov/coronavirus/2019-ncov/vaccines/faq.html.
- *Health Canada:* Health Canada authorizes first COVID-19 vaccine: *https://www.canada.ca/en/health-canada/news/2020/12/health-canada-authorizes-first-covid-19-vaccine0.html*.
- The National Academies of Sciences, Engineering, Medicine: National Academies Release Framework for Equitable Allocation of a COVID-19 Vaccine for Adoption by HHS, State, Tribal, Local, and Territorial Authorities. This news release summarizes the four phases of vaccine distribution. https://www.nationalacademies.org/news/2020/10/national-academies-release-framework-for-equitable-allocation-of-a-covid-19-vaccine-for-adoption-by-hhs-state-tribal-local-and-territorial-authorities.
- *Public Health Agency of Canada (PHAC):* COVID-19 Drugs and Vaccines. https://www.canada.ca/en/public-health/services/diseases/coronavirus-disease-covid-19.html.
- *United States Federal Drug Administration (FDA):* COVID-19 Vaccine. https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines.

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