COVID-19 Delta Variant and Third Doses
FAQs and Talking Points

**Purpose:** Internal use only. Penn Medicine providers and staff should reference this document for more information about the COVID Delta variant, third doses of the COVID-19 vaccine for severely immunocompromised patients, and the booster shot.

**Delta Overview and Vaccine Effectiveness**
- The dominant strain of COVID-19 in the United States is now the Delta variant:
  - The Delta variant is highly contagious, more than 2x contagious as previous variants.
  - Some data suggest that the Delta variant might cause more severe illness than previous strains in unvaccinated persons.
  - Unvaccinated people remain the greatest concern. Although breakthrough infections happen much less often than infections in unvaccinated people, individuals infected with the Delta variant, including fully vaccinated people with symptomatic breakthrough infections, can transmit it to others.
  - Fully vaccinated people with Delta variant breakthrough infections can spread the virus to others. However, vaccinated people appear to be infectious for a shorter period. Previous variants typically produced less virus in the body of infected fully vaccinated people (breakthrough infections) than in unvaccinated people. In contrast, the Delta variant seems to produce the same high amount of virus in both unvaccinated and fully vaccinated people.
- Vaccines are highly effective against the Delta variant.
  - Although vaccines are highly effective, some fully vaccinated people will become infected (called a breakthrough infection) and experience illness. For such people, the vaccine still provides them strong protection against serious illness and death.

**Third-Doses for Immunocompromised Patients**
- In response to the Delta variant, the FDA extended its emergency use authorizations (EUA) for both the Pfizer-BioNTech COVID-19 vaccine and the Moderna COVID-19 vaccine to allow an additional dose for certain people who are immunocompromised. Information about third doses for immunocompromised patients is available on the [COVID-19 vaccine page](https://www.pennmedicine.org/coronavirus/vaccine).
- Since Wednesday, Aug. 25, Penn Medicine has been scheduling third doses of the Pfizer-BioNTech COVID-19 vaccine for severely immunocompromised patients ages 16 and older and the Moderna COVID-19 vaccine for severely immunocompromised patients ages 18 and older. [Information about step-by-step patient scheduling is available here](https://www.pennmedicine.org/coronavirus/vaccine).
  - Appointments will only be made for patients with severely compromised immune systems and who received the 2nd dose of a COVID-19 vaccine at least 28 days prior. Patients should check with their providers to determine if they are severely immunocompromised.
  - “Severely immunocompromised” includes people who have received an organ transplant and are taking therapies that suppress their immune systems, and people who are in active treatment, such as chemotherapy or a daily radiation therapy for cancer.
Penn Medicine is also providing third doses of the Pfizer-BioNTech and Moderna COVID-19 vaccine to severely immunocompromised employees. Click here for details and scheduling information.

Patients who receive a third-dose vaccine should notify their care team so the information can be updated in their medical record.

Unlike last winter, there is ample supply of the vaccines. We are confident in our area pharmacies’ ability to provide third doses of the COVID vaccine, safely and conveniently, just like they do with flu shots every year. If a third dose is authorized and available to you, we recommend that you take it.

Severely immunocompromised patients and faculty and staff are encouraged to utilize vaccines.gov as a resource to find COVID-19 vaccines locally.

Booster Shots

- The CDC has released guidance that aligns with the FDA’s decision to expand access to COVID-19 vaccine booster doses to anyone who previously received Pfizer, Moderna, or J&J vaccines.
- For individuals who received a Pfizer-BioNTech or Moderna COVID-19 vaccine, the following groups are eligible for a booster shot at 6 months or more after their initial series:
  - 65 years and older
  - Age 18+ who live in long-term care settings
  - Age 18+ who have underlying medical conditions
  - Age 18+ who work or live in high-risk settings, including health frontline health care workers
- For individuals who received the Johnson & Johnson COVID-19 vaccine, booster shots are also recommended for those who are 18 and older and who were vaccinated two or more months ago.
- Penn Medicine is currently providing boosters of Pfizer, Moderna, and J&J vaccines. Interested employees can schedule an appointment for a booster on the Employee COVID-19 Third Dose and Booster Shot Vaccine Scheduling site.
- Booster vaccines are not being mandated under the COVID-19 Immunization Policy at this time.
- It is safe to administer a COVID-19 shot and other vaccines, such as the influenza vaccine, at the same time. The CDC has shared that the 14-day separation from other vaccines during initial administration was out of an abundance of caution, not due to an identified risk. They have since updated their guidance.
- Penn Medicine is providing booster shots of the Pfizer-BioNTech, Moderna, and Johnson & Johnson COVID-19 vaccines to patients who meet the criteria below:
  - Pfizer BioNTech: Patients ages 16 and older who are severely immunocompromised and received their second dose of Pfizer at least 28 days ago
  - Pfizer: Patients ages 65 and older who received their second dose of Pfizer at least six months ago
  - Moderna: Patients ages 18 and older who are severely immunocompromised and received their second dose of Moderna at least 28 days ago
  - Moderna: Patients ages 65 and older who received their second dose of Moderna at least
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six months ago

- Johnson & Johnson: Patients ages 18 and older who received their dose of Johnson & Johnson at least two months ago

- CDC guidance allows eligible individuals to choose which vaccine they receive as a booster dose. Some people may have a preference to receive the same vaccine type that they originally received, and others may prefer to get a different vaccine booster. If you are not sure which vaccine to get as your booster dose you should speak with your provider.

- Unlike last winter, vaccines are now widely available, and we are confident in our area pharmacies’ ability to provide COVID booster shots, safely and conveniently. Patients and faculty and staff can utilize **vaccines.gov** as a resource to find COVID-19 vaccines locally.

- Vaccine boosters are different from third doses of the vaccine which were approved for people with severely weakened or compromised immune systems.
  - If you have already received, or plan to receive, a third dose of either mRNA vaccine, additional shots are not recommended at this time. Click here for details and scheduling information for employees who require a third dose.

**Boosters for Moderately and Severely Compromised Individuals**

- Moderately and severely immunocompromised individuals who are 18 years of age or older who completed an mRNA (Pfizer or Moderna) COVID-19 vaccine primary series, and received an additional mRNA (Pfizer or Moderna) vaccine dose, may receive a single COVID-19 booster dose (Pfizer, Moderna, or J&J) at least 6 months after receiving the third mRNA vaccine dose.

- Moderately and severely immunocompromised individuals who are 18 years of age or older who received a single dose of the Johnson & Johnson COVID-19 vaccine initially should receive a single COVID-19 booster vaccine dose (Pfizer, Moderna, or J&J) at least 2 months after receiving the initial Janssen vaccine dose.

**Masking Guidance**

- In response to the rapid spread of the Delta variant, Penn Medicine announced changes to the masking guidance. Effective immediately:
  - Masks should be worn at all times when indoors in all Penn buildings, regardless of whether the building is clinical or nonclinical, and regardless of individual vaccination status.
  - Individuals should avoid large crowds.
  - Masks should be worn during meetings, even when all attendees are known to be fully vaccinated, and regardless of whether the meeting is in a clinical or nonclinical space/building.
  - Meals should no longer be served at educational conferences and meetings; even if all attendees are vaccinated. Masks should stay on at all times in these group settings.

**Pre-Procedural Testing**

- Penn Medicine is **requiring pre-procedure testing** for all procedures with sedation and/or anesthesia (general, MAC, and regional). This decision by the UPHS COVID-19 Clinical Testing
Oversight and the UPHS Epidemiology Committees is effective Monday, August 23. For all other procedures, testing is not required but may be ordered at the discretion of the provider.

Classifying SARS-CoV-2 Variants

- The Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) have classified SARS-CoV-2 variants by letters of the Greek alphabet, and have subdivided the variants by clinical importance.
- **Variants of Interest (VOI)** are those that carry genetic markers that have been associated with changes to the receptor binding, reduced neutralization by antibodies, reduced efficacy of treatments, potential diagnostic impact, or predicted increase in transmissibility or disease severity. Many of these are under study by CDC.
- **Variants of Concern (VOC)** are those for which there is solid evidence of increased transmissibility, more severe disease, a significant reduction in neutralization by antibodies, reduced effectiveness of treatments or vaccines, or diagnostic detection failures. The table below outlines the current list of VOC:

<table>
<thead>
<tr>
<th>WHO designation</th>
<th>Other names</th>
<th>Country/region of origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td>B.1.1.7</td>
<td>U.K.</td>
</tr>
<tr>
<td>Beta</td>
<td>B.1.351, B.1.351.2, B.1.351.3</td>
<td>South Africa</td>
</tr>
<tr>
<td>Gamma</td>
<td>P.1, P.1.1, P.1.2</td>
<td>Brazil</td>
</tr>
<tr>
<td>Delta</td>
<td>B.1.617.2, AY.1, AY.2, AY.3</td>
<td>India</td>
</tr>
<tr>
<td>Epsilon</td>
<td>B.1.427, B.1.429</td>
<td>California</td>
</tr>
</tbody>
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- **Variants of High Consequence (VOHC)** are those with clear evidence that prevention measures or medical countermeasures have significantly reduced effectiveness compared to prior variants. Fortunately, there are no SARS-CoV-2 VOHC that have been identified.

Responding to Patient Questions

**Question:** What is the Delta variant?
**Response:** The Delta variant, which was first discovered in India during the summer and spread rapidly around the globe, is the predominant strain of COVID-19 in the U.S. This new variant is far more contagious than all prior SARS-CoV-2 strains. The Delta variant is associated with a two-fold increased risk of hospitalization compared to prior variants. Although uncommon, the Delta variant has demonstrated the ability to infect and be transmitted by persons that have been fully vaccinated. Illness caused by the Delta variant in vaccinated persons, however, tends to be mild. Nonetheless, the rising rate of U.S. cases due to the Delta variant has resulted in a CDC recommendation to return to indoor masking as an added mitigation step irrespective of vaccination status.

**Question:** What about the Delta-plus and Lambda variants?
**Response:** The Delta-plus variant has an additional mutation that enhances the ability to enter cells. It also arose in India, and currently makes up a small percentage of U.S. SARS-CoV-2 strains. The Lambda variant developed in Peru, where it now causes the vast majority of infections in that and surrounding countries. It
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has not, however, gained a foothold in the U.S. CDC currently considers both of these variants to be VOI, and they are being carefully tracked.

**Question:** I am immunocompromised. Why do I need to get an additional dose of vaccine?

**Response:** People with severely weakened immune systems have a harder time fighting infections and are especially vulnerable to viruses like COVID. The FDA evaluated information on the use of a third dose of the Pfizer-BioNTech or Moderna vaccines in these individuals and determined that a third vaccine dose may increase their protection against COVID. The CDC also released guidance recommending booster shots for all recipients of Johnson & Johnson's coronavirus vaccine, saying everyone who got the one-dose shot — including immunocompromised patients — can get another dose of Johnson & Johnson at least two months after they were vaccinated — or a booster shot of Pfizer or Moderna.

**Question:** How soon should I get an additional dose? How long should I wait until after my second dose?

**Response:** The FDA authorizes individuals with severely weakened immune systems to receive a third dose at least 28 days following the second dose of the same vaccine. If you are severely immunocompromised and received your second dose more than 28 days ago, you can get a third dose.

**Question:** Where should I get my third dose?

**Response:** Penn Medicine can help you schedule an appointment to get your third dose. Note that appointments fill up quickly; if we are unable to find a time that works for you, please consider checking with your local pharmacy for availability. You can also use vaccines.gov to find a vaccination location near you.

**Question:** Can I get the third dose from my local pharmacy?

**Response:** Yes. We are confident in our area pharmacies to administer the vaccine and encourage you to get the third dose at a location convenient to you. Use vaccines.gov to find a vaccination location near you.

**Question:** What kind of vaccine should I get?

**Response:** The FDA has authorized the use of heterologous (or “mix and match”) booster doses for currently available (i.e., FDA-authorized or approved) COVID-19 vaccines. CDC guidance allows eligible individuals to choose which vaccine they receive as a booster dose. Some people may have a preference to receive the same vaccine type that they originally received, and others may prefer to get a different vaccine booster. If you are not sure which vaccine to get as your booster dose you should speak with your provider.

**Question:** Can I get an additional dose if I’m immunocompromised and got the Johnson & Johnson COVID-19 vaccine?

**Response:** Yes. The CDC released guidance recommending booster shots for all recipients of Johnson & Johnson’s coronavirus vaccine, saying everyone who got the one-dose shot — including immunocompromised patients — can get another dose of Johnson & Johnson at least two months after they were vaccinated — or a booster shot of Pfizer or Moderna.

**Question:** Should I have an antibody test before I get a third dose?

**Response:** An antibody test is not necessary. It would not change the decision to give you an additional dose.

**Question:** Do I need to provide proof of vaccination to get my third dose?

**Response:** Proof of vaccine is preferred, but it is not required when you present for your third dose. For scheduling purposes, patients need to report which vaccine they received for their first and second dose.
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**Question:** What kind of side effects can I anticipate if I get an additional dose of vaccine?  
**Response:** Based on preliminary studies, the side effects appear to be similar to the initial vaccine reactions, although they may be more pronounced. These include pain, redness and swelling at the injection site, as well as tiredness, headache, muscle pain, chills, fever and nausea. So far, there have not been serious side effects to additional dosing, but we will monitor patients closely.

**Question:** What is the difference between a third dose and a booster shot of the COVID-19 vaccine?  
**Response:** A third dose of the vaccine is recommended for patients who are moderately to severely immunocompromised. These patients do not respond with high levels of antibodies like nonimmunocompromised patients. As such, they require a third dose to achieve a similar level of immunity to patients without immunocompromising conditions. The third dose can be administered 28 days after a person’s second dose. Certain people who do not have severely weakened or compromised immune systems are eligible for a “booster shot” to “boost” their antibody levels and their immune response. [see question below].

**Question:** I am not immunocompromised. Am I eligible to receive a booster dose of the COVID-19 vaccine?  
**Response:** The CDC has released guidance that aligns with the FDA’s decision to expand access to COVID-19 vaccine booster doses to anyone who previously received Pfizer, Moderna, or Johnson & Johnson vaccines.

For individuals who received a Pfizer-BioNTech or Moderna COVID-19 vaccine, the following groups are eligible for a booster shot at 6 months or more after their initial series:

- 65 years and older
- Age 18+ who live in long-term care settings
- Age 18+ who have underlying medical conditions
- Age 18+ who work or live in high-risk settings including health frontline health care workers

For individuals who received the Johnson & Johnson COVID-19 vaccine, booster shots are also recommended for those who are 18 and older and who were vaccinated two or more months ago.

Vaccines are now widely available, and we are confident in our area pharmacies’ ability to provide COVID booster shots, safely and conveniently. Patients can utilize vaccines.gov as a resource to find COVID-19 vaccines locally. Patients can also schedule a vaccine appointment at one of the Penn Medicine locations by calling our COVID-19 Vaccine Scheduling Hotline at 267-758-4902.

**Question:** Is it safe to receive the influenza vaccine at the same time as the COVID-19 Booster?  
**Response:** The CDC has shared that the 14-day separation from other vaccines during initial administration was out of an abundance of caution, not due to an identified risk. They have since updated their guidance and shared that it is safe to administer a COVID-19 shot and other vaccines, such as the influenza vaccine, at the same time.

**Question:** Will there be enough vaccine available to meet the demand?  
**Response:** Yes, there is ample supply of the vaccines. At Penn Medicine, we will be prioritizing our supply to vaccinate our sickest patients and healthcare workers first. However, we are confident in our area
pharmacies’ ability to provide your COVID booster shots, safely and conveniently, just like they do with flu shots every year.

**Question:** Is the 15 or 30-minute wait time still required after the third dose or booster?
**Response:** Yes, the wait time will be the same as the first two vaccines.

**Question:** Should I let my care team know if I received the third dose or booster outside of Penn Medicine?
**Response:** Yes. Please let your care team know if you get an additional dose of the vaccine, so we have an accurate report of your vaccination status in your health records.

**Question:** How can I keep up with which variants are present in the U.S.?
**Response:** The CDC provides general information on SARS-CoV-2 variants [here](https://www.cdc.gov/coronavirus/2019-ncov/index.html). In addition, the relative proportion of variants present in the U.S. based on whole genome sequencing data can be found [here](https://www.cdc.gov/coronavirus/2019-ncov/index.html).

**Question:** Do our current tests for SARS-CoV-2 detect the new variants?
**Response:** Yes. All of the current diagnostic instrument platforms used throughout Penn Medicine can detect the circulating SARS-CoV-2 variants. This continues to be carefully studied by the laboratory at HUP.

**Questions:** What are the symptoms of a breakthrough infection in vaccinated people?
**Response:** Most patients with symptoms of a breakthrough infection will have the common symptoms associated with COVID-19, including new cough, fever, fatigue, or loss of taste or smell. There are anecdotal reports of breakthrough infections being associated with nasal congestion or runny nose, and headache. To date, there is no published evidence to definitively suggest that these symptoms are now being associated with breakthrough infections caused by the Delta variant. However, if you develop these types of symptoms, you should get tested.

**Question:** If I become infected with a COVID-19 variant strain, is there still treatment available?
**Response:** Yes. Although some variants have demonstrated partial resistance to monoclonal antibody cocktails administered in the outpatient setting, medications and other therapeutics administered in the hospital are still effective against the new COVID-19 variants.

**Question:** Where can I get more information?
**Response:** Please visit the COVID-19 vaccine webpage (pennmedicine.org/coronavirus/vaccine) for the most up-to-date information and FAQs. You can also review the guidance from the City of Philadelphia (phila.gov), the PA Department of Health (health.pa.gov) or the NJ Department of Health (nj.gov), depending on where you live. If you need help locating a vaccination site, visit [vaccines.gov](https://www.vaccines.gov).

**Employee Questions**

**Question:** How and why do new SARS-CoV-2 variants arise?
**Response:** Genetic variants of SARS-CoV-2 have been emerging and circulating around the world throughout the COVID-19 pandemic. Viral replication is an inefficient process that is prone to errors in copying the nucleotide sequence of RNA. These errors can result in changes to the amino acid sequence in proteins and thus a change in the three-dimensional structure of that protein. This is especially important in the spike protein of SARS-CoV-2, which is the critical attachment site for coronavirus infection of human cells. For SARS-CoV-2, mutations in the spike protein can significantly enhance the ability of the virus to enter cells.
and produce higher numbers of virus particles, which leads to the ability to more easily transmit infection to others. Such enhancements allow some viral strains (variants) to out-compete other strains as infection spreads through a population. Additional mutations can result in the ability of SARS-CoV-2 to resist destruction (neutralization) by antibodies. The evolutionary trend in SARS-CoV-2 has been both towards more contagious and more antibody-resistant variants.

**Question:** What are Penn Medicine’s plans for a third dose of the vaccine?

**Response:** The FDA extended its emergency use authorizations (EUA) for the Pfizer-BioNTech, Moderna, and Johnson & Johnson COVID-19 vaccines to allow an additional dose for certain people who have severely weakened immune systems. Currently, Penn Medicine is scheduling third-dose appointments for patients who are severely immunocompromised. [Click here to review more information about scheduling a severely immunocompromised patient for a third-dose vaccine.]

**Question:** If I am immunocompromised can I get a third dose from Occupational Medicine or should I obtain the dose from a local pharmacy?

**Response:** Penn Medicine is providing third doses of the Pfizer-BioNTech, Moderna, and Johnson & Johnson COVID-19 vaccines to severely immunocompromised employees. Click here for details and scheduling information. Employees who are Penn Medicine patients should have received scheduling information via MyPennMedicine. You can also receive a vaccine at your local pharmacy. Use vaccines.gov to find a vaccination location near you.

**Question:** What kind of vaccine should I get?

**Response:** The FDA has authorized the use of heterologous (or “mix and match”) booster doses for currently available (i.e., FDA-authorized or approved) COVID-19 vaccines. Some people may have a preference to receive the same vaccine type that they originally received, and others may prefer to get a different vaccine booster. If you are not sure which vaccine to get as your booster dose you should speak with your provider. Interested employees can get vaccinated at a local pharmacy or schedule an appointment through Penn Medicine.

**Question:** I’m not immunocompromised, but I work in a clinical setting. Are non-immunocompromised staff eligible for the booster?

**Response:** Yes. The CDC has released guidance that aligns with the FDA’s decision to expand access to COVID-19 vaccine booster doses to anyone who previously received Pfizer, Moderna, or J&J vaccines.

**For individuals who received a Pfizer-BioNTech or Moderna COVID-19 vaccine,** the following groups are eligible for a booster shot at 6 months or more after their initial series:

- 65 years and older
- Age 18+ who live in long-term care settings
- Age 18+ who have underlying medical conditions
- Age 18+ who work or live in high-risk settings including health frontline health care workers

**For individuals who received the Johnson & Johnson COVID-19 vaccine,** booster shots are also recommended for those who are 18 and older and who were vaccinated two or more months ago.
Employees who are interested in getting a booster vaccine at Penn Medicine, can schedule an appointment on the [Employee COVID-19 Third Dose and Booster Shot Vaccine Scheduling site](https://www.pennmedicine.org/coronavirus/vaccine). Vaccines are also now widely available, and we are confident in our area pharmacies’ ability to provide COVID booster shots, safely and conveniently. Employees can utilize [vaccines.gov](https://www.vaccines.gov) as a resource to find COVID-19 vaccines locally.

**Question:** Will I be paid for my time getting vaccinated?

**Response:** Appointments can be scheduled either during or outside of your work shift. University of Pennsylvania Health System paid employees will be paid for the time required for the appointment, including the observation period. Before scheduling your appointment during a work shift, please coordinate with your manager to minimize impact on patient care operations.

**Question:** Is the 15 or 30-minute wait time still required after the third dose or booster?

**Response:** Yes, the wait time will be the same as the first two vaccines.

**Question:** What are the side effects from the third dose/booster? This will help me plan for staff being out the next day.

**Response:** Based on preliminary studies, the side effects appear to be similar to the initial vaccine reactions, although they may be more pronounced. These include pain, redness and swelling at the injection site, as well as tiredness, headache, muscle pain, chills, fever and nausea. Fatigue and pain at the injection site where the most commonly reported side effects and, overall, most symptoms were mild to moderate. So far, there have not been serious side effects to additional dosing.

**Question:** Is it safe to receive the influenza vaccine at the same time as the COVID-19 booster?

**Response:** The [CDC](https://www.cdc.gov) has shared that the 14-day separation from other vaccines during initial administration was out of an abundance of caution, not due to an identified risk. They have since updated their guidance and shared that it is safe to administer a COVID-19 shot and other vaccines, such as the influenza vaccine, at the same time.

**Question:** I’m a Penn Medicine employee and I received the J&J vaccine. What about me?

**Response:** The [CDC](https://www.cdc.gov) released guidance recommending booster shots for all recipients of Johnson & Johnson's coronavirus vaccine, saying everyone who got the one-dose shot — including immunocompromised patients — can get another dose of Johnson & Johnson at least two months after they were vaccinated — or a booster shot of Pfizer or Moderna.