



# **Delta Variant Update**

## **(Data from Canada, UK, USA and Israel)**

**(Including breakthrough infections in the vaccinated population, and whether natural immunity having already recovered from the illness offers better protection against reinfection)**

**by**

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<https://www.canadiancovidcarealliance.org/>



## Executive Summary

- Although the Delta variant is about double more transmissible compared with the original L (Wuhan) strain, it seems to be less pathogenic. The death rate in the UK, Israel and Canada is currently such that it would be considered as a bad flu. Therefore, lock-downs are not warranted under these circumstances.
- The current COVID-19 vaccines are less effective against the Delta variant, and other variants since the number of cases in vaccinated and non-vaccinated is about equal based upon the data from Israel and the UK, the first country to attain “herd immunity” by immunization.
- People who have achieved natural immunity following recovery from SARS-CoV-2 infection are less likely to be reinfected. Their natural immunity being far more robust than that afforded by the experimental vaccines.
- In Canada, the predominant variant has been Alpha until recently and therefore only limited Delta variant data from Canada have been included in this brief. However, currently, the delta variant is contributing to up to 95% of the cases depending on the province in Canada.

## Delta Strain Occurrence in Canada

There is increasing concern expressed by health authorities world-wide for the emergence and predominance of the Delta variant (B.1.617.2) of the SARS-CoV-2 virus in many countries such as the UK, India and South Africa. This variant appears to be more infectious than its predecessors, and claims have been made in the media that it may be more virulent for sickness, hospitalizations and death. In Canada, the Delta variant has rapidly increased from 7% to 80% in just two months (Figures 1 and 2).

Figure 1. Variant prevalence for all Canada based on available sequenced cases from May 2 to July 4, 2021.

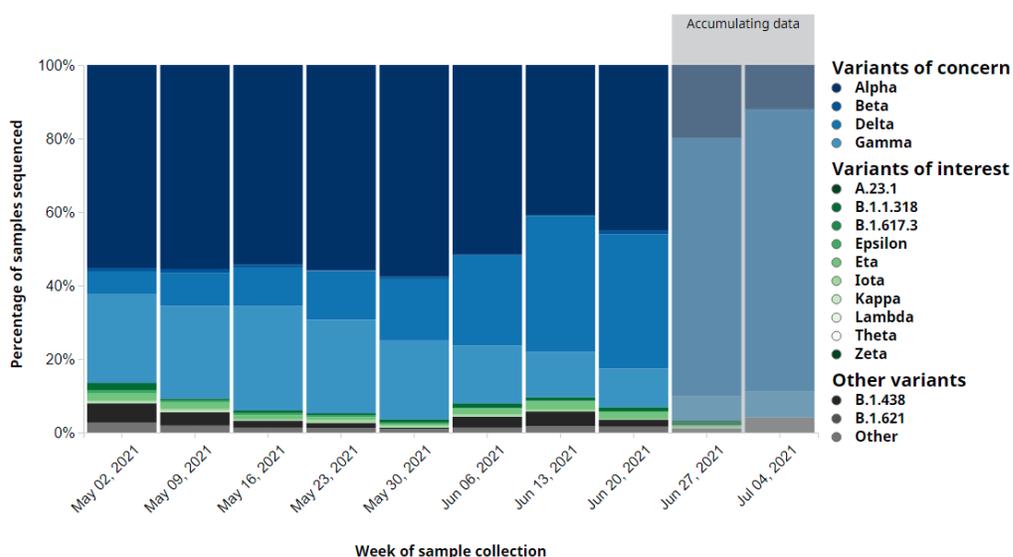
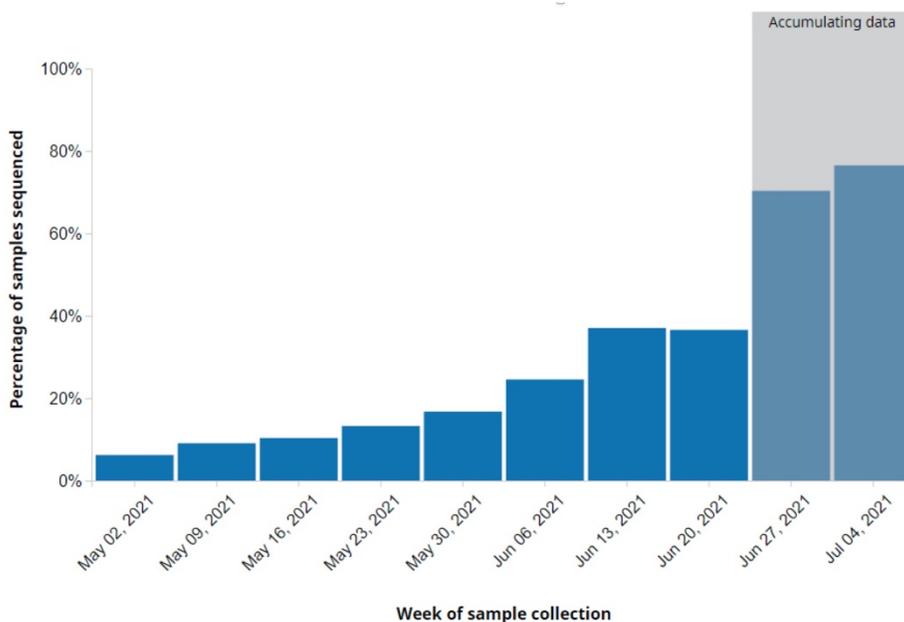
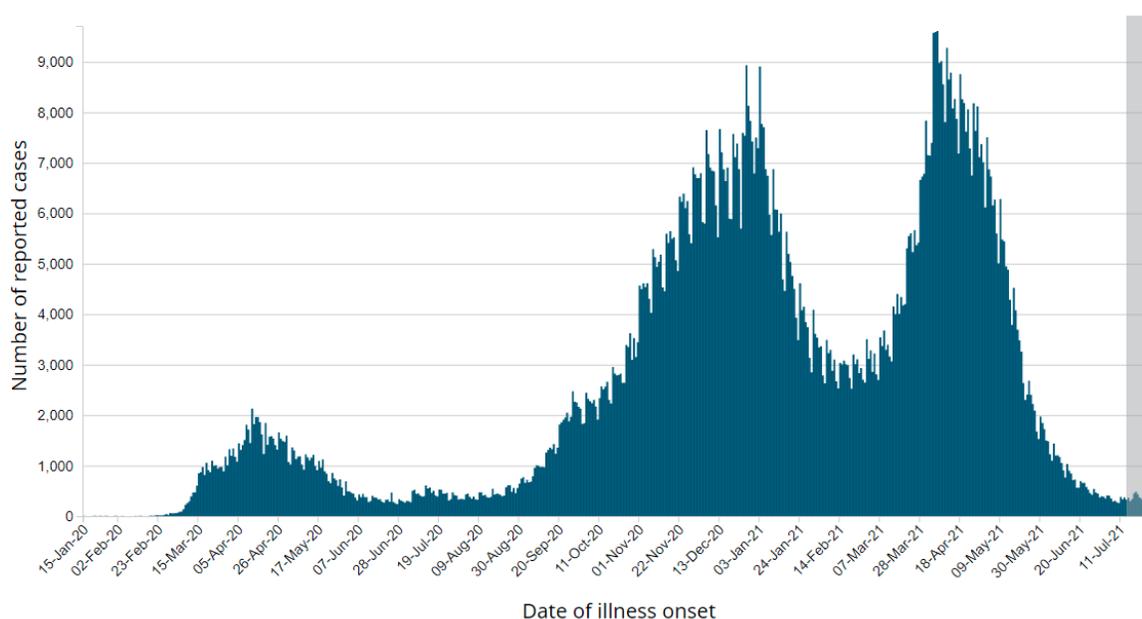


Figure 2. Prevalence of the Delta variant for all Canada in available sequenced cases from May 2 to July 4, 2021.



Although the Delta variant has become a lot more prominent, making up approximately 80% of the SARS-CoV-2 sequenced cases as of July 4, 2021, this increase is has not yet reflected in the number of COVID-19 cases. The expected “fourth wave” has not yet clearly materialized (Figure 3). However, in the Canada COVID-19 Weekly Epidemiology Report July 18 until July 24, 2021 (Week 29), over a 7-day period the number of cases were 3510, up by 27% compared to the previous week. Whereas, the number of deaths during that same period of time was 52, down by 19% in comparison to the previous week. In the weekly reports from the B.C. Centre for Disease Control for the week of July 25 to July 31, 2021, 95% of all COVID-19 cases corresponded to the Delta Strain. We may be seeing the beginning of the fourth Delta variant wave, but it is still early days and we are currently monitoring the situation looking for trends. Nevertheless, the weekly number of deaths in Canada remain quite low as shown in Figure 4.

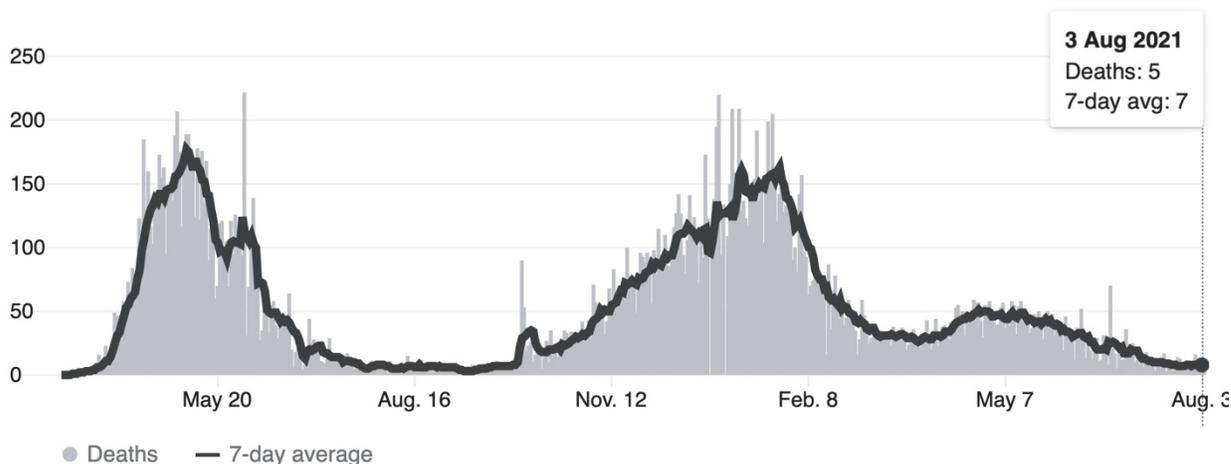
Figure 3. COVID-19 cases in Canada by date of illness onset as of July 30, 2021.



Source for Figures 1-3: <https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html#VOC>

Source for weekly update: <https://www.canada.ca/content/dam/phac-aspc/documents/services/diseases/2019-novel-coronavirus-infection/surv-covid19-weekly-epi-update-20210730-en.pdf>

Figure 4. COVID-19 deaths in Canada as of August 3, 2021.



Source for Figure 4: [Google search of “COVID-19 deaths in Canada”](#)

### Delta Variant Status in the UK

As can be seen in Figure 5, the Delta strain accounts for the vast majority of COVID-19 cases in the UK. As of mid-July 2021, the Delta strain accounts for nearly 100% of the sequenced SARS-CoV-2 variants in the UK. Figure 5 clearly shows the corresponding death rate during that same period of time. So, although the Delta variant is clearly more transmissible, it is also less pathogenic, which will be further discussed when we go through the actual number of cases. A comparison will be made between the Alpha and Delta variants. Note that the Alpha variant predominated in the UK from February until May, and was later supplanted by the Delta variant.

Figure 5. Variant prevalence for all England based on available sequenced cases from February 1, 2021 as of July 19, 2021.

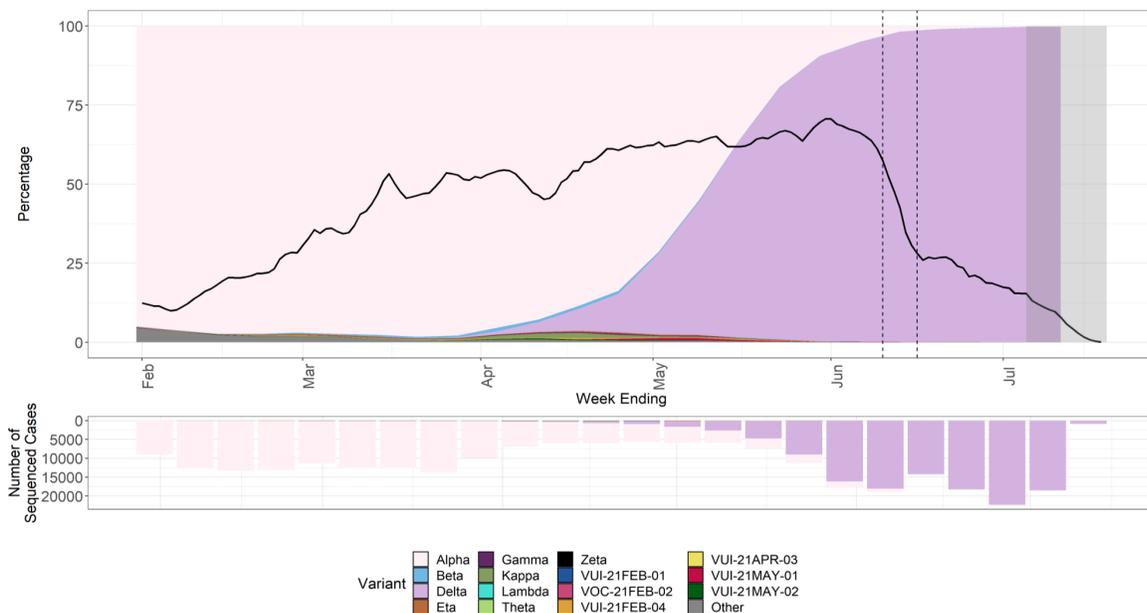


Figure 6. Daily death rate from COVID-19 verses time in the UK.

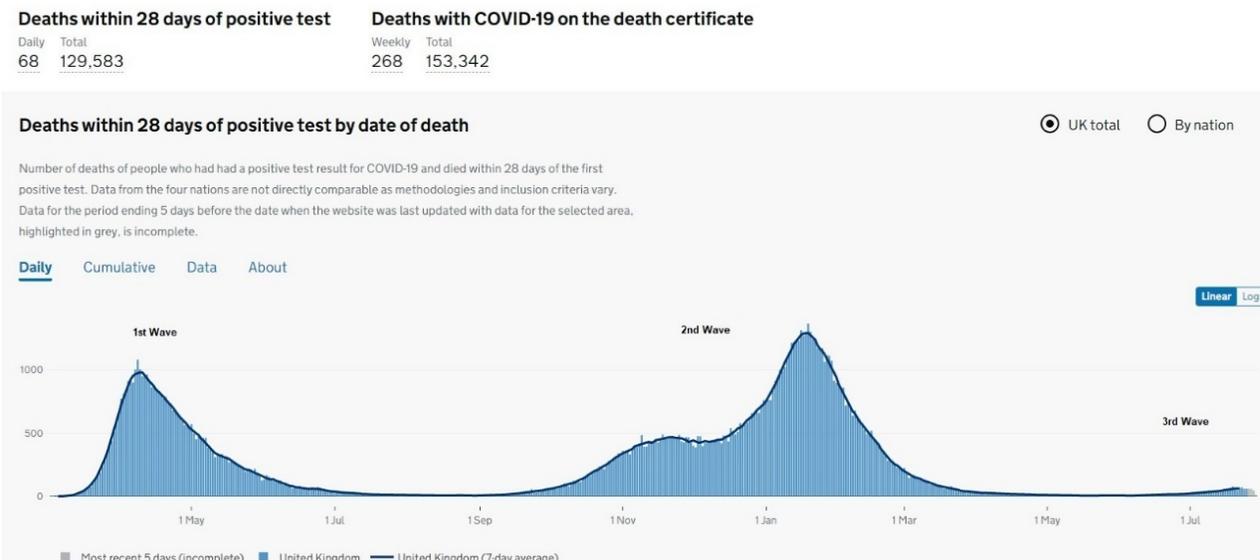


Table 1. Age breakdown of the sequenced and genotyped Alpha and Delta cases in England from February 1 – July 19, 2021.

Variant	Age group (years)	Number of cases	Deaths
Alpha	<50	118082	66 (0.1%)
	≥50	32265	1548 (4.8%)
	All cases	150436	1614 (1.1%)
Delta	<50	205549	45 (0.0%)
	≥50	23379	415 (1.9%)

Table 2. Deaths by vaccination status among sequenced Delta confirmed cases in England as of July 19, 2021.

	Age group (years)	Total	Not linked to vaccination status	<21 days post dose 1	≥21 days post dose 1	Received 2 doses	Not vaccinated
Delta Variant	All cases	229,218	24,952	21,088	33,003	28,773	121,402
	<50	205,549	22,496	20,930	27,714	15,346	119,063
	≥50	23,379	2,169	157	5,289	13,427	2,337
Number of Deaths	All cases	460	6	5	60	224	165
	<50	45	1	3	3	4	34
	≥50	415	5	2	57	220	131

Source for Tables 1-2: <https://www.gov.uk/government/publications/investigation-of-novel-sars-cov-2-variant-variant-of-concern-20201201>

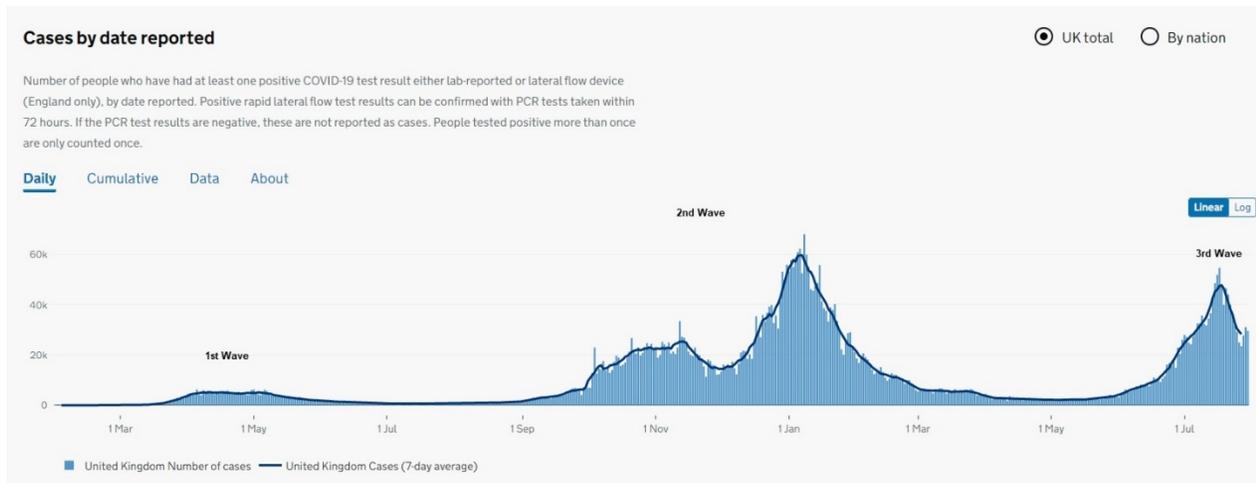
The Alpha variant is more concerning in the ≥50 years age group, with a total of 1548 (4.8%) deaths from February 1 until mid-June, compared to the younger <50 years age group at 66 (0.1%). The Delta variant, although more transmissible, was notably less pathogenic in comparison to the Alpha variant. However, people over 50 years old seem to be more at risk, compared to the younger ≥50 years age group (Table 1). Looking at the results overall, there is no clear indication that the vaccines actually protected against the Delta variant (Table 2). However, it is also feasible that the vaccines were less effective against other strains too. Overall, there was a slight reduction in the death rate from the Delta strain in the >50 years of age group with the fully vaccination (1.6%) compared to without vaccination (5.6%), so it may confer some limited benefit in the more vulnerable population. However, there was no apparent reduction in deaths for those <50 years of age with vaccination (0.026% for double vaccinated vs 0.029% for unvaccinated). This information was extracted from the “SARS-CoV-2 variants of concern and variants under investigation in England (Technical briefing 19)” dated July 23, 2021.

At this present time, the UK does not consider COVID-19 to be a high consequence infectious disease (HCID). Refer to the guidance for the full definition.

Source: <https://www.gov.uk/guidance/high-consequence-infectious-diseases-hcid#status-of-covid-19>

The three waves of the COVID-19 pandemic in the UK are indicated above in both Figures 5 and 6. It is evident that the third wave was associated with far fewer deaths, and this would normally be viewed as an end to the pandemic.

Figure 7. COVID-19 cases in the UK from March 2020 until July 19, 2021.



Source for Figures 6 and 7: <https://coronavirus.data.gov.uk/details/cases>

Figure 8 is an example of taking the correct data out of context to give a false message to the general public. The NewStatesman published the following on the July 5, 2021:

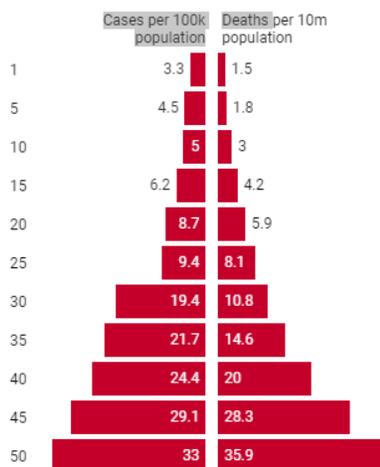
Source: <https://www.newstatesman.com/science-tech/2021/07/how-uk-s-covid-19-vaccine-rollout-has-dramatically-reduced-deaths>

Figure 8. Cases versus deaths histogram generated from the UK data.

### How the UK's vaccine rollout has dramatically reduced Covid-19 deaths

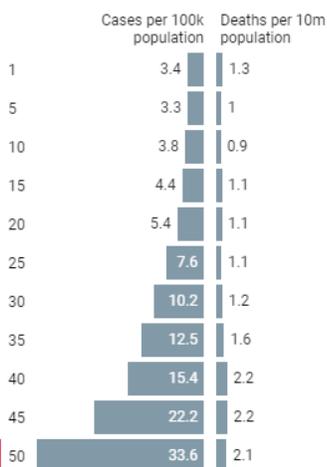
Cases versus deaths over days 1–50 of the UK's second and third Covid waves

#### Second Wave



Get the data · Created with Datawrapper

#### Third wave



Get the data · Created with Datawrapper

Calculations based on a seven-day rolling average of daily recorded cases and deaths. Second wave is recorded from 8/9/20, third wave is recorded from 14/5/21.

Source: UK Government, ONS

The title in bold is somewhat misleading, and the differences between the second and third waves probably have more to do with the COVID-19 variant being less lethal. During the second wave, the deadlier Alpha variant was predominant, whereas in the third wave it was the Delta variant (Figure 3). From Table 2, it would appear that the COVID-19 vaccines are much less effective against the Delta variant. Therefore, the title of the NewStatesman article should read:

***“The Delta variant although more contagious has resulted in fewer deaths***

***Deaths have plummeted from 400 at the same point during the second (Alpha variant) wave to just eight.”***

Figure 8 is a typical example of bad science that is bias-driven.

Again, a more reasonable conclusion would be that we are seeing an end to the pandemic in the UK.

### Delta Variant Status in the USA

The Delta variant started to appear near the end of May and beginning of June 2021, and then increased rapidly over the following weeks (Figure 9), initiating yet another wave of infections similar to that seen in the UK. As the Delta variant cases increased in the US (Figure 10a), there was no corresponding increase in the number of deaths recorded (Figure 10b), again a pattern that has been observed in the UK.

Figure 9. Distribution of variants in COVID-19 cases in the USA.

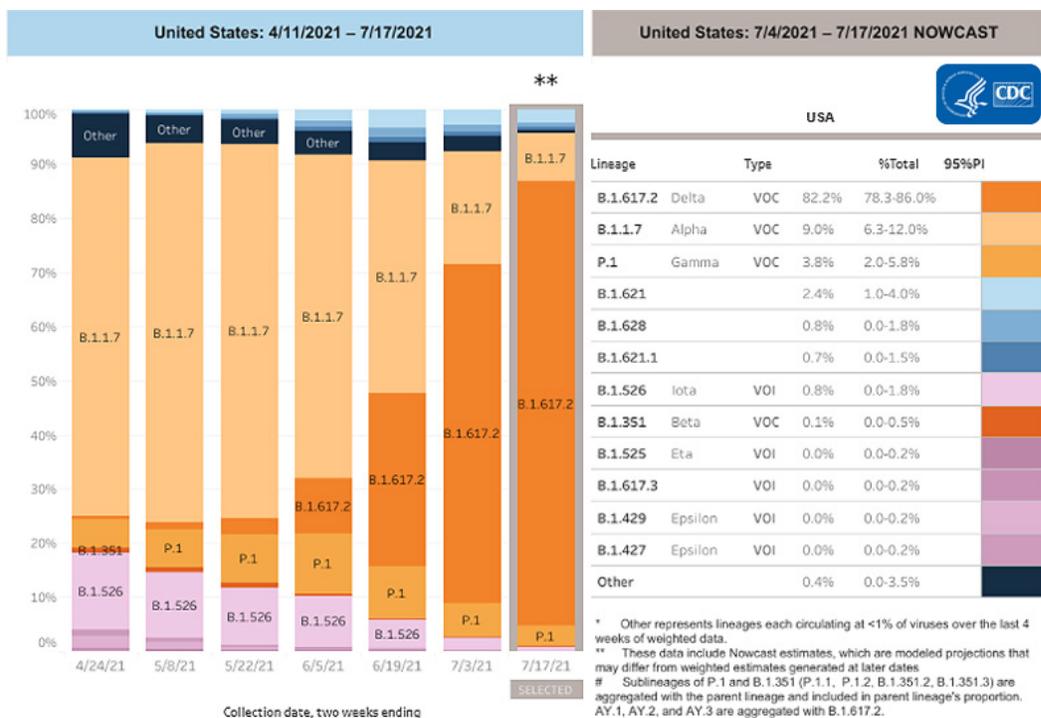


Figure 10a. Daily new COVID-19 cases in the United States.

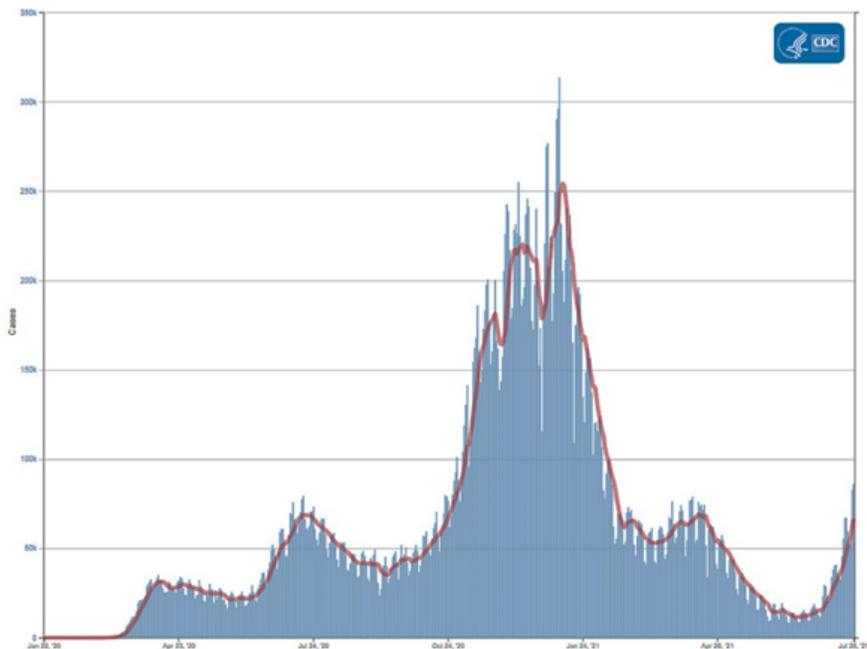
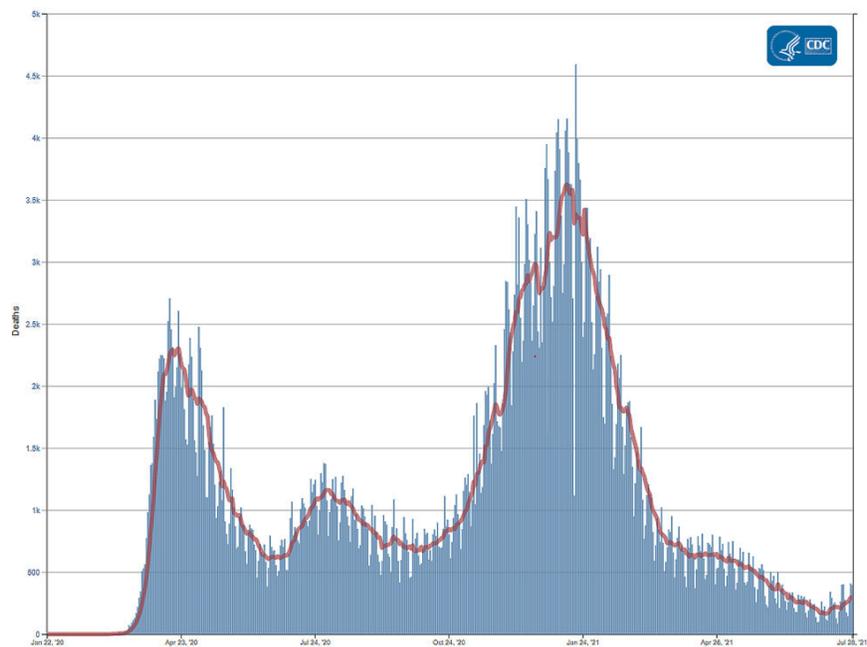


Figure 10b. Number of deaths due to COVID-19 in the United States.



Source for Figures 9 and 10: <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html>



A CDC Morbidity and Mortality Weekly Report dated July 30, 2021, documented an outbreak of SARS-CoV-2 (Delta variant) infections, including COVID-19 vaccine breakthrough infections, associated with large public gatherings in Barnstable County, Massachusetts. The following are quotations from this report:

“During July 3–17, 2021, multiple summer events and large public gatherings were held in a town in Barnstable County, Massachusetts, that attracted thousands of tourists from across the United States. Beginning July 10, the Massachusetts Department of Public Health (MA DPH) received reports of an increase in COVID-19 cases among persons who reside in or recently visited Barnstable County, including in fully vaccinated persons.”

“By July 26, a total of 469 COVID-19 cases were identified among Massachusetts residents; dates of positive specimen collection ranged from July 6 through July 25. Most cases occurred in males (85%); median age was 40 years (range = <1–76 years). Nearly one half (199; 42%) reported residence in the town in Barnstable County. Overall, 346 (74%) persons with COVID-19 reported symptoms consistent with COVID-19. Five were hospitalized; as of July 27, no deaths were reported. One hospitalized patient (age-range = 50–59 years) was not vaccinated and had multiple underlying medical conditions. Four additional, fully vaccinated patients aged 20–70 years were also hospitalized, two of whom had underlying medical conditions. Initial genomic sequencing of specimens from 133 patients identified the Delta variant in 119 (89%) cases and the Delta AY.3 sub-lineage in one (1%) case; genomic sequencing was not successful for 13 (10%) specimens.”

“Among the 469 cases in Massachusetts residents, **346 (74%) occurred in persons who were fully vaccinated**; of these, 301 (87%) were male, with a median age of 42 years. Vaccine products received by persons experiencing breakthrough infections were Pfizer-BioNTech (159; 46%), Moderna (131; 38%), and Janssen (56; 16%); among fully vaccinated persons in the Massachusetts general population, 56% had received Pfizer-BioNTech, 38% had received Moderna, and 7% had received Janssen vaccine products. Among persons with breakthrough infection, 274 (79%) reported signs or symptoms, with the most common being cough, headache, sore throat, myalgia, and fever. Among fully vaccinated symptomatic persons, the median interval from completion of  $\geq 14$  days after the final vaccine dose to symptom onset was 86 days (range = 6–178 days). Among persons with breakthrough infection, four (1.2%) were hospitalized, and no deaths were reported.”

Source: <https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm>

From reviewing this report, it can be concluded that the Delta variant is highly transmissible but not as pathogenic as the previous Alpha variant. Also, as with the UK figures, the vaccines are less effective against the Delta variant.

An additional directive from the CDC indicates (yet to be published) that a vaccinated person is just as likely to infect someone else as someone who is non-vaccinated. The cases above seem to support this hypothesis.

## Delta Variant Status in Israel

Unlike the UK, Israel started to experience the impact of the Delta variant only from June 2021. Up to now, the characteristics of the Delta variant seem to be identical to that observed in the UK and USA. That is the Delta variant is highly transmissible but less pathogenic to such an extent that renders “lock-downs” unnecessary (Figures 11a and 11b). Also, vaccinated people can get and transmit the infection to the same extent as an unvaccinated person. **However, it is widely accepted that a person who has already attained immunity by recovering from a previous infection is less likely to get re-infected and transmit the disease.** It is worth noting that breakthrough infections in the vaccinated population were occurring as early as in February 2021, prior to the arrival of the Delta variant in Israel, so SARS-CoV-2 variants other than Delta were responsible for these early breakthrough infections. This supports the notion that beneficial effects of these experimental vaccines are waning quite quickly over time, especially against the newer more infectious variants.

The overall conclusions regarding the delta variant in the above countries is that although it is more transmissible, it is less virulent. The current vaccines do not prevent acquiring or transmitting the Delta variant. Immunity from natural exposure to SAR-CoV-2 appears to be offering more broad-based durable immunity to the emerging strains than the vaccines. It is also important to consider alternative treatment options if a person get COVID-19.

Figure 11a. Daily new cases of COVID-19 in Israel.

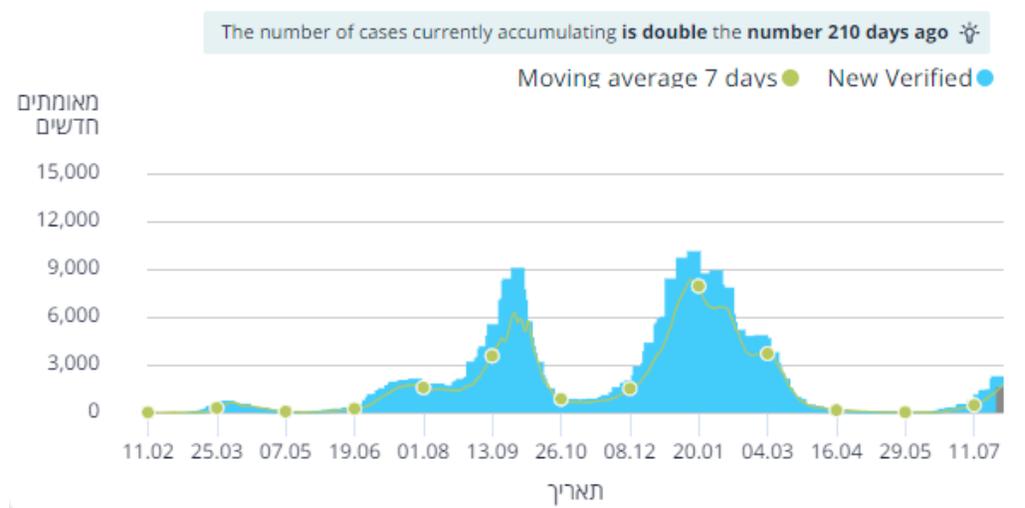
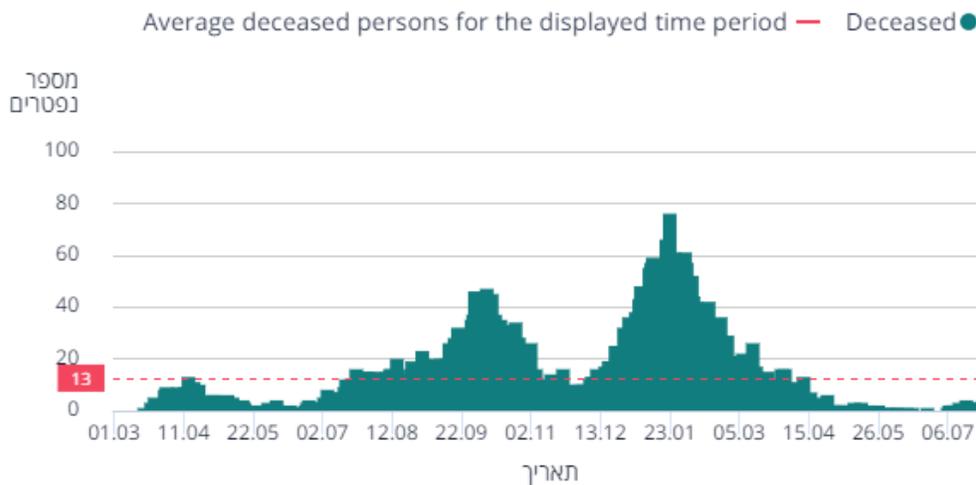


Figure 11b. Number of deaths due to COVID-19 in Israel.



Source for Figure 11: <https://datadashboard.health.gov.il/COVID-19/general>

**Supplementary sources for cases in Israel:**

<https://www.medrxiv.org/content/10.1101/2021.04.06.21254882v2>

<https://doi.org/10.1101/2020.11.15.383323>

<https://www.israelnationalnews.com/News/News.aspx/309762>