

Data on COVID vaccine side effects in real time: Here's what you can expect

20 April 2021, by Natasha Yates



Credit: CDC/Unsplash

Although the country's vaccine rollout is not progressing entirely as planned, thousands of Australians continue to receive their COVID vaccines every week.

As a [general practitioner](#) administering the AstraZeneca vaccine, I find it strange that my patients all know about the very rare potential complications—such as [blood clots](#)—yet often don't know what [side effects](#) they can realistically expect.

Side effects show the vaccine is working

Vaccines work by [training our immune system](#) to fight disease.

Many of the side effects we experience after a vaccination (of any sort, not just against COVID-19) are actually because our [immune system](#) is doing its thing. If we train for a sport we expect to get sore muscles from training, as well as when we actually compete. Training our immune system is no different.

Possible reactions to vaccines [include](#) headache, fever, injection site pain, muscle and joint pain, and fatigue.

Side effects tend to vary slightly between different vaccines, and different people will experience them differently.

Reporting side effects generates information

Because COVID vaccines are so new, Australia's Therapeutic Goods Administration (TGA) has requested every reaction suspected to be from a COVID vaccine be [reported](#). This is happening in a number of ways.

For doctors and nurses administering COVID vaccines, reporting adverse events is mandatory. Of course, many adverse events only occur after a person has left the clinic, so patients are advised to self-report any symptoms or side effects that concern them.

You can report any side effects via the health-care setting where you had your vaccination (if they have a system for this), via the NPS MedicineWise Adverse Medicine Events line on 1300 134 237, or through [the TGA](#).

Many vaccination centers also send out SMS questionnaires after your vaccine. Innovative software including [Vaxtracker](#) and [Smartvax](#) are facilitating this.

As a result, we've been able to gather a large amount of data about both the Pfizer and the AstraZeneca vaccines since their rollout began in Australia. We no longer need to rely on drug company trial results.

A government-funded research organization collates the data from these reporting mechanisms, and weekly updates on COVID-19 vaccine safety [are freely available](#).

A snapshot of the current data

More than 200,000 Australians—over two-thirds of

people surveyed through these mechanisms so far—have participated in feeding back data.

Some 51.8% of respondents have reported some kind of adverse event, but only 1.2% experienced events serious enough for them to seek medical attention.

The types of events people have reported for both the [Pfizer](#) and [AstraZeneca](#) vaccines are similar to those reported in clinical trials, and what we're seeing in [other countries](#). They include fatigue, headaches, pain/swelling at the injection site, muscle aches, chills, fever and joint pain.

Symptoms appear to be more pronounced [after the second dose](#), which fits with our understanding that they generally indicate a natural immune response rather than anything more sinister (we have a more developed immune response after the second dose). Symptoms usually resolve within three days of vaccination.

How does this compare to other vaccines?

According to Australian data collected on the [influenza vaccine](#) in 2020, only 5.5% of people reported any adverse event, with just 0.3% being serious enough to see a doctor about.

You could therefore say the COVID-19 vaccine is causing side effects much more often. It's possible there's a biological reason for this—our immune systems may be fighting harder than they do when faced with influenza vaccines.

But there may be a behavioral reason for higher reports too. Perhaps people are being hyper-vigilant about any apparent reaction they're experiencing to COVID vaccines, possibly inducing what we call a "[nocebo](#)" response. This is when negative expectations around a treatment cause patients to report more negative effects than they would have otherwise.

It's fair to say no vaccine has been as highly scrutinized by the public as the COVID vaccines.

Certain groups may be more likely to get side effects

Are women more likely to have an adverse reaction to a COVID vaccine? While this may seem fairly simple to answer from the data, confounding features make it more complex.

While women do report minor reactions [more often](#), is that partly because they're more conscientious at reporting? We know women are [more likely to seek help](#) for their health in general. The answer to this question continues to be debated.

One group that clearly does have more pronounced reactions is [younger people](#). This is probably because their immune systems mount a stronger response to the vaccine.

Managing side effects

Whichever vaccine you receive, remember side effects are common and expected.

If you're concerned, the government's [side effect checker](#) asks questions which can help you ascertain whether your reaction is normal, or whether it's more serious and you should seek medical attention.

It's fine to take paracetamol or ibuprofen for symptom relief, but taking these pre-emptively is [not recommended](#) for COVID-19 vaccines.

Notably, between 4.7% and 23.2% of people are reporting [missing work or routine duties](#) for a short period (generally up to one day) following the vaccine. I suggest my patients have their [vaccine](#)—especially the second dose—just before a day off work, if possible.

There's excellent ongoing research happening to define the "real world" side effects from COVID-19 vaccines. Many of us can play a part, and this information can inform us as a community about what to expect.

While serious but rare side effects are making the headlines, the realistic expectation for most of us is that we may feel mildly unwell, and may need to take a day off our regular commitments, especially after our second dose.

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