



Delaying Vaccination by 2-3 Days in Ontario Can Lead to Higher Risk of Death from Covid Compared to Blood Clot from Astra Zeneca Vaccine

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Astra Zeneca’s Covid vaccine is not recommended for those under age 55. However, what if you are just above the age cut-off? Many people have asked me if they should hold off on vaccination until they can get a different vaccine. In Ontario, Astra Zeneca is now available in pharmacies for those 55 and over, and Moderna and Pfizer are available to those 60 and above. The answer: Covid is so prevalent today that it’s more dangerous to wait even 2-3 days.

Astra Zeneca has a rare risk of blood clot (vaccine-induced prothrombin immune thrombocytopenia, or VIPIT). The vast majority of cases occur in those under 55, and that’s why Canada’s National Advisory Committee on Immunizations has recommended pausing the vaccine’s use in this age group¹. There have, however, been isolated reports of older persons getting it (at least one 63 year-old woman and one 57 year-old man in Germany²). Let’s take the worst-case scenario by assuming that the death rate for under 55s is the same as 55 to 64. I’ll use the country with the highest reported death rate, Norway: 4 deaths³ in 120,000 persons⁴ vaccinated under age 65⁵, or 1 in 30,000. (Note: Norway’s cases were in people aged 50 or below, so to say this rate applies to those over 55 is being very conservative. Also, Germany’s estimated death rate was far lower, about 1 in 240,000.^{6 7})

Now, let’s look at the current daily risk of infection from Covid, for Toronto and Ontario on average. As of April 11:

Variable	Toronto	Ontario
Case counts per day	1,353*	4,456*
Population	2,731,571	14,733,119
Chance per day of getting infected	1 in 2,018	1 in 3,306

* These counts are rising now, and there is a backlog of cases waiting to be tested. Hence, these calculations likely underestimate risk of infection.

Now let’s calculate the risk of dying from Covid, for every day that one delays vaccination:

Age group	Chance of dying, if you get infected with Covid ^{8 9}	Overall chance per day of dying due to Covid		Risk of death from Covid exceeds risk from VIPIT clot after this many days:	
		Toronto	Ontario	Toronto	Ontario
55	3.2%	1 in 64,000	1 in 104,000	2.1	3.5
57	4.0%	1 in 51,000	1 in 83,000	1.7	2.8
60	5.7%	1 in 36,000	1 in 58,000	1.2	1.9
65	10.2%	1 in 20,000	1 in 33,000	0.7	1.1

These calculations are valid as of April 11; Covid stats change daily and please adjust your interpretation of these findings accordingly.

This shows that delaying your vaccination just a few days exposes you to a risk of death that is greater than the risk of a blood clot due to Astra Zeneca. The exact risk for you may be a bit higher or lower, depending on your work, location or social circumstances; you are the best judge of that. However, remember that these calculations are very conservative: I’ve deliberately *overestimated* the risk of a clot.

Bottom line: I still urge everyone to take the first available vaccine. If Astra Zeneca is offered to you now but you want to wait a few days until Pfizer and Moderna are available, then that delay may lead to a greater risk of death.

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¹ www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci/rapid-response-recommended-use-astrazeneca-covid-19-vaccine-younger-adults.html

² https://www.business-standard.com/article/current-affairs/coronavirus-vaccine-germany-reports-more-astrazeneca-clot-cases-121032900737_1.html

³ <https://www.fhi.no/en/news/2021/fortsatt-pause-i-astrazeneca-vaksineringen/>

⁴ www.euronews.com/2021/03/18/norway-sweden-denmark-wait-before-restarting-astrazeneca-vaccinations

⁵ <https://medicalxpress.com/news/2021-02-norway-denmark-reserve-astrazeneca-vaccine.html>

⁶ www.business-standard.com/article/current-affairs/coronavirus-vaccine-germany-reports-more-astrazeneca-clot-cases-121032900737_1.html; 21 cases per 2.27 million shots in Germany.

⁷ www.pei.de/SharedDocs/Downloads/EN/newsroom-en/hp-news/faq-temporary-suspension-astrazeneca.pdf?__blob=publicationFile&v=7. In Germany, 3 in 7 cases resulted in death.

⁸ www.publichealthontario.ca/-/media/documents/ncov/epi/2020/06/covid19-epi-case-identification-age-only-template.pdf?la=en; lists case-fatality rates by age group, based on early 2020 data. Log-linear interpolation used to estimate rates for ages 57 and 60.

⁹ https://covid19-sciencetable.ca/wp-content/uploads/2021/03/Science-Brief_VOC-Prognosis_20210329_published3.pdf Mortality has increased by 56% since 2020 due to new variants; this information was used to adjust 2020 rates in reference 8.