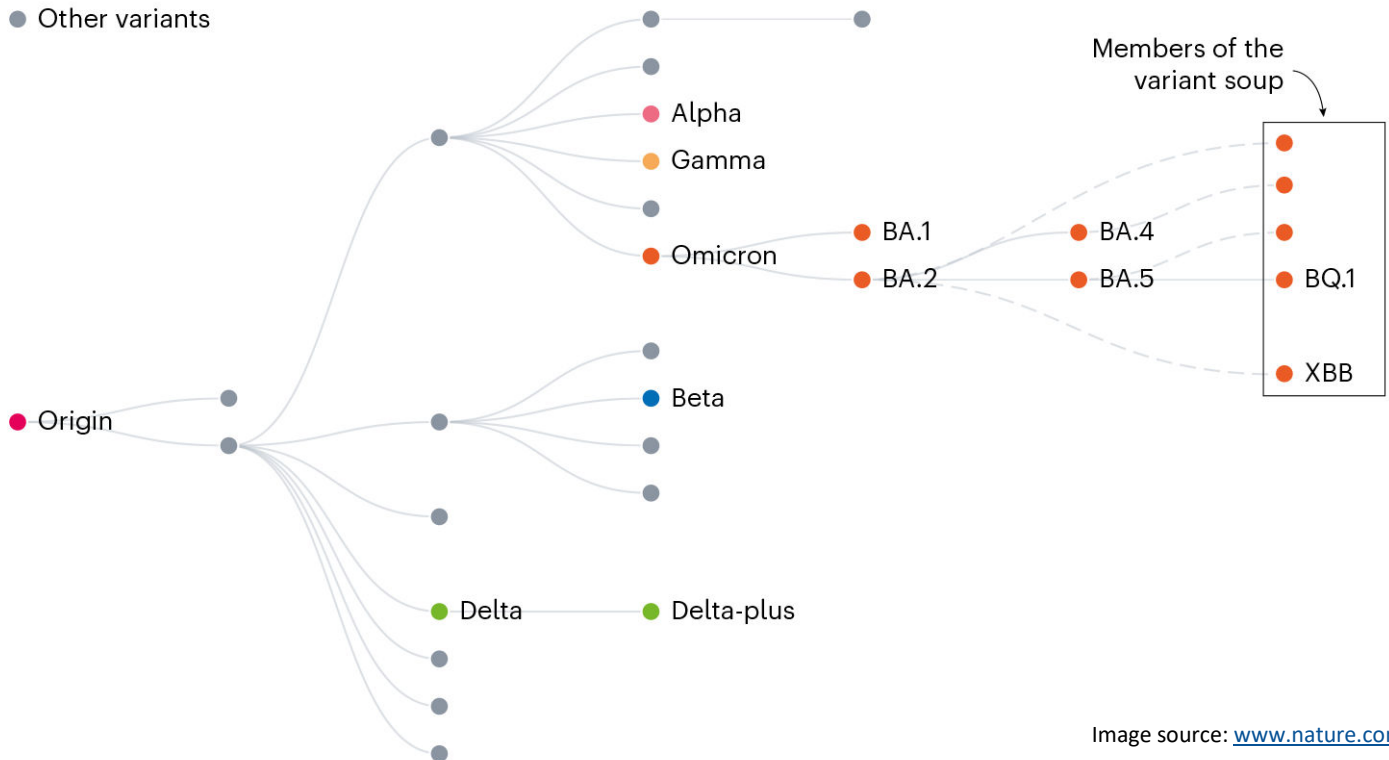


GROWING FAMILY

Omicron sublineages come from a single part of the SARS-CoV-2 family tree, unlike earlier variants of concern such as Alpha and Delta.



OMICRON AND THE 'VARIANT SOUP'

In 2022, the Omicron variant of SARS-CoV-2 spawned a 'soup' of subvariants that made it harder to predict future surges. The XBB variant (BA.2 offshoot) and offshoots in the BA.5 family have set off fresh waves of infection in many parts of the world. In Canada, clinical sequencing has shown steady increase in immune evasive variants BQ.1, BQ.1.1, and BF.7, while previously dominant BA.5.2 and BA.5.2.1 sublineages are declining according to the data from Public Health Agency of Canada from the week of Dec 25th, 2022.

The current crop of immunity-dodging offshoots of the Omicron family tree is unprecedented in its diversity. But amid the chaos, patterns are emerging. Rise of multiple subvariants have helped scientists to pinpoint a handful of immunity-evading mutations that power a variant's spread. The mutations are mainly in a portion of the viral spike protein called the **receptor binding domain (RBD)**. This part of the protein is required for the virus to infect cells, and is the target of antibodies that deliver a potent immune response. Researchers have observed that the more of these RBD changes a variant has, the faster it seems to grow or spread.

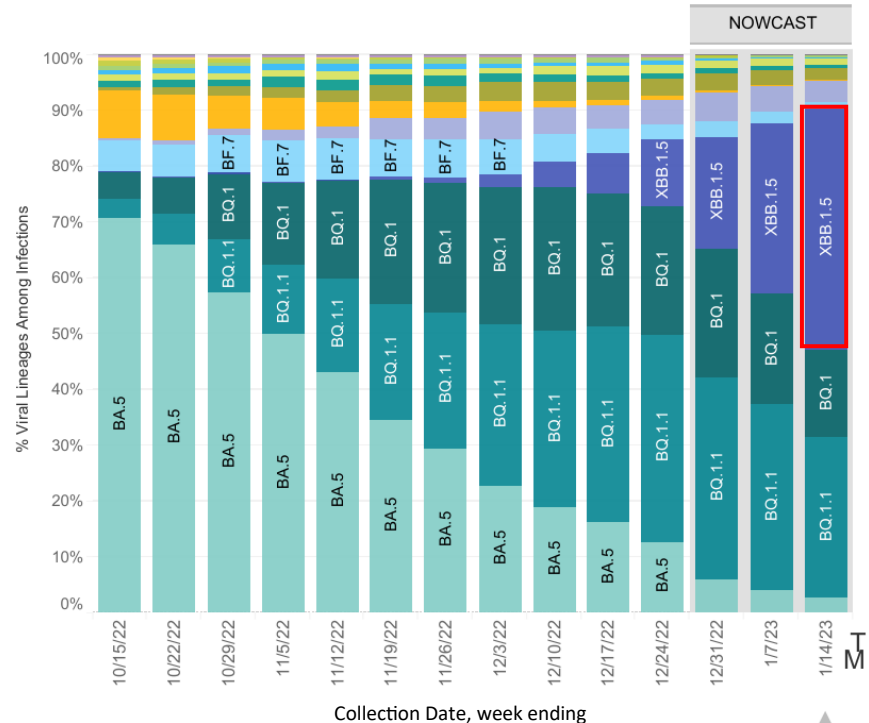
The highly immune evasive XBB caused waves of infection in South Asia in the past few months, and caused a surge in cases in Singapore, Bangladesh, Indonesia, and India. The subvariant **XBB.1.5** has already become dominant in the northeastern United States but only limited number of cases of XBB.1.5 have been reported in Canada from the latest data reported. However, due to inadequate amount of testing and the lag in reporting, the actual number of XBB.1.5 cases in the country could be higher.

Sources: www.nature.com | health-infobase.canada.ca

CDC's National SARS-CoV-2 Genomic Surveillance Data as of Jan 14, 2023

USA

WHO label	Lineage #	US Class	%Total	95%PI	
Omicron	XBB.1.5	VOC	43.0%	26.4-61.1%	
	BQ.1.1	VOC	28.8%	20.5-38.7%	
	BQ.1	VOC	15.9%	11.0-22.2%	
	XBB	VOC	3.9%	3.0-5.1%	
	BA.5	VOC	2.6%	1.8-3.7%	
	BN.1	VOC	2.1%	1.5-3.1%	
	BF.7	VOC	1.4%	0.9-2.1%	
	BA.2.75	VOC	1.3%	0.8-1.9%	
	BA.5.2.6	VOC	0.5%	0.3-0.8%	
	BA.2	VOC	0.2%	0.1-0.4%	
	BF.11	VOC	0.2%	0.1-0.3%	
	BA.4.6	VOC	0.1%	0.1-0.2%	
	BA.2.75.2	VOC	0.1%	0.0-0.1%	
	BA.1.1	VOC	0.0%	0.0-0.0%	
	BA.4	VOC	0.0%	0.0-0.0%	
	B.1.1.529	VOC	0.0%	0.0-0.0%	
	BA.2.12.1	VOC	0.0%	0.0-0.0%	
Delta	B.1.617.2	VBM	0.0%	0.0-0.0%	


Data source: covid.cdc.gov

THE XBB.1.5 SUBVARIANT: WHAT WE KNOW SO FAR

XBB.1.5 is a great-grandchild of the Omicron variant (the type who shouldn't be included in the legal will), and is an offshoot of a SARS-CoV-2 variant called XBB, which is a recombinant of two descendants of the BA.2 lineage. XBB.1.5 began to take hold in the United States towards the end of 2022. Modelling suggests that the share of SARS-CoV-2 infections caused by XBB.1.5 rose from 2% in early December to 43% by mid January. In the northeast of the United States, XBB.1.5 is now responsible for over 75% of all new cases.

The XBB.1.5 subvariant bears a rarely seen mutation in the spike protein that improves its ability to attach to the human ACE2 receptor to infect cells, and still maintain the high degree of immune evasion of XBB. There is no indication yet that the disease severity caused by XBB.1.5 has changed. However, it could still lead to re-infections while preying on the vulnerable and the under-vaccinated. At present, the uptake of bivalent booster dose is extremely low with only around 20% of eligible Canadians who have received it. The impact of XBB.1.5 in the United States and beyond is still far from clear and more data is needed. But early numbers do suggest that XBB.1.5 has the potential to out-compete all other Omicron variants.

So **what can we do** at an individual level to keep ourselves and people around us safe? The updated bivalent COVID-19 vaccine is still highly effective at preventing serious illness and hospitalization from ever-evolving Omicron offshoots. In addition, using masks, especially a well-fitted, high-quality mask, improving indoor air quality, not mixing with others when you're feeling sick — these strategies will work for whatever variant exists because they are based on physics and are not about a specific variant. We can protect ourselves by using multiple layers of protection. None of them in isolation is perfect, but together they can dramatically reduce the risk of infection and severe illness.

Sources: www.nature.com | covid.cdc.gov | www.cbc.ca

Source: sketchplanations.com



We are now nearing three years into the COVID-19 pandemic and healthcare workers have experienced substantially increased burnout and emotional exhaustion during this period. With never-ending workloads, multiple job roles, changing guidelines and recurring outbreaks, there is seldom time to stop and *sharpen the saw* as the metaphor goes.

When we are deep in, it may feel like we have no time to pause or take a break. Maybe no time to stop and think about how we are working. No time to step back and improve on our processes or work on our tools. And especially, even no time to look after ourselves, **to recharge, to reflect**. Until we do it. Then, we realize we don't have the time to *not* stop and 'sharpen the saw'. In this new year, let's make sure to take a break when possible, reflect,

renew, and take out some time to recharge and continue to keep our residents, clients, and team safe.



COVID-19 Community Risk

[CLICK HERE](#) 

For the date of:

7 January, 2023 

Overall Risk Level

- Very High
- High
- Moderate**
- Lower (Caution)

Trend



Similar

For the week ending January 7, 2023:

The overall COVID-19 Risk Level is **Moderate**

Compared to the previous week COVID-19 activity is **similar**.





Appendix C: Flow Diagram for COVID-19 Fall Booster Vaccination

When to get a fall COVID-19 booster

Use the chart below if you have completed your primary series and are aged 5 and older.

Start

Has it been at least 6 months since:

- your last COVID-19 vaccine dose, or
- you tested positive for COVID-19?

Yes

Get your booster **now**

Protect yourself during respiratory illness season and before cool weather leads to more time indoors.

No

Do any of the following apply to you?

- Aged 65 or older
- Resident of long term care, retirement home, or other congregate care setting
- Aged 12 or older and moderately to severely immunocompromised¹ or with an underlying medical condition²
- Health care worker
- Pregnant
- Adult First Nations, Inuit, or Métis individual or household member
- Adult in racialized and/or marginalized community disproportionately affected by COVID-19

Yes

Get your booster **3 months after your last dose or last COVID-19 infection**

You are at high risk of severe outcomes and are **strongly recommended to get your booster dose at a shorter interval** to protect yourself during respiratory illness season and before cool weather leads to more time indoors.

No

Get your booster **6 months after your last dose or last COVID-19 infection**

You are not at high risk of severe outcomes. Longer intervals between vaccines may result in a better immune response and higher vaccine effectiveness.

Notes

1. If you are immunocompromised, talk to your health care provider about the timing of your booster.

2. May include: heart, kidney, or lung conditions, diabetes and other metabolic conditions, cancer, anemia or hemoglobinopathy, neurologic or neurodevelopmental conditions, a Body Mass Index (BMI) of 40 and over.

All vaccines available in Ontario are approved by Health Canada and are safe, effective, and are the best way to stay protected from COVID-19 and its variants.