新冠病毒的未來：全年傳播，重複感染?

How Often Can You Be Infected With the Coronavirus?

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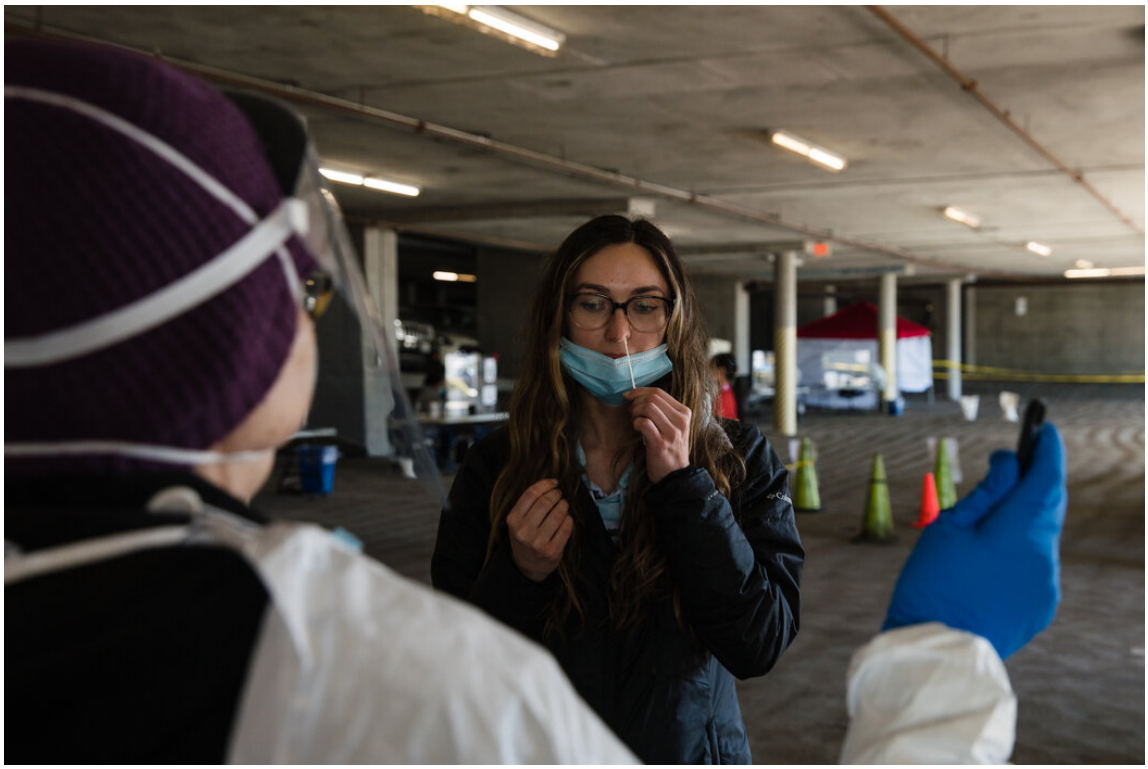


去年聖地亞哥的一個新冠病毒檢測點。在疫情早期，專家們認為接種疫苗或以前感染產生的免疫力可以防止再次感染，但奧密克戎改變了這一點。 ARIANA DREHSLER FOR THE NEW YORK TIMES

A virus that shows no signs of disappearing, variants that are adept at dodging the body's defenses, and waves of infections two, maybe three times a year — this may be the future of Covid-19, some scientists now fear.

一種看起來不打算消失的病毒，擁有擅長躲避身體防禦的變異，每年都會帶來兩三波感染——一些科學家現在擔心，這可能就是新冠病毒的未來。

The central problem is that the coronavirus has become more adept at reinfecting people. Already, those infected with the first Omicron variant are reporting second infections with the newer

versions of the variant — BA.2 or BA2.12.1 in the United States, or BA.4 and BA.5 in South Africa.

核心問題是，新冠病毒已變得更容易再次感染。已經有報告說，感染了第一個奧密克戎變異株的人第二次感染了該變異株的較新版本——美國的BA.2或BA2.12.1，或者南非的BA.4和BA.5。

Those people may go on to have third or fourth infections, even within this year, researchers said in interviews. And some small fraction may have symptoms that persist for months or years, a condition known as long Covid.

研究人員在採訪中說，這些人可能會繼續第三次或第四次感染，甚至在今年之內。一小部分人的癥狀可能會持續數月或數年，這種情況被稱為長期新冠病毒感染。

“It seems likely to me that that’s going to sort of be a long-term pattern,” said Juliet Pulliam, an epidemiologist at Stellenbosch University in South Africa.

「在我看來，這可能會成為一種長期模式，」南非斯泰倫博斯大學流行病學家朱麗葉·普利亞姆說。

“The virus is going to keep evolving,” she added. “And there are probably going to be a lot of people getting many, many reinfections throughout their lives.”

「病毒會繼續進化，」她還說。「可能會有很多人一生中再次感染很多次。」

It’s difficult to quantify how frequently people are reinfected, in

part because many infections are now going unreported. Dr. Pulliam and her colleagues have collected enough data in South Africa to say that the rate is higher with Omicron than seen with previous variants.

再次感染率很難被量化，部分原因是許多感染現在都沒有報告。普利亞姆和她的同事在南非收集了足夠的數據，可以證明，與之前的變異株相比，奧密克戎的再次感染率更高。

This is not how it was supposed to be. Earlier in the pandemic, experts thought that immunity from vaccination or previous infection would forestall most reinfections.

這種情況是出人意料的。疫情早期，專家們認為，接種疫苗或以前感染所產生的免疫力可以預防大多數再次感染。

The Omicron variant dashed those hopes. Unlike previous variants, Omicron and its many descendants seem to have evolved to partially dodge immunity. That leaves everyone — even those who have been vaccinated multiple times — vulnerable to multiple infections.

奧密克戎變異株使得這樣的希望破滅了。與之前的變異株不同，奧密克戎和它的許多後裔似乎已經進化到可以逃避部分免疫。這使得每個人——即使是那些已經多次接種疫苗的人——都容易受到多次感染。

“If we manage it the way that we manage it now, then most people will get infected with it at least a couple of times a year,” said Kristian Andersen, a virologist at the Scripps Research Institute in San Diego. “I would be very surprised if that’s not

how it's going to play out."

「如果我們以現在的方式來應對，那麼大多數人一年至少會感染幾次，」聖地亞哥斯凱瑞普斯研究所的病毒學家克里斯蒂安·安德森說。「如果不是這樣的結果，我會非常驚訝。」

The new variants have not altered the fundamental usefulness of the Covid vaccines. Most people who have received three or even just two doses will not become sick enough to need medical care if they test positive for the coronavirus. And a booster dose, like a previous bout with the virus, does seem to decrease the chance of reinfection — but not by much.

新的變異株並沒有改變新冠疫苗的基本有效性。如果新冠病毒檢測結果呈陽性，大多數接受過三劑甚至兩劑疫苗者病情不會發展到需要醫療護理的程度。而且，像之前的病毒暴發時一樣，加強針似乎確實可以減少再次感染的機會——但不會減少太多。

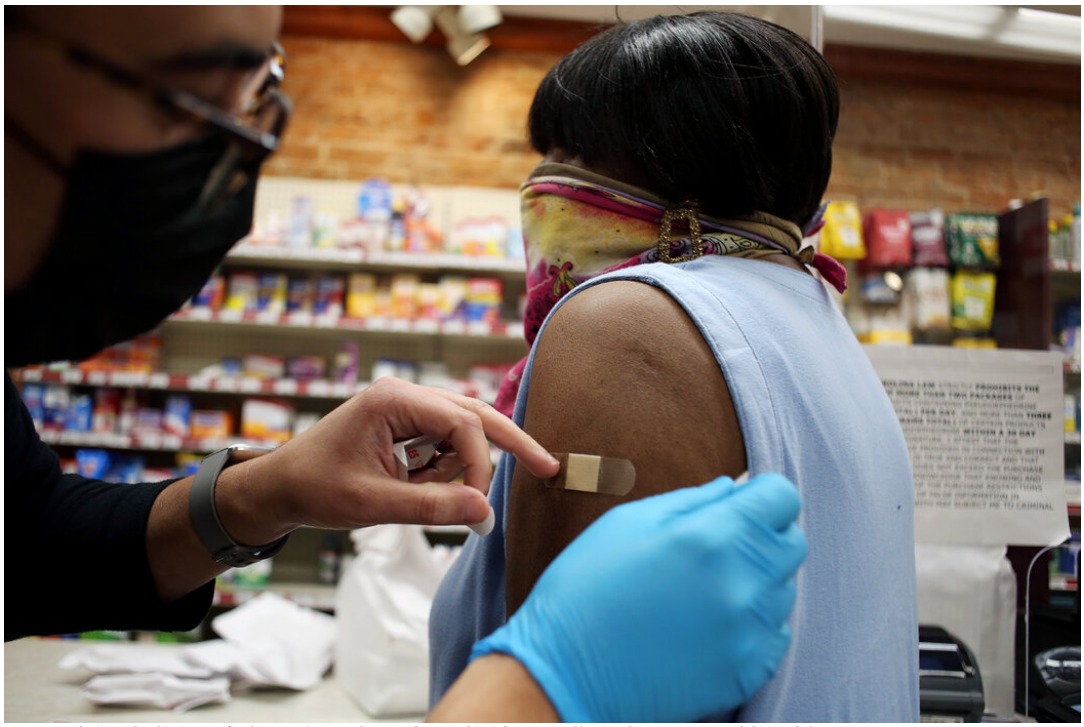
At the pandemic's outset, many experts based their expectations of the coronavirus on influenza, the viral foe most familiar to them. They predicted that, as with the flu, there might be one big outbreak each year, most likely in the fall. The way to minimize its spread would be to vaccinate people before its arrival.

疫情開始時，許多專家以他們最熟悉的病毒敵人——流感病毒為基礎，對新冠病毒的走勢進行預測。他們預測，就像流感一樣，新冠病毒疫情每年可能會有一次大暴發，最有可能發生在秋季。盡量減少傳播的方法是在疫情到來之前給人們接種疫苗。

Instead, the coronavirus is behaving more like four of its closely

related cousins, which circulate and cause colds year round. While studying common-cold coronaviruses, “we saw people with multiple infections within the space of a year,” said Jeffrey Shaman, an epidemiologist at Columbia University in New York.

相反，新冠病毒的表現更像它的四個近親，它們都是全年傳播並導致感冒。紐約哥倫比亞大學的流行病學家傑弗里·沙曼說，在研究普通感冒冠狀病毒時，「我們發現人們在一年時間裡多次感染。」



76歲的克萊姆·威廉斯本月在北卡羅萊納州達勒姆接受加強針注射。 VEASEY CONWAY FOR THE NEW YORK TIMES

If reinfection turns out to be the norm, the coronavirus is “not going to simply be this wintertime once-a-year thing,” he said, “and it’s not going to be a mild nuisance in terms of the amount of morbidity and mortality it causes.”

他說，如果再次感染成為常態，新冠病毒「將不僅僅是這種每年冬季發生一次的事情，就發病率和死亡率而言，它也不會是一種輕微的小麻煩」。

Reinfections with earlier variants, including Delta, did occur but were relatively infrequent. But in September, the pace of reinfections in South Africa seemed to pick up and was markedly high by November, when the Omicron variant was identified, Dr. Pulliam said.

包括德爾塔在內的一些以前的變異株也會發生再次感染，但相對少見。但普利亞姆說，南非的再次感染速度在9月似乎有所加快，到了11月，也就是奧密克戎變異株被確認的時候，再感染的速度明顯加快。

Reinfections in South Africa, as in the United States, may seem even more noticeable because so many have been immunized or infected at least once by now.

與美國一樣，南非的再次感染似乎更加明顯，因為目前有許多人已經接種了疫苗，或者至少被感染過一次。

“The perception magnifies what’s actually going on biologically,” Dr. Pulliam said. “It’s just that there are more people who are eligible for reinfection.”

「這種感受放大了生物學上實際發生的情況，」普利亞姆說。「只是有更多人符合再次感染的條件。」

The Omicron variant was different enough from Delta, and Delta from earlier versions of the virus, that some reinfections were to be expected. But now, Omicron seems to be evolving new forms that penetrate immune defenses with relatively few changes to its genetic code.

奧密克戎變異株與德爾塔不同，德爾塔與新冠病毒的早期版本也不同，因此一些再次感染是可以預期的。但現在，奧密克戎似乎正在進化新的形式，可以穿透免疫防禦系統，其遺傳密碼的變化相對較少。

“This is actually for me a bit of a surprise,” said Alex Sigal, a virologist at the Africa Health Research Institute. “I thought we’ll need a kind of brand-new variant to escape from this one. But in fact, it seems like you don’t.”

「這實際上讓我有點吃驚，」非洲衛生研究所的病毒學家亞歷克斯·西格爾說。「我曾經以為會有一種全新的變異株，從而讓我們擺脫這個變異株。但事實上似乎不是這樣。」

An infection with Omicron produces a weaker immune response, which seems to wane quickly, compared with infections with previous variants. Although the newer versions of the variant are closely related, they vary enough from an immune perspective that infection with one doesn’t leave muchprotection against the others — and certainly not after three or four months.

感染奧密克戎後會產生較弱的免疫反應，與以前的變異株造成的感染相比，這種反應似乎很快就會減弱。儘管較新版本的幾個變異株之間有著密切的關係，但從免疫角度來看，它們之間的差異很大，感染一個變異株所產生的免疫力並不能對其他變異株提供多少保護——當然在感染三四個月後也不能。

Still, the good news is that most people who are reinfected with new versions of Omicron will not become seriously ill. At least at the moment, the virus has not hit upon a way to fully sidestep

the immune system.

不過，好消息是，大多數再次感染新版本奧密克戎病毒的人不會患上重病。至少目前，該病毒還沒有找到一種完全避開免疫系統的方法。

“That’s probably as good as it gets for now,” Dr. Sigal said. “The big danger might come when the variant will be completely different.”

「這可能是目前最好的結果了，」西格爾說。「當變異株完全不同時，最大的危險可能就來了。」

Each infection may bring with it the possibility of long Covid, the constellation of symptoms that can persist for months or years. It’s too early to know how often an Omicron infection leads to long Covid, especially in vaccinated people.

每一次感染都會帶來長期新冠的可能性，即可能持續數月或數年的一系列癥狀組合。目前還不足以判斷奧密克戎感染導致長期新冠癥狀的機率，尤其是在接種過疫苗的人群中。

To keep up with the evolving virus, other experts said, the Covid vaccines should be updated more quickly, even more quickly than flu vaccines are each year. Even an imperfect match to a new form of the coronavirus will still broaden immunity and offer some protection, they said.

還有專家表示，為了跟上不斷演變的病毒，新冠疫苗的更新速度要加快，甚至比流感疫苗每年的更新速度更快。他們說，即使疫苗與新型冠狀病毒並不完全匹配，也會擴大免疫力，提供一些保護。

“Every single time we think we’re through this, every single time we think we have the upper hand, the virus pulls a trick on us,” Dr. Andersen said. “The way to get it under control is not, ‘Let’s all get infected a few times a year and then hope for the best.’”

「每當我們認為已經度過了難關，每當我們認為佔了上風的時候，病毒就會捉弄我們，」安德森說。「控制它的辦法並不是，『讓我們每年都感染幾次，然後期待最好的結果。』」

Apoorva Mandavilli為時報報導科學和全球健康相關議題。她在2019年獲得了科恩醫學科學報導傑出獎(Victor Cohn Prize for Excellence in Medical Science Reporting)。歡迎在Twitter上關注她：@apoorva_nyc。

翻譯：晉其角