

# Interim clinical guidance on testing for possible COVID-19 reinfection within 90 days

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## Introduction

This guidance provides clinical advice to healthcare providers about how to manage patients who present with COVID-19 symptoms, or a positive COVID-19 RAT, within 90 days of a prior probable COVID-19 infection.

## COVID-19 reinfection within 90 days

Reinfection with COVID-19 is possible, particularly with a different variant, for example: Delta to Omicron. Omicron to Omicron reinfection is thought to be uncommon and probably related to Omicron sub-variants. Omicron to Omicron reinfection was noted in 0.01% of individuals over 9 weeks in a Belgian study (Nevejan, 2022).

Definitive diagnosis of COVID-19 reinfection within 90 days would require whole genome sequencing of the virus during both infection episodes. Polymerase Chain Reaction testing (PCR) can be performed for suspected episodes of reinfection, but interpretation is nuanced, and may require specialist judgement and repeated re-testing.

Current public health advice is that if a person has symptoms consistent with COVID-19 within 90 days of a COVID-19 diagnosis, and they are at high risk of becoming unwell, they should seek advice from a health practitioner, or Healthline on 0800 358 5453.

## Understanding possible reinfection in individual patients

Reinfection is not generally a problem for most people i.e., reinfection does not cause serious illness.

However, a diagnosis of reinfection with COVID-19 can be important for some individuals – particularly those who are elderly, have high risk conditions, or who have frequent close contact with such people –to target any required support.

## Public advice for symptomatic individuals after COVID-19 infection

- People who are low-risk and have symptoms consistent with COVID-19 within 90 days of a COVID-19 diagnosis, should stay at home whilst symptomatic, and are advised **not** to use a Rapid Antigen Test (RAT) to self-test.

- People with underlying health conditions, and/or who have deteriorating symptoms consistent with COVID-19, after a recent COVID-19 diagnosis, should seek further advice from their healthcare provider, who may decide to test with a supervised RAT.

Diagnosing reinfection may be significant for several reasons:

- to enable provision of wrap-around support/manaaki,
- for access to COVID-19 therapeutics,
- to allow protection of vulnerable family members, workmates, clients, and businesses,
- to enable compliance with isolation requirements, such as access to financial support,
- to allow notification and monitoring of COVID-19,
- it may allow identification of new Variants of Concern.

Individuals will not be able to upload a positive RAT result on My Covid Record within 90 days of previously doing so. If an individual attempts to upload a positive RAT result, they will be notified that they are not considered a case and given automated advice to isolate and contact a health provider if symptoms worsen.

## Choice of test for COVID-19

If after clinical assessment and testing for COVID-19 again is warranted, a supervised RAT is recommended. If the supervised RAT is positive, then a probable case can be created by a practitioner in the Covid Clinical Care Module (CCCM).

If clinical concern remains after a supervised RAT, discussion with a microbiologist may be necessary. Consideration may be given to testing with PCR for COVID-19 and/or other respiratory pathogens.

## Testing symptomatic patients

**Less than 28 days:** reinfection is considered exceptionally unlikely. If COVID-19 reinfection is plausible, consider testing with a supervised RAT.

If clinical concern remains after a supervised RAT, discussion with a microbiologist may be necessary. Consideration may be given to testing with PCR, for COVID-19 and/or other respiratory pathogens.

**Within 29-90 days:** if a patient who had a prior confirmed or probable episode of COVID-19 infection has new symptoms consistent with a COVID-19 infection, then consider re-testing with a supervised RAT. This is particularly if their first COVID-19 infection was diagnosed by RAT, and confidence in the initial diagnosis is low, for example, if the first infection:

- was not epidemiologically linked, or
- was not symptomatic, or
- occurred at a time of low prevalence.

or if a diagnosis is important for:

- access to COVID-19 therapeutics,
- access to isolation support,
- protecting vulnerable household members, workplace, or clients,
- employment purposes.

## Managing patients seeking advice about a positive self-RAT

Current advice is to **not** perform asymptomatic surveillance, or screening, within 90 days of a confirmed, or probable, diagnosis of COVID-19. Individuals are also advised not to self-RAT if symptomatic. However, some people are required to screen for employment purposes, or will have self-tested prior to consultation.

In such cases, the result of the initial self-RAT should be disregarded, and the case should be assessed as previously described.

## Interpretation of a positive test result in cases of possible reinfection

It is possible to have a positive test result for COVID-19 within 90 days of having an earlier positive result through a RAT, or nucleic acid amplification test (NAAT)/ polymerase chain reaction (PCR) test. This does not confirm reinfection and has several potential causes (see Table 1).

The interpretation of a COVID-19 RAT requires an understanding of RAT test performance. False positives and false negatives are possible, and positive and negative predictive value will vary according to the community prevalence of COVID-19.

Clinical judgement, including interpretation of the symptomatology, epidemiology, and test results from previous and current episodes, should guide the diagnosis of a probable case.

CCCM case creation, COVID-19 therapeutics, isolation support, and certification for employment, are accessible through diagnosis of a probable case.

Interpreting test results within 90 days of probable infection can be challenging – and in cases where a diagnosis is important, may require input from a microbiologist.

	<b>Symptomatic patient</b>	<b>Asymptomatic patient</b>
<b>Positive RAT</b>	<ul style="list-style-type: none"> <li>• Persistently positive RAT from previous infection (less likely than NAAT/PCR).</li> <li>• Previous or current RAT could be false positive (non-COVID-19 infection).</li> <li>• COVID-19 reinfection.</li> </ul>	<ul style="list-style-type: none"> <li>• Persistently positive RAT from previous infection.</li> <li>• Previous or current RAT could be false positive.</li> <li>• COVID-19 reinfection.</li> </ul>
<b>Positive NAAT/PCR</b>	<ul style="list-style-type: none"> <li>• Persistently positive NAAT/PCR from previous infection.</li> <li>• Symptoms due to non-COVID-19 infection.</li> <li>• Previous COVID-19 test was a false positive.</li> <li>• COVID-19 reinfection.</li> </ul>	<ul style="list-style-type: none"> <li>• Persistently positive NAAT/PCR from previous infection.</li> <li>• If previous positive test was RAT, it could have been a false positive.</li> </ul>

Table 1. Possible explanations for positive test results in patients with recent probable COVID-19.

## Reinfection isolation requirements

Those who are diagnosed with a COVID-19 reinfection must follow standard isolation requirements, as per the MOH website: link: <https://www.health.govt.nz/covid-19-novel->

[coronavirus/covid-19-health-advice-public/advice-people-covid-19/covid-19-isolating-others](#)

A household contact will need to re-isolate – unless they had been a case within the previous 90 days, or they have recently isolated as a household contact (within the previous 10 days).

The Ministry of Health continues to monitor emerging information. Changes will be made to this interim guidance as new evidence becomes available.

This advice will be reviewed **before 31 May 2022**.

Reference: Nevejan, L. et al. (2022). [Early SARS-CoV-2 reinfections within 60 days highlight the need to consider antigenic variations together with duration of immunity in defining retesting policies \(medrxiv.org\)](#)

# COVID-19 Interim operational guidance: TESTING FOR POSSIBLE REINFECTION WITHIN 90 DAYS OF A COVID-19 INFECTION

5 May 2022

## Purpose

This guidance provides advice to healthcare providers about how to manage patients who present with clinical symptoms of suspected COVID-19 and/or a positive COVID-19 rapid antigen test (RAT) within 90 days of a prior probable COVID-19 infection. The Ministry continues to monitor new variants and incidence of reinfection internationally. Changes will be made to this plan as new evidence becomes available.

## COVID-19 reinfection

Reinfection with COVID-19 is possible, particularly with a different variant, for example: Delta to Omicron. Omicron to Omicron reinfection is thought to be uncommon and probably related to Omicron sub-variants. Omicron to Omicron reinfection was noted in 0.01 percent of individuals over nine weeks in a Belgian study (Nevejan, 2022)<sup>1</sup>.

Current public health advice is that if a person has symptoms consistent with COVID-19 within 90 days of a COVID-19 diagnosis, and they are at high risk of becoming unwell, they should seek advice from a health practitioner, or Healthline on 0800 358 5453.

People who are low-risk and have symptoms consistent with COVID-19 within 90 days of a COVID-19 diagnosis, should stay at home whilst symptomatic, and are advised **not** to use a Rapid Antigen Test (RAT) to self-test.

## When COVID-19 reinfection matters most

New Zealand's current COVID-19 strategy is to minimise and protect, with our emphasis on protecting the vulnerable. Reinfection is not generally a problem for most people i.e., reinfection does not cause serious illness.

However, diagnosis of COVID-19 reinfection can be important for some individuals, particularly those who are elderly, have high risk conditions, or who have frequent close contact with such people, to target any required support.

## Clinical assessment

Testing for possible COVID-19 reinfection is important for several reasons:

- to enable provision of wrap-around support/manaaki
- for access to COVID-19 therapeutics
- to allow protection of vulnerable family members, workmates, clients and businesses
- to enable compliance with isolation requirements
- to allow notification and monitoring of COVID-19
- it may allow identification of new variants of concern.

## Testing principles

Test to:

- inform public health management, such as when it is necessary for a case or a household contact to isolate
- inform patient management, such as access to antivirals, ensuring timely access to care in the community or admission to hospital, if required
- return/continue activity, such as through the Close Contact Exemption Scheme.

## Reinfection isolation requirements

Those who are diagnosed with a COVID-19 reinfection must follow standard isolation requirements, as per the Ministry of Health (the Ministry) website: [health.govt.nz/covid-19-novel-coronavirus/covid-19-health-advice-public/advice-people-covid-19/covid-19-isolating-others](https://health.govt.nz/covid-19-novel-coronavirus/covid-19-health-advice-public/advice-people-covid-19/covid-19-isolating-others). A household contact will need to re-isolate – unless they had been a case within the previous 90 days, or they have recently isolated as a household contact (within the previous ten days).

<sup>1</sup> Nevejan, L. et al. (2022). [Early SARS-CoV-2 reinfections within 60 days highlight the need to consider antigenic variations together with duration of immunity in defining retesting policies \(medrxiv.org\)](https://doi.org/10.1101/2022.05.02.22268888)

**Possible explanations for a positive test result in patients less than 90 days from initial infection**

	<b>Symptomatic Person</b>	<b>Asymptomatic Person</b>
<b>Positive RAT</b>	<ul style="list-style-type: none"> <li>Persistently positive RAT from previous infection (less likely than positive NAAT<sup>2</sup>/PCR<sup>3</sup>)</li> <li>Current RAT could be false positive</li> <li>COVID-19 reinfection</li> </ul>	<ul style="list-style-type: none"> <li>Persistently positive RAT from previous infection (less likely than positive NAAT/PCR)</li> <li>Previous or current RAT could be false positive</li> <li>COVID-19 reinfection</li> </ul>
<b>Positive NAAT/PCR</b>	<ul style="list-style-type: none"> <li>Persistently positive NAAT/PCR from previous infection</li> <li>A true primary infection occurring after a previous false positive RAT</li> <li>COVID-19 reinfection</li> </ul>	<ul style="list-style-type: none"> <li>Persistently positive NAAT/PCR from previous infection</li> <li>If previous positive test was RAT it could have been a false positive</li> </ul>

**Testing plan**

The following table outlines the testing plan for people who are suspected to be reinfected with COVID-19 and are likely to be seen in general practice, and:

have had a prior COVID-19 infection within 90 days, have symptoms consistent with a COVID-19 infection; or have a positive RAT test from surveillance testing (for example as required by their employer).

<b>Days Since Last Positive Test</b>	<b>Indication</b>	<b>Test Type</b>	<b>Interpretation of PCR Result</b>
<b>0 – 28</b>	Reinfection is considered to be exceptionally unlikely. Undertake patient consult and monitoring as required as part of the COVID-19 Care in the Community services. Reassure the patient to stay home whilst symptomatic and to not do further RAT self-tests.	No test	Not required.
	COVID-19 reinfection is unlikely. If COVID-19 reinfection is plausible, consider testing with a supervised RAT. If clinical concern remains after a supervised RAT discussion with a microbiologist may be necessary.	Supervised RAT	It is possible to have a positive test result for COVID-19 within 90 days of having an earlier positive result (either RAT or NAAT/PCR). This does not confirm reinfection, even if an individual has had negative tests in between, and could mean several things. Interpretation will depend on the epidemiological context, the type of test and the related symptoms of both the previous test and the current test.  PCR cycle time (CT) interpreted within the clinical context is necessary to diagnose reinfection. A very low CT is consistent with reinfection, but a higher CT may be consistent with prior (historical) infection, resolving infection, or mild infection.  Interpretation can be complex, and consultation with microbiology or public health may be required in cases of doubt.  If reinfection is likely, then COVID-19 reinfection probable case can be created by the clinician in COVID-19 Clinical Care Module. Provide COVID-19 Care in the Community services as a new episode of infection.
<b>29 - 90</b>	If clinical assessment deems that testing is warranted, a supervised RAT is recommended. If supervised RAT is positive, interpret in the context of symptomatology, epidemiology and clinical risk.  If clinical concern remains after a supervised RAT discussion with microbiology may be necessary. Consideration may be given to testing with PCR, for COVID-19 and/or other respiratory pathogens.  Consider re-testing, particularly if a definite diagnosis is important as listed above, or if their first COVID-19 infection was diagnosed by RAT and confidence in the initial diagnosis is low, for example if it: <ul style="list-style-type: none"> <li>was not epidemiologically linked</li> <li>was not symptomatic</li> <li>occurred at a time of low prevalence.</li> </ul> Or if a definite diagnosis is important: <ul style="list-style-type: none"> <li>for access to COVID-19 therapeutics</li> <li>for access to isolation support</li> <li>to protect vulnerable household members, workplace or clients</li> <li>for regulatory or employment purposes.</li> </ul>	Supervised RAT	
<b>91+</b>	Refer to existing RAT and PCR guidance for the general population.	RAT/PCR	Refer to existing RAT and PCR guidance for the general population.

<sup>2</sup> Nucleic Acid Amplification Test (NAAT)

<sup>3</sup> Polymerase Chain Reaction (PCR)