Timing of surgery after COVID-19 in adults

This document provides clinicians and patients information to aid in the decision making about when patients should have planned surgery after COVID-19.

**Scope**

This advice will be updated based on the clinical impact of new variants of concern, vaccination, new treatments and how they may affect recovery after COVID-19.

It is important to stress that there is minimal information about the timing of surgery after infection with the Omicron variant and these recommendations are based on available data related to the Alpha and Delta variants of COVID-19.

**Overview**

“Decisions regarding surgical timing will require careful consideration of possible sequelae of COVID-19 infection, the urgency of the required surgery and the expected physiological effects of surgery and anaesthesia on the patient. After seven weeks, the perioperative risk is thought to return to baseline in those who had asymptomatic COVID-19 infection and/or those whose symptoms have resolved.”

**Limitations of advice and evidence**

This advice is based on currently available evidence and may change as new evidence comes to light.

An Evidence Check (11 February 2022) by the NSW Agency for Clinical Innovation (ACI) COVID-19 Critical Intelligence Unit (CIU) found no available evidence relating to surgery in patients after infection with the Omicron variant. The CIU continually updates available evidence which can be found at their Living Evidence – website.

There remains no available advice regarding minor procedures being done under sedation or local anaesthetic (e.g. gastrointestinal endoscopy) for patients following COVID-19.

**Recommendations**

1. Planned non-urgent surgery for Category 2 and 3 patients should be deferred for seven weeks after the first positive test diagnosing COVID-19 infection, in either asymptomatic or symptomatic patients, in view of the probable increased risk of mortality and pulmonary morbidity.

   Should surgery be recommended within this seven-week period, patients should have a documented discussion with the treating surgical team about the increased risks associated with surgery for the post COVID-19 patient, weighed up against the risk of delaying surgery. Informed consent should be given and documented. Please refer to the Elective Surgery Access Policy for details on urgency categories.

2. For Category 1 and urgent Category 2 cases:

   a. Consensus advice proposes that asymptomatic patients, or those who had mild COVID-19 symptoms, could have surgery four weeks after recovery from COVID-19. This four-week delay after recovery is reasonable for low risk, otherwise well patients, having minor minimal-risk procedures (low risk category 3 patients). An indicative list of low risk interventions may include: cardioversion, coronary angiogram, permanent pacemaker or automated implantable cardioverter defibrillator box change, transoesophageal echocardiogram, dental surgery, gastroscopy, colonoscopy, endoscopic retrograde cholangiopancreatography, drainage
of superficial abscess, minor amputation (e.g., toe), excision of skin lesions, axillary lymph nodes, Bartholin’s cyst, hysteroscopy, hand surgery, carpal tunnel, cataract, trabeculectomy, vitreoretinal surgery, hallux valgus, removal of hardware, local skin flaps, cystoscopy, hydrocele, epididymal cyst, transrectal biopsy prostate, vasectomy, bronchoscopy and electroconvulsive therapy.

b. Patients who experienced moderate or severe COVID-19 symptoms should be risk assessed by the admitting consultant and multidisciplinary team (if appropriate) to determine if surgery can be deferred until the recommended seven-week period has passed. Should surgery be recommended within this seven-week period, patients should have a documented discussion with the treating surgical team of the increased risks associated with surgery in the post COVID-19 patient weighed up against the risk of delaying surgery. Informed consent should be given and documented.

c. Preoperative assessment is primarily a surgical and anaesthetic decision but may include advice from a multidisciplinary team. Issues to assess include premorbid functional status, risk of disease progression from delaying surgery, and extent and complexity of surgery. While awaiting surgery, patients may benefit from prehabilitation.

d. Patients who have ongoing symptoms or who needed hospitalisation (especially ICU care) will require additional precautions for perioperative care. This may include waiting longer than seven weeks for further recovery to reduce surgical risk. This decision will have to be balanced against the risk of delaying surgery and is a surgical and anaesthetic decision with input as required by other specialties.

3. Vaccination before elective surgery, when practicable, may reduce risk to patients and staff.

**Background to the recommendations**

The number of patients who have been infected with COVID-19 means that many patients will present for planned non-urgent surgery with a history of COVID-19 infection. As of 1 July 2022, more than 8.3 million people in Australia have been infected with COVID-19. Current Australian and NSW guidelines recommend that planned surgery in patients should be delayed until eight or more weeks after infection with COVID-19.

The above advice is general and based on data from COVID-19 infection prior to Omicron; it does not consider the severity of COVID-19 infection, residual functional impairment related to the infection, prior health status, or the nature or extent of surgery.

**The nature of COVID-19 infection on patients’ clinical and functional status**

While COVID-19 is principally a respiratory disease, it also has significant multi-organ effects. Persistence of symptoms, clinical abnormality and abnormal investigations after recovery from COVID-19 may be longer than six months in 50% of patients (Systematic review, n= 250,351, 57 studies). The most common persistent clinical abnormalities were: pulmonary impairment and imaging (62%), difficulty concentrating (23.8%), generalised anxiety disorder (29.6%), functional impairment (44%) and fatigue or muscle weakness (37.5%).

**Surgery on patients with concurrent COVID-19**

There is a higher risk of mortality (23.8% at 30-days) and pulmonary morbidity (51.2%) for patients who acquire COVID-19 in the period of seven days prior to surgery or within 30 days from surgery. Mortality is higher for patients who are men, aged over 70-years-old, who have major surgery and who have higher American Society of Anesthesiology (ASA) status. Different variants of COVID-19 will have different morbidity and mortality profiles.
Consensus statements

The advice from the Royal Australasian College of Surgeons (RACS), and the joint consensus statement from the Royal College of Surgeons England and the Royal College of Anaesthetists state that non urgent planned surgery should be deferred for seven weeks after COVID-19 unless outweighed by the risk of deferring surgery such as disease progression or clinical priority. The advice from the Australian and New Zealand College of Anaesthetists (ANZCA) states that non-urgent elective major surgery should be delayed for a minimum of eight weeks. The American Society of Anesthesiologists (ASA) has released an expert consensus statement about advice for the timing of surgery after COVID-19, based on risk stratification according to symptoms and severity of illness. This statement recommends the timing of elective surgery after recovery from COVID-19 use both symptom- and severity-based categories, suggesting delaying from the time of COVID-19 diagnosis to surgery:

- Four weeks for an asymptomatic patient or recovery from only mild, non-respiratory symptoms.
- Six weeks for a symptomatic patient (e.g., cough, dyspnea) who did not require hospitalisation.
- Eight to 10 weeks for a symptomatic patient who is diabetic, immunocompromised or hospitalised.
- Twelve weeks for a patient who was admitted to an intensive care unit due to COVID-19 infection.

Assessment of Infectivity

For the protection of healthcare staff, patients and hospital visitors, elective surgery should not occur if the patient is still infectious. Patients should meet the criteria for release from isolation prior to elective surgery.

If a subsequent COVID-19 test is performed (according to local admission policies) and found to be positive, discuss with the local clinical microbiologist as this is likely to represent residual shedding of non-infectious viral particles which may persist for weeks or months following infection.

The presence of viable virus can be determined by using cell culture. A positive rapid antigen test may offer a practical and sensitive assessment of infectivity.

Vaccination before surgery

Vaccination against COVID-19, at least two weeks before elective surgery, reduces the risk of preventable COVID-19 infection and the severity of the infection in surgical patients, as well as protecting staff and other patients within the hospital. This will help maintain the health system capacity and avoid preventable furloughing of staff.

Long COVID-19

A proportion of patients who have had COVID-19 will have ongoing symptoms. This is commonly defined as being present for more than three months. These symptoms are multi-systemic in their nature and vary in severity. Organ systems affected include respiratory, cardiac, neurological, gastrointestinal, and musculoskeletal systems. Long COVID-19 appears to be more prevalent in patients that have had severe COVID-19, or who have been unvaccinated.

Surgeons and anaesthetists need to be aware of the potential of long COVID-19 in patients before surgery. Recognition and management options before surgery need to be considered.
Timing of surgery after COVID-19 in adults

August 2022

References


## Document information

<table>
<thead>
<tr>
<th><strong>Version number</strong></th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Original publication date</strong></td>
<td>9 March 2022</td>
</tr>
<tr>
<td><strong>Developed by</strong></td>
<td>Developed by the Anaesthesia and Surgery Communities of Practice.</td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td>This document gives clinicians and patients information to aid in the decision making about when patients should have planned surgery after COVID-19.</td>
</tr>
<tr>
<td><strong>Consultation</strong></td>
<td>Consultation: Infectious Diseases Community of Practice and Professor Peter Work, Clinical Lead, Respiratory Community of Practice.</td>
</tr>
<tr>
<td><strong>Endorsed by</strong></td>
<td>Dr. Nigel Lyons</td>
</tr>
<tr>
<td><strong>Review date</strong></td>
<td>August 2022</td>
</tr>
<tr>
<td><strong>Reviewed by</strong></td>
<td>Surgery and Anaesthesia Community of Practice Clinical Leads</td>
</tr>
<tr>
<td><strong>For use by</strong></td>
<td>To assist clinicians and patients regarding decision making about when patients should have planned surgery after COVID-19.</td>
</tr>
<tr>
<td><strong>Feedback</strong></td>
<td>Feedback on this document can be provided to <a href="mailto:michaela.ward@health.nsw.gov.au">michaela.ward@health.nsw.gov.au</a></td>
</tr>
</tbody>
</table>

© State of New South Wales (Agency for Clinical Innovation) 2022. Creative Commons Attribution-NoDerivatives 4.0 licence. For current information go to: aci.health.nsw.gov.au

The ACI logo is excluded from the Creative Commons licence and may only be used with express permission.