

## In brief

### Cardiac investigations and elective surgery post-COVID-19

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## Background

Patients with perioperative SARS-CoV-2 infection have a significantly higher risk for postoperative complications.<sup>1</sup> Additional preoperative cardiac assessment prior to elective surgery may be considered in patients with a recent COVID-19 diagnosis, however the optimal approach is not yet well defined.<sup>2</sup>

## Summary

- There is limited guidance on cardiac specific investigations for patients undergoing elective surgery following SARS-CoV-2 infection. However, standard clinical practice guidelines for perioperative cardiac risk assessment may be generalised to most patients with COVID-19 undergoing non-cardiac surgery.<sup>2</sup>
- Guidance generally recommends elective surgery be deferred seven weeks or more after COVID-19 diagnosis.<sup>2, 3</sup>
- Individualised assessment of each patient is recommended, taking into consideration the severity of COVID-19 illness in addition to the traditional cardiac risk. Additional preoperative cardiovascular testing may be considered in select patients.<sup>2</sup>
- The risk of complications from perioperative COVID-19 infection needs to be weighed against the risk from delayed surgical treatment.<sup>3, 4</sup>
- The available data is from study periods with zero to low prevalence of vaccination and there is limited evidence on patients recovering from the Delta and Omicron variants.<sup>5</sup>

## Evidence

### Timing of surgery

- A [large international prospective observational study](#) from the GlobalSurg-COVIDSurg collaborative reported higher 30-day postoperative mortality in patients undergoing surgery within seven weeks of a COVID-19 diagnosis compared to patients undergoing surgery seven weeks or more after a COVID-19 diagnosis.<sup>6</sup>
- The [Australian National COVID-19 Clinical Evidence Taskforce](#) conditionally recommends against routine elective surgery within eight weeks of recovery from acute COVID-19 illness, unless the risk of deferring surgery outweighs the risk of performing it.<sup>3</sup>
- The [American Society of Anesthesiologists and Anesthesia Patient Safety Foundation](#) expert consensus statement from December 2020 proposed delaying elective surgery for:
  - four weeks or more after asymptomatic or mild (non-respiratory) COVID-19
  - six weeks or more for patients with moderate illness not requiring hospitalisation
  - eight to ten weeks or more for patients with severe COVID-19 requiring hospitalisation, immunocompromised patients, and those with diabetes

- twelve weeks or more for critically ill patients with COVID-19.<sup>5</sup>
- Guidance from [UpToDate](#) recommends elective procedures be delayed where possible until the patient has recovered to baseline cardiopulmonary status and is no longer infectious.<sup>7</sup>

### Cardiac assessment

- Generally, [major guidelines on preoperative cardiovascular risk assessment](#) recommend establishing the risk of surgery and the related timing, evaluating cardiac conditions and performing any relevant cardiovascular testing, assessing the functional capacity of the patient, and then estimating the perioperative risk for major cardiac adverse events.<sup>8</sup>
- Findings from the GlobalSurg-COVIDSurg study suggest preoperative cardiovascular screening be individualised and incorporate the baseline cardiac risk, any history of cardiovascular complications of COVID-19, severity of COVID-19 illness, and clinical status after recovery.<sup>2</sup>
- Possible screening tests include 12-lead electrocardiogram, troponin measurement, brain natriuretic peptide tests, ambulatory monitoring for arrhythmias, transthoracic echocardiogram, or evaluation for cardiac ischemia as indicated.<sup>2</sup>
- The Australian National COVID-19 Clinical Evidence Taskforce and the United Kingdom multidisciplinary consensus statement recommend a multisystem preoperative assessment prior to elective surgery.<sup>3,9</sup>

### Appendix

PubMed, Google, and Google Scholar were searched on 25 March 2022. The search terms used are outlined below. The Critical Intelligence Unit maintains a living evidence table on [surgery and COVID-19](#) and recently published an evidence check on [surgery post COVID-19](#).<sup>10, 11</sup>

#### PubMed search terms

("General Surgery"[MeSH Terms] OR "surgical procedures, operative"[MeSH Terms] OR "Surgery"[MeSH Subheading] OR "Surgery"[Title/Abstract] OR "Elective Surgical Procedures"[MeSH Terms]) AND ("elective"[Title/Abstract] OR "non-urgent"[Title/Abstract]) AND ("Heart Function Tests"[MeSH Terms] OR "cardiac"[Title/Abstract] OR "cardiovascular"[Title/Abstract] OR "heart"[MeSH Terms]) AND ("COVID-19"[Title/Abstract] OR "COVID-19"[MeSH Terms] OR "sars cov 2"[Title/Abstract] OR "sars cov 2"[MeSH Terms] OR "Severe Acute Respiratory Syndrome Coronavirus 2"[Title/Abstract] OR "2019 NCOV"[Title/Abstract] OR "Covid19"[Title/Abstract] OR "COVID-19"[Title/Abstract] OR "sars cov 2"[Title/Abstract] OR "Severe Acute Respiratory Syndrome Coronavirus 2"[Supplementary Concept]) AND (english[Filter])

#### Google and Google Scholar search terms

Searches were conducted using terms related to cardiac and elective surgery and COVID-19.

### References

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