

## Recommendations

**Individuals receiving direct oral anticoagulant (apixaban, dabigatran, edoxaban & rivaroxaban) or warfarin in therapeutic INR range or on full dose heparin or fondaparinux injections can all receive the COVID-19 vaccination**

- There is an increased risk of bruising at the injection site but we do not anticipate any serious effects related to anticoagulation
- We suggest that after the injection prolonged pressure (at least 5 minutes) should be applied to the injection site to reduce bruising
- Patients on warfarin with supra-therapeutic INR should wait until their INR is <4.0
- We encourage patients to have vaccinations and they should not be avoided on the basis of being on anticoagulation

Patients with inherited bleeding disorders such as Haemophilia need to seek advice from their own Haemophilia Centre to ensure they receive the vaccine safely

## Key Points

The COVID vaccines, whilst novel, are not themselves contraindicated for patients on anticoagulation. The key risk assessment is from the use of intramuscular injection. Patients on anticoagulation are generally advised to avoid intramuscular injection due to the risk of haematoma formation due to tissue injury and puncture of small blood vessels by the needle used to vaccinate, however;

1. There are a number of studies which have documented the relative risk of injections in anticoagulated patients.
2. We also know that warfarin does not need to be discontinued for a number of invasive procedures such as dental procedures and endoscopy with submucosal biopsy, and arthroscopy.
3. PGDs for flu vaccination, recommend patients on anticoagulation within a therapeutic dose can receive intra-muscular influenza vaccination with sufficient pressure applied for a sufficient period of time to ensure there is no leakage of blood into muscle tissue.

## Further information

- For more on thrombosis, thromboprophylaxis & coagulopathy associated with COVID-19 infection please see this webinar:
- <https://academy.isth.org/isth/2020/covid-19/291581/marcel.levi.26.beverley.jane.hunt.webinar.thrombosis.thromboprophylaxis.26.html>
- For up-to-date freely downloadable international guidance for preventing and managing thrombosis in COVID-19 go to: <https://pubmed.ncbi.nlm.nih.gov/32459046>

