

Doctor, I heard that COVID-19 causes blood clots. I have a history of DVT or PE, what do I need to know to protect myself?

For people who have a history of DVT or PE and are diagnosed with COVID-19:

If you are on anticoagulants, continue to take them as instructed.

If you are not on anticoagulants and are diagnosed with COVID-19 infection, ask your doctor if you might benefit from taking anticoagulants temporarily.

Stay as active as you can around your home.



What's the issue?

Understanding the problem

The COVID-19 virus has caused millions of people around the world to become sick. One of the complications of infection with COVID-19 for some people has been the development of blood clots.

Infection with viruses and bacteria causes inflammation which helps the body to fight against the infection. However, inflammation can also trigger the blood clotting system. This seems to be the case for COVID-19 because high rates of DVT and PE have been reported in people who required admission to hospital for COVID-19 infection.

There are two types of blood clots that occur in people with COVID-19:

- 1) In people who have life-threatening illness due to COVID-19 infection in their lungs, inflammation causes damage to the lining of the blood vessels within the lungs. This inflammation causes blood clots to form at the damaged sites and, along with fluid in the lungs, make it hard for the body to get enough oxygen. These clots are small but are very common in this group of extremely ill people.
- 2) Less commonly, people who are ill with COVID-19 can also develop larger blood clots that form in the legs (deep vein thrombosis; DVT) some of which may then travel to the lungs (pulmonary embolism; PE).

There is a lot we do not understand about the effects of COVID-19 which is why high-quality research is so important. Based on what was known at the time of writing, the researchers in this review provide suggestions to doctors on how to prevent and treat blood clots in people who are infected with COVID-19.

Study highlights

There is a lot we don't know about COVID-19. If you are asked to participate in a study, please consider doing so - we need more answers!

Review the patient-friendly document "Thrombosis and COVID-19 Information for Patients and Families (<https://thrombosiscanada.ca/blood-clots-and-covid-19/>)" by Thrombosis Canada for additional helpful information

Watch for signs of DVT and PE



The research

A summary of all studies published up to April 2020.

Who? People diagnosed with COVID-19 infection.

What? Studies that collected data on people with COVID-19 infection who were diagnosed with PE or DVT.



Summary of findings

People with COVID-19 infection	Results	Number of studies and quality of evidence	Suggestions by Bikdeli and colleagues
Required admission to hospital	25-40% were found to have <u>DVT</u> or <u>PE</u> (most were in the ICU because they were extremely ill due to COVID)	2 studies; total of 279 people Very-low to low quality evidence	Low-dose <u>anticoagulants</u> should be given to all admitted COVID patients who are not bleeding
Well enough to stay home and have a history of <u>DVT</u> or <u>PE</u>	No reports to date	No study data available	Stay as active as possible Continue to take <u>anticoagulants</u> if already on them Discuss with your doctor if you should start or restart <u>anticoagulants</u> if you are not currently taking any
Well enough to stay home and do NOT have a history <u>DVT</u> or <u>PE</u>	No reports to date	No study data available	Stay as active as possible

This Evidence Summary is based on the following article:

Bikdeli B, Madhavan MV, Jimenez D, et al. COVID-19 and Thrombotic or Thromboembolic Disease: Implications for Prevention, Antithrombotic Therapy, and Follow-Up: JACC State-of-the-Art Review. *J Am Coll Cardiol.* 2020 Jun 16;75(23):2950-2973. doi: 10.1016/j.jacc.2020.04.031. Epub 2020 Apr 17. PubMed (<https://pubmed.ncbi.nlm.nih.gov/32311448>)

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