# 19. D-dimer

*Last Updated: 2/15/2004*

**Q: "What is a D-dimer test? How would it be used in conjunction with someone having factor V Leiden? How long does it take to return to normal?"**

A: The D-dimer test is a blood test that examines, whether a certain breakdown product of blood clots, the so-called D-dimer, is present in the bloodstream. Whenever we clot, our body immediately starts to break down part of the clot and D-dimers start to appear in the blood. A negative test excludes the presence of a major blood clot in many patients and may make a Doppler ultrasound, venogram, or lung scan examination unnecessary.

A negative D-dimer test result may be helpful in excluding the presence of a blood clot. A positive test, on the other hand, is not, since it can be due to many things other than thrombosis (for example liver disease, trauma, surgery, pregnancy, infection); it, therefore, does not confirm the presence of a clot. In patients who have had a clot in the past, who are known to have a clotting disorder, or in whom the physician has a high suspicion for a thrombosis, the D-dimer test is not reliable and should not be used; in these patients one should go straight to obtaining an imaging study (Doppler ultrasound, venogram, or lung scan). The D-dimer test can return to normal within a few days to a week, but that depends on how elevated the test-level was to begin with and whether there are other reasons for the level to be elevated.

Recent data indicate that in the patient who has had a deep vein thrombosis (DVT) and has been treated with warfarin (=coumadin®) for a few months, a positive D-dimer indicates a higher risk for recurrent DVT if warfarin (=coumadin) is stopped (ref. 3,4). In these patients one may, therefore, consider more aggressive treatment with blood thinners, i.e. long-term full-dose warfarin (target INR 2.0-3.0) rather than low-dose warfarin or discontinuation of warfarin.

Personal comment: In patients with a history of one spontaneous deep vein thrombosis I often recommend 6 months of full dose warfarin (target INR 2.0-3.0). At the end of the 6 months I obtain a D-dimer test. If it is negative I discuss low-dose warfarin (target INR 1.5-2.0) with the patient, based on the PREVENT trial results (ref. 1). If the D-dimer is positive, I discuss full-dose warfarin (target INR 2.0-3.0), based on the ELATE trial results (ref. 2).

**References:**


1. PREVENT trial: Ridker PM et al.: "Long-term, low intensity warfarin therapy for the prevention of recurrent venous thromboembolism". New England Journal of Medicine 2003;348:1425-34.
2. ELATE trial: Kearon C et al.: "Comparison of low-intensity warfarin therapy with conventional-intensity warfarin therapy for long-term prevention of recurrent venous thromboembolism". New England Journal; of Medicine 2003;349:631-9.
3. Fattorini A et al.: "Risk of DVT recurrence: high negative predictive value of D-dimer performed during oral anticoagulation". Thrombosis and Haemostasis 2002;88:162-3.
4. Palareti G et al.: "Predictive value of d-dimer test for recurrent venous thromboembolism after anticoagulation withdrawal in subjects with a previous idiopathic event and in carriers of congenital thrombophilia". Circulation 2003;108:313-318.