Factor V Leiden (FVL): Who to consider for genetic testing

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For specific instructions on how to order FVL testing, contact your local genetics centre.

FVL carrier testing, in addition to other thrombophilia conditions e.g. Protein C deficiency, may be considered in the following scenarios when the results of testing would affect clinical management (e.g. use or duration of anticoagulation prophylaxis):

FVL testing is indicated for:

Those assigned female at birth and planning a pregnancy who have a family history of VTE and the potential for homozygous FVL in the individual (each parent of the individual is a carrier of FVL)

- Anticoagulation prophylaxis would be indicated if homozygous FVL.

Consider FVL testing for:

Those assigned female at birth and planning a pregnancy who have:

- A family history of VTE
  - *Consider FVL testing if anticoagulation prophylaxis is being considered*
- Multiple VTE risk factors e.g. obesity, older age, comorbid medical conditions
  - *Consider FVL testing if test results would affect clinical management*

Individuals with:

- An unprovoked VTE involving unusual sites e.g. cerebral, when management would be affected. If indefinite anticoagulation is already planned, then testing is not indicated.
- A VTE provoked by nonsurgical major transient risk factor e.g. confinement to hospital bed for more than 3 days
- A VTE associated with pregnancy, occurring post-partum or the use of combined oral contraceptives
- A VTE under age 40 years, either spontaneous or associated with weak environmental risk factors, and family history of at least one first-degree relative with VTE

FVL carrier testing is **NOT** recommended in the following scenarios:

- General population screening
  - Risk of unnecessary thromboprophylaxis, or modifications to plans for birth control, surgery, or travel, and improper labelling as an individual with a disease.
- Asymptomatic individuals with family members known to have FVL (i.e. cascade screening is not recommended in asymptomatic relatives)
  - Unless the individual is planning a pregnancy and there is the possibility for that individual to be homozygous for FVL
- Considering oral contraception (OC) or hormone replacement therapy
  - Overall incidence of thrombosis is low
  - For context, the presence of one FVL variant and the use of combined OC increases the risk of thrombosis from 1 to 35–40/10,000 per year, approximately <1 in 200 risk of VTE per year.
- Unexplained early pregnancy loss
  - No clear association with FVL status
- Unprovoked VTE, unless at rare site e.g. cerebral
  - Anticoagulation duration rarely impacted by FVL status as recurrence rate is high
- Provoked VTE following surgery
  - Recurrence rate is low

For more on FVL check out the GECKO *on the run*

Adapted from Martin and Cushman JAMA 2025 and Middledorp et al Blood Adv 2023