

# DEEP VENOUS THROMBOSIS: PRESENTATION & DIAGNOSIS

FM FLAME LECTURE: 94

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SWEDISH FAMILY MEDICINE RESIDENCY

# LEARNING OBJECTIVES

## ▶ To understand:

- ▶ Clinical presentation of DVT
- ▶ Likelihood of DVT based on above presentation
- ▶ Labs/imaging helpful in the diagnosis of DVT

## ▶ Prerequisites:

- ▶ **FM FLAME 93:** Deep Vein Thrombosis: Risk factors and Pathogenesis

## ▶ See also – for closely related topics:

- ▶ **FM FLAME 95:** Deep Vein Thrombosis: Treatment and Management
- ▶ **FM FLAME 96:** Deep Vein Thrombosis: Complications - Pulmonary Embolism

# PRESENTATION

- ▶ **“Classic” Clinical Presentation** → limb pain, swelling, warmth, redness
  - ▶ Can be asymptomatic
  - ▶ Symptoms are neither sensitive nor specific
- ▶ **History** – acute onset, no trauma, no illness, isolated
  - ▶ Usually distal extremity
- ▶ **Vital Signs** – tachycardia, elevated BP, afebrile (can cause fever)
  - ▶ Largely due to pain
  - ▶ Usually normal
- ▶ **Physical Exam** – extremity w/ tenderness, edema (generally  $\geq 3$  cm more than other limb), erythema, warmth, cords
  - ▶ Difficulty using limb (i.e. pain w/ standing)
  - ▶ Homan's sign

# RISK STRATIFICATION

- ▶ **AAFP, ACCP, ACEP, ASH, ACP recommend using a clinical prediction rule to assess DVT risk BEFORE ordering imaging studies**
- ▶ History and Physical
- ▶ Wells' Criteria
  - ▶ Most widely used
  - ▶ More subjective
  - ▶ Hospital setting
  - ▶ Less accurate in older patients and in recurrent DVT
- ▶ Dutch Primary Care Rule
  - ▶ Comparable to Wells'
  - ▶ More objective
  - ▶ Requires D-dimer

# WELLS' CRITERIA FOR DVT

## Scoring

< 1 = Low prob

>1 = D-dimer

Obtain U/S if +

Active cancer in last 6 mos	+1
Paralysis, paresis, or recent immobilization of extremity	+1
Recently bedridden > 3 d or major surgery w/in last 12 wks	+1
Localized tenderness	+1
Entire leg swelling	+1
Calf swelling (3 cm > than asymptomatic limb)	+1
Pitting edema confined to symptomatic limb	+1
Collateral superficial veins	+1
PMHx of DVT	+1
Alternative diagnosis as likely as DVT	-2

# DUTCH PRIMARY CARE RULE

## Scoring

D-dimer required

3 = positive

Diagnostic U/S

Active cancer in last 6 mos	+1
Absence of leg trauma	+1
Male	+1
Recently bedridden > 3 d or major surgery w/in last 12 wks	+1
Calf swelling (3 cm > than asymptomatic limb)	+2
Oral contraceptive use	+1
Collateral superficial vein dilation	+1
Positive D-dimer ( $\geq 0.5$ mcg/mL or $\geq 1.7$ mol/L)	+6

# FURTHER TESTING / DIAGNOSIS

## ▶ D-dimer

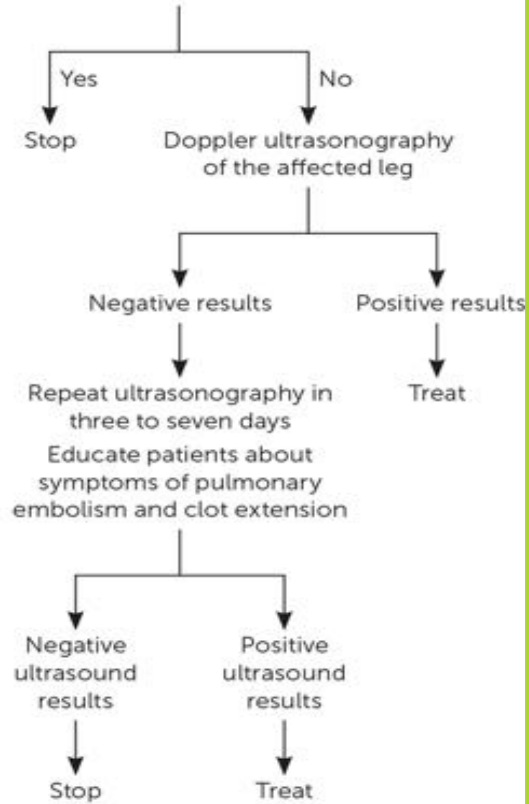
- ▶ Purpose: Further assess likelihood of clot
- ▶ Being tested: Presence/quantity of fibrin degradation product
  - ▶ Sign of fibrinolysis
  - ▶ Large clot = more fibrinolysis
- ▶ High sensitivity and NPV: Helps rule out DVT

## ▶ Doppler U/S

- ▶ Purpose: Directly identify clot burden
- ▶ Unlikely to need further imaging, but could consider if convincing presentation w/ negative U/S (CT)

# AAFP Diagnostic Algorithm for Diagnosing DVT

Score of 1 point or less on the Wells score and a negative D-dimer result, or a score of 3 points or less on the Dutch Primary Care Rule\*?





# REFERENCES

1. ASH Clinical Practice Guidelines on Venous Thromboembolism (<https://www.hematology.org/education/clinicians/guidelines-and-quality-care/clinical-practice-guidelines/venous-thromboembolism-guidelines>)
2. Diagnosing DVT in Nonpregnant Adults in the Primary Care Setting (<https://www.aafp.org/afp/2019/1215/p778.html>)
3. Diagnosis of Deep Venous Thrombosis and Pulmonary Embolism (<https://www.aafp.org/afp/2012/1115/p913.html>)
4. Diagnosing VTE: Guidelines from the American Society of Hematology (<https://www.aafp.org/afp/2019/1201/p716.html>)