

# Pulmonary Embolism in Pediatrics

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PGY-1

What is the biggest risk factor for DVT/PE development in pediatric patients?

- A) Cancer
- B) Infection
- C) Sickle Cell Disease
- D) Oral Contraceptive use
- E) Indwelling catheter

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# Correct Answer: (E) Indwelling catheter

- Although all answer choices are major risk factors for the development of VTE in children; indwelling catheter remains the most

# Risk Factors for VTE in Children

- Cancer (particularly acute lymphoblastic leukemia)
- Congenital heart disease
- Trauma
- Surgery/immobility
- Local Infection
- Renal diseases
- Systemic lupus erythematosus
- Lupus anticoagulant
- Sickle cell disease
- Hypovolemia
- Obesity
- Ventriculoatrial shunts
- Medications (including estrogens and L-asparaginase)
- VTE = venous thromboembolism.

What is the most common presenting complaint of PE in adolescents?

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- B) Pleuritic chest pain
- C) Fever
- D) Lower Extremity pain
- E) Cough

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# Correct Answer: (B) Pleuritic Chest Pain

- In adolescents, pleuritic chest pain is the most common presenting complaint (84%), followed by dyspnea, cough, and hemoptysis.
- Presenting signs in **teenagers** include arterial hypoxemia, physical signs of a DVT of the lower extremity, tachypnea, and fever.
- Unexplained persistent tachypnea can be an important indication of pulmonary embolism in pediatric patients of all age categories.
- Many patients have complex medical conditions and PE may present with subtle signs that are attributed to underlying pathology



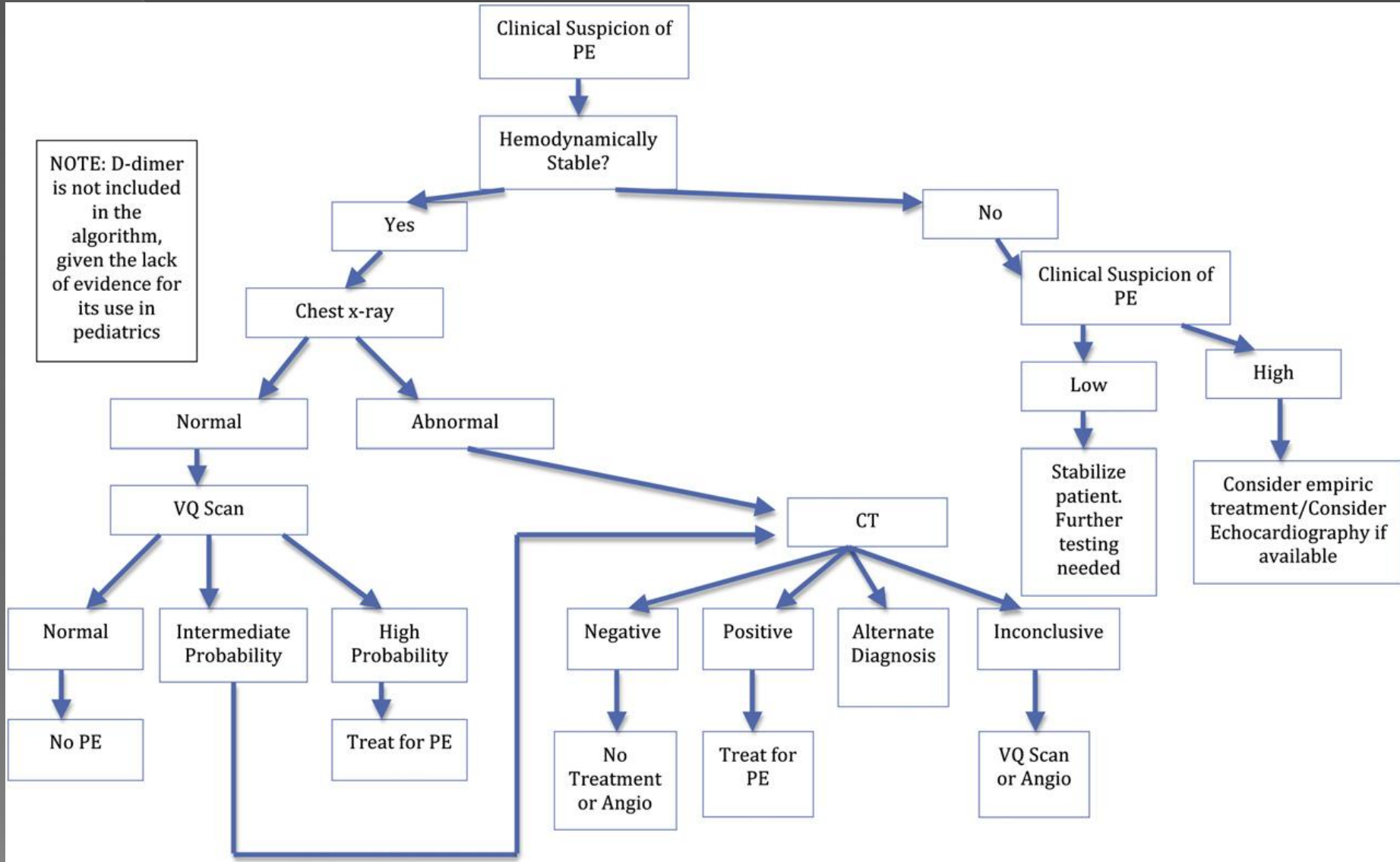
# Diagnostic testing

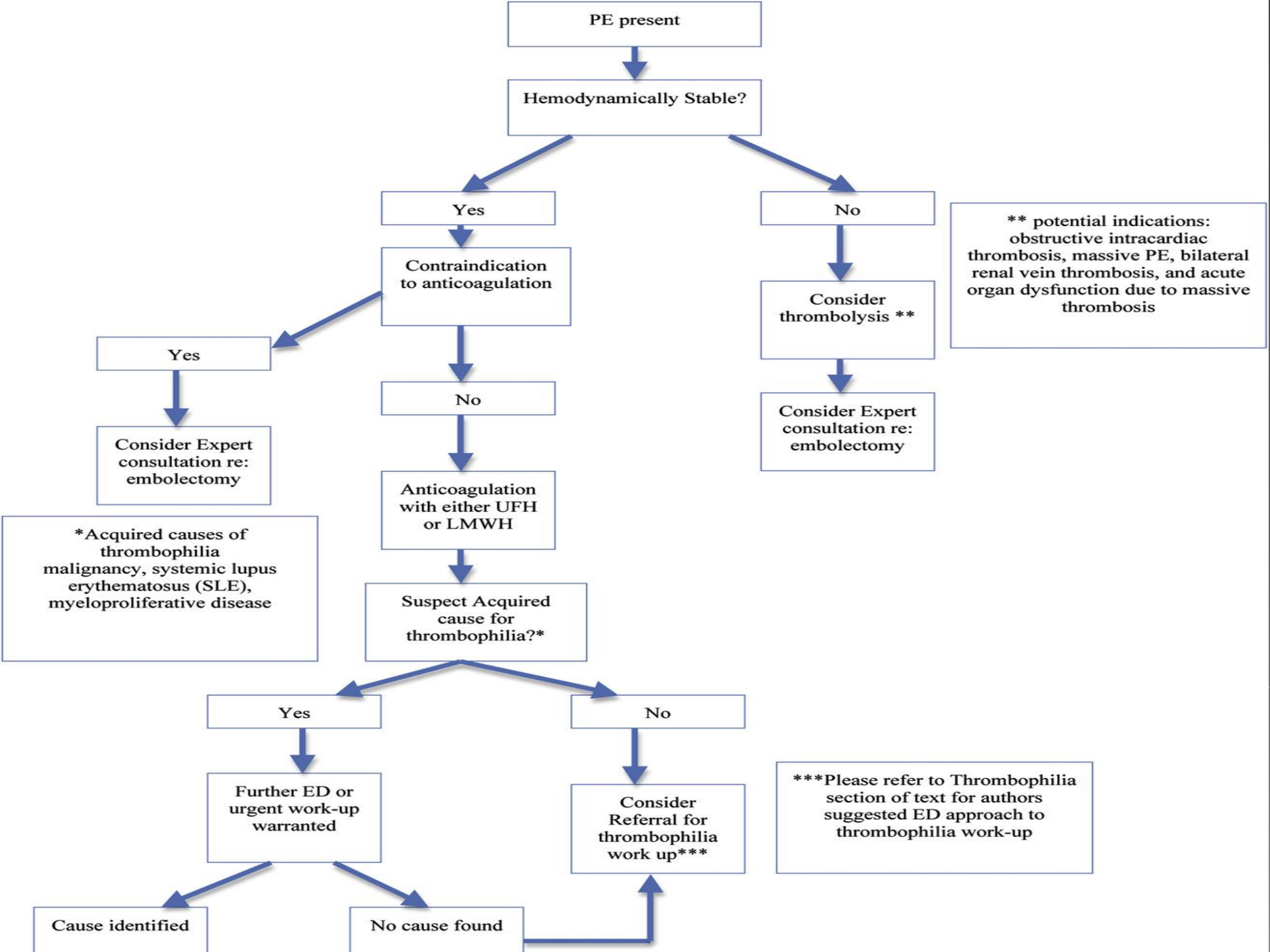
- Gold standard is pulmonary angiography
  - > However, because of difficult venous access and use of iodinated dyes in children, ultrasound is often used
- Young children and infants most often have VTE of the UPPER EXTREMITY
  - > 2/3 of children with VTE is found in upper extremity
- Presence or absence of DVT cannot confirm or rule out PE
- Further diagnostic testing can be based on suspicion and availability of resources

# Diagnostic Testing, cont.

- No evidence that D-dimer may be helpful in pediatrics, especially considering that children presenting with PE usually have complicated underlying medical disorders that may cause them to have a baseline elevation

# Diagnostic Testing Algorithm





# References

- Patocka C, Nemeth J. Pulmonary Embolism in Pediatrics. *The Journal of Emergency Medicine*. 2012; 42: 105-116
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