

IN A NUTSHELL

The knowledge platform for general practitioners

Wells' Criteria for Pulmonary Embolism

The Wells' Criteria for pulmonary embolism can be used to estimate the probability of pulmonary embolism based on the history and clinical criteria. This results in a recommendation for further diagnostics depending on the pretest probability.

Clinical signs and symptoms of deep vein thrombosis

(leg swelling or compressive tenderness along the deep veins)

No Yes (+3)

Pulmonary embolism as likely or more likely than an alternative diagnosis

No Yes (+3)

Heart rate > 100 bpm

No Yes (+1.5)

Immobilization (? 3 days) or surgery in the past 4 weeks

No Yes (+1.5)

Previously diagnosed deep vein thrombosis or pulmonary embolism

No Yes (+1.5)

Hemoptysis

No Yes (+1)

Malignancy

(existing therapy, palliative therapy, or treatment discontinuation within the last 6 months)

No Yes (+1)

Wells' Criteria for Pulmonary Embolism:

Classification according van Belle et al. [2]

Recommendation:

Interpretation

Score	Original classification according to Wells et al. [1]	Classification according to van Belle et al. [2]
	Low probability of pulmonary embolism	
	Prevalence: 1.2 %	
	Recommendation: perform D-dimer test	Pulmonary embolism unlikely
? 1	- D-dimer negative: pulmonary embolism excluded	Prevalence: 12.1 %
	- D-dimer positive: imaging to rule out pulmonary embolism	Recommendation: perform D-dimer test
2		- If D-dimer is negative, pulmonary embolism can be excluded.
3	Moderate probability of pulmonary embolism	- If D-dimer is positive, CT angiography should be performed to rule out pulmonary embolism.
4	Prevalence: 16.2 %	
5	Recommendation: imaging to rule out pulmonary embolism	
6		Pulmonary embolism likely
	High probability of pulmonary embolism	Prevalence: 37.1 %
? 7	Prevalence: 37.5 %	Recommendation: CT angiography should be performed to rule out pulmonary embolism.
	Recommendation: imaging to rule out pulmonary embolism	

References

1. Wells PS, Anderson DR, Rodger M et al. Excluding pulmonary embolism at the bedside without diagnostic imaging: management of patients with suspected pulmonary embolism presenting to the emergency department by using a simple clinical model and d-dimer. *Ann Intern Med* 2001; 135: 98-107
2. van Belle A, Büller HR, Huisman MV et al. Effectiveness of managing suspected pulmonary embolism using an algorithm combining clinical probability, D-dimer testing, and computed tomography. *JAMA* 2006; 295: 172-179