Anticoagulation in Nonvalvular Atrial Fibrillation (NVAF) and/or Venous Thromboembolism (VTE)
RISK PREDICTION SCORES THAT INCLUDE RENAL CRITERIA

CME OUTFITTERS

DOAC Score

In individuals with atrial fibrillation (AF) potentially eligible for direct oral anticoagulant (DOAC) therapy, the DOAC Score, introduced in 2023, can help stratify patients based on expected bleeding risk. Compared to the HAS-BLED Score, the DOAC Score showed stronger predictive performance.

DOAC SCORE

Clinical Risk Prediction Tool	Points
Age, years	
65–69	2
70–74	3
75–79	4
≥80	5
Creatinine clearance/estimated glomerular filtration rate (mL/min)	
30–60	1
<30	2
Underweight (body mass index <18.5 kg/m^2)	1
Stroke/transient ischemic attack/embolism history	1
Diabetes	1
Hypertension	1
Antiplatelet use	
Aspirin	2
Dual-antiplatelet	3
Nonsteroidal anti-inflammatory drug (NSAID) use	1
Bleeding history	3
Liver disease*	2
TOTAL SCORE[†]	

*Defined as AST, ALT, ALP ≥3× upper limit of normal (ULN), ALP ≥2× ULN, or cirrhosis

[†]Score range: 0–10 (Maximum 10 points—individuals with scores ≥10 are assigned a score of 10); 0–3 points = very low risk; 4–5 points = low risk; 6–7 points = moderate risk; 8–9 points = high risk; 10 points = very high risk

Aggarwal R, Ruff CT, Virdone S, et al. Development and validation of the DOAC score: a novel bleeding risk prediction tool for patients with atrial fibrillation on direct-acting oral anticoagulants. Circulation. 2023;148(12):936–946.

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Risk Prediction Scores That Include Renal Criteria

1

VTE-BLEED Score

This tool can be used to estimate the risk of major or clinically relevant bleeding after day 30 of anticoagulation administration for acute VTE. The original study enrolled patients who were taking either warfarin or dabigatran.

VTE-BLEED SCORE

Risk Factors	Points
Active cancer	2
Male with uncontrolled hypertension	1
Anemia	1.5
History of bleeding	1.5
Renal dysfunction (CrCl 30–60 mL/min)	1.5
Age ≥60 years	1.5
TOTAL SCORE	

<2 = low risk; ≥2 points = elevated risk

Klok FA, Hosel V, Clemens A, et al. Prediction of bleeding events in patients with venous thromboembolism on stable anticoagulation treatment. Eur Respir J. 2016;48(5):1369–1376.

Website and Mobile Apps for the VTE-BLEED Score Calculator | MDCalc

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2

HAS-BLED Score

HAS-BLED is a simple, novel bleeding risk score introduced in 2010 that provides a practical tool to assess the individual bleeding risk of real-world patients with AF, potentially supporting clinical decision making regarding antithrombotic therapy in patients with AF.

HAS-BLED SCORE

Risk Factors	Points
Prior bleeding	1
Age >65 years	1
Hypertension	1
Renal disease* or liver disease[†]	1 or 2
Stroke	1
Labile international normalized ratios	1
Drug (aspirin) or alcohol use	1 or 2
TOTAL SCORE[‡]	

*Dialysis, renal transplantation, or serum creatinine >2.26 mg/dL (199.8 µmol/L)

[†]Cirrhosis; bilirubin >2× ULN that is associated with alanine transaminase, aspartate transaminase, or alkaline phosphatase >3× ULN

[‡]0 points = low risk; 1–2 points = moderate risk; >3 points = high risk

Pisters R, Lane DA, Nieuwlaat R, et al. A novel user-friendly score (HAS-BLED) to assess 1-year risk of major bleeding in patients with atrial fibrillation. The Euro Heart Survey. Chest. 2010;138(5):1093–1100.

Website and Mobile Apps for the HAS-BLED Score Calculator | MDCalc

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3

ATRIA Bleeding Risk Score

The ATRIA Bleeding Risk Score, in combination with other risk scores and clinical experience, can be used to help guide the decision for warfarin therapy in patients who need anticoagulation. The ATRIA risk scoring scheme may be used as one potential tool to stratify the risk of major hemorrhage in patients for whom warfarin anticoagulation is being considered.

ATRIA BLEEDING RISK SCORE

Risk Factors	Points
Prior bleeding	1
Age >75 years	2
Severe renal disease*	3
Anemia[†]	3
Hypertension	1
TOTAL SCORE[‡]	

*Dialysis or glomerular filtration rate <30 mL/minute

[†]Hemoglobin <13 g/dL (130 g/L) in men and <12 g/dL (120 g/L) in women

[‡]0–3 points = low risk; 4 points = moderate risk; 5–10 points = high risk

Fang MC, Go AS, Chang Y, et al. A new risk scheme to predict warfarin-associated hemorrhage: the ATRIA (Anticoagulation and Risk Factors in Atrial Fibrillation) Study. J Am Coll Cardiol. 2011;58(4):395–401.

Website and Mobile Apps for the ATRIA Score Calculator | MDCalc

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ORBIT Bleeding Risk Score

The ORBIT Score was developed and validated as a way to assess bleeding risk in patients with AF. Derivation was based on data from the Outcomes Registry for Better Informed Treatment of Atrial Fibrillation (ORBIT-AF), a prospective registry of patients with AF across 176 sites in the United States.

ORBIT BLEEDING RISK SCORE

Risk Factors	Points
Older (≥75 years)	1
Reduced hemoglobin (<13 mg/dL in men and <12 mg/dL in women), hematocrit (<40% in men and <36% in women), or history of anemia	2
Bleeding history	2
Insufficient kidney function (eGFR <60 mg/dL/1.73 m^2)	1
Treatment with an antiplatelet agent	1
TOTAL SCORE*	

*0–2 points = low risk; 3 points = medium risk; 4–7 points = high risk

PrimaryCare Notebook. ORBIT bleeding risk score. Last reviewed August 21, 2023. https://primarycarenotebook.com/pages/cardiovascular-medicine/orbit-bleeding-risk-score. Accessed December 2023.

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5

HEMORR$_2$HAGES Score

The HEMORR$_2$HAGES Score was developed to quantify the risk of hemorrhage in patients with AF on anticoagulation and to aid in the management of antithrombotic therapy.

HEMORR$_2$HAGES SCORE

Risk Factors	Points
Hepatic or renal disease	1
Ethanol (alcohol) abuse	1
Malignancy history	1
Older (age >75 years)	1
Reduced platelet count or function (includes aspirin use, any thrombocytopenia or blood dyscrasia, like hemophilia)	1
Rebleeding risk (history of past bleeding)	2
Hypertension (uncontrolled)	1
Anemia (Hgb <13 g/dL for men; Hgb <12 g/dL for women)	1
Genetic factors (CYP 2C9 single-nucleotide polymorphisms)	1
Excessive fall risk, dementia, Parkinson disease, or psychiatric disease	1
Stroke history	1
TOTAL SCORE*	

*0–1 points = low risk; 2–3 points = intermediate risk; ≥4 points = high risk

Gage BF, Yan Y, Milligan PE, et al. Clinical classification schemes for predicting hemorrhage: results from the National Registry of Atrial Fibrillation (NRAF). Am Heart J. 2006;151(3):713–719.

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