

Risk scheme

CHADS₂ (2001)^{16*}

Framingham (2003)^{17†}

NICE guidelines (2006)¹⁸

multi scores... !!

**NECESSARI PER STRATIFICARE
IL RISCHIO E DEFINIRE IL
TRATTAMENTO OTTIMALE**

Rietbrock modified (2008)^{22‡}

CHA₂DS₂-VASc (2009)^{21§}

CHADS₂

Validation of Clinical Classification Schemes for Predicting Stroke

Results From the National Registry of Atrial Fibrillation

Brian F. CAGE

JAMA, June 13, 2001—Vol 285, No. 22



CHEST

CHA₂DS₂-VASc

Refining Clinical Risk Stratification Predicting Stroke and Thromboembolism in Atrial Fibrillation Using a Novel Factor-Based Approach

The Euro Heart Survey on Atrial Fibrillation

*Gregory Y. H. Lip, MD; Robby Nieuwlaat, PhD; Ron Pisters, MD; Deirdre A. Lane, PhD;
and Harry J. G. M. Crijns, MD*

CHEST 2010; 137(2):263–272

Estimation of stroke risk in AF: CHADS₂

- Validated using the National Registry of Atrial Fibrillation (NRAF)
- Most widely used to guide the choice of antithrombotic therapy

CHADS₂ risk criteria	Score
C ardiac failure	1
H ypertension	1
A ge ≥75 yrs	1
D iabetes mellitus	1
S troke or TIA (previous history)	2

5 ITEM / SEI PUNTI TOTALI

Tabella 7. CHADS₂ score e incidenza di ictus.

CHADS ₂ score	Pazienti (n=1733)	Incidenza aggiustata di ictus (%/anno) ^a (IC 95%)
	65-95 aa; FA no TAO	
0	120	1.9 (1.2-3.0)
1	463	2.8 (2.0-3.8)
2	523	4.0 (3.1-5.1)
3	337	5.9 (4.6-7.3)
4	220	8.5 (6.3-11.1)
5	65	12.5 (8.2-17.5)
6	5	18.2 (10.5-27.4)

score = 0 (rischio basso)

score = 1 (rischio moderato)

score = ≥ 2 (rischio alto)

Gage BF et al. JAMA 2001;285:2864-70



Problemi del CHADS₂ score

Problemi del CHADS₂ score

Patients at low risk are not at “truly low risk”

Rilevante numero di soggetti classificati come rischio moderato: non include alcuni altri noti fattori di rischio per ictus

**“studi”
successivi...**



Independent predictors of stroke in patients with atrial fibrillation: a systematic review.

Neurology 2007;69:546-54.

Stroke and thromboembolism in atrial fibrillation: a systematic review of stroke risk factors, risk stratification schema and cost effectiveness data.

Thromb Haemost 2008;99:295-304.

Fattori di rischio per ictus e tromboembolismo in FA

- Pregresso ictus / TIA / T. embolismo
- Età avanzata (da 65 anni)
- Ipertensione
- Diabete
- Cardiopatia strutturale: disfunzione sistolica VS (ecoTT)
- Trombosi atriale, placche aortiche complicate (ecoTE)
- Pregresso IMA
- Arteriopatia periferica

CHA₂DS₂-VASc SCORE

Risk factor	Score
Congestive heart failure/LV dysfunction	1
Hypertension	1
Age ≥ 75 ans	2
Diabetes mellitus	1
Stroke/TIA/thrombo-embolism	2
Vascular disease*	1
Age 65-74	1
Sex category [i.e. femal sex]	1
Maximum score	9

*Prior myocardial infarction, peripheral artery disease, aortic plaque.

Risk category	CHA ₂ DS ₂ -VASc score
One 'major' risk factor or ≥ 2 'clinically relevant non-major' risk factors	≥ 2
One 'clinically relevant non-major' risk factor	1
No risk factors	0

CHA ₂ DS ₂ -VASc Score	No.	Number of TE Events	TE Rate During 1 y (95% CI)
0	103	0	0% (0-0)
1	162	1	0.6% (0.0-3.4)
2	184	3	1.6% (0.3-4.7)
3	203	8	3.9% (1.7-7.6)
4	208	4	1.9% (0.5-4.9)
5	95	3	3.2% (0.7-9.0)
6	57	2	3.6% (0.4-12.3)
7	25	2	8.0% (1.0-26.0)
8	9	1	11.1% (0.3-48.3)
9	1	1	100% (2.5-100)
Total	1,084	25	<i>P</i> Value for trend 0.003

**Maggiore potere predittivo
di T.E. rispetto al CHADS 2**

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Identifica bene i pz “very low risk”

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Solo una piccola % di soggetti rimane nel "rischio intermedio"

Identifying Patients at High Risk for Stroke Despite Anticoagulation

A Comparison of Contemporary Stroke Risk Stratification Schemes in an
Anticoagulated Atrial Fibrillation Cohort

Gregory Y.H. Lip, MD; Lars Frison, PhD; Jonathan L. Halperin, MD; Deirdre A. Lane, PhD

Predictors of thromboembolism
risk (n.7329 subjects)

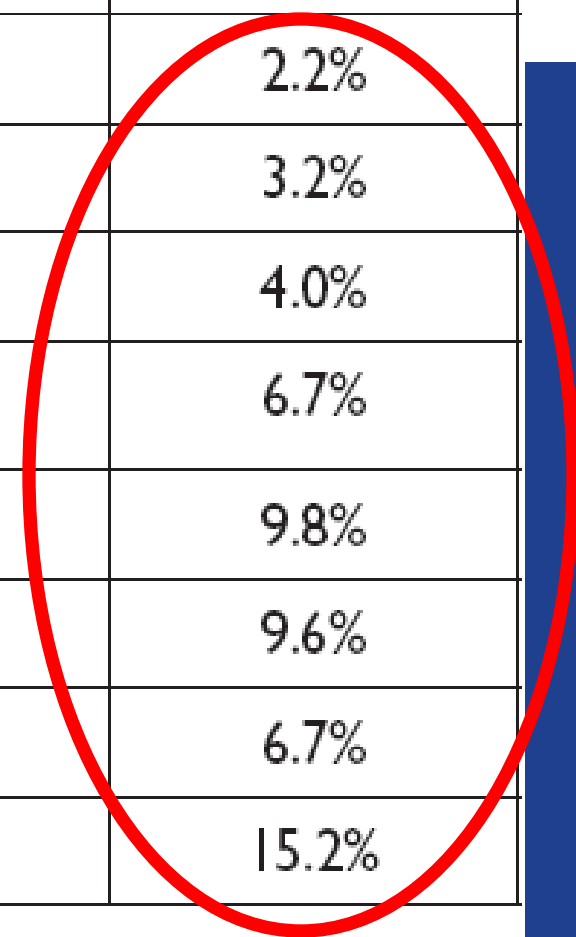
Predictive value of contemporary
RSS in this cohort

Stroke. 2010;41:2731-2738.

CHA ₂ DS ₂ -VASc score	Patients (n = 7329)	Adjusted stroke rate (%/year) ^b
0	1	0%
1	422	1.3%
2	1230	2.2%
3	1730	3.2%
4	1718	4.0%
5	1159	6.7%
6	679	9.8%
7	294	9.6%
8	82	6.7%
9	14	15.2%

A

an



OLD & NEW

CHADS₂

CHA₂DS₂-VASc

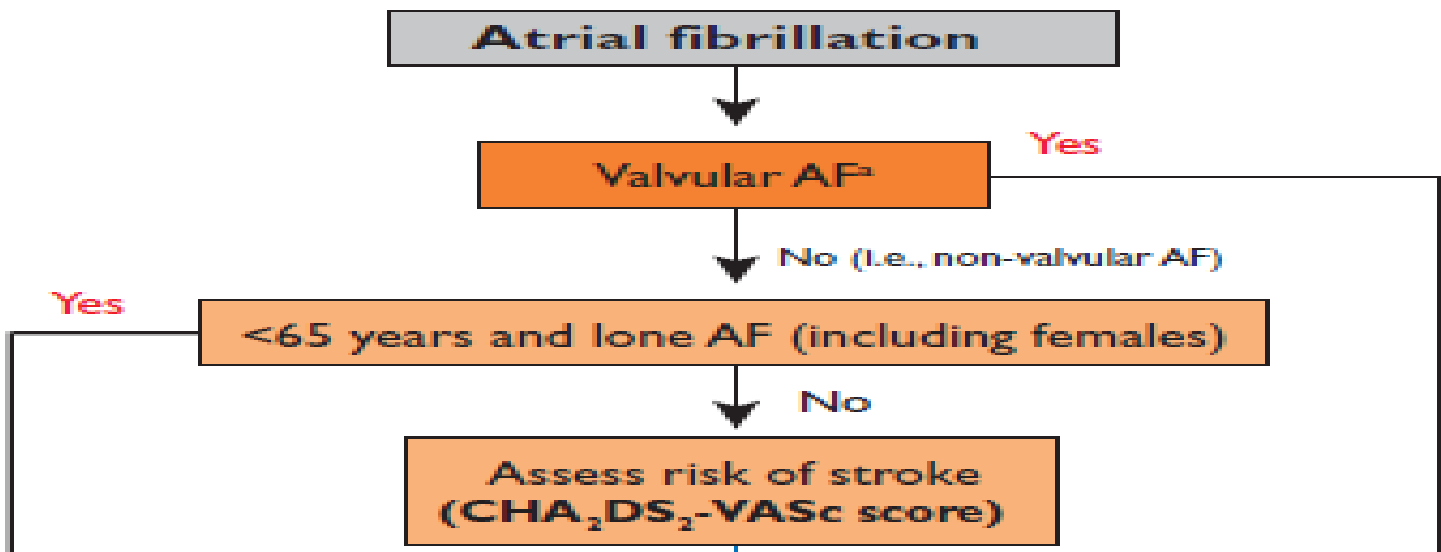
2012 focused update of the ESC Guidelines for the management of atrial fibrillation

Recommendation	Class	Level
Antithrombotic therapy to prevent thromboembolism is recommended for all patients with AF, except those (both male and female) who are at low risk (aged <65 years and lone AF), or with contraindications	I	A
Choice of antithrombotic therapy should be based upon the absolute risks of stroke/thromboembolism and bleeding and the net clinical benefit for a given patient	I	A
CHA ₂ DS ₂ -VASc score is recommended as a means of assessing stroke risk in nonvalvular AF	I	A
In patients with a CHA ₂ DS ₂ -VASc score of 0 (i.e. aged <65 years with lone AF) who are at low risk, with none of the risk factors, no antithrombotic therapy is recommended	I	B

2012 focused update of the ESC Guidelines for the management of atrial fibrillation

Recommendation	Class	Level
<p>In patients with CHA₂DS₂-VASc score ≥2, OAC therapy with:</p> <ul style="list-style-type: none"> • a dose-adjusted VKA (INR 2–3); or • a direct thrombin inhibitor (dabigatran); or • an oral Factor Xa inhibitor (e.g. rivaroxaban, apixaban*) <p>... is recommended unless contraindicated</p>	I	A
<p>In patients with CHA₂DS₂-VASc score 1, OAC therapy with:</p> <ul style="list-style-type: none"> • a dose-adjusted VKA (INR 2–3); or • a direct thrombin inhibitor (dabigatran); or • an oral Factor Xa inhibitor (e.g. rivaroxaban, apixaban*) <p>... should be considered, based upon an assessment of the risk of bleeding complications and patient preferences</p>	IIa	A

*Pending approval; INR = international normalized ratio; OAC = oral anticoagulation; VKA = vitamin K antagonist
 Camm AJ et al. Eur Heart J doi:10.1093/eurheartj/ehs253



Antiplatelet therapy with aspirin plus clopidogrel, or—less effectively—aspirin only, should be considered in patients who refuse any OAC, or cannot tolerate anticoagulants for reasons unrelated to bleeding. If there are contraindications to OAC or antiplatelet therapy, left atrial appendage occlusion, closure or excision may be considered.

