# CHADS2 Score for Atrial Fibrillation Stroke Risk

## INPUTS

|  |  |
| --- | --- |
| CHF history | **Options:**   * No (0) * Yes (1) |
| Hypertension history | **Options:**   * No (0) * Yes (1) |
| Age ≥ 75 years | **Options:**   * No (0) * Yes (1) |
| Diabetes mellitus history | **Options:**   * No (0) * Yes (1) |
| Stroke or TIA symptoms previously | **Options:**   * No (0) * Yes (2) |

## FORMULA

Addition of the selected points:

## FACTS & FIGURES

See formula table, below:

|  |  |
| --- | --- |
| Variable | Points |
| Congestive heart failure history | 1 |
| Hypertension history | 1 |
| Age ≥ 75 | 1 |
| Diabetes mellitus history | 1 |
| Stroke or TIA symptoms previously | 2 |

## EVIDENCE APPRAISAL

* Although in the initial derivation and validation studies a CHADS2 score of 0 was associated with a low annual stroke risk of 1.9 and 0.8% respectively, subsequent studies have found that patients with a CHADS2 score of 0 may have up to a 3.2% per year risk of ischemic stroke ([Gage 2004](https://www.ncbi.nlm.nih.gov/pubmed/15477396)).
* The derivation study, published in 2001, was a retrospective review of the National Registry of Atrial Fibrillation involving 1,733 patients and 2,121 patient years ([Gage 2004](https://www.ncbi.nlm.nih.gov/pubmed/15477396)).
  + It compared the performance of the CHADS2 score to two previously established stroke risk(AFI and SPAF III).
  + Found that the CHADS2 was the most accurate at predicting future stroke risk, with risk increasing by a factor of 1.5 for every additional point in a subject’s score.
* The validation study included 2,580 subjects with non-valvular AF who were started on aspirin and found that the CHADS2 score could successfully risk stratify patients ([Gage 2001](https://www.ncbi.nlm.nih.gov/pubmed/11401607)).
  + A score of 0 translated into a 0.8% annual stroke risk in this cohort, potentially making these patients appropriate for forgoing oral anticoagulation.
  + Patients with a score of 1-2 had a 2.7% annual stroke risk.
  + Patients with a score of 3 or more had a stroke risk of 5.3% up to 18.2% for subjects with a CHADS2 score of 6.
* A study of the Danish National Patient Registry identified 146,251 patients with non-valvular AF and found that 47,576 had a CHADS2 score of 0 or 1 ([Olesen 2012](https://www.ncbi.nlm.nih.gov/pubmed/22473219)).
  + 19,444 had a CHADS2 score of 0 and the CHA₂DS₂-VASc Score was applied to these patients.
  + Authors found that in patients with a CHADS2 score of 0 but a CHA₂DS₂-VASc score of 3 (if they had all three risk factors not accounted for by CHADS2) that this cohort was at a 3.2% annual risk of stroke.
  + In contrast, patients with a CHA₂DS₂-VASc score of 0 was considered to be “truly low risk” with an annual ischemic stroke risk of 0.82%.
* Among 541 patients with non-valvular AF (of >48 hours duration) who underwent electrical cardioversion, 136 had a CHADS2 score of 0 but 14 of those patients were found to have atrial thrombus on echocardiography, suggesting that the score missed 10% of patients who would have been at a high risk for a thromboembolic stroke after cardioversion ([Yarmohammadi H 2012](https://www.ncbi.nlm.nih.gov/pubmed/22503581)).