# [External Validation of 3 Risk Scores in Adults with Congenital Heart Disease.](https://www.ncbi.nlm.nih.gov/pubmed/31165593)

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**Take-Home Point:**

* There was no significant difference in discrimination between the 3 mortality predictors. However, calibration showed RACHS 1 underpredicted mortality, Aristotle overpredicted mortality and Euro 1 was mis-calibrated.



***Commentary from Dr. Helen Parry (Leeds UK), section editor of ACHD Journal Watch:***

**Aim:** To compare RACHS-1, Aristotle and EURO-1 risk scores in predicting in hospital mortality for patients undergoing surgery for congenital heart disease in adulthood

**Methods:** The study was performed retrospectively in a single centre in Spain, looking at operations performed over a 26 year period. The primary end-point was 30 day mortality, looked at each of the above scores and looked at correlation with mortality. This was assessed by discrimination (ability to predict death, using the area under the curve) and calibration (accuracy of the prediction).

**Results:** Six hundred and eight procedures were performed on adult patients with congenital heart disease. There was no significant difference in discrimination between the 3 mortality predictors. However, calibration showed RACHS 1 under predicted mortality, Aristotle over predicted mortality and Euro 1 was mis-calibrated.

**Discussion:** The authors suggest that RACHS 1 and Aristotle are superior to Euro 1 in congenital heart disease patients. RACHS 1 and Aristotle take greater account of the complexity of patients with congenital heart disease e.g. those with genetic disorders. However, RACHS 1 and Aristotle also look at birth weight and prematurity, which are less relevant in adults relative to paediatrics.

**Strengths of the study:**

* Large sample size
* Representative case mix including high percentage of re-do sternotomies

**Weaknesses of the study:**

* Single centre and retrospective
* It would also have been useful to have more details on the mortalities e.g. why did a 32 year old male attending for a PVR die of a myocardial infarction?