# [Risk of coronary artery disease in adults with congenital heart disease: A comparison with the general population.](https://www.ncbi.nlm.nih.gov/pubmed/31767384)

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**Take Home Points:**

* There is an increased risk of Coronary Artery Disease (CAD) in patients with Congenital Heart Disease (CHD) compared to the general population
* The relative risk is greater at younger age, in women or in those with more severe CHD.



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

**Aim:**

To compare risk of coronary artery disease in patients with adult congenital heart disease (ACHD) compared with the general population.

**Methods:**

Retrospective study looking at ACHD patients on the Dutch CONCOR registry, these patients were categorised as having mild/moderate/ severe congenital heart disease according to previously published criteria. The data from the general population was gleaned from the Population Registry and each ACHD case was linked to 2 age and gender matched controls. Patients were regarded as having coronary artery disease (CAD) if they had had an admission with myocardial infarction or death caused by coronary artery disease. Cumulative incidence functions were calculated using the R statistical software to compare CAD development in each of the 3 categories of severity with the general population.

**Results:**

The 11 723 patients with congenital heart disease were analysed as above. “First CAD” occurred at a younger age in patients with ACHD (52.4 vs 60.0). Those with “mild” congenital heart disease were not shown to be at significantly increased risk of early CAD relative to the general population, for patients with moderate congenital heart disease the hazard ratio was 1.6, p=0.026, and for patients with “severe congenital heart disease” the hazard ratio was 2.9 (p=0.013). The risk of CAD development in women with congenital heart disease was increased significantly more than in men when compared to the background population. The overall absolute increase in risk was small and as patients grew older, the difference with the general population decreased significantly.

**Discussion:**

The authors propose there results are in concordance with earlier studies in Sweden, Denmark and England. They suggest this is due to a combination of coronary anomalies and endothelial dysfunction. It is unclear why the difference between the general population and women with ACHD should be greater than for men.

**Strengths of the study:**

* Large sample size
* Results in-keeping with previously published studies
* Pathophysiology seems logical

**Weaknesses:**

* Retrospective
* Patients with ACHD divided by severity of heart disease but may have been more useful to split them according to who had known congenital coronary anomalies and who did not
* The study looks at myocardial infarction and death only but we do not know if patients with ACHD are more likely to have stable angina
* Is there a bias towards increased pick-up rate in patients with ACHD? There may well be a higher index of suspicion in these patients.