

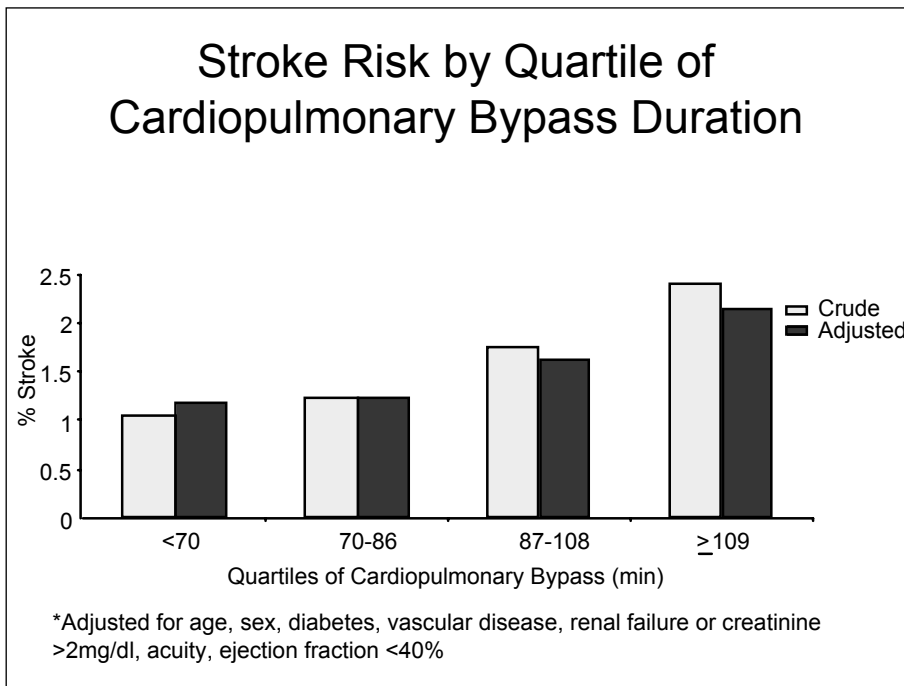
## Duration of Cardiopulmonary Bypass and Risk of Perioperative Stroke in Coronary Artery Bypass Surgery Operations

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**Authors:** RM Weintraub, DS Likosky, CS Ross, BJ Leavitt, CAS Marrin, DJ Malenka, LR Caplan, YR Baribeau, DC Charlesworth, F Hernandez, GT O'Connor

**Background:** We previously identified patient and disease characteristics associated with risk of stroke following isolated CABG. We hypothesized that duration of cardiopulmonary bypass (CPB) is an independent risk factor for stroke.

**Methods:** We collected data prospectively from 29,406 consecutive patients undergoing CABG with CPB between 1992 - 2000. Stroke was defined as a new focal neurological deficit lasting >24 hours. Patients were divided into quartiles by duration of CPB. We excluded patients requiring return to CPB and CPB <30 min and  $\geq 230$  min. Direct standardization was used to adjust for pre-operative risk factors.

**Results:** There were 460 (1.56%) strokes. Risk of stroke was twice as great (2.3% vs. 1.0%) in the highest quartile than in the lowest (ptrend < 0.001). This increased risk persisted after adjusting for pre-operative risk factors.



**Conclusion:** Increasing duration of CPB was significantly associated with risk of stroke, independent of pre-operative risk factors. Possible mechanisms include damage to blood elements, increased embolic burden, and difficulty in separation from CPB.