

## A Comparison of Relative and Absolute Risk of Stroke after CABG

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**Background:** Accurate methods to predict the risk of stroke, based on preoperative patient and disease characteristics, have been developed by our group and by others. In this study we calculated the preoperative risk of stroke and enumerated the number of strokes occurring in each of three risk groups.

**Methods:** We conducted a regional prospective study of 7,529 consecutive patients undergoing CABG in northern New England from 1996-2000. Data were collected on patient and disease characteristics, intra- and post-operative care, and outcomes. Stroke was defined as a new focal neurological defect lasting longer than 24 hours. Logistic regression analysis was used to predict the risk of stroke. Variables included age, acuity, comorbidity, and ejection fraction. Preoperative stroke risk was divided into the following groups: low (0-49<sup>th</sup> percentile), medium (50-89<sup>th</sup> percentile), high (90-100<sup>th</sup> percentile).

**Results:** The incidence of stroke was 1.54% (116 of 7,529). The rates and number of strokes in each risk group were: low (0.7%, 27 of 3687); medium (1.9%, 59 of 3125); and high (4.2%, 30 of 717). Compared to those at low risk, the relative risk of stroke was 2.6 in the medium and 5.7 in the high-risk groups. Of the 116 strokes, 86 (74.1%) occurred in the low or medium risk groups.

**Table 3. Stroke Risk by Pre- and Post-operative Risk Category**

Pre-operative Risk	Post-operative Risk	Number of Patients	Percent of Patients	Absolute Risk (Per 100 patients)	Number of Strokes	Percent of all strokes
<b>Low</b>	Low	5,331	45.0%	0.6	30	16.9%
	Medium	576	4.9%	1.2	7	4.0%
	High	10	0.1%	10.0	1	0.6%
<b>Medium</b>	Low	0	0.0%	NA	0	0.0%
	Medium	4,248	35.9%	1.7	73	41.2%
	High	491	4.1%	3.9	19	10.7%
<b>High</b>	Low	0	0.0%	NA	0	0.0%
	Medium	526	4.4%	1.3	7	4.0%
	High	660	5.6%	6.1	40	22.6%
<b>All patients</b>		<b>11,842</b>	<b>100.0%</b>	<b>1.5</b>	<b>177</b>	<b>100.0%</b>

**Conclusion:** Most patients were in low or medium preoperative risk categories. While these patients have lower overall stroke rates than the high-risk patients, they are more numerous and account for the majority of strokes. Some of these strokes may be avoidable by changing processes of clinical care.