

RFG-2/15/2009-Fairbanks (Stacy)

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“Mechanisms of Sex Differences in Neuronal Survival”  
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Summary: Important sex differences in stroke risk and outcome exist between men and women. It is not clear if males and females have inherently different susceptibility to ischemic stress, independent of effects of sex steroids. We will explore the role of an enzyme called sEH in the difference in brain cell death after stroke between men and women. sEH breaks down compounds in the brain called EETs that are protective against stroke. Women have less sEH and, therefore, have more, protective EETs. We will test the hypothesis that female cortical neurons are protected against ischemic cell death due to lower activity and expression of sEH, leading to higher EETs. Elucidating sex specific mechanisms of brain injury after stroke may allow the development of sex-tailored and more effective therapies against stroke injury for both men and women.