Every year, millions of Americans are faced with auditory damage as a result of noise induced hearing loss (NIHL). One way to combat this is through dietary intervention to protect against hair cell loss using antioxidants. In this study, it was hypothesized that the ingestion of dark chocolate, which contains a number of antioxidants and essential vitamins and minerals, would protect against NIHL and result in attenuated permanent threshold shifts after noise exposure. Eighteen mice were tested for thresholds at a range of frequencies using auditory brainstem responses, given access to dark chocolate, exposed to noise for one hour, and retested for thresholds two weeks later. A repeated-measures ANOVA test showed that mice that consumed chocolate had significantly more hearing loss than controls, $F(5, 75) = 5.506, p < 0.001, \eta^2 = 0.269$. Research into the individual compounds within cocoa may explain this interesting and unexpected effect.