# No Bull about It: Antioxidants Prevent DNA Damage

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Aging followed by death is one of the most fascinating and unexplained phenomena of the studies of life science. Many different theories on why organism age have been established, but no firmly proven primary cause has been found yet. Previously established theories have found that there is a correlation between the DNA damaged and the aging rate of organisms. In order to explore whether the DNA damage depends on antioxidants, an experiment was conducted for the testing of two different antioxidants and their effects on DNA, both DNA exposed and DNA not exposed to initial oxidative stress. The DNA worked with was DNA of three different bull sperm samples. The hypothesis for this experiment was that the presence of the antioxidants quercetin and catechin will decrease the DNA damage of the sperm cells and so supposedly decrease the aging rate and increase its life span. Results gathered from the analysis conducted through the comet score software, confirmed that a general pattern exists between the DNA that remained undamaged amongst differently treated samples. The data gathered supports the hypothesis by indicating a steady level of percentage of undamaged DNA in the cells of the control, an increased percentage of DNA damage in the cells of the $H_2O_2$ treated samples, a decreased percentage of DNA damage in the cells of the antioxidant treated cells and a return to the steady percentage of undamaged DNA in the cells exposed to both the oxidizer and antioxidant.

**Awards Won:**