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Antioxidant Content in Plant-based Diets Versus Meat-Based Diets

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Abstract

The result of naturally occurring free radicals in the body are oxidative-stress-related damages to cells, tissues, and biomolecules. Oxidative stress occurs when the balance between reactive oxygen species (ROS) outnumbers antioxidants, producing negative effects. Antioxidants exist as a natural defense mechanism utilized by the body. This defense exists in two distinct forms: enzymatic and non-enzymatic antioxidants. Non-enzymatic antioxidants consist of vitamins and bioactive compounds, such as phenols. In previous studies, plant-based diets showed promising results in reducing damage caused by oxidative-stress. The purpose of this study was to determine the extent to which antioxidant concentration differs between meat-based diet and plant-based diet. This study compared the concentration of three antioxidants (vitamin C, vitamin E, and Total Phenolic Compounds (TPC)) in hamburger meat to plant-based (faux) meat. According to our hypothesis, the plant-based meat will have a higher concentration of non-enzymatic antioxidants than hamburger meat. Our findings suggest that the plant-based meat contains a higher concentration of vitamin C and vitamin E. The plant-based patty also had a mean TPC higher than that of the animal-meat.