

JORDAN SMITH, RICHARD TANDOH, & JAMES WALTERS, Dept. of Applied Science and Mathematics, Bluefield State College, Bluefield, WV 24701. The effects of a high-fat diet vs. high-fat diet plus Dihydronortanshinone in larval zebrafish (*Danio rerio*).

Obesity is common in the Appalachian population and contributes to disorders of metabolism of lipid called, collectively, dyslipidemias. These are primarily the result of consuming western diet, which contains high amounts of fats and cholesterol. The goal of our study is to determine the effects of diet induced oxidative stress on larval zebrafish (*Danio rerio*). Our first hypothesis is when larval zebrafish are fed a high-fat diet, oxidative stress will be induced. Our second hypothesis is that when a high-fat diet is combined with the natural product Dihydronortanshinone (DNT), there should be a reduced amount of oxidative stress. To test these claims, we will have three dietary conditions for the zebrafish, a low-fat diet, a high-fat diet, and a high-fat diet plus DNT. Zebrafish will be fed for eight weeks, and their food consumption will be calculated after each feed. After eight weeks, the body fat volume will be calculated, and a dissection of the intestines will occur. The dissected intestines will be processed for RNA extraction and RT-PCR of oxidative stress genes. We expect to see increased BMI in the high-fat diet animals. In the high-fat diet plus DNT animals we expect to see a decrease in oxidative stress response gene expression. This study's significance is to fill in knowledge gaps associated with oxidative stress created by high-fat diet consumption. *NIH Grant P20GM103434 supported this work to the West Virginia IDeA Network for Biomedical Research Excellence, and NIH Grant P20GM103434 awarded to Bluefield State College and the McNair Scholars Program.*