

University of Northern Colorado Sport and Exercise Science Professor Receives NIH Grant

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Dr. Reid Hayward, a University of Northern Colorado, College of Natural and Health Science, School of Sport and Exercise Science Associate Professor, recently received a grant award from the National Institutes of Health worth over \$300,000 to support a research project to assess the therapeutic value of exercise on the negative side effects associated with a chemotherapeutic drug, doxorubicin.

The prognosis for cancer patients has steadily improved with advancement in treatments; however, one of the most significant obstacles to further improvement in survivorship is the toxicity associated with some of the most effective chemotherapeutic drugs. Use of doxorubicin is limited by cardiotoxicity that can eventually progress to heart failure. Thus, many patients who may benefit from continued doxorubicin treatment are forced to switch to alternative drugs that may be less effective. Ultimately, in patients receiving doxorubicin, the likelihood of cure can be compromised by the cumulative dose that can be tolerated by the heart. Therefore, successful strategies directed at limiting this cardiotoxicity could lead to increases in cure rate, long-term survival, and the quality of life for cancer survivors.

One such strategy that may limit this drug-induced cardiotoxicity is exercise training. The health benefits of exercise have been well documented for cancer patients. Exercise is a safe and easily-implemented strategy. Many of the primary cardiovascular benefits of exercise observed in healthy populations may have potential to treat specific problems associated with doxorubicin cardiotoxicity. The studies completed with this grant will shed light on whether or not exercise alleviates the chronic, or long term, cardiotoxicity associated with doxorubicin treatment as well as the cellular mechanisms that may be involved with any observed protective effects.

Dr. Hayward's previous work is nationally recognized for providing scientific evidence on the merits of exercise training programs for cancer patients. He has presented his findings to the Colorado State Legislature, the American College of Sports Medicine, and St. Jude Children's Hospital.