

SIUE students research effectiveness of steady state vs. interval training

by Megan Wieser

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EDWARDSVILLE - As the finale to their undergraduate studies in the Southern Illinois University Edwardsville School of Education, Health and Human Behavior (SEHHB), five seniors determined which, if either, style of aerobic exercise was more effective among untrained adults: steady state or interval training.

Project team members, all slated to graduate in May with a bachelor's in exercise science from the SEHHB Department of Applied Health, included Courtney Willoughby, of Chatham, Marcus Breden, of Hardin, Jorden Ekstrom, of Indianapolis, Ind., Tyler Hubert, of Red Bud, and Cody Snyder, of Shelbyville.

"Interval training programs have become increasingly common, touted by their ability to produce better results than that of standard aerobic training," said Snyder. "However, with the higher intensities comes the greatest risk for injury, especially in an older population that has not exercised in years."

"A lot of research on interval training does not equate for workload," added Hubert. "Therefore, we wanted to test the hypothesis that the amount of total work done, not the mode in which its performed, is the main driver of the changes seen from aerobic exercise. We based our project off protocols performed in previous research."

The project team gathered 16 participants, all of whom qualified as sedentary, untrained adults who work desk jobs for eight or more hours each day. The participants were split into two groups: steady state and interval. After conducting a pre-test, the students led participants through a training protocol for six weeks, then conducted a post-test.

"Our goals were to see whether interval training or steady state cardio was a more beneficial or effective form of aerobic exercise given an equivalent workload," said Ekstrom. "We wanted to apply what we have learned in the classroom to a specific population, as well as reduce sedentary behavior and improve the everyday movements of our participants."

Their results did not show a significant difference between the two aerobic training modes. However, they say their experience greatly enhanced their preparedness, and ignited their passion for future studies and professional work.

"We found that for the most part, both programs were equivalent," Breden explained. "The one statistically significant difference was the change in resting heart rate, which showed a greater decrease in the interval group."

“I was shocked at the results and improvements that were made in six short weeks,” added Willoughby. “Our participants were dedicated and motivated. So much so, that we adjusted our initial workloads to make the training more challenging for them.”

“This group of students completed their work as part of the University’s required senior assignment,” said Bryan Smith, PhD, assistant professor and exercise science program director. “The requirement encourages students to integrate general education capabilities to produce research findings or other creative work. Their completion of this project aligns with SIUE’s value of excellence, emphasizing high-quality learning within and beyond the classroom.”

“I have thoroughly enjoyed SIUE’s exercise science program,” said Snyder. “I have learned an incredible amount in a short amount of time, and I was able to apply that knowledge directly to this project.”

During their studies at SIUE, Snyder, Breden and Willoughby have also all been involved in the Undergraduate Research and Creative Activities (URCA) program, where they have had opportunities to work with a faculty mentor on extended research.

Snyder and Willoughby have both worked with Smith as their URCA advisor. Breden’s advisor was Joshua Wooten, PhD, assistant professor in the Department of Applied Health.

“The URCA program has been the most valuable experience during my time here,” said Breden, who will attend graduate school at John’s Hopkins University. “It gave me the opportunity to work under an established faculty researcher, assisting in ongoing projects, while also learning techniques critical to basic science research. This experience has shaped my outlook on my career, and is the reason I want to pursue advanced degrees in the field of research.”

SIUE’s strong commitment to research supported the team’s work and fostered a love of investigative learning. After graduation, Hubert plans to work as a personal trainer. Snyder, Willoughby and Ekstrom will all attend the SIUE Graduate School to pursue a master’s in exercise physiology.

The [SIUE School of Education, Health and Human Behavior](#) prepares students in a wide range of fields including public health, exercise science, nutrition, instructional technology, psychology, speech-language pathology and audiology, educational administration, and teaching. Faculty members engage in leading-edge research, which

enhances teaching and enriches the educational experience. The School supports the community through on-campus clinics, outreach to children and families, and a focused commitment to enhancing individual lives across the region.

