

BYU Student Examines Bone Density in Fellow Classmates

Susan Christiansen, is trying to determine peak levels of bone mass density in women aged 18-24. The senior from Denver is taking bone mass density samples from some of her fellow BYU students to accomplish this task.

Osteoporosis, the bone debilitating disease, is most common in women, and runs in Christiansen's family line. These facts motivate her to better understand the processes that lead to bone deterioration, and she believes many other females her age are interested in knowing the results of her study as well as recommendations for reaching and maintaining their physical peak.

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The study includes more than 50 participants, divided into four groups: one group receiving calcium supplements, another receiving magnesium supplements, a third taking both calcium and magnesium and a fourth taking neither. The participants record their exercise routines and diet so that Christiansen and her research partners can chart any additional amounts of calcium and magnesium. Heredity of the subjects is also factored into the research.

The focus of the study, according to Christiansen, is to maximize the peak of bone density. "If you start a lot higher, even if it decreases over time, you'll still have a good supply," she says.

For years doctors and trainers have advised women, especially older women, to exercise regularly and maintain a healthy diet in order to build stronger bones and ward off osteoporosis. However, the research Christiansen is working on attempts to find how women can build and maintain stronger bones earlier in life and for a longer period of time.

Her zoology professor, Dr. Bruce Woolley, invited Christiansen to take part in his research, and suggested she try for an ORCA grant to obtain funding. She also learned more about the funding opportunity from her sister and brother-in-law who both received ORCA grants. She says the grant aid has helped her considerably with expenses related to the project, including costs of printing flyers that solicit volunteer participants.

Before working on the bone mass density project, Christiansen had never conducted formal research. Now she is working on two different projects and receives guidance from her mentor, Dr. James McDonald. He taught her how to perform statistical analyses and she says she turns to him for answers and advice. "We have a really good working relationship," she says of her mentor. She is most impressed with how he dedicates so much of his time to his students.

She says that the opportunity to do research has been an important and beneficial part of her college experience. “I think when you add any activity to your school work that it’s worthwhile and constructive,” she says. “It helps you budget your time so much more. It has helped me become more productive as a whole.”

She continues: “I’m glad that at the university level we have opportunities to do things like research that can be sponsored and funded by the school. Research helps you do things that you can’t do in a classroom setting, so it stretches you in completely different ways.”

Where before she considered medical school after graduation, Christiansen now thinks about a doctoral degree in economics or law school. Stay tuned.

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