

Sizing up the competition: Researchers compare body composition measurement techniques

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Measuring body composition - the amount of fatty tissue, muscle tissue and bone present in the body - can provide valuable information for determining an individual's overall health status. However, obtaining accurate measurements can be difficult and expensive, according to Steve Ball, University of Missouri Extension fitness specialist. Now, MU researchers are comparing measurement techniques to determine the most efficient and cost-effective method for assessing body composition.

"There are several field and laboratory techniques for measuring [body composition](#), but few are accurate, comfortable, non-invasive and do not require a highly trained technician," said Ball, associate professor of exercise physiology in the College of Human Environmental Sciences. "The most accurate laboratory techniques are expensive, time-consuming and aren't accessible to many health practitioners and trainers. Methods that are inexpensive and easily available, such as skinfold testing, [body mass index](#) and bioelectrical impedance, aren't the most accurate."

Two of the most effective laboratory methods for assessing body composition are dual energy X-ray absorptiometry (DXA, pronounced 'dexa'), which is considered the 'gold standard'; and the Bod Pod, which measures air displacement and body volume. The 3-D body scanner, originally developed to measure clothing sizes, is a new method that might be a more cost-effective system to measure body fatness. No

previous study has compared body composition measurements from the 3-D body scanner to DXA or the Bod Pod to determine its efficacy.

"Specifically, we want to evaluate the accuracy of the 3-D [body scanner](#) by comparing it to DXA and the Bod Pod," said Justin Ryder, a graduate student researcher in the Department of Nutrition and Exercise Physiology. "The goal is to determine if the 3-D scanner can provide another tool for body composition assessment that is fast, accurate and non-invasive."

Understanding and accurately measuring body composition is important for fitness and health professionals, Ryder said. Accurate body measurements are needed to assess health risks and changes in body fat, determine ideal body weight, recommend diet and exercise changes, and monitor growth, development, maturation and age-related changes in body composition.

The results would benefit health professionals and individuals who are at risk for certain health issues, including heart disease, hypertension and type 2 diabetes, conditions that are two to three times more prevalent in obese individuals, according to the National Institutes for Health.

Provided by University of Missouri-Columbia

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