RACHEL FULKS, Dept. of Exercise Science and Athletic Training, West Virginia Wesleyan College, Buckhannon, WV, 26201. KRISTY HENSON, Dept of Biology and Environmental Science, West Virginia Wesleyan College, Buckhannon, WV, 26201. GREG POPOVICH, ALEA HESS, TARA GOLDMAN, Dept of Exercise Science and Athletic Training, West Virginia Wesleyan College, Buckhannon, WV, 26201. Applying an xbox kinect to the two-compartment model of body composition.

Body composition is an important determinant of health status and a useful statistic in clinical and research settings. Current two-compartment methods used to determine body composition are hydrodensitometry, air displacement plethysomography (BodPod), and dual-energy X-ray absorptiometry (DXA). These options are expensive, and inconvenient. The purpose of this study is to test the reliability and validity of an Xbox Kinect V1 when applied to the two-compartment model of human body composition. We hypothesize that the Xbox Kinect can capture an individual's volume and thus calculate percent body fat. 3D scanning took place in Skanect, then scans were exported to Blender to calculate the volume. Participants wore form-fitting clothing and stood in a standardized position during scanning. A complete 360-degree 3D model of the subject was captured. The Siri equation was used to convert body density to body fat percentage. To determine accuracy of this method, skinfold caliper body fat estimates were compared to the 3D scanning results. A regression was run on the data, resulting in a R^2 value of 0.004 and a variance of 1. Preliminary results indicate that the subjects were successfully captured as a 3D image but had a higher body fat percentage than indicated by the skinfold calipers. The Xbox Kinect suffers from common 3D scanner limitations. These limitations are corrected with a skilled operator. Our research indicates the need of a percent error algorithm added to the scanner volume to correct this over-estimated body fat percentage.