

## 3D Virtual Images as a Motivational Tool for an Individual's Exercise and Diet

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### Abstract

3D body scanning is a technology that is likely to have increasing use in the near future for processes such as fitness training, sports, health enhancement tool as well as apparel industry. However, there is not enough academic research that provides understanding of how individuals see themselves in 3D body scans. The purpose of this study is to understand how individuals see themselves in 3D body scans and to explore whether viewing 3D virtual images influences their intentions to engage in exercise or dietary behaviors.

A convenience sample of undergraduate students was recruited from one of the U.S. Midwestern universities. Using [TC]<sup>2</sup> NX-16 white-light 3D body scanner, each participant first scanned his/her body. Each participant had enough time to examine his/her 3D image before completing a survey questionnaire and a short interview (see Figure 1). The usable sample of 145 participants was used for data analyses. Participant's ages ranged from 18 to 32 with a mean of 21 years. The majority of the participants were younger than 24 years (93.2%) and female (85.9%). White European Americans comprised 69.1% followed by Asian (28.9%), and others including Hispanic American and African American. Participants' Body Mass Index (BMI) scores were also calculated based on their heights and weights. The largest percentage of participants was categorized into normal weight (69.1%) followed by overweight (17.4%), underweight (10.1%), and obesity (3.4%).

The results showed that the participants were pleased to be able to do the visual inspection of their virtual body generated by the 3D body scanned data, which plausibly provided immediate feedback of their body shape. The participants also mentioned that the scanned images provided more objective and complete views of the body in comparison to 2D images. This study proves that 3D body scan virtual images provide far more information about individual's bodies, as well as provide incentive or motivation to improve eating and exercise habits. One participant expressed her 3D body scanning experience as "... I was really nervous first because nobody wants to see what they actually look like but I think... viewing this 3D image motivated me to go out and exercise and eat healthy." The findings also provide a foundation for future research to determine whether 3D body scans are useful for health and fitness consultation. Further, the 3D body scanner has potential application in the prevention, treatment and monitoring of diseases that are related to obesity via the provision of accurate circumference measurements. This study provided preliminary data for future longitudinal research that will focus on individual's attitudinal and behavioral changes while they are engaged in physical activity and healthy eating programs, and the usefulness of the 3D body scanner as an intervening tool in changing intentions to engage in healthy behaviors.

**Keywords:** 3D body scanning, 3D image, diet, exercise

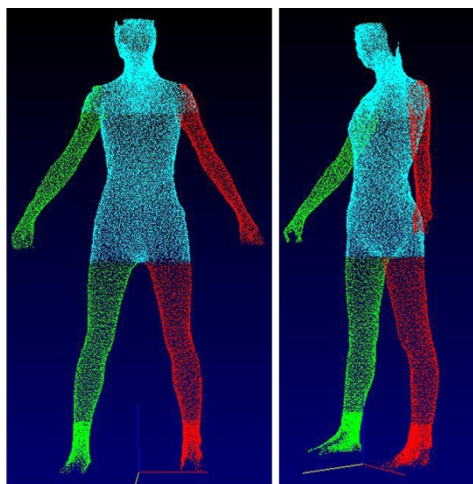


Fig. 1. 3D body scan images.