Computer Games to Assist with Weight Loss: Opportunities for the Future

Bradley Tanner, MD, Mary Metcalf, PhD, MPH, Karen Rossie, DDS, PhD, Clinical Tools, Inc., Chapel Hill, NC

Key Message: New technology offers an opportunity to empower the patient struggling with excessive weight.

Background: Computer apps and wearable enabled devices tied to apps are common and ubiquitous; yet there is little evidence they offer much value to a health community interested in the prevention or treatment of obesity. Even the cardiovascular benefits are doubtful.

Innovation: There is a potential role for Virtual Reality especially VR delivered with state of the art head mounted displays such as Facebook Oculus, Google Daydream, HTC Vive, and Playstation VR. Strengths and weakness for each solution vary because of complexity, computer hardware requirements, and the availability or lack of support for hand controllers which are essential to manipulate objects in the VR environment.

Entertainment quality role playing games allow players to practice lifestyle change as seen in so called "first-person thinker" games, mystery games, find-and-seek (e.g., Pokeman Go) games, and exploratory simulations. In such games players make choices, healthy or unhealthy, and receive feedback on the outcome. Elements of the typical game challenge players to maximize metrics such health, strength, and mobility, develop and test skills, advance to higher levels, and work with other players in the game. The collaboration potential of games allows them to offer peer support and coaching, further enhancing motivation for lifestyle change.

Potential Benefits: GAIN INCREASED AWARENESS OF CUES: Seeing a food or drink can act as a "cue" to eating behavior. Items and places associated with eating also can act as cues. And thoughts, too, can act as internal cues to eat. A simulation or game can help the patient become more aware of cues and how they can trigger cravings and automatic responses.

GET USED TO NOT RESPONDING TO CUES: Through exposure to cues over and over again in the controlled game setting, where one cannot actually eat or drink, the cues start to lose some of their power.

PRACTICE INTERRUPTING AUTOMATIC RESPONSES AND REFUSING CUES: The game gives the patient practice in responding to cues in a different way from automatically seeking them. In the game, instead of responding to the image, players hit, catch and throw, or swipe them away. Players also choose to take actions that support non-eating behaviors. The more they practice noticing the cue and doing something other than responding, the more likely they will be able to interrupt automatic responses when encountering cues in real life.

FEEL EMPOWERED: The pull of cues and hunger can feel strong at times, leading to feelings of helplessness. Success in the game may lead to success in other steps toward weight control.

GET POSITIVE FEEDBACK INSTANTLY: When changing habits, it can be frustrating not to see the rewards for a while in real life. A game provides instant positive feedback, through the visuals and points, that lets the patient know they are succeeding.

Future Directions: We will be testing a prototype game and making further refinements to the game play and assessing impact on the above potential benefits. We are also designing other games which empower the patient and enhance confidence in weight control.

Acknowledgments & Disclosure

The background research was funded by the National Institutes of Health/NIDDK 2R44DK091144-01A1 Bradley Tanner, PI. Clinical Tools, Inc is 100% owned by Bradley Tanner, MD and he serves as President of Clinical Tools, Inc.

Suggested Citation & Communication

Tanner B, Metcalf M, Rossie, K. Computer Games to Assist with Weight Loss: Opportunities for the Future. Poster presented at the 2017 5th Canadian Obesity Summit! Banff, Alberta, 04/28/2017.

Contact Author: **bradtanner@gmail.com**