

# Interactive Media for Childhood Obesity Prevention

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Childhood obesity is a worldwide pandemic that increases the risk of type 2 diabetes, cardiovascular diseases, and multiple cancers and reduces quality of life and functional ability. Fruit, 100% juice, and vegetable (FJV) intake and physical activity (PA) are behaviors related to childhood obesity prevention.

While promising, behavioral research on dietary intake and physical activity is still in its infancy. For example, most identified behavioral mediators have low predictiveness and most obesity prevention programs have not had the desired effect. Part of the problem is that scholars and practitioners have not known how to effectively operationalize behavior change procedures in appropriate implementation channels.

Through working with professional media practitioners, behavioral research explores new channels to promote behavior change and to create new generations of intervention tools to improve children's diet and physical activities. One such channel is interactive media. Interactive media provide an edutainment modality by creating theoretically precise, personalized, meaningful, and immersive

environments that embed functional knowledge and change procedures.

Based on various behavioral and cognitive theories, such as social cognitive, self-determination, narrative transportation, dual-processing, and behavioral inoculation theories, behavioral scientists at the Children's Nutrition Research Center of Baylor College of Medicine have collaborated with Archimage, a Houston-based design practice, to develop a series of behavioral intervention projects to reduce childhood obesity. Their interventions have built upon previous research and have resulted in significant behavior change outcomes through effectively merging behavioral theories with professional media content specifically designed for children. For example, a 10-session interactive multimedia game, *Squire's Quest!* (Baranowski et al., 2003), was a successful adaptation of a school-based nutrition education program, *Gimme 5* (Davis et al., 2000). Based on *Squire's Quest!*, a Girls Health Enrichment Multisite Studies (GEMS) *Fun, Food, and Fitness Project* (FFFP) was developed as a special 4-week summer day camp followed by an 8-week home Internet intervention (Thompson, Baranowski, Cullen, & Baranowski, 2007). Drawing from FFFP, an 8-week Web-based program, *Family Eats* (Cullen & Thompson, 2008), promoted healthy eating behaviors within families with 9- to 12-year-olds, and another

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8-week e-health program, *Food, Fun, and Fitness* (Thompson et al., 2008), promoted FJV consumption and PA among youth at risk of obesity. Following these projects, a successful nine-session troop-plus-Internet FJV intervention, *5-A-Day Achievement Badge Program (5AD)*, was conducted with Boy Scout troops in Houston, TX, to promote FJV consumption (Thompson et al., 2009) and PA (Jago et al., 2006). Recently, drawing from all of the aforementioned projects, two nine-session video games, *Escape from Diab* and *Nanoswarm: Invasion from Inner Space*, were designed to improve 10- to 12-year-old children's FJV intake and PA (Baranowski et al., 2010). Archimage is currently helping to transplant several of the aforementioned videogames onto the Internet and DVDs for more efficacy trials at a larger scale.

While theoretical, methodological, and operational problems linger, such collaboration will ultimately result in innovative interactive-media interventions that offer promise of effectiveness. Immense opportunities await further explorations to optimize interactive media's role in childhood obesity prevention. We are just beginning to learn how to do this.

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