

BHE-040

Monitoring and Feedback to Support Physical Exercise Awareness

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Abstract

A study published in the Journal of the American Medical Association found that 61% of all Americans are overweight or obese. Pennsylvania has an adult population that is 62% overweight or obese, and is 25th in a ranking of healthy states. Reviews of studies on exercise have revealed two factors that promote and maintain appropriate levels of physical activity: point-of-decision prompts and individual activity programs. Point-of-decision prompts present information about the need to be more active at the time when an individual is making a choice about physical activity. Individual activity programs are behavior change programs that are tailored to an individual's needs and routines. Most work in supporting physical activity has concentrated on non-computer-based solutions. However, technology has a lot to offer to this domain.

In this proposed work, we will conduct a rigorous user-centered design and development process to build technological support to automatically monitor physical activity and provide effective feedback to encourage engaging in appropriate amounts of physical activity. This work consists of two main activities. First, we will sense and monitor individuals who are interested in weight loss and/or maintenance, as they go about their normal daily routines. Second, we will use this information, both instantaneous and compiled over time, to sense activity patterns and to provide appropriate feedback such as situated prompts and customized activity plans. We will evaluate a range of feedback mechanisms to monitor the ability of each to successfully motivate a change in behavior.