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## Study: Self-Assessments Important In e-Health Interventions

**Participants preferred expending more effort to obtain tailored feedback**

E-health programs have great potential, as they reach many people who cannot access traditional treatment, but there are ways to increase and improve utilization, according to a study published recently in the *Journal of Medical Internet Research*.

Health communication research and prior study suggest that tailoring messages individually yields the best results in terms of behavior and attitude change. The Internet presents an opportunity to reach large groups of people, but most studies have involved highly structured programs that do not reflect its *ad libitum* (freely at will) use in the real world. The authors of the current study thus sought to investigate further. They

tested the effects of an electronic weight loss program focusing on self-assessments as a way to deliver more personally relevant content to each individual user.

**Analysis revealed highest utilization in interactive assessments, while monitoring tools, educational materials, and support group message boards were not accessed by the majority of participants.**

The authors tracked use of the Healthy Weight Center, a free access, evidence-based, direct-to-consumer weight loss program including a variety of components such as nutritional and fitness information, monitoring tools, moderated support group message boards, and self-assessments. The first 204 men and women 18 years and older who signed up online

and met the inclusion criteria of body mass index greater than or equal to 25, completion of the online registration process, and endorsement with the program disclosure agreement were included for analysis. Mean age was 42 years and nearly 82

*continued on page 2*

... Study: Self-Assessments Important In e-Health Interventions  
*continued from page 1*

percent were women. The most common reason cited for wanting to lose weight was for their health.

Utilization of each component of the Healthy Weight Center was defined as accessing that part at least once during the study period of May to September 2008. Analysis revealed highest utilization in interactive assessments, but monitoring tools (meal planner, nutrition lookup, activity log, and weight tracker), educational materials (nutrition, fitness, and behavioral), and support group message boards were not accessed by the majority of participants. The authors said the distinguishing feature of the interactive self-assessments was the promise of personally relevant feedback and they noted that the users were not deterred by the effort required to complete the assessments. They concluded that "This finding

highlights the need for architects of Internet-based programs to explore increasing the use of interactive exercises to tailor the user experience in ways that increase personal relevance." More research is needed, but tailoring appears a worthwhile endeavor in e-health interventions.

**Source:** Binks M, van Mierlo T. 2010. Utilization patterns and user characteristics of an ad libitum internet weight loss program. *Journal of Medical Internet Research* 12(1):e9.

## Visit-to-visit Variability in Systolic Blood Pressure Predicts Vascular Events

**Mean blood pressure is the more standard, but less accurate predictor**

**V**ascular events are predicted more by visit-to-visit variability in systolic blood pressure than by mean systolic blood pressure, according to a study published recently in the *Lancet*. Maximum systolic blood pressure (SBP) was also highly associated with vascular events.

Many patients have significant variability in their blood pressure between office visits, but episodic hypertension is rarely treated. Guidelines suggest follow-up monitoring and treatment based on mean blood pressure, but prior research conducted by the authors of the current study made them suspect variability as a more accurate measure. They sought to investigate its prognostic significance further in a large cohort of British patients called UK-TIA. Three other cohorts were used to validate the main results.

**Variability between visits before 30 months predicted risk of stroke, myocardial infarction, angina, and heart failure after 30 months independently of mean and daytime SBP.**

The UK-TIA study tested placebo against 1,200 milligrams and 300 milligrams of daily aspirin in patients with recent transient ischemic attack (TIA) or stroke. Sitting blood pressure was assessed every 4 months via mercury sphygmomanometer and all vascular events and deaths were recorded during approximately 6 years of

follow-up. The other cohorts were similar and looked at the effect of aspirin, dipyridamole, or atenolol on ambulatory blood pressure.

Statistical analysis revealed several important findings. Mean SBP predicted stroke, however visit-to-visit variability — and visit-to-visit variability

independent of mean — were stronger predictors, and this effect held true both in patients taking antihypertensives and those not taking antihypertensives at baseline. Maximum SBP also predicted stroke independently of mean SBP, and the association strength-

*continued on page 4*

... Visit-to-visit Variability in Systolic Blood Pressure ...  
*continued from page 3*

ened with each additional office visit included in the analysis. Episodic severe hypertension was more strongly associated with stroke than stable hypertension.

Visit-to-visit SBP variation predicted vascular events about equally in men and women, but less so as patients aged. Variability between visits before 30 months predicted risk of stroke, myocardial infarction, angina, and heart failure after 30 months independently of mean and daytime SBP. Ischemic stroke risk was increased more than hemorrhagic stroke risk because of visit-to-

visit variability, and the effect of diastolic blood pressure appeared minimal. The authors write that more data are necessary but that “these findings challenge the usual blood-pressure hypothesis and have implications for diagnosis, treatment, and monitoring of patients with hypertension.”

**Source:** Rothwell PM, Howard SC, Dolan E, et al. 2010. Prognostic significance of visit-to-visit variability, maximum systolic blood pressure, and episodic hypertension. *Lancet* 375:895-905.

## Hot Topic Highlights

Vascular Domain recently posted the following Hot Topics to your website:

### Daily Aspirin Not Protective in Patients with Low ABI

Taking aspirin is not beneficial for people who have a low ankle brachial index (ABI) but no cardiovascular disease, according to a study published recently in the *Journal of the American Medical Association*. The authors tracked 3,350 Scottish men and women who had ABIs of less than 0.95, were between the ages of 50 and 75 years, and were free of serious conditions like stroke, cancer, and kidney disease, for an average of 8 years. They were randomly assigned to receive either a 100-milligram aspirin tablet or placebo (sugar pill) daily. The likelihood of death from any cause was about the same in the two groups.

**Source:**

Fowkes FGR, Price JF, Stewart MCW, et al. 2010. Aspirin for prevention of cardiovascular events in a general population screened for a low ankle brachial index. *Journal of the American Medical Association* 303(9):841-848.

### Being Overweight Increases Stroke Risk

Obesity increases the risk for the most common type of stroke, according to research published recently in *Stroke*. After an average of 17 years of follow-up, the authors found a strong association between higher stroke risk and greater BMI, waist circumference, and waist-to-hip ratio. High blood pressure and diabetes appeared to account for most of obesity's effect on risk of stroke. These findings were true for all races and for both men and women.

**Source:**

Yatsuya H, Folsom AR, Yamagishi K, et al. 2010. Race- and sex-specific associations of obesity measures with ischemic stroke incidence in the Atherosclerosis Risk in Communities (ARIC) Study. *Stroke* 41:417-425.