



# Effectiveness of an interactive Internet program promoting physical activity: The feasibility of an Internet-based, randomised study design



Nicole Thüring<sup>1,2</sup>, Eva Martin-Diener<sup>1,2</sup> & Brian Martin<sup>1</sup>

<sup>1</sup>Institute of Sport Sciences, Swiss Federal Office of Sports, Magglingen, Switzerland; <sup>2</sup>Institute for Social and Preventive Medicine, University of Zurich, Switzerland

## Introduction

www.active-online.ch is a freely accessible interactive website with a tailored counselling program for health enhancing physical activity, defined as the accumulation of 30 minutes or more of moderate intensity activities on most, preferably all days of the week, or alternatively at least 20 minutes of vigorous exercise on three or more days of the week. The program is based on the Transtheoretical Model of behaviour change (Prochaska et al., 1992) and is available in German, French and Italian. It is disseminated population wide, currently with a multimedia strategy including collaboration with the most visited Swiss Internet portal. As has been shown in previous research (Martin-Diener & Thüring, 2001), the program is well accepted by its users and reaches its target population aged 30-60 years.

A pilot study was conducted to investigate the feasibility of an Internet-based effectiveness study under real life conditions of Internet and program use. The aim of this study was to investigate the potential of various media channels to recruit participants, to quantify dropout rates and to investigate the characteristics of the self-selected participants.

## Results

313 participants completed the online-questionnaire at baseline, 51% males and 49% females. Gender distribution depended on the used recruitment channel: While no gender difference was found among the participants responding to the e-mail call, 62.4% women and 37.6% men answered to the other media calls. Mean age was 42.3 years (SD=12.2, range 18-77). 28% were smokers, 35.4% had a body mass index > 25.

57% of the participants were inactive, i.e. not accumulating at least 30 minutes of moderate intensity activities on most days of the week and not accumulating at least 20 minutes of vigorous exercise on three or more days of the week. More women than men were inactive (see graph).

Participation could be calculated exactly only for the e-mail recruitment: 36.8% of all, respectively 46.6% of the German speaking employees responded to the participation call. About 0.03% of the estimated readers of the magazines responded to the call for participation.

60.1% of the participants had at least one positive answer in the PAR-Q. Analysis show that a substantial number of physically active persons reported at least one risk factor according to the PAR-Q (see graph).

Until the completion of this poster, 58 e-mails out of 165 have already been delivered to participants six weeks after their first visit. 5% of the e-mails were not deliverable, 29% of the participants did not respond, and 66% completed the follow-up questionnaire.

## Conclusions

Recruitment of participants by a multimedia strategy is possible. The participants in this study are similar to the users of active-online.ch regarding sociodemographic characteristics and physical activity behaviour. They do not have extreme health characteristics that would bias the results of an effectiveness study.

Only the proactive recruitment strategy by e-mail reaches men and women equally. Print advertisements for the recruitment of participants are more cost-effective than Internet banners. Recruitment by e-mail messaging results in good participation.

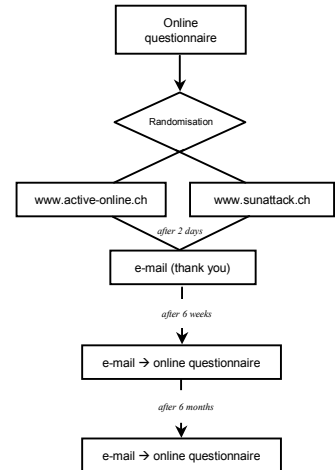
First trends show good adherence after six weeks and low percentage of undeliverable e-mails. The high specificity and the low sensitivity of the PAR-Q can create problems when used for excluding participants.

## Methods

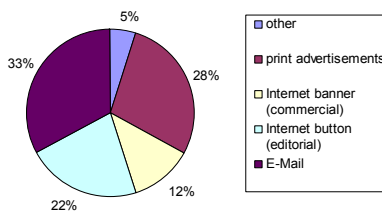
A randomized controlled trial was conducted on the Internet. Calls for participation in an "online health study" conducted by the University of Zurich were made using various media channels: a small (7x3 cm) advertisement in two Swiss weekly magazines, a button on the Internet homepage of a weekly printed magazine (10 weeks) as well as e-mail messaging to 277 employees (219 of them German speaking) of a unit of the Federal administration. The study language was German.

After answering an online questionnaire, participants were randomly assigned to either the physical activity promotion program www.active-online.ch or to an interactive program on sun protective behaviour. The online questionnaire was provided with an inherent algorithm to exclude persons with potential health risks according to the physical activity readiness questionnaire PAR-Q (ACSM & AHA, 1998). Physical activity, sociodemographical, health and health behaviour-related characteristics were measured. E-mail addresses were used for identification and detection of double registration.

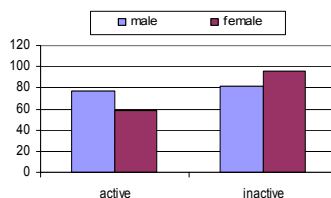
After six weeks and after six months, participants received an e-mail and were invited to answer a follow-up questionnaire on the study website via a given link in the e-mail.



Recruitment channels (% of participants, n = 313)



Physical activity behaviour and gender (n = 313)

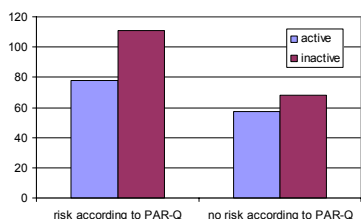


Cost-effectiveness of the commercial recruitment channels (costs in Swiss Francs)

Channel	Recruited participants	Publication fee	Costs per recruited participant
Print advertisements	88	2669.-	30.-
Internet banner (commercial)	39	1679.-	43.-

The editorial Internet button as well as the e-mail messaging were not of commercial nature and did not cause direct costs.

Risk according to PAR-Q and physical activity (n = 313)



## References

- American College of Sports Medicine & American Heart Association (1998). Joint position statement: recommendations for cardiovascular screening, staffing, and emergency policies at health/fitness facilities. *Medicine & Science in Sports & Exercise*, 30, 1009-1018.
- Martin-Diener, E. & Thüring, N. (2001). www.active-online.ch - a tailored intervention program for the promotion of physical activity. In European College of Sport Science, Book of abstracts of the 6th annual congress of the European College of Sport Science, 15th congress of the German Society of Sport Science (p. 149). Köln: Sport und Buch Strauss.
- Prochaska, J. O., DiClemente, C. C. & Norcross, J. C. (1992). In search of how people change. Applications to addictive behaviors. *American Psychologist*, 47, 1102-1114.