University of Zurich[UZH]

Institute of Social and Preventive Medicine

Experiences with the Use of IT for Physical Activity Promotion in Switzerland

Brian Martin, MD MPH
Physical Activity and Health Unit

University of South Carolina, The Department of Exercise Sciences
Seminar Series, 28 January 2011

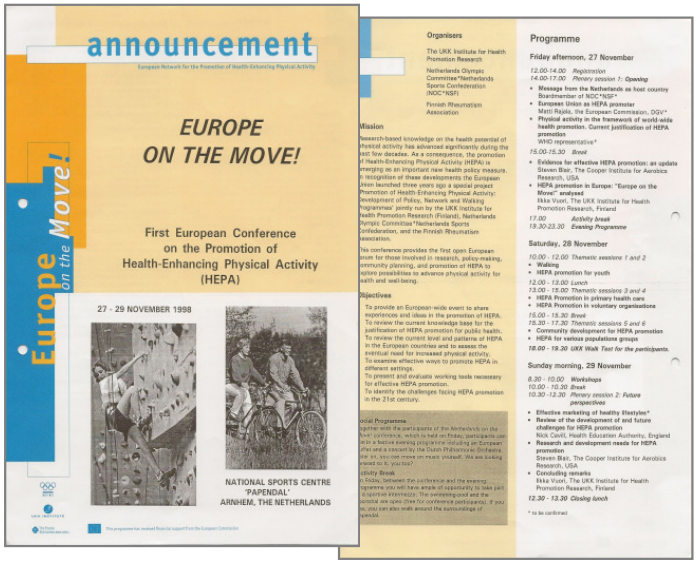
The 34th Magglingen Symposium 1995 Sports - Physical Activity - Health

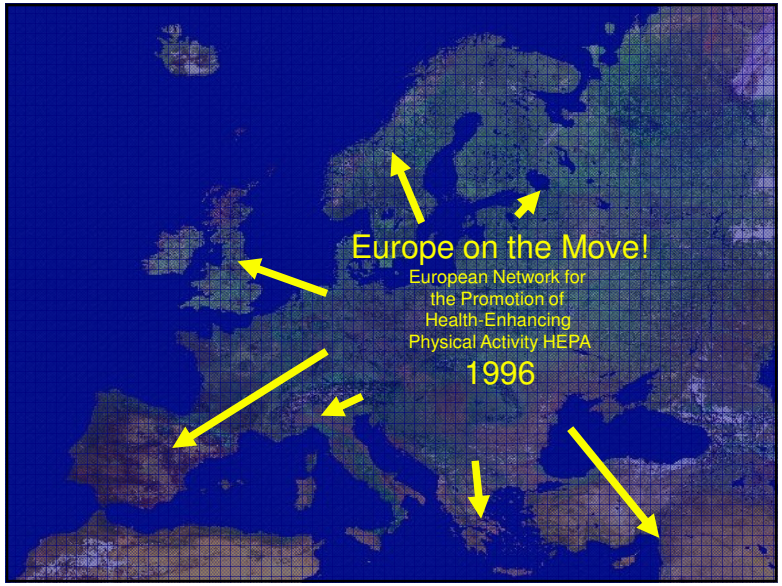
- Organised by Bernard Marti
- Physical activity and health - recent findings (Steven Blair, US)
- Physical activity in Switzerland – first estimates
- National examples for HEPA promotion: Finland (Ilkka Vuori), the Netherlands (Bart Coumans)

➔ Consensus: need for a Swiss national programme

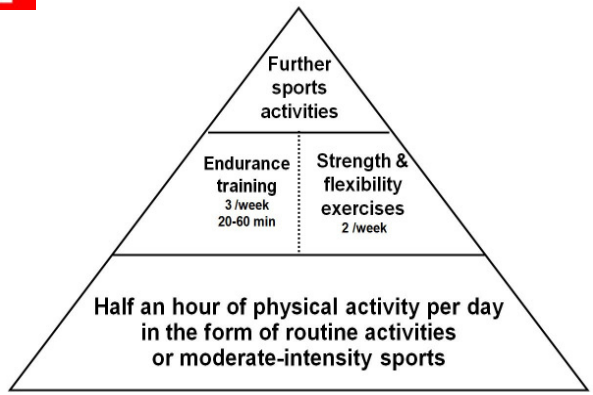
- No additional resources available

➔ Creation of Health Promotion Unit in Magglingen (1)





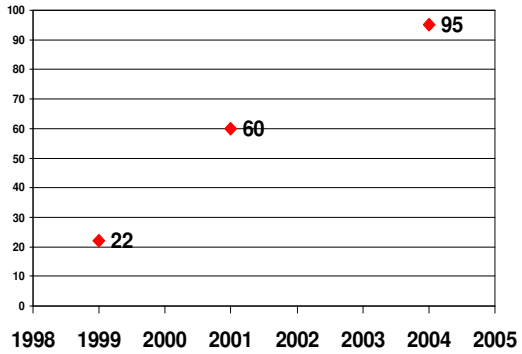
National HEPA recommendations 1999

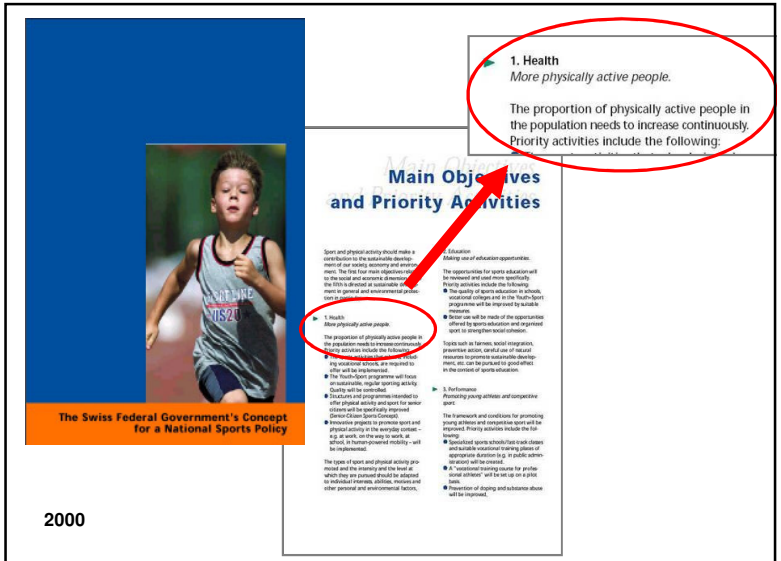


Martin BW, Mäder U, Stamm HP, Braun-Fahrländer C. Physical activity and health - what are the recommendations and where do we find the Swiss population? Schweiz Z Sportmed Sporttraumatol 2009: 57 (2); 37-43..

hepa.ch

Network HEPA Switzerland
Number of member organisations





2000

Overview presentation

- Physical Activity Promotion in Switzerland
- Use of IT for Physical Activity Promotion
- Experiences with IT for physical activity promotion in Switzerland
- Other approaches to physical activity promotion in Switzerland
- Physical activity promotion at the international level

Established use of IT in physical activity and sport

- development of sport equipment
- technical training
- membership management for clubs
- promoting events
- providing access to results

The potential of IT in promoting physical activity

- (Conventional) video games for behavioural change
- The potential of exercise-generating video games
- Support for sport and physical activity providers and professionals
- Facilitating access to offers and facilities
- Motivation and support for becoming and remaining physically active

www.escapefromdiab.com

The potential of exercise-generating video games

- The technology exists – the economic interest also
- Physiological issues
- Potential for specific applications – therapy and rehabilitation
- The social question
- Challenge exercise adherence

Exercise-generating video games - Physiological issues

BMJ

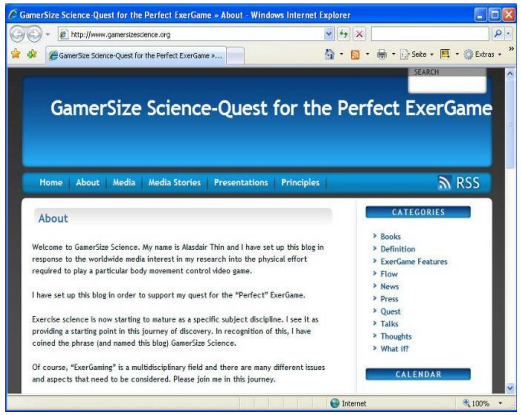
Comparison of energy expenditure in adolescents when playing new generation and sedentary computer games: cross sectional study

Lee Graves, Gareth Stratton, N D Ridgers and N T Cable

BMJ 2007;335;1282-1284
doi:10.1136/bmj.39415.632951.80

„Conclusions: Playing new generation active computer games uses significantly more energy than playing sedentary computer games but not as much energy as playing the sport itself.“

Exercise-generating video games - Physiological issues



Alisdair Thin: www.gamersizescience.org

Exercise-generating video games - Physiological issues

- Energy expenditure in conventional e-games:
  1 to 2 METS *(1 MET or metabolic equivalent = resting)*
- Energy expenditure in “Exergames” up to 6 MET ("Cascade"), 7 MET ("Box the Robot", Dance Games)
  or over 10 MET ("Dodge...")

➢ Energy expenditure sufficient for health recommendations

➢ Very high intensities (10 MET) might raise health screening issues…

Alisdair Thin: www.gamersizescience.org

HUMAN MOVEMENT
2010, vol. 11 (1), 95–99

THE IMPACT OF A SCHOOL-BASED ACTIVE VIDEO GAME PLAY INTERVENTION ON CHILDREN'S PHYSICAL ACTIVITY DURING RECESS

DOI: 10.2478/v10038-009-0023-1

Michael J. Duncan[1*], Victoria Staples[2]
[1] Department of Bimolecular and Sports Science, Coventry University, Coventry, United Kingdom
[2] Department of Psychology, University of Derby, Derby, United Kingdom

ABSTRACT
Purpose. To assess physical activity levels during active video game play over time and compare this to 'free play' associated with recess activity in a sample of British primary school children over a 6-week period. **Basic procedures.** Thirty children (ages 10–11, 12 boys, 18 girls) from central England were randomly selected to participate in a 6 week, recess based, active video gaming intervention ($n = 15$) or act as controls ($n = 15$). Repeated measures analysis of covariance (controlling for body fatness) was used to examine any differences in physical activity, determined by pedometry and heart rate monitoring over time and between intervention and control groups. **Main Findings.** Children in the intervention accumulated significantly greater steps/day than the control group during the first week of the intervention. This pattern was reversed at the mid and end points of the intervention ($p = .03$). Irrespective of time point, children engaging in active video game play spent a lesser percentage of time engaged in MVPA than the controls undertaking 'traditional' recess activity ($p = .0001$). **Conclusions.** Active video game play does not appear to be a sustainable means to enhance children's physical activity. Although physical activity (steps/min) was greater on initial presentation of active video games compared to 'traditional' recess activity, this appears to be an acute effect.

HUMAN MOVEMENT
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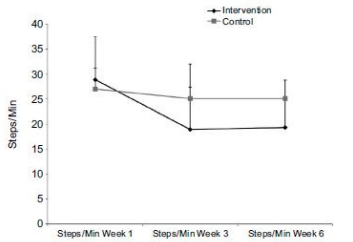


Figure 1. Mean (SD) of steps/min between intervention and control group during the first, third and final week of the intervention period

HUMAN MOVEMENT
2010, vol. 11 (1), 95–99

THE IMPACT OF A SCHOOL-BASED ACTIVE VIDEO GAME PLAY INTERVENTION ON CHILDREN'S PHYSICAL ACTIVITY DURING RECESS

Table 1. Mean (SD) of children's anthropometric characteristics

	Age (years)	Body Mass (kg)	Stature (m)	Body Fatness (%)
Group ($n = 30$)	10.4 (.50)	38.6 (8.2)	1.44 (.06)	20.1 (4.3)
Intervention ($n = 15$)	10.4 (.50)	38.7 (7.8)	1.44 (.07)	20.2 (4.6)
Control ($n = 15$)	10.4 (.51)	38.5 (8.9)	1.43 (.06)	19.9 (4.2)

Table 2. Mean (SD) of steps/min and percentage of recess time spent in MVPA across the monitoring period

	Steps/Min Week 1	Steps/Min Week 3	Steps/Min Week 6	MVPA Week 1 (% recess time)	MVPA Week 6 (% recess time)
Intervention ($n = 15$)	28.9 (8.6)	18.9 (8.5)	19.3 (5.6)	15.9 (8.3)	12.1 (6.0)
Control ($n = 15$)	27.0 (4.2)	25.1 (6.9)	25.1 (3.7)	23.1 (8.9)	25.2 (11.2)

Support for providers and professionals

- Support for sport instructors
- Support and teaching for physical activity counsellors
- Exchange platforms for promotion professionals

Support for sport instructors

Original articles 65

Oliver Padlina[a,b], Gerda Jimmy[a,b], Brian W. Martin[a,b]

[a] Swiss Federal Institute of Sport, Magglingen, Switzerland
[b] Institute of Social and Preventive Medicine, University of Zurich, Switzerland

Acceptance of an Internet-based programme to train physical activity counsellors during the development phase and in regular use

Schweizerische Zeitschrift für «Sportmedizin und Sporttraumatologie» 57 (2), 65–68, 2009

Reviews Dössegger A. et al.

Alain Dössegger[a], Oliver Studer[a,b], Ursula Maeder[a,b], Gerda Jimmy[a], Martin Rumo[a], Urs Mäder[a], Brian W. Martin[a,c]

[a] Swiss Federal Institute of Sport, Magglingen, Switzerland
[b] Network HEPA Switzerland, Magglingen, Switzerland
[c] Institute of Social and Preventive Medicine, University of Zurich, Switzerland

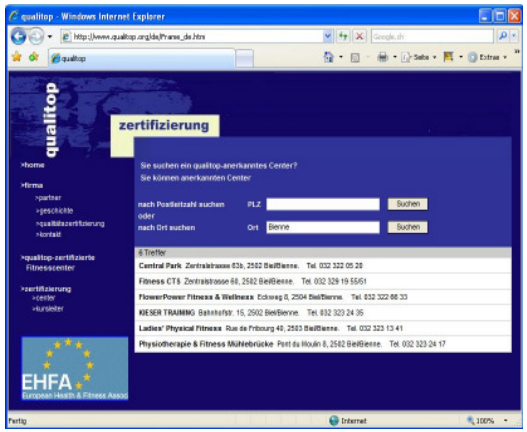
From hepa.ch to COMPI – Internet-based exchange platforms for physical activity promotion professionals in Switzerland

Schweizerische Zeitschrift für «Sportmedizin und Sporttraumatologie» 57 (2), 48–50, 2009

Facilitating access to offers and facilities

- Electronic databases for training and exercise offers
- Integrated information systems

Electronic databases for training and exercise offers



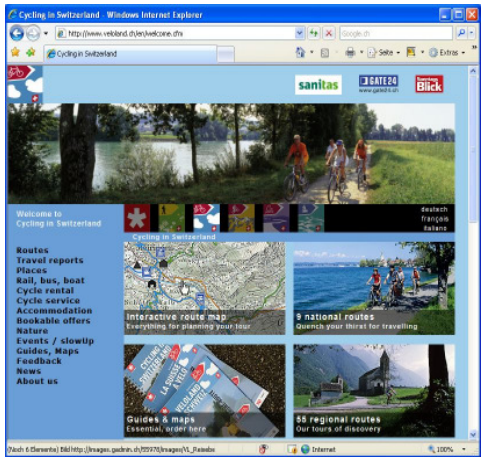
Qualitop

Certified commercial fitness centres in Switzerland

The real challenge is not in the information technology, but in keeping the database up to date

www.qualitop.org

Integrated information systems



Cycling in Switzerland

www.veloland.ch

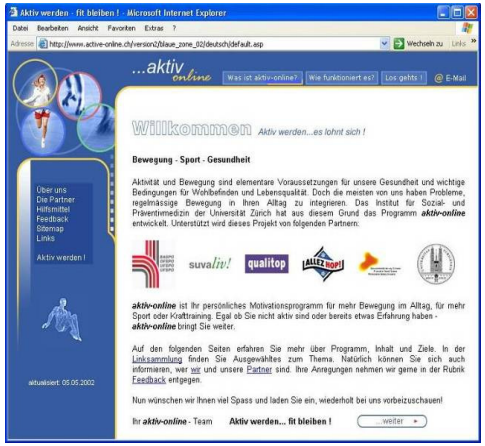
SwitzerlandMobility

www.switzerlandmobility.ch

Motivation and support for physical activity

- Automated counselling systems
- Potential of feedback providing systems
- Training diaries and personal coaching
- Integrated systems linking to real life offers

Automated counselling systems



www.active-online.ch

Development of Active-Online

HEALTH EDUCATION RESEARCH
Theory & Practice

Vol.19 no.4 2004
Pages 406–417

The Stages of Change in three stage concepts and two modes of physical activity: a comparison of stage distributions and practical implications

Eva Martin-Diener[1,2,3], Nicole Thüring[1,2], Thomas Melges[1] and Brian W. Martin[2]

The Individualistic Behavioural Change Approach

JOURNAL OF MEDICAL INTERNET RESEARCH
Wanner et al

Original Paper

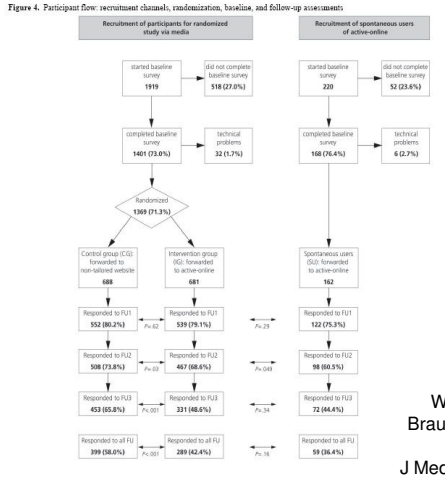
Effectiveness of Active-Online, an Individually Tailored Physical Activity Intervention, in a Real-Life Setting: Randomized Controlled Trial

Miriam Wanner[1,2], MSc; Eva Martin-Diener[1], MPH; Charlotte Braun-Fahrländer[2], MD; Georg Bauer[3,4], MD, DrPH; Brian W Martin[1,3], MD, MPH

[1]Swiss Federal Institute of Sport Magglingen, Magglingen, Switzerland
[2]Institute of Social and Preventive Medicine, University of Basel, Basel, Switzerland
[3]Institute of Social and Preventive Medicine, University of Zurich, Zurich, Switzerland
[4]Center for Occupational and Organizational Sciences ETH Zurich, Zurich, Switzerland

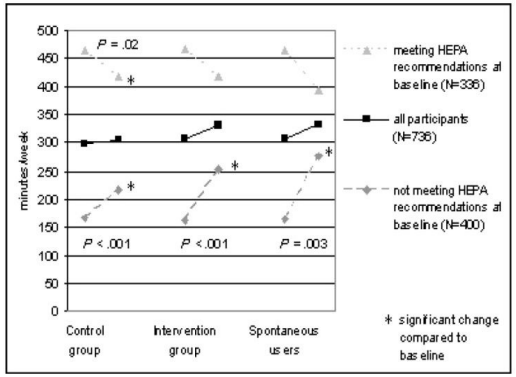
(J Med Internet Res 2009;11(3):e23) doi:10.2196/jmir.1179

Effectiveness of Active-Online, an Individually Tailored Physical Activity Intervention, in a Real-Life Setting



Wanner M, Martin-Diener E, Braun- Fahrländer C, Bauer G, Martin BW.
J Med Internet Res 2009; 11(3):

Effectiveness of Active-Online, an Individually Tailored Physical Activity Intervention, in a Real-Life Setting



Wanner M, Martin-Diener E, Braun-Fahrländer C, Bauer G, Martin BW.
J Med Internet Res 2009; 11(3): e23

Effectiveness of Active-Online, an Individually Tailored Physical Activity Intervention, in a Real-Life Setting

„In a real-life setting, Active-online was not more effective than a nontailored website in increasing physical activity levels in volunteers from the general population. Further research may investigate ways of integrating Web-based physical activity interventions in a wider context, for example, primary care or workplace health promotion."

Wanner M, Martin-Diener E, Braun-Fahrländer C, Bauer G, Martin BW.
J Med Internet Res 2009; 11(3): e23

User Behaviour in Active-Online

JOURNAL OF MEDICAL INTERNET RESEARCH — Wanner et al

Original Paper

Comparison of Trial Participants and Open Access Users of a Web-Based Physical Activity Intervention Regarding Adherence, Attrition, and Repeated Participation

Miriam Wanner[1,2], PhD; Eva Martin-Diener[1], MPH; Georg Bauer[3,4], MD, DrPH; Charlotte Braun-Fahrländer[2], MD; Brian W Martin[3], MD, MPH

[1]Swiss Federal Institute of Sport Magglingen, Magglingen, Switzerland
[2]Swiss Tropical and Public Health Institute, University of Basel, Basel, Switzerland
[3]Institute of Social and Preventive Medicine, University of Zurich, Zurich, Switzerland
[4]Division of Public and Organizational Health, University and ETH Zurich, Zurich, Switzerland

J Med Internet Res 2010 | vol. 12 | iss. 1 | e3 |

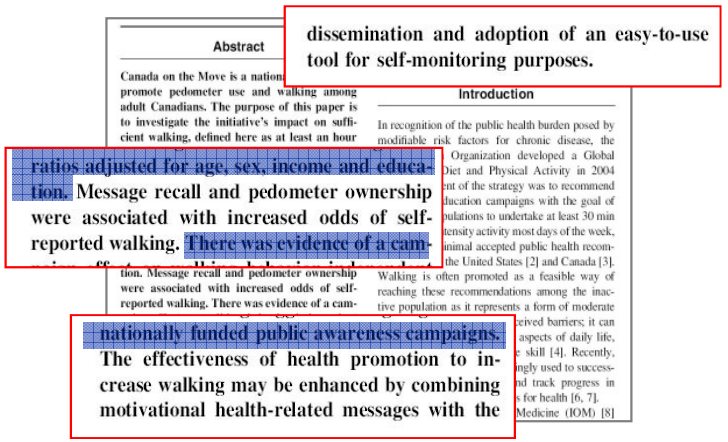
Potential of feedback providing systems

HEALTH EDUCATION RESEARCH — Vol.22 no.3 2007
Pages 406–413
Advance Access publication 13 September 2006

Twelve-month effects of Canada on the Move: a population-wide campaign to promote pedometer use and walking

C. L. Craig[1,2]*, C. Tudor-Locke[1,3] and A. Bauman[4]

Potential of feedback providing systems



Abstract

Canada on the Move is a nation… promote pedometer use and walking among adult Canadians. The purpose of this paper is to investigate the initiative's impact on sufficient walking, defined here as at least an hour

Introduction

In recognition of the public health burden posed by modifiable risk factors for chronic disease, the … Organization developed a Global … Diet and Physical Activity in 2004 … ent of the strategy was to recommend … ducation campaigns with the goal of … pulations to undertake at least 30 min … tensity activity most days of the week, … inimal accepted public health recom… … the United States [2] and Canada [3]. Walking is often promoted as a feasible way of reaching these recommendations among the inactive population as it represents a form of moderate … aspects of daily life, … skill [4]. Recently, … ingly used to success… … nd track progress in … s for health [6, 7]. … Medicine (IOM) [8]

dissemination and adoption of an easy-to-use tool for self-monitoring purposes.

ratios adjusted for age, sex, income and education. Message recall and pedometer ownership were associated with increased odds of self-reported walking. There was evidence of a cam-

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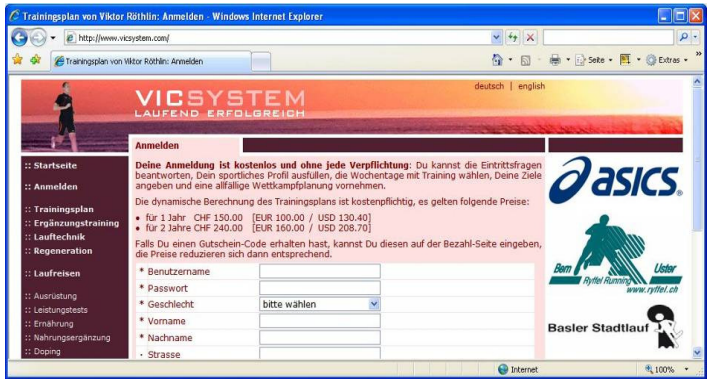
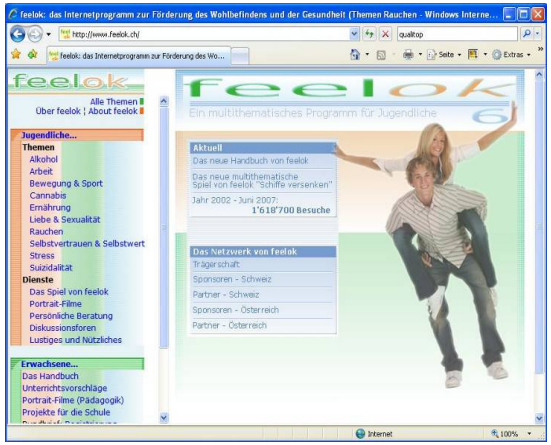
nationally funded public awareness campaigns. The effectiveness of health promotion to increase walking may be enhanced by combining motivational health-related messages with the

Training diaries and personal coaching



www.vicsystem.ch

Integrated systems linking to real life offers



Feelok

Youth prevention progamme including physical activity and sport

www.feelok.ch

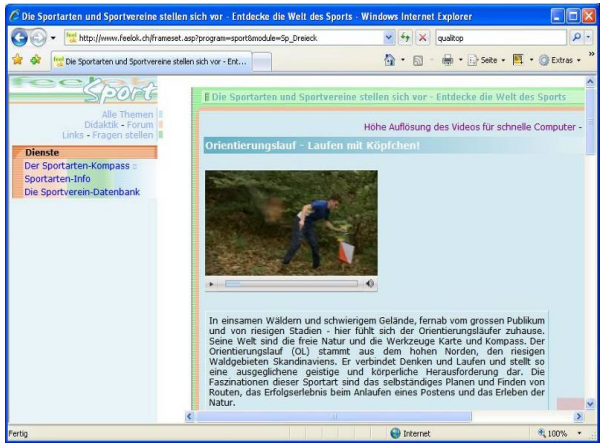
Integrated systems linking to real life offers

Feelok

Physical activity module

www.feelok.ch

Integrated systems linking to real life offers

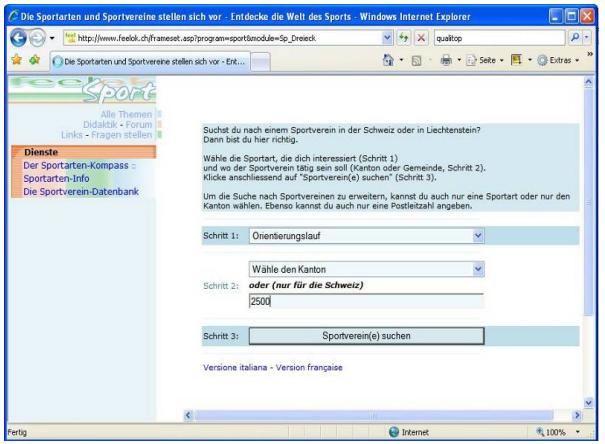


Feelok

Sport presen-tation module

feelok.ch

Integrated systems linking to real life offers



Feelok

Sport club search engine

feelok.ch

Short reports Padlina O. et al.

Oliver Padlina[a,b], Alain Dössegger[a], Gerda Jimmy[a], Martin Jeker[a], Stephan Toggweiler[a], Jürg Schmid[ac], David Egli[a], Matthias Zurbriggen[a], Daniel Käsermann[a], René Hagi[a], Tina Hofmann[b], Georg Bauer[b], Brian W. Martin[a,b]

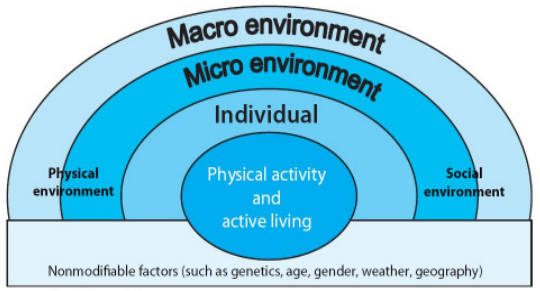
[a] Swiss Federal Institute of Sport, Magglingen, Switzerland
[b] Institute of Social and Preventive Medicine, University of Zurich, Switzerland
[c] Institute of Sport Science, University of Berne, Switzerland

Promotion of physical activity and sport in adolescents – first experiences of the Internet programme www.feelok.ch

Schweizerische Zeitschrift für «Sportmedizin und Sporttraumatologie» 57 (2), 90–92, 2009

Approaches to Physical Activity Promotion

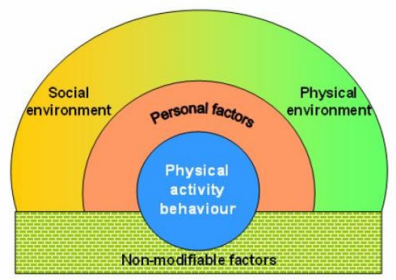
– There is no single magic bullet



Source: adapted from Dahlgren *(61)*.

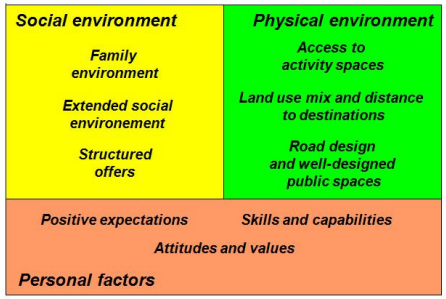
Cavill N, Racioppi F, Kahlmeier S. Physical Activity and Health in Europe. Evidence for Action. Copenhagen: WHO, 2006.

Determinants of physical activity behaviour



Physically active at every age. General principles and suggestions for the promotion of sport and physical activity. Manuscript February 2008.

Modifiable determinants of PA behaviour



Physically active at every age. General principles and suggestions for the promotion of sport and physical activity. Manuscript February 2008.

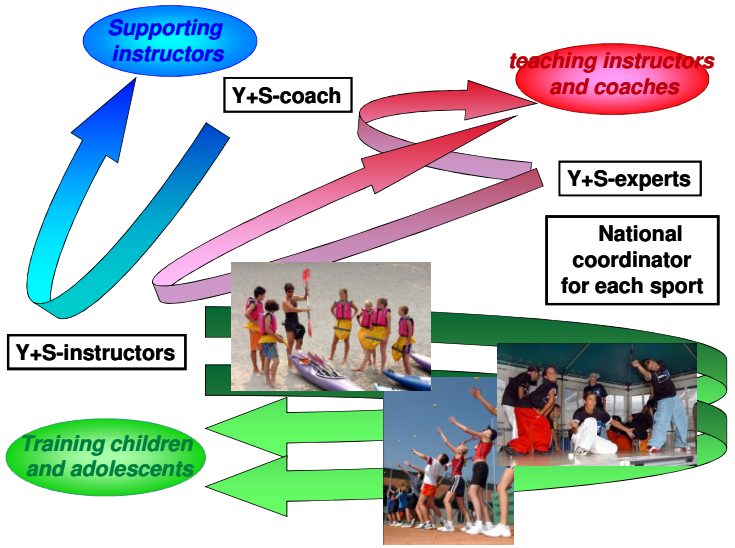
Jugend+Sport

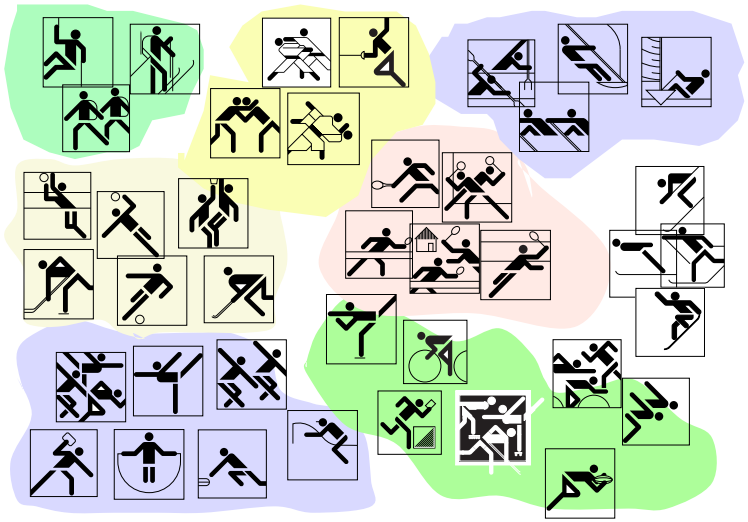
Youth+Sports

Established by federal law in 1972 (constitutional vote in 1970)

"The aim of the institution youth+sports is to develop young people of 14 *(since 1994 10)* to 20 years of age in sports and to guide them to a healthy lifestyle"

Emphasis on sports for all





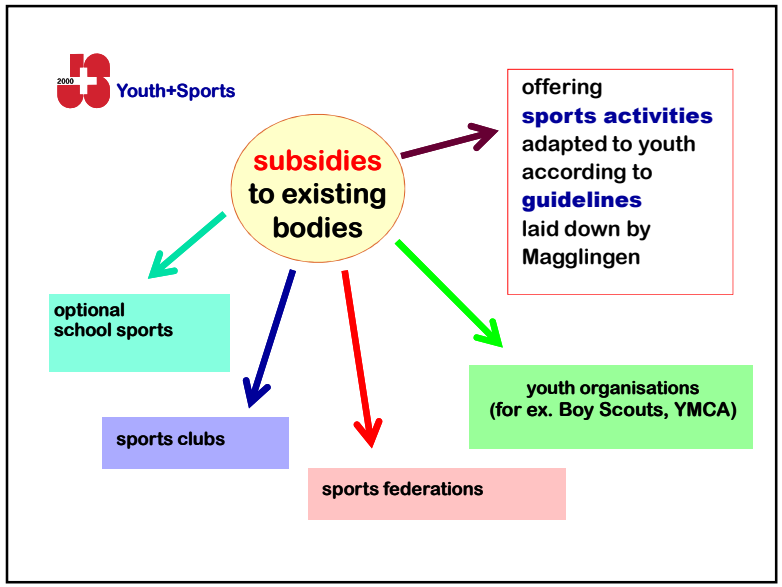
The roles of partners

Teaching material
Prepared for each specific sports discipline by the confederation in collaboration with the sports associations

Instructors' training
By the Confederation, the cantons and the sports associations

Implementation of courses for children
By clubs, sports associations and youth organisations

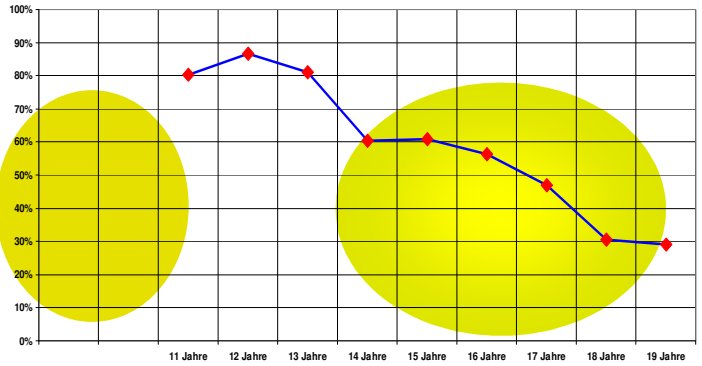
Support by political entities
Infrastructure by municipalities, with financial contributions from municipalities, cantons and the Confederation



Youth+Sports – key figures

	2005
Children/Adolecents (10–20)	550'000
Active Instructors	53'200
Courses / Camps	48'000
Federal subsidies to organizers	35 million Euro
Total public money invested	70 million Euro
Certified instructors	107'784
Certified coaches	15'269
Certified experts	5'358
People in Training (instr. / coaches)	47'000
Training Courses	2'516

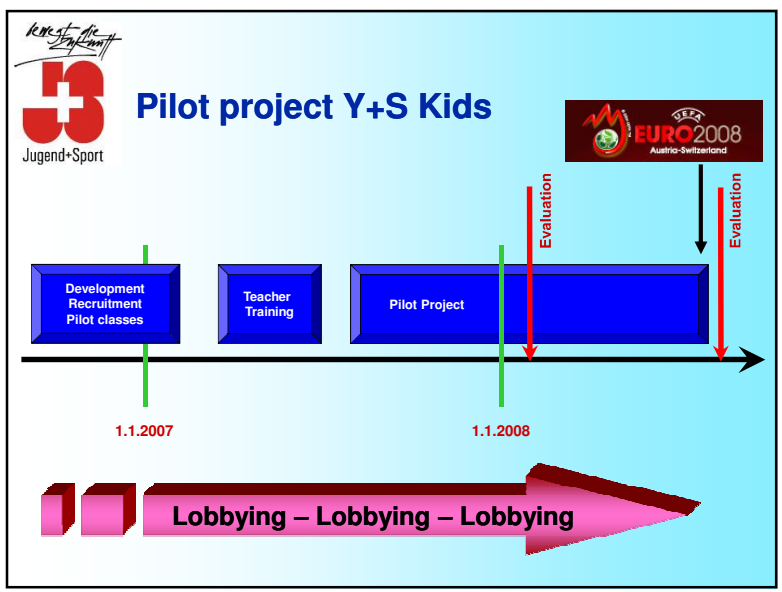
Youth+Sports – coverage by age 2005



Y+S Kids: Pilot project for 5 to 10 year old

- **One additional hour of „multisport“ activities per week during one year offered by primary teachers, additional to regular PE**
- **Focus on children not reached through existing offers**
- **Pilot project until 2007-2008 in 247 classes (out of 17’000 in this age group)**
- **Detailed evaluation in 15 intervention and 15 control classes**

Pilot project Y+S Kids



Y+S Kids: Political development

Lobbying by cantons and project leader

Broad consensus among politicians: „something has to be done for children“

Annual budget of 20 mio Swiss Francs (14 mio Euro) adopted by federal parlament
-> national level implementation since 2009

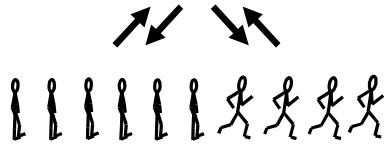
„sports law“ currently under revision >> inclusion of 5-10 year olds?

The local, national and international level in HEPA promotion

International contacts and experiences

National level support and conditions

Local HEPA promotion



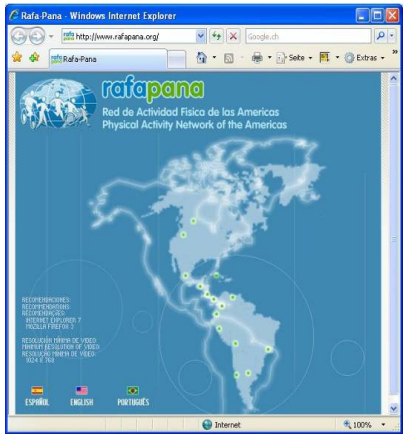
European Network for the Promotion of Health-Enhancing Physical Activity HEPA 1996-2001 (✶)

European Situation in 2004

- Scientific exchange on physical activity and health ↑↑
- Development of methods ↑↑
- WHO Global Strategy on Diet, Physical Activity and Health
- Global networks like Agita Mundo and GAPA
- No more regular exchange and development platform for national physical activity promotion strategies at the European level

➔Decision to re-launch HEPA Europe

Regional Networks for Physical Activity and Health



Red de Activitad Fisica de las Americas

Physical Activity Network of the Americas

RAFA-PANA

www.rafapana.org

Regional Networks for Physical Activity and Health

HEPA Europe

European Network for the promotion of health-enhancing physical activitiy

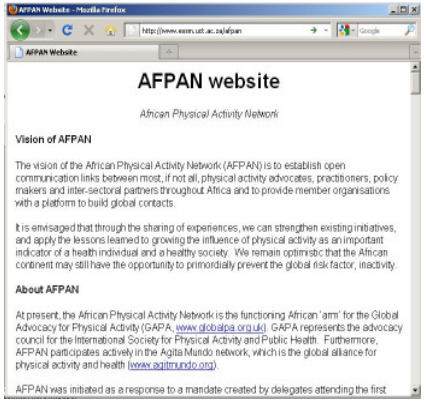
www.euro.who.in/hepa

Regional Networks for Physical Activity and Health

Asia Pacific Physical Activity Network

www.ap-pan.org

Regional Networks for Physical Activity and Health

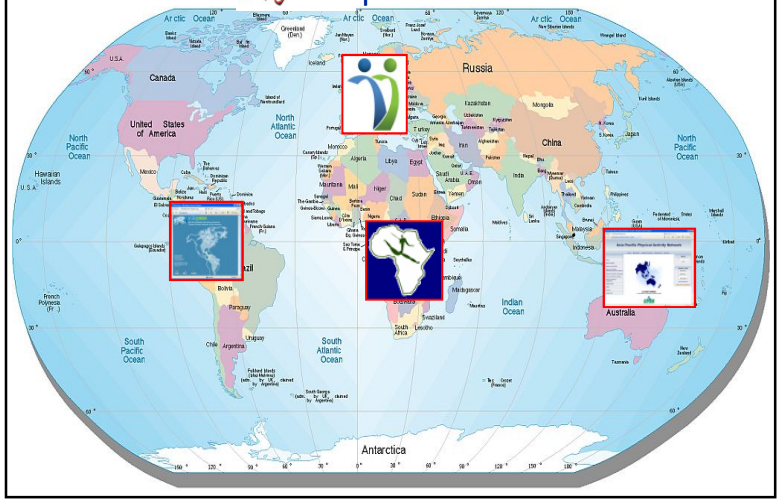


African Physical Activity Network

www.essm.uct.ac.za/afpan

Specificity of actors in physical activity and health

The global PA promotion network



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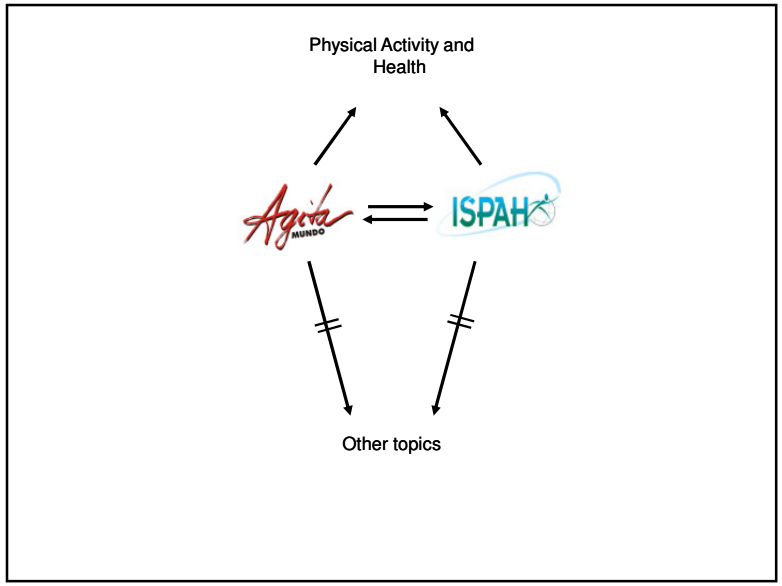
GAPA
GLOBAL ADVOCACY FOR PHYSICAL ACTIVITY

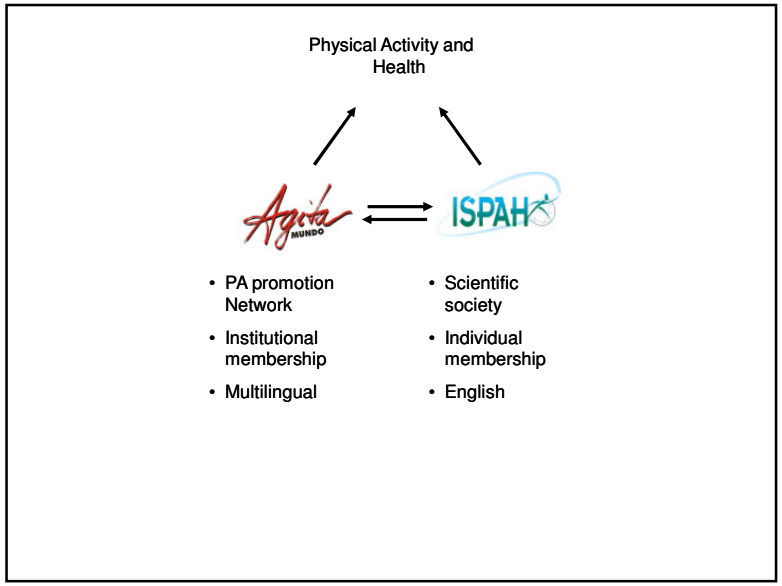
IPEN
INTERNATIONAL PHYSICAL ACTIVITY AND THE ENVIRONMENT NETWORK

Other Councils

ISPAH

www.ispah.org





Work Programme 2010/2011

Main activities
Preparation and organisation of Agita Mundo meeting
Preparation and organisation of World Day for Physical Activity
Communication and cooperation
Maintaining and expanding multilingual communication platform
Cooperation and support to regional networks
Defining and improving cooperation with other important global institutions