



Determinants of physical activity: why are some people physically active and others not?

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Institute for Environmental Decisions (IED), Consumer Behavior, ETH Zurich, 28.03.2013

THE LANCET



"In view of the prevalence, global reach, and health effect of physical inactivity, the issue should be appropriately described as pandemic, with far-reaching health, economic, environmental, and social consequences."

Physical Activity

The Lancet Physical Activity Series Working Group



33 researchers from 16 countries

www.thelancet.com/series/physical-activity

Panel 1: Health benefits of physical activity in adults³⁻⁵

Strong evidence of reduced rates of:

- All-cause mortality
- Coronary heart disease
- High blood pressure
- Stroke
- Metabolic syndrome
- Type 2 diabetes
- Breast cancer
- Colon cancer
- Depression
- Falling

Strong evidence of:

- Increased cardiorespiratory and muscular fitness
- Healthier body mass and composition
- Improved bone health
- Increased functional health
- Improved cognitive function

Lee IM, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT, for the Lancet Physical Activity Series Working Group. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. Lancet. 2012 Jul 21;380(9838):219-29.

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conservative assumptions



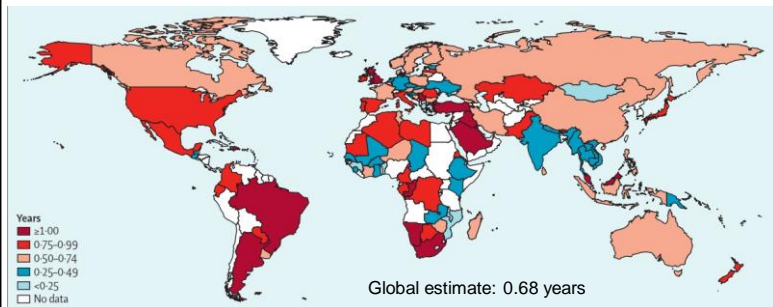
calculation of burden of disease

← physical inactivity

- 6% to 10% of cases for these diseases worldwide
- 9% of premature mortality worldwide (5.3 million deaths)
- ~ comparable to worldwide effects of smoking or obesity

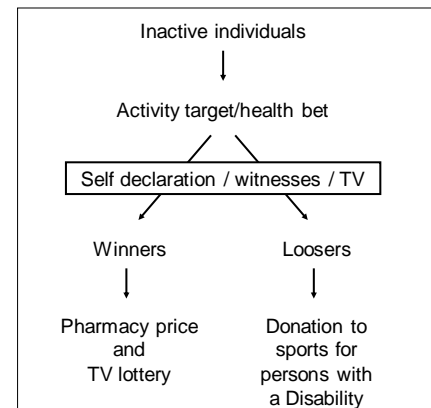
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Estimated gains in life expectancy worldwide with elimination of physical inactivity



Lee IM, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT, for the Lancet Physical Activity Series Working Group. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. *Lancet*. 2012 Jul 21;380(9838):219-29.

General idea «Health Bet»



Launching «Health Bet» in September 2003

- TV health programme «Gesundheit Sprechstunde» with 300'000-500'000 spectators
- Health magazine «Gesundheit Sprechstunde» with circulation 80'000
- Article in in pharmacy magazine
- 170 (-> 180) participating pharmacies/dispensing chemists

→ Expected number of participants: 1'000 to 10'000

Dössegger A, Nützi C, Kienle G, Ackermann B, Stutz S, Martin BW. Experiences in nationwide recruiting for the Allez Hop Physical Activity Programme. *Schweiz Z Sportmed Sporttraumatol* 2009; 57 (2); 61-64

Participation «Health Bet» in September 2003

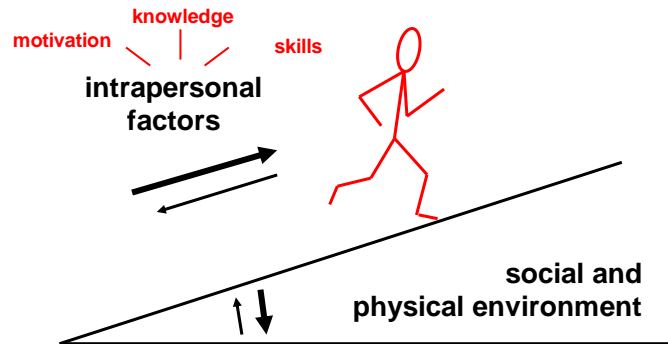
- TV health programme «Gesundheit Sprechstunde» with 300'000-500'000 spectators
- Health magazine «Gesundheit Sprechstunde» with circulation 80'000
- Article in in pharmacy magazine
- 170 (-> 180) participating pharmacies/dispensing chemists

→ 35 bets accepted out of 55 offered

→ 8 winners

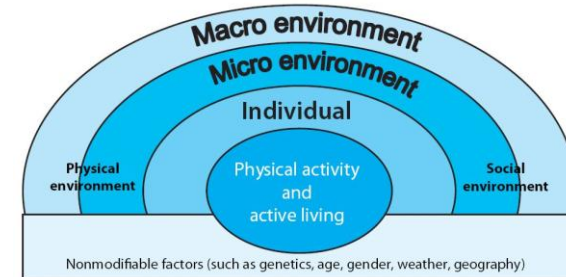
Dössegger A, Nützi C, Kienle G, Ackermann B, Stutz S, Martin BW. Experiences in nationwide recruiting for the Allez Hop Physical Activity Programme. *Schweiz Z Sportmed Sporttraumatol* 2009; 57 (2); 61-64

Determinants of (physical activity) behaviour



Martin BW, Martin E, Mengisen W. Promotion de l'activité physique: définir des stratégies intégrées en Europe. In Insem. Activité physique et santé. Contextes et effets sur la santé. Expertise collective. Paris, Insem 2008: 755-768.

Determinants of physical activity behaviour



Source: adapted from Dahlgren (61).

Cavill N, Racioppi F, Kahlmeier S. Physical Activity and Health in Europe. Evidence for Action. Copenhagen: WHO, 2006. www.euro.who.int/hepa

A conceptual approach to determinants of PA

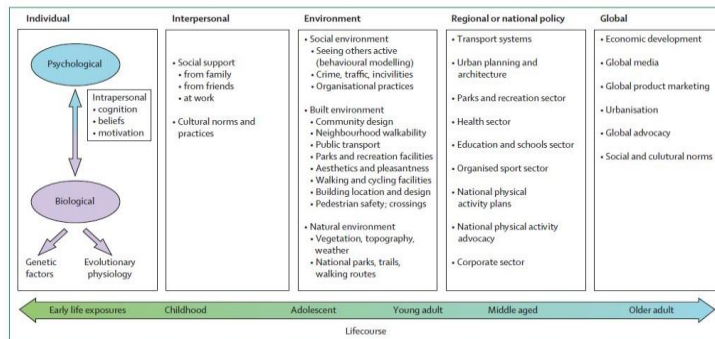


Figure 1: Adapted ecological model of the determinants of physical activity

Bauman A, Reis R, Sallis JF, Wells J, Loos R, Martin BW, for the Lancet Physical Activity Series Working Group. Physical Activity 2 - Why are some people physically active and others not? Understanding the Correlates of Physical Activity. Lancet. 2012 Jul 21;380(9838):258-71.

Evaluation «Health Bet» 2003

Representative population survey (n=811)

"The results (...) showed a solicited awareness of 39% for the "Health Bet" for the whole of Switzerland and of 50% for the German-speaking part where the intervention was centred."

Survey in TV show audience (n=153)

„53% of all interviewees were aware of the health bet. Among them, 56% were informed about the objective of the intervention, 54% knew the target population, 38% knew that health bets could be placed with the pharmacists and 25% were informed of all three aspects. When asked whether they saw themselves as members of the target group of the intervention, the following proportion of the three categories (...) answered "yes": trained 39%; active 50%; insufficiently active: 48%."

Dössegger A, Nützi C, Kienle G, Ackermann B, Stutz S, Martin BW. Experiences in nationwide recruiting for the Allez Hop Physical Activity Programme. Schweiz Z Sportmed Sporttraumatol 2009; 57 (2); 61-64

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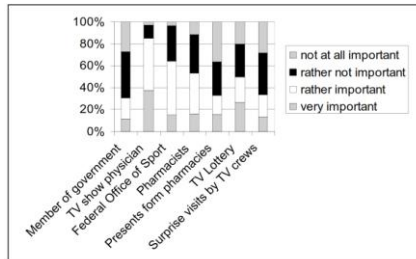


Figure 4: Relevance of the different motivational elements of the "Health Bet" according to the interviews with the audiences of the "Health Practice" shows in December 2002 and January 2003 (n=153)

Dössegger A, Nützi C, Kienle G, Ackermann B, Stutz S, Martin BW. Experiences in nationwide recruiting for the Allez Hop Physical Activity Programme. *Schweiz Z Sportmed Sporttraumatol* 2009; 57 (2); 61-64

„A question addressed specifically the surprise visits of the TV crews to the health bet participants: A little less than 36% of the TV audience saw this element as partially motivating and partially deterring, while 33 % saw it as rather or very motivating and 31% as rather or very deterring.

Interventions implemented through sporting organisations for increasing participation in sport - Mozilla Firefox

http://www2.cochrane.org/reviews/en/ab004812.html

The Cochrane Collaboration
Cochrane Reviews

Interventions implemented through sporting organisations for increasing participation in sport

Priest N, Armstrong R, Doyle J, Waters E

Summary

Interventions implemented through sporting organisations for increasing people's participation in sport

The sport sector is viewed as a priority area for increasing rates of physical activity. Participation rates in organised sport have been shown to be lower in females and to decline with age, and are reduced in lower socio-economic and minority groups. It is important to determine the most effective interventions that sporting organisations can use to increase people's participation and reduce inequalities. In this systematic review of the literature we did not find any controlled studies assessing the effects of interventions to increase participation in sport.

The sport sector is viewed as a priority area for increasing rates of physical activity.

Interventions implemented through sporting organisations for increasing participation in sport

Priest N, Armstrong R, Doyle J, Waters E

Authors' conclusions

There is an absence of high quality evidence to support interventions designed and delivered by sporting organisations to increase participation in sport.

Zimmermann-Sloutskis et al.
International Journal of Behavioral Nutrition and Physical Activity 2010, 7:2
<http://www.ijbnpa.org/content/7/1/2>

INTERNATIONAL JOURNAL OF BEHAVIORAL NUTRITION AND PHYSICAL ACTIVITY

RESEARCH Open Access

Physical activity levels and determinants of change in young adults: a longitudinal panel study

Dorith Zimmermann-Sloutskis¹, Miriam Wanner^{1*}, Erwin Zimmermann², Brian W Martin³

Relative risks for being inactive by sport club membership

Table 4 Odds ratios for being physically inactive in young males and females

Sport club membership	Men				Women			
	"no sport"		inactive		"no sport"		inactive	
	unadjusted	adjusted ¹	unadjusted	adjusted ¹	unadjusted	adjusted ¹	unadjusted	adjusted ¹
member	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
non-member	6.6 (5.4-8.1)	6.7 (4.9-8.9)	4.2 (3.5-5.0)	4.6 (3.5-6.0)	7.3 (6.0-8.9)	8.1 (6.7-11.4)	5.3 (4.4-6.5)	4.6 (3.3-6.4)
p-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

¹ adjusted for all variables displayed in the table except education
 All estimates and 95% CI are based on the pooled data using the GEE model with pair-wise log odds ratios for the within-subject correlation. *N*male participants = 1,534; *N*female participants = 1,534

6.7
4.6
8.1
4.6

Relative risks for becoming inactive by sport club membership

Table 5 Odds ratios for becoming physically inactive in previously active young males and females

Sport club membership	Men				Women			
	becoming "no sport"		becoming inactive		becoming "no sport"		becoming inactive	
	unadjusted	adjusted ¹	unadjusted	adjusted ¹	unadjusted	adjusted ¹	unadjusted	adjusted ¹
remaining member	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
becoming member	1.4 (0.7-2.7)	1.3 (0.4-3.3)	2.1 (1.2-3.7)	2.7 (1.1-6.3)	1.5 (0.8-2.8)	2.7 (1.1-7.0)	2.1 (1.2-3.6)	1.6 (0.7-3.7)
becoming non-member	0.3	0.6	0.01	5.9 (3.4-10.5)	0.2	0.04	0.007	0.2
p-value	7.4 (4.9-11.0)	7.8 (4-14.0)	5.6 (3.9-8.1)	<0.001	7.0 (4.5-11.1)	11.9 (5.9-24.1)	5.4 (3.5-8.5)	5.1 (2.7-9.6)
remaining non-member	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
p-value	9.2 (6.6-13.1)	8 (4.7-12.9)	5.2 (3.7-7.4)	5.1 (3.1-8.4)	10.7 (7.3-15.6)	11.4 (6.4-24.1)	7.9 (5.4-11.3)	6.9 (4.0-11.8)
p-value	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

¹ adjusted for all variables displayed in the table except education
² OR = 12.7 (2.6-61.5), due to small numbers estimates become unreliable
 All estimates and 95% CI are based on the pooled data for the one-year outcome conditional to previous physical activity level using the GEE model with an independent correlation structure for the within-subject association. Only observations were included with data for the preceding wave in individuals previously active in sports (*N*male participants = 95; *N*female participants = 93) or previously active (*N*male participants = 933; *N*female participants = 936)

7.8
5.9
11.9
5.1

Objectives of the "correlates" article

- Summary of present knowledge and its development
- Examination of correlates and determinants research in countries of low and middle income
- Discussion of "hot topics" in the field

Bauman AE, Reis RS, Sallis JF, Wells JC, Loos RJF, Martin BW. Lancet 2012; 380 (9838): 258-71

Role of the lifecourse for correlates and determinants of PA

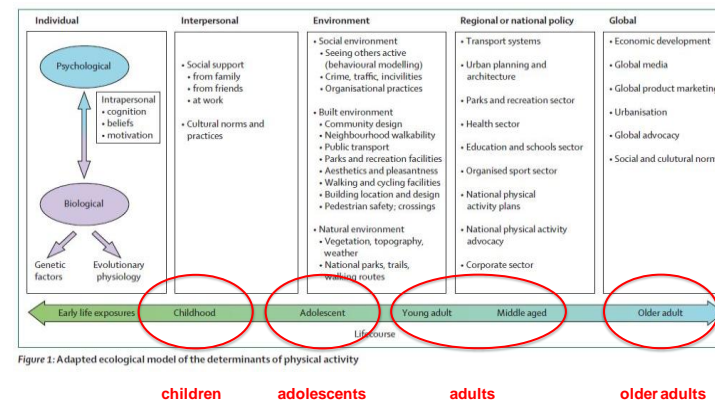


Figure 1: Adapted ecological model of the determinants of physical activity

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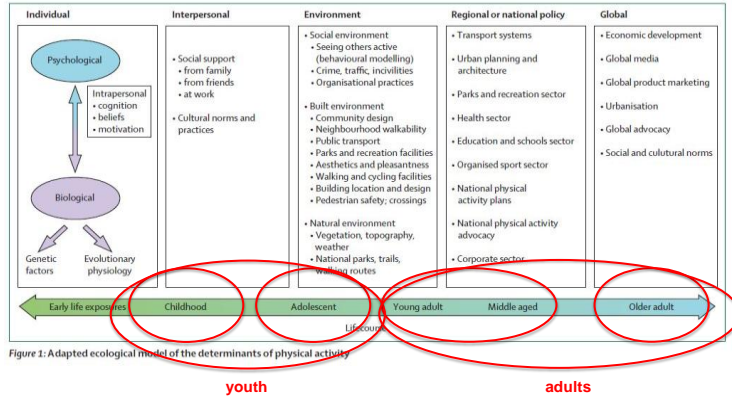


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Categories of correlates and determinants of PA

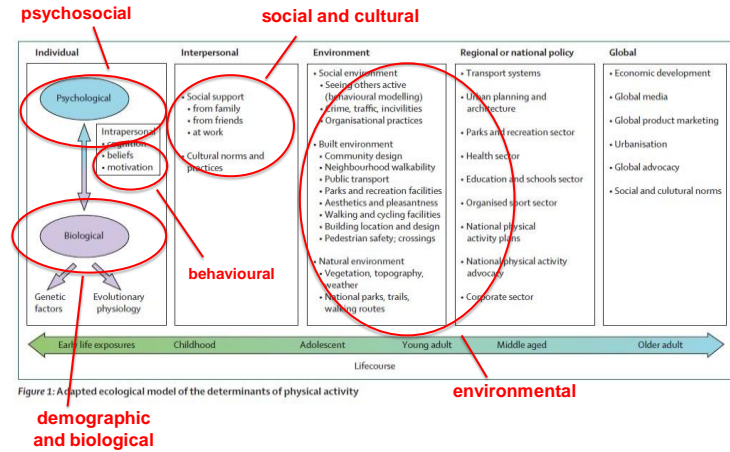


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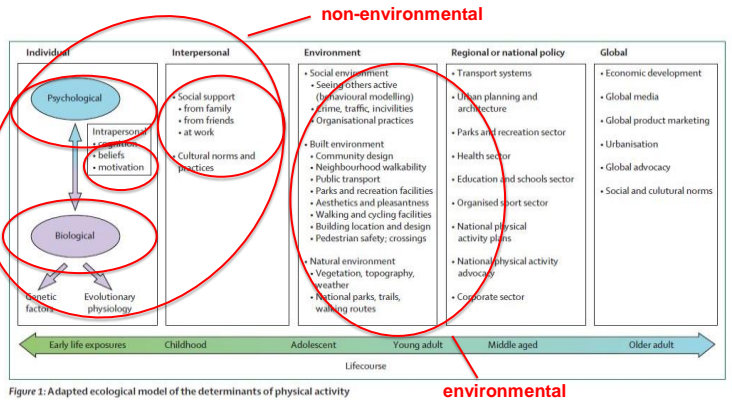


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Methods

Systematic review of systematic reviews and meta-analyses

	initial search	read	final selection	included					
non-environmental factors	1891	→	1299	→	32	→	8 youth	→	9 adults
environmental factors	7621	→	4835	→	42	→	9 adults		

Existing recent systematic review

environmental factors	Ding D et al, Am J Prev Med 2011; 41: 442-55	→	9 youth
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Systematic review of original articles low and middle income countries

all factors	1360	→	988	→	68	→	68 all ages
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Review of topics of growing interest

Genetics – evolution – obesity – tracking

Bauman AE, Reis RS, Sallis JF, Wells JC, Loos RJF, Martin BW. Lancet 2012; 380 (9838): 258-71

Condensed Tables 1 and 2 on non-environmental factors

The image shows three overlapping tables from a review. The top table is for 'Children', the middle for 'Adolescents', and the bottom for 'Adults'. Each table lists various non-environmental factors and their associations with physical activity. The tables are condensed versions of the full tables in the annexes.

Full tables in annex...

Bauman AE, Reis RS, Sallis JF, Wells JC, Loos RJF, Martin BW. Lancet 2012; 380 (9838): 258-71

Concept of consistent evidence

Consistent evidence for role as determinant:

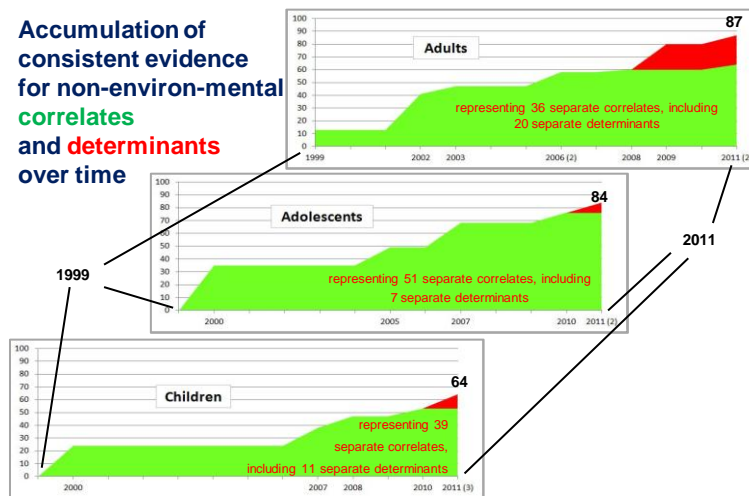
- three or more original reports cited in review
- review based exclusively on longitudinal design studies
- at least 60% of them show the same association (direct, inverse or consistently no association)

Consistent evidence for role as correlate:

- three or more original reports cited in review
- review based on cross-sectional design studies
- at least 60% of them show the same association

Sallis JF, Prochaska JJ, Taylor WC. Med Sci Sports Exerc 2000; 32: 963.

Accumulation of consistent evidence for non-environmental correlates and determinants over time



Bauman AE, Reis RS, Sallis JF, Wells JC, Loos RJF, Martin BW. Lancet 2012; 380 (9838): 258-71

Examples of variables identified as consistent correlates

Non-environmental factors

	children	adolescents	adults
Reported health			direct
Male sex	direct	direct	direct
Intention to exercise			direct
Self-efficacy	direct	direct	direct
Previous physical activity	direct	direct	direct
Social support		direct	

Environmental factors

	children	adolescents	adults
Neighbourhood design		direct	
Recreation facilities and locations		direct	direct
Transport environments		direct	direct
Aesthetics			direct

Bauman AE, Reis RS, Sallis JF, Wells JC, Loos RJF, Martin BW. Lancet 2012; 380 (9838): 258-71

Correlates and determinants of domains of PA

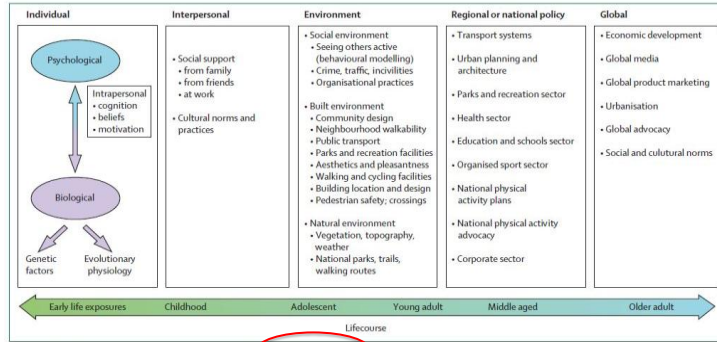


Figure 1: Adapted ecological model of the determinants of physical activity

specific activity
 specific activity
 ...
 physical activity
 overall physical activity

Bauman AE, Reis RS, Sallis JF, Wells JC, Loos RJF, Martin BW. Lancet 2012; 380 (9838): 258-71

Correlates and determinants of domains of PA

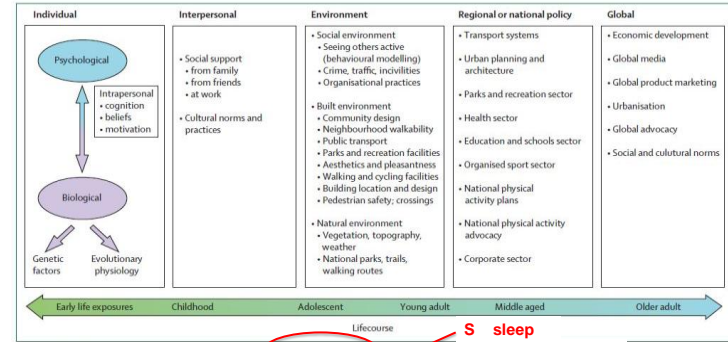


Figure 1: Adapted ecological model of the determinants of physical activity

S sleep
 L leisure time
 O occupational
 T transport
 H home
 physical activity

Correlates and determinants of domains of PA

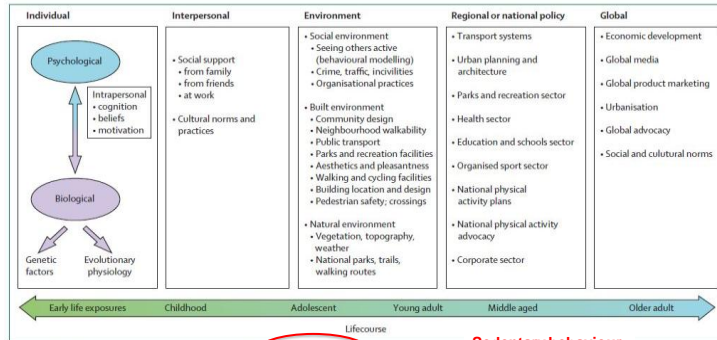


Figure 1: Adapted ecological model of the determinants of physical activity

Sedentary behaviour
 Light intensity behaviour
 Moderate intensity activities
 MVPA
 Vigorous intensity activities
 physical activity

Correlates and determinants of domains of PA

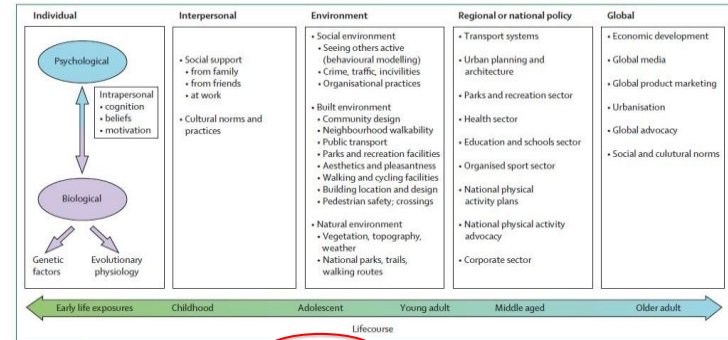


Figure 1: Adapted ecological model of the determinants of physical activity

initiation
 maintenance
 physical activity

Examples of variables identified as consistent correlates

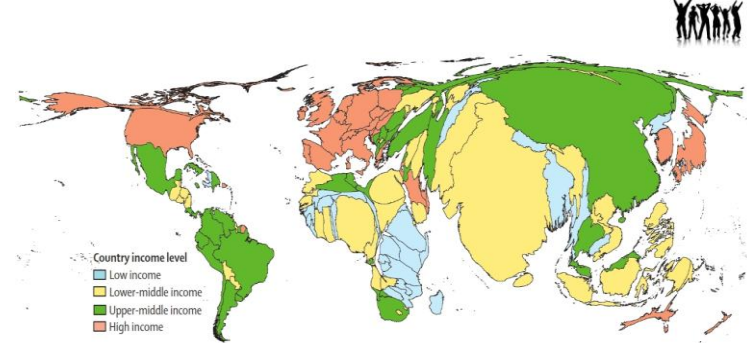
“Health status and self-efficacy are the clearest correlates in adults, with consistent evidence for a direct role in four of seven reviews (table 2). Consistent evidence from one of two reviews shows that both are determinants (table 2). The next clearest are personal history of physical activity during adulthood and intention to exercise, both with consistent evidence for a direct role from two correlate reviews and one determinant review. The stages of behavioural change according to the transtheoretical model were direct correlates in one review and direct determinants in another.”

Why is there not more consistency between reviews?

- Lack of standardisation in assessment of potential correlates
- Differences between countries and population subgroups
- Diversity of the outcome “physical activity”

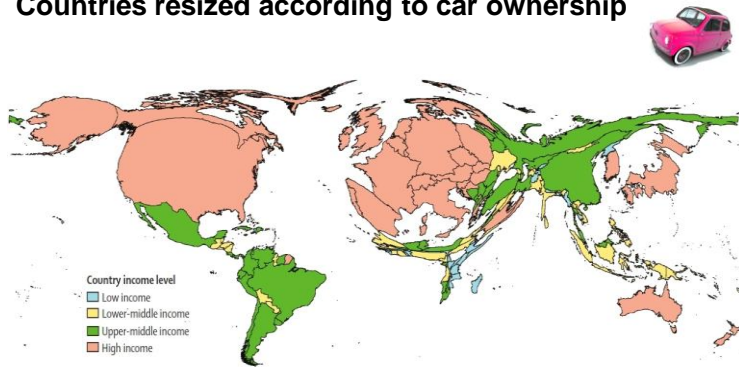
Bauman AE, Reis RS, Sallis JF, Wells JC, Loos RJF, Martin BW. Lancet 2012; 380 (9838): 258-71

Countries resized according to population size



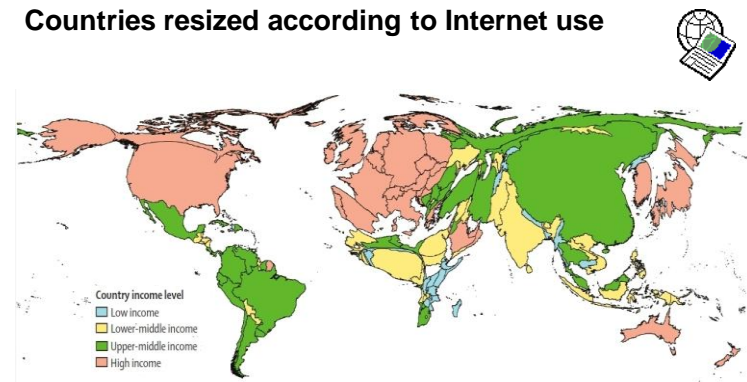
Pratt M, Sarmiento OL, Montes F, et al, for the Lancet Physical Activity Series Working Group. Physical Activity 4 - The implications of megatrends in information and communication technology and transportation for changes in global physical activity. Lancet. 2012 Jul 21;380(9838):282-93.

Countries resized according to car ownership



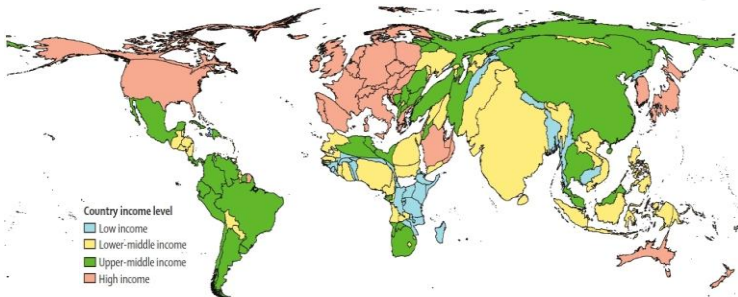
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Countries resized according to Internet use



Pratt M, Sarmiento OL, Montes F, et al, for the Lancet Physical Activity Series Working Group. Physical Activity 4 - The implications of megatrends in information and communication technology and transportation for changes in global physical activity. Lancet. 2012 Jul 21;380(9838):282-93.

Countries resized according to mobile phone use



Pratt M, Sarmiento OL, Montes F, et al, for the Lancet Physical Activity Series Working Group. Physical Activity 4 - The implications of megatrends in information and communication technology and transportation for changes in global physical activity. Lancet. 2012 Jul 21;380(9838):282-93.

Key messages

- Non-communicable diseases occur in low-income or middle-income countries.
- Physical inactivity accounting for several important shape people's
- Information an access have grown tremendously during the past decade; these technologies have the potential to affect physical activity.
- Trends in transport improved and negatively and
- On the basis of modelled the effect of ownership on p
- The direct and middle-income planned phys
- The greatest potential of supportive p (communication)
- There is a glaring mismatch between where the studies of physical activity interventions have been done and where the potential lies for population-level effects that will truly affect global health (low-income and middle-income countries)

„The implications of megatrends – key messages“

• „ On the basis of a review of publications about physical activity interventions, we modelled the effects of megatrends in internet access, mobile phone access, and car ownership on physical activity.“

• The direct and potentiating effects of mobile phone technology on physical activity in middle-income and upper-income countries are similar in size to the mean effects of planned physical activity interventions in community and clinical settings.

• The greatest potential (...) might be in the creation of supportive policies in sectors outside health (transportation, urban planning, and communication)“

Pratt M, Sarmiento OL, Montes F, et al, for the Lancet Physical Activity Series Working Group. Physical Activity 4 - The implications of megatrends in information and communication technology and transportation for changes in global physical activity. Lancet. 2012 Jul 21;380(9838):282-93.

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 Melges¹ and Brian W. Martin²

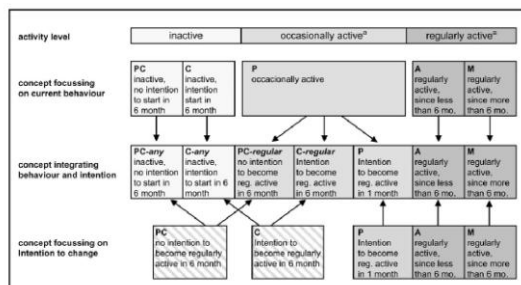


Fig. 1. Three concepts of the Stages of Change for physical activity. PC = precontemplation, C = contemplation, P = preparation, A = action, m = maintenance; -any: intention/no intention for any activity, -regular: intention/no intention for regular activity. *Regular physical activity defined according to behavior and target criteria under consideration.

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 Melges¹ and Brian W. Martin²

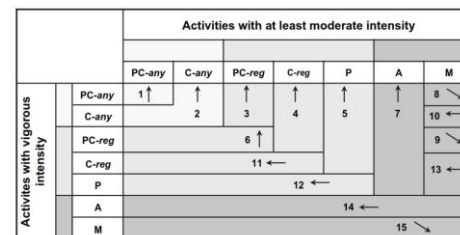


Fig. 2. Stage categorization of participants in a computerized counseling system for two physical activity behaviors. PC = precontemplation, C = contemplation, P = preparation, A = action, M = maintenance; -any: intention/no intention for any activity, -reg = intention/no intention for regular activity; b: participants motivated towards moderate intensity activities (Groups 1-7); f: participants motivated towards vigorous intensity activities (Groups 10-14); m: participants motivated to think about strength and flexibility training (Groups 8, 9 and 15).



www.active-online.ch

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-Diener¹, MPH; Charlotte Braun-Fahrländer^{2,3}, MD; Georg Bauer^{3,4}, MD, DrPH; Brian W Martin^{1,3}, MD, MPH

¹Swiss Federal Institute of Sport Magglingen, Magglingen, Switzerland

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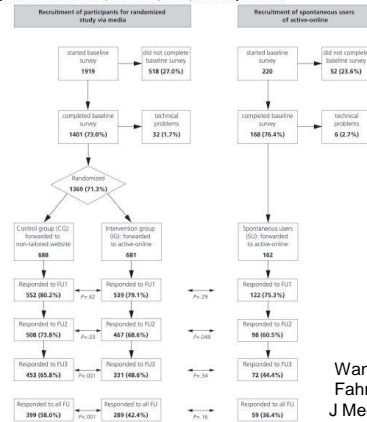
³Institute of Social and Preventive Medicine, University of Zurich, Zurich, Switzerland

⁴Center for Occupational and Organizational Sciences ETH Zurich, Zurich, Switzerland

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

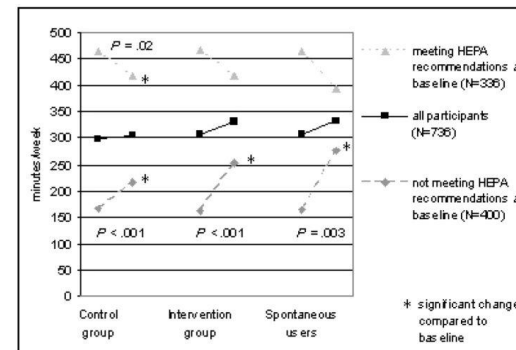
Effectiveness of Active-Online

Figure 4. Participant flow: recruitment channels, randomization, baseline, and follow-up assessments.



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

Effectiveness of Active-Online



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

Effectiveness of Active-Online

„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-Fahrlander C, Bauer G, Martin BW.
J Med Internet Res 2009; 11(3): e23

Table 1. Recorded website visits in the open access context (according to the six time periods from 2003-2009) and during the RCT

Open Access Program Use	Number of Visits Recorded in Database	Number of First Visits (% of Recorded Visits)	Number of First Visits Resulting in Registration (% of First Visits)
Time period (from April 23 to April 22 of the following year)			
2003-2004	42,626	41,699 (97.8%)	2263 (5.4%)
2004-2005	25,392	25,026 (98.6%)	784 (3.1%)
2005-2006	12,776	12,517 (98.0%)	592 (4.7%)
2006-2007	9847	9539 (96.9%)	610 (6.4%)
2007-2008	9689	9451 (97.5%)	513 (5.4%)
2008-2009	8343	8140 (97.6%)	322 (4.0%)
Total (2003-2009)	108,673	106,372 (97.9%)	5084 (4.8%)
RCT^a (May 1, 2006 to September 30, 2007)	2103	836 (39.8%)	836 (100%)

^aTrial participants were automatically registered within Active-online.

JOURNAL OF MEDICAL INTERNET RESEARCH
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-Diener¹, MPH; Georg Bauer^{3,4}, MD, DrPH; Charlotte Braun-Fahrlander², MD; Brian W Martin⁵, MD, MPH

JOURNAL OF MEDICAL INTERNET RESEARCH

Wanner et al

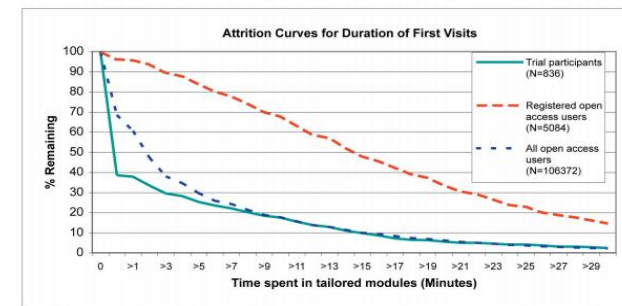
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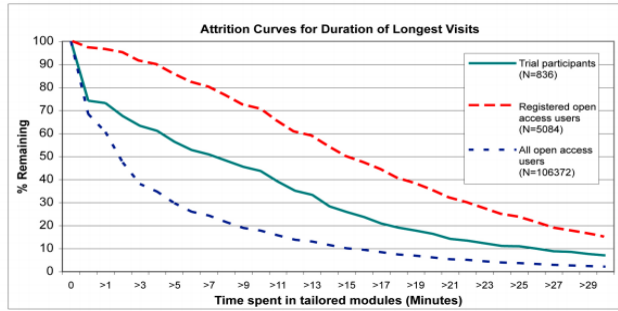
J Med Internet Res 2010 | vol. 12 | iss. 1 | e3

Figure 6. Attrition curves for the duration of the first visit for open access users and trial participants



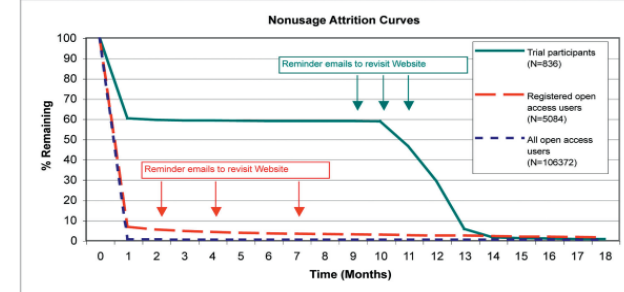
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Figure 7. Attrition curves for the duration of the longest visit for open access users and trial participants



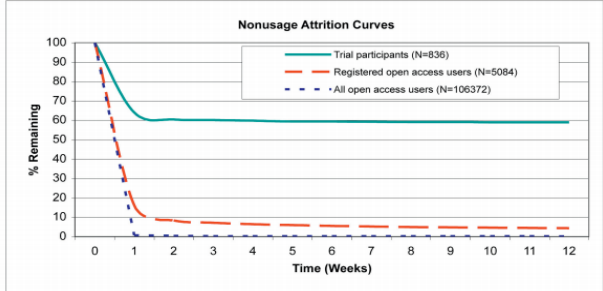
JOURNAL OF MEDICAL INTERNET RESEARCH
 Comparison of Trial Participants and Open Access Users of a Web-Based Physical Activity Intervention Regarding Adherence, Attrition, and Repeated Participation
 Victor Neeley¹, PhD, Eva Maria-Cheung¹, MPH, Georg Baur^{2,3}, MD, DPH, Charlotte Braun-Fallick^{4,5}, MD, Brian W. Knapik^{1,6}, MD, MPH

Figure 4. Nonusage attrition curves for open access users and trial participants over 18 months



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Figure 5. Nonusage attrition curves for open access users and trial participants over 12 weeks



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 Comparison of Trial Participants and Open Access Users of a Web-Based Physical Activity Intervention Regarding Adherence, Attrition, and Repeated Participation
 Victor Neeley¹, PhD, Eva Maria-Cheung¹, MPH, Georg Baur^{2,3}, MD, DPH, Charlotte Braun-Fallick^{4,5}, MD, Brian W. Knapik^{1,6}, MD, MPH

Curr Cardiovasc Risk Rep (2011) 5:340–349
 DOI 10.1007/s12170-011-0180-6

Public Policy Actions Needed to Promote Physical Activity

Bill Bellew · Adrian Bauman · Brian Martín · Fiona Bull · Victor Matsudo

HEAT for Cycling illustrated in its former Excel version

www.euro.who.int/hepa

HEAT for Cycling illustrated in its former Excel version

Step 1: enter your data (all users must fill in the red fields)

Number of trips per day	10'000
Mean trip length (km)	4

Step 2: check the parameters

Mean number of days cycled per year	124
Proportion of trips that are one part of a return journey (or 'round trip')	0.9
Proportion undertaken by people who would not otherwise cycle	0.5
Mean proportion of working age population who die each year	0.005847
Value of life (in Euros)	EUR 1'500'000
Discount rate	5.0%

Population parameters used to calculate results

Population that stands to benefit	2750
Mean proportion of working age population who die each year	0.005847
Expected deaths in the local population	16.08
Protective benefit, according to actual distance traveled	0.17
Lives saved	2.81

HEAT for Cycling illustrated in its former Excel version

Step 1: enter your data (all users must fill in the red fields)

Number of trips per day	10'000
Mean trip length (km)	4

Step 3: read the economic savings resulting from reduced mortality

Maximum annual benefit	EUR 4'209'000
Savings per km cycled per individual cyclist per year	EUR 0.81
Savings per individual cyclist per year	EUR 765
Savings per trip	EUR 3.39

Mean annual benefit:	EUR 3'136'000
Present value of mean annual benefit:	EUR 2'283'000

Based on the following assumptions (see user guide for details)

- 5% discount rate
- 5 year build-up of benefit and 1 year build-up of uptake, averaged over 10 years

HEAT Applications

- Since May 2011:
 - over 2.500 visits
 - from almost 60 countries
- Part of official transport assessment toolbox:
 - in 2 countries (Sweden, England)
 - under consideration in 1 more (France)
- Applied in project evaluations, status quo and scenario analyses



www.euro.who.int/HEAT



4. Primary health care systems

3. Urban design regulations and infrastructure

2. Transport policies and systems

1. „Whole-of-school“ programmes

5. Public education

6. Integrated community-wide programmes

7. „Sport for all“ systems and programmes

NON COMMUNICABLE DISEASE PREVENTION: Investments that Work for Physical Activity
A complementary document for The Toronto Charter for Physical Activity: A Global Call to Action

Whole-of-community approaches where people live, work and recreate have the opportunity to mobilize large numbers of people.

GAPA, a council of the International Society for Physical Activity and Health ISPAH
www.globalpa.org.uk

Review

Effect of school-based interventions on physical activity and fitness in children and adolescents: a review of reviews and systematic update

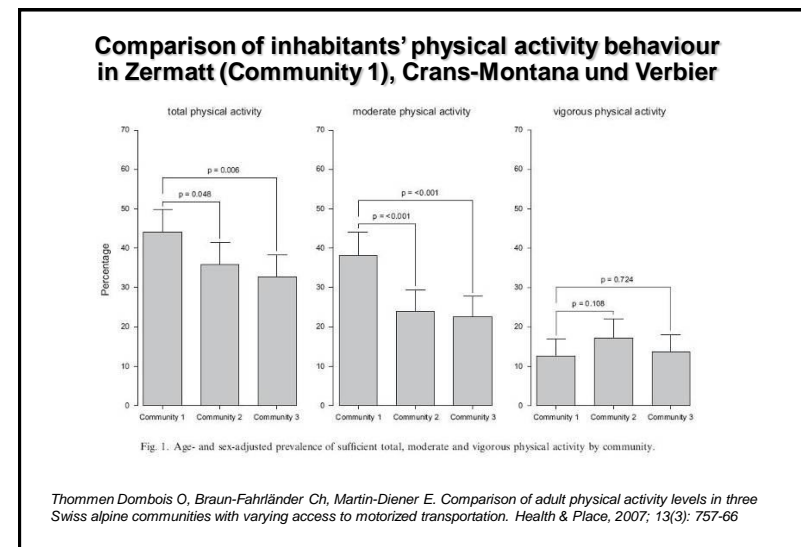
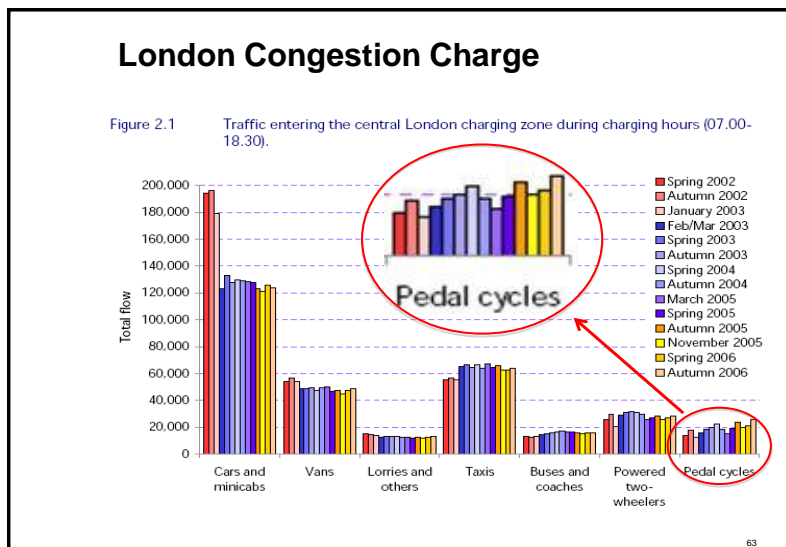
S Kriemler,^{1,2} U Meyer,¹ E Martin,² E M F van Sluijs,³ L B Anderson,^{4,5} B W Martin²

Br J Sports Med 2011;45:923-930. doi:10.1136/bjsports-2011-090186

Effects of J+S-kids teachers' training on physical activity during PE lessons in 7 to 9 year old children
Short title: Physical activity during PE lessons in J+S-kids

Kids Up!

Physical activity behaviour, coordinative abilities and injuries in 7 to 9 year old children



BMJ

BMJ 2012;344:e1389 doi: 10.1136/bmj.e1389 (Published 26 March 2012) Page 1 of 17

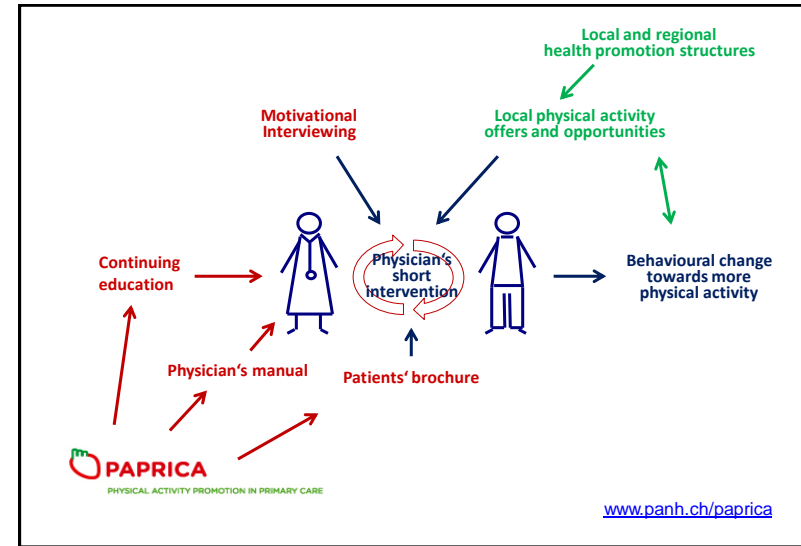
RESEARCH

Effectiveness of physical activity promotion based in primary care: systematic review and meta-analysis of randomised controlled trials

OPEN ACCESS

Gillian Orrow academic clinical fellow in general practice, Ann-Louise Kinmonth foundation professor of general practice, Simon Sanderson senior clinical research associate, Stephen Sutton professor of behavioural science

“CONCLUSIONS: Promotion of physical activity to sedentary adults recruited in primary care significantly increases physical activity levels at 12 months, as measured by self report (...).”



SGSM
SSMS
Schweizerische Gesellschaft für Sportmedizin
Société suisse de médecine du sport
Società Svizzera di medicina dello sport

Sportmedizin und Reha Schweiz Kongress 2012
Congrès Suisse de Médecine
du Sport et de Réadaptation 2012
Congress Centre Kursaal Interlaken 10./11. Oktober 2012

KOLLEGIUM FÜR HAUSARZTWESEN
COLLEGE DE MÉDECINE DE PREMIER RECOURS
COLLEGO DI MEDICINA DI BASE
COLLEGE OF PRIMARY CARE MEDICINE

PAPRICA
PHYSICAL ACTIVITY PROMOTION IN PRIMARY CARE

BEWEGUNGSFÖRDERUNG DURCH DEN HAUSARZT IN DER SCHWEIZ

Pressemitteilung, 17.10.12

PAPRICA
PHYSICAL ACTIVITY PROMOTION IN PRIMARY CARE

PROMOTION DE L'ACTIVITÉ PHYSIQUE PAR LE MÉDECIN DE PREMIER RECOURS EN SUISSE

Communiqué de presse, 17.10.2012

www.paprica.ch
www.panh.ch/presse
www.sgsam.ch

Potential of population wide campaigns

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. Bauman⁴

Potential of population wide campaigns

Abstract

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

Message recall and pedometer ownership were associated with increased odds of self-reported walking.

The effectiveness of health promotion to increase walking may be enhanced by combining motivational health-related messages with the

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

Introduction

on of the public health burden posed by risk factors for chronic disease, the World Health Organization developed a Global Strategy on Diet and Physical Activity in 2004. The goal of the strategy was to recommend population-wide campaigns with the goal of increasing physical activity. In 2002, the Institute of Medicine (IOM) [8]



www.agitasp.org.br

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Time Trends in Physical Activity in the State of São Paulo, Brazil: 2002–2008

VICTOR K. R. MATSUDO¹, SANDRA M. MATSUDO¹, TIMÓTEO L. ARAÚJO¹, DOUGLAS R. ANDRADE¹, LUIS C. OLIVEIRA¹, and PEDRO C. HALLAL²

¹Physical Fitness Research Center, CELAFISCS, São Caetano, BRAZIL; and ²Federal University of Pelotas, Pelotas, BRAZIL

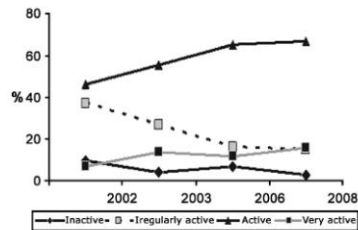


FIGURE 1—Trends of physical activity categories in the state of São Paulo, Brazil (2002, 2003, 2006, and 2008).

Med Sci Sports Exerc. 2010 Dec;42(12):2231-6.

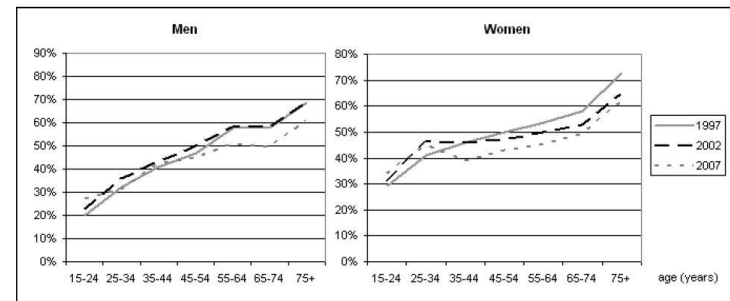
71

ALLESZ HOP
Bewegen. Mit Spass.

1997-2008

Population impact of a nation-wide physical activity programme with 200'000 participants

<1 „sweat episodes“ during leisure time reported in the Swiss Health Survey (1997: n=12'999; 2002: n=19'698; 2007: n=18'745)



Wanner M, Martin-Diener E, Bauer G, Stamm HP, Martin BW. Brit J Sport Med 2011.

Act Now on Physical Activity for Better Health, Wellbeing and the Prevention of NCDs

Three key documents:

- The Toronto Charter for Physical Activity: A global call for action (May 2010) - A concise summary of the call for national action on physical activity. A framework for action relevant to all countries.
- NCD Prevention: Investments that Work for Physical Activity (Feb 2011) - Over 20 specific evidence-based, cost-effective actions relevant for all countries that are the best investments to increase physical activity.
- The Lancet Special Series on Global Physical Activity (Jan 2012) - This special edition includes 5 commentaries and 6 papers that explore the burden of inactivity, the global levels of inactivity, understanding participation, effective interventions and global action.

Access at: www.gloalpa.org.uk Access at: www.thelancet.com

Access at: www.who.int/diabetes/physical_activity or email: flama.bell@wva.edu.au

PREVENTION OF NCDs: Why Physical Activity?

Physical inactivity is the fourth leading cause of death globally and non-communicable diseases (NCDs) worldwide. Increasing population-wide participation in physical activity is a priority in most high and middle-income countries and is a high-priority priority in lower-income countries. There is the need for all countries to develop, implement, programme and evaluate interventions that inform, motivate and support individuals and communities to take action to meet their own needs, accessible and equitable. Actions to boost health, environment, transport, sport, culture and the economy.

KEY MESSAGES FROM GAPA

1. There is enough evidence on health and other benefits of physical activity to act now.
2. We use **global physical activity guidelines** based on international scientific evidence and consensus.
3. We **can measure** and have tested tools to assess **population levels** of physical activity.
4. We **now need to act on increasing problems** - **NCDs** high-income countries, **NCDs** and low and middle-income countries, **NCDs** participants in countries experiencing rapid urbanisation.
5. We **have solutions** - across different settings and these require cross-sector partnerships.
6. **All countries can and should increase** their **action** to increase physical activity across the life span.
7. **It works** - we have examples of effective large-scale national strategies on physical activity to **beat NCDs** contact.

GAPA is the Advisory Council for the International Society of Physical Activity and Health. GAPA aims to support an increase in commitment to national level action on physical activity and encourage governments and international partners to develop, implement and evaluate policies, programmes, services to support physical activity.

GAPA, a council of the International Society for Physical Activity and Health ISPAH
www.globalpa.org.uk

University of Zurich
Institute of Social and Preventive Medicine

BE ACTIVE 2012

4th International Congress on Physical Activity and Public Health
Australian Conference of Science and Medicine in Sport
National Sports Injury Prevention Conference
OCT 31 - NOV 3, 2012 SYDNEY AUSTRALIA

Understanding physical activity and sedentary behaviour in 2020 – will we know it all and where do we go from here?

Brian Martin, MD MPH
Physical Activity and Health Unit

Panel session: *Understanding physical activity and sedentary behaviour at BE ACTIVE 2012- ICPAPH, Sydney, 03.11.2012*

Physical activity and sedentary behaviour for prevention and public health in 2020

- ↑ Need for interventions and strategies in different cultural contexts and populations subgroups
- ↑ Demand for accountability and evidence-based action
- ↑ Integration in the fight against non-communicable diseases

Understanding PA and sedentary behaviour - still needed in 2020 or time to move on?

- ↑ Need for state-of-the art correlate and determinants research in different cultural contexts and populations subgroups
- ↑ Integration with evaluation research and monitoring systems
- ↑ Identification of similarities and differences in public health and patient-oriented approaches

For population health, the need for more physical activity is clear

- What are determinants of physical activity? ✓
- What do we know about the role of determinants? ✓
- What do we know about the effectiveness of interventions? ✓
- How do we communicate the effectiveness of interventions? ✓
- Where do we go from here?
 - State-of-the-art research in different contexts
 - Integration with evaluation research and monitoring
 - Public health and patient-oriented approaches