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# The scientist or the demagogue – who is driving the development? The role of evidence in physical activity promotion

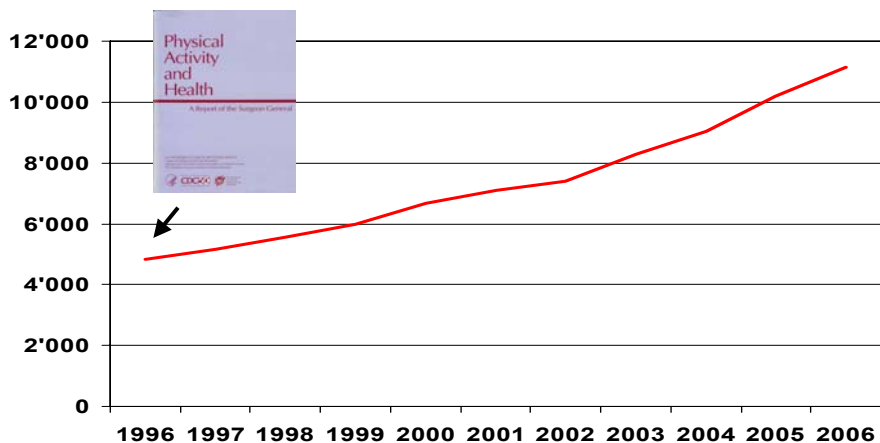
**Brian W. Martin**

**Physical Activity and Health Branch,  
Swiss Federal Institute of Sport Magglingen**

*2<sup>nd</sup> International Conference on Physical Activity and Public Health, Amsterdam, 16.04.2008*

## Physical activity related publications in the Pubmed database

*MeSH terms „physical activity“ OR „exercise“ OR „sport“ OR „sports“*



www.pubmed.org, 22.08.2007

**Hillsdon M, Cavill N, Nanchahal K, Diamond A, White IR.  
National level promotion of physical activity:  
results from England's ACTIVE for LIVE campaign**

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„There is no evidence that ACTIVE for LIVE improved physical activity, either overall or in any subgroup.“

J Epidemiol Community Health 2001; 55 (19): 755-761

Evidence

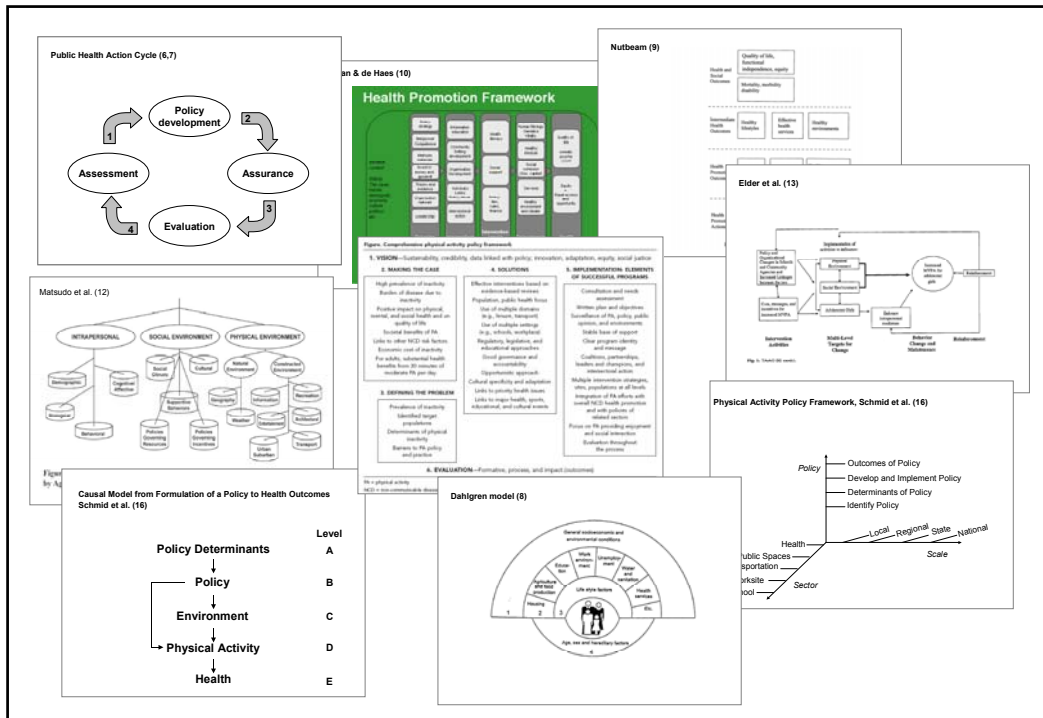


Action



Physical Activity  
Behaviour

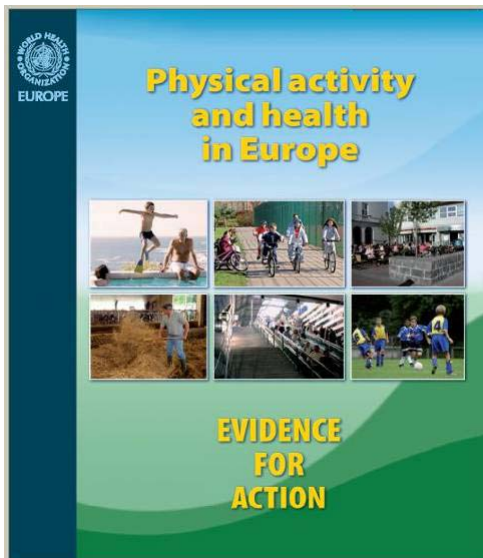
# Why another framework or another model ?



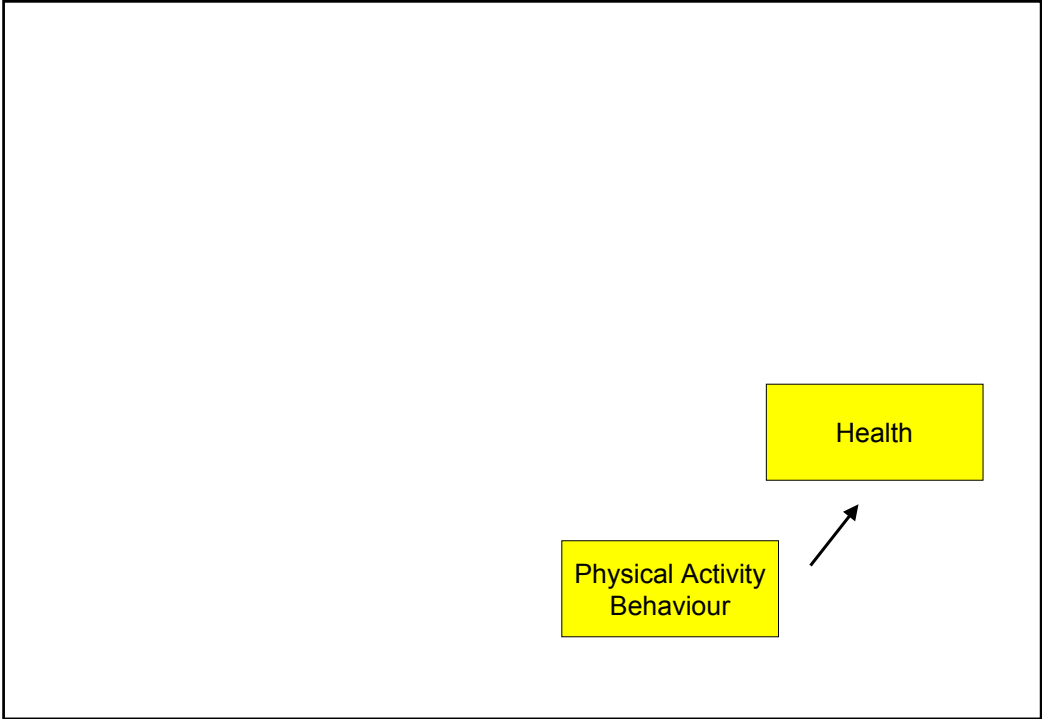
**Because we want to be understood  
by people outside our field**

*We are competing with slogans like  
“it’s all price and availability”*

**Because we want to be understood**



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



**1. Why is physical activity important for health?**



Although the effects of diet and physical activity on health often interact, particularly in relation to obesity, there are additional health benefits to be gained from physical activity that are independent of nutrition and diet...  
 -- Global Strategy on Diet, Physical Activity and Health (8)

In 2002, two thirds of the adult population (aged 15 years and over) in the European Union (EU) did not reach recommended levels of activity (8). Across the WHO European Region as a whole, one in five people takes little or no physical activity, with higher levels of inactivity in the eastern part of the Region. Physical inactivity is estimated to cause 600 000 deaths per year in the Region (5–10% of total mortality, depending on countries) and leads to a

loss of 5.3 million years of healthy life due to premature mortality and disability per year (9).

Physical activity is a critical public health issue because:

- adequate physical activity is important for many aspects of health; and
- few people participate in regular health-enhancing physical activity.

**Health effects**

Physical activity has major beneficial effects on most chronic diseases (Table 2). These benefits are not limited

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

## 2. What is known about current levels of physical activity and inactivity?



Only in recent years have internationally comparable data on levels of physical activity across the European Region begun to be collected. Thus, few comprehensive figures are available about trends and prevailing patterns of physical activity in many countries.

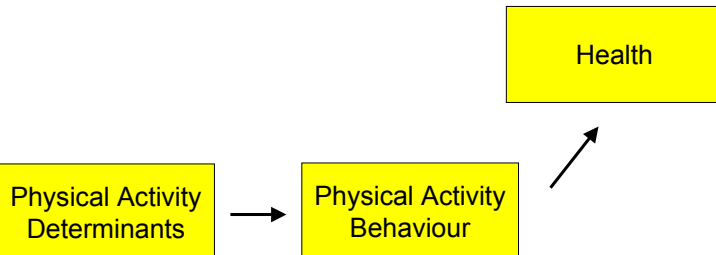
### How active are people in the European Region?

#### Current activity levels

An analysis of a survey of EU countries in 2002 (8) showed that two-thirds of the adult population did not reach recommended levels of physical activity. On average, only 31% of respondents reported sufficient physical activity (Fig. 1).

A survey of health behaviour among young people aged 11, 13 and 15 years across Europe, in 2001–2002, measured participation in physical activity (54). It found that about a third (34%) reported enough physical activity to meet current guidelines: one hour or more of at least moderate intensity on five or more days a week. In most countries, boys were more active than girls and activity declined with age in both sexes. Activity varied widely between countries, however, ranging from 11% of girls and 25% of boys in France to 51% of girls and 61% of boys in Ireland among 11-year-olds. Similar variations existed among all age groups; for example, the proportion of active 15-year-old boys was 49% in the Czech Republic and 25% in Portugal.

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



### 3. What factors and conditions influence physical activity?



Why are some people active and others not? A complex range of factors – in the individual and the micro and macro environments (Fig. 2) – influences the likelihood that an individual group or community will be physically active. Factors in the macro environment include general socioeconomic, cultural and environmental conditions. Influences from the micro environment include the conduciveness of living and working environments to physical activity, and the supportiveness of social norms and local communities. Such individual factors as attitudes towards physical activity, belief in one's ability to be active or awareness of opportunities in daily life can influence the likelihood that someone will try a new activity (60).

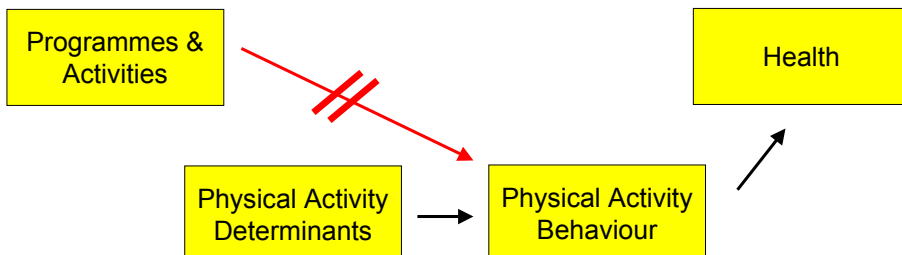
Some of the determinants of active living – such as the weather or people's genetic make-up – are difficult or impossible to modify. A combination of short- and long-term action, however, can be used to tackle most factors. Bringing these actions together in a comprehensive strategy should be a key priority for policy-makers (see spotlight on Finland).

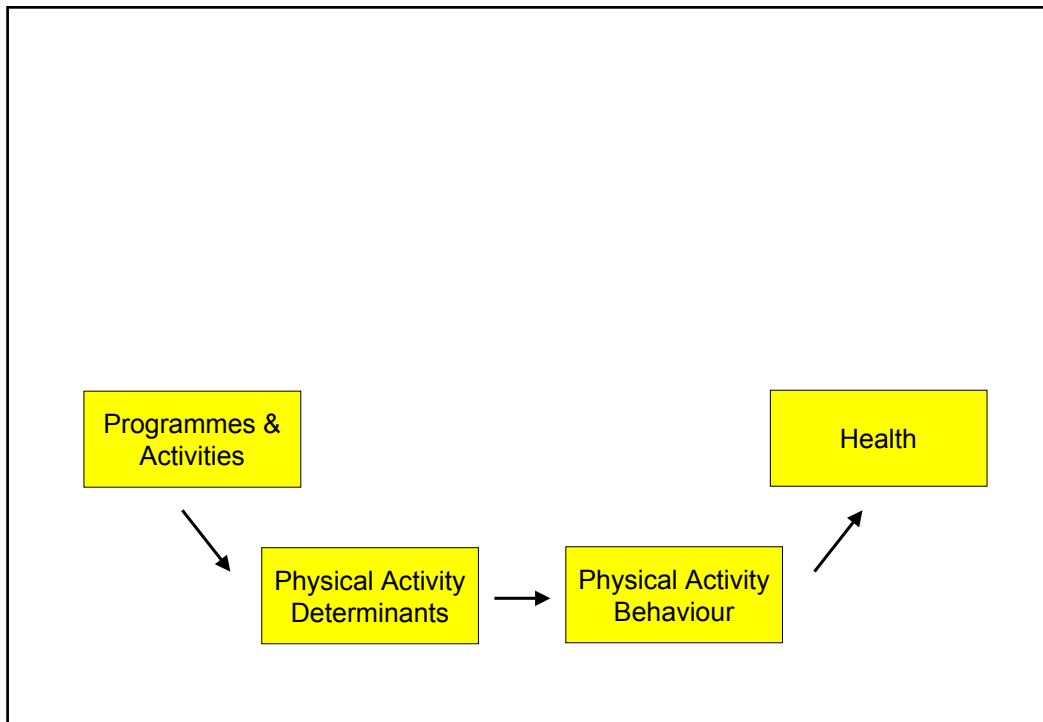
#### Macro environment

**Socioeconomic status**  
Socioeconomic conditions can affect physical activity in many ways. Participation in leisure-time physical activity tends to be directly related to socioeconomic status. Poorer people

11

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





#### 4. What can the health sector and others do to increase physical activity?



##### Strategies

Action on physical activity should be based on a number of key principles, adapted from a Swedish plan (7):

1. taking a population health approach;
2. using a broad definition of physical activity;
3. engaging multiple sectors;
4. improving the environment for physical activity;
5. working at multiple levels;
6. basing programmes on the stated needs of the population;
7. improving equity; and
8. using the best available evidence.

##### Taking a population health approach

Physical activity promotion should focus on the health needs of the population as a whole, rather than particular high-risk groups. Creating more opportunities for activity for everyone and improving the environment to support it are likely to lead to greater public health benefit than programmes that target only small groups. Multilevel, coordinated action is urgently needed to improve participation in health-enhancing physical activity (see spotlight on Spain).

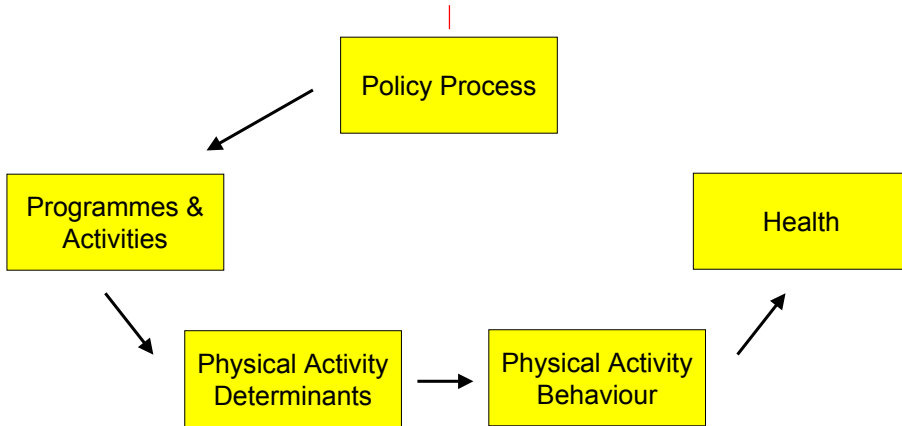
##### Using a broad definition of physical activity

Using a broad definition offers far greater potential to engage a range of sectors. Physical activity includes

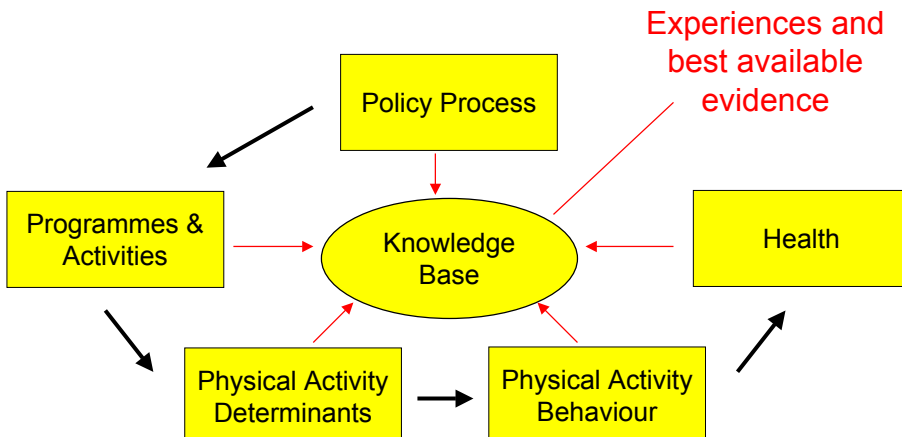
Cavill N, Racioppi F, Kahlmeier S. Physical Activity and Health in Europe. Evidence for Action. Copenhagen: WHO, 2006.

“Policy outcomes are formal written codes, regulations or decisions bearing legal authority, written standards that guide choices; guidelines or unwritten social norms”

Schmid TL, Pratt M, Witmer L. J Phys Act Health, 2006, 3, S20-S29



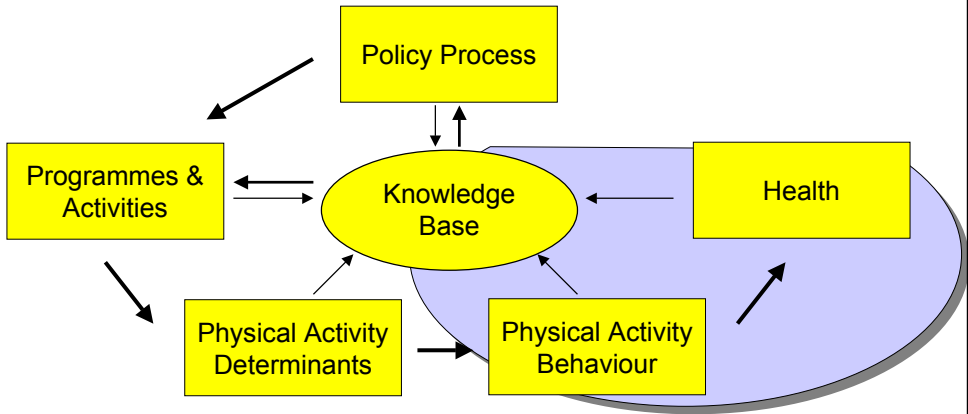
## Framework for evidence-based HEPA Promotion





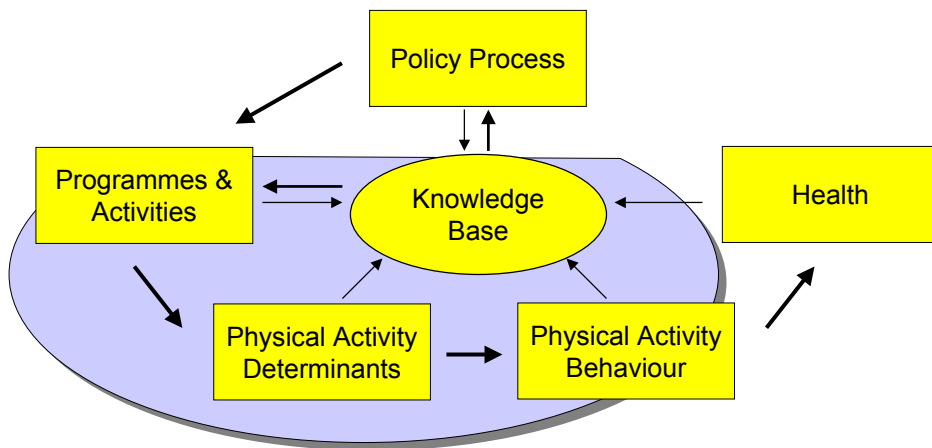
# Framework for evidence-based HEPA Promotion

Type I evidence - "Why should something be done?"



# Framework for evidence-based HEPA Promotion

Type II evidence - "What should be done?"



# Impact of ParticipACTION - Past and Present

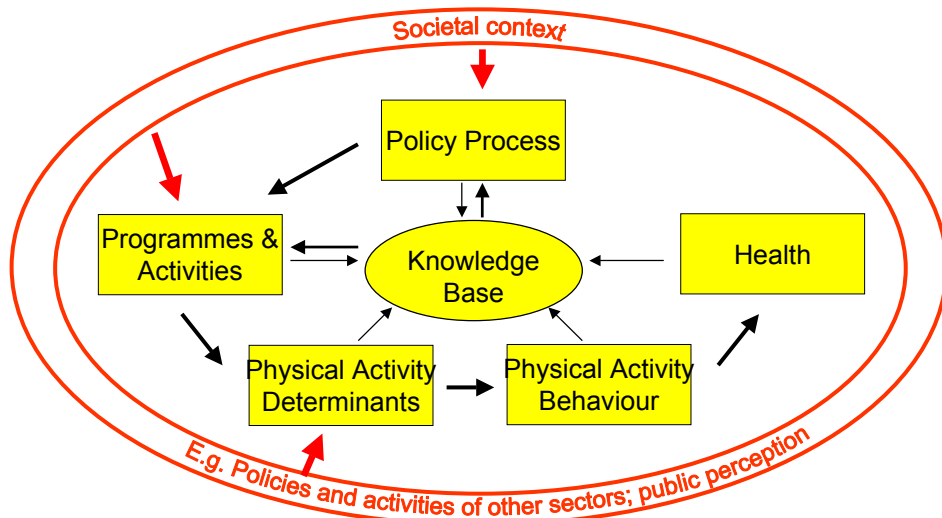
## Conclusions: 35 years later

- Clear role for serial mass campaigns to promote PA
- 1971-2001
  - *Short term impacts* - recall of brand name
  - *Intermediate impacts* - outcome expectancy, attitude, decision balance, intention
  - *Longer term impacts* - maintenance or increase to sufficient PA (12-month activity).
- 2007-2008
  - *Short term impact* – campaign recall
  - \$\$\$\$\$ Evaluation of impacts using standardized methods is essential



Cora Craig, Adrian Bauman, Bill Reger-Nash in ICPAPH08  
Session: Physical activity promotion in the general population

## The HEPA Europe Framework



# Need for type III evidence in HEPA promotion

## Type I evidence

Disease ← risk factor (e.g. physical inactivity)

*“Why should something be done?”*

## Type II evidence

Intervention → prevalence of risk factor

*“What should be done?”*

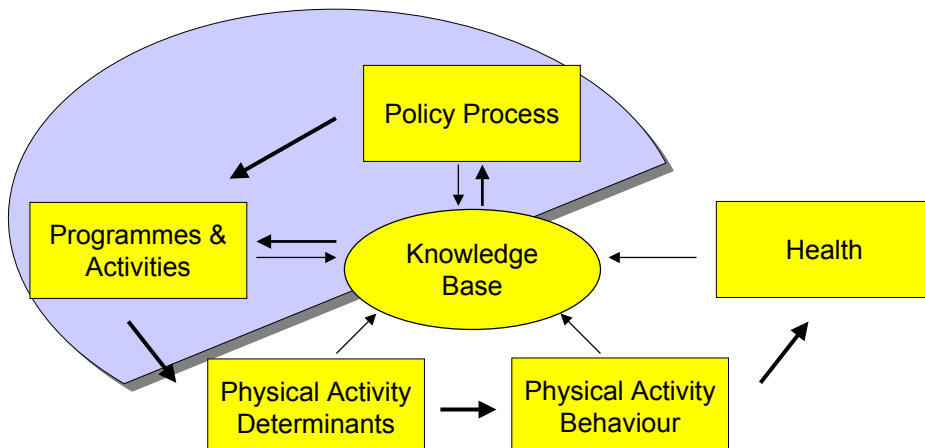
## Type III evidence

Advocacy → policy and intervention

*“How can be done what should be done?”*

## Framework for evidence-based HEPA Promotion

Type III evidence - *“How can be done what should be done?”*



## Evaluation of Finland's HEPA policies and programmes

Table 2. Evaluations of Finland's policies and programs related to health-enhancing physical activity

Object of evaluation	Main findings
First Sports Act, Juppilä 1995 <sup>a</sup>	Summary of several evaluations; status, stability, and resources increased, planning and division of tasks improved, effect of participation in sports and exercise not known
Quantity and quality of sites and related services, Suomi 2000 <sup>b</sup>	Availability, accessibility, and affordability to various population groups rather good except persons with disabilities
Quantity and quality of outdoor recreation sites and connected services, Suomen Latu 2002 <sup>c</sup>	Number of sites rather sufficient, need to improve condition, quality, and marketing
Perceptions of the success of the public physical activity promotion actions, Sahlh and Kannas 2002 <sup>d</sup>	Policies perceived by the people as at least satisfactory
Finnish policy on health promotion, international group of experts 2002 <sup>e</sup>	Physical activity promotion not mentioned
Research related to sports and exercise, international group of experts 2002 <sup>f</sup>	Health-related research very good from both scientific and practical point of view
Policy and actions promoting cycling recommended in the program of 1993, working group 1999 <sup>g</sup>	Great part of the recommended measures had materialized or were progressing; substantial decrease of fatal accidents; effect on amount of cycling not known
Finland on the Move promotion program, Pyykkö et al. 1995 <sup>h</sup>	Favorable results (support of local ideas and actions by "seed money" and other means, networking, multisectoral actions, etc.); effect on participation in physical activity not known
Fit for Life program, Anttilä 1999 and Helakorpi et al. 2000 <sup>i</sup>	Favorable and important experiences, the goal of increased participation in the target population was met
Action Program for Finnish Heart Health, Reunanen 2003 <sup>j</sup> ; Recommendations for local promotion of health-enhancing physical activity	Substantial progress in the direction of the recommended actions especially concerning physical activity; the recommendations for local promotion of physical activity were rather poorly known; influence on physical activity not known

Vuori I, Lankenau B, Pratt M. Physical Activity Policy and Program Development: The Experience in Finland. Public Health Reports 2004; 119: 331-345

## Evaluation of Finland's HEPA policies and programmes

Policy and actions promoting cycling recommended in the program of 1993, working group 1999<sup>g</sup>

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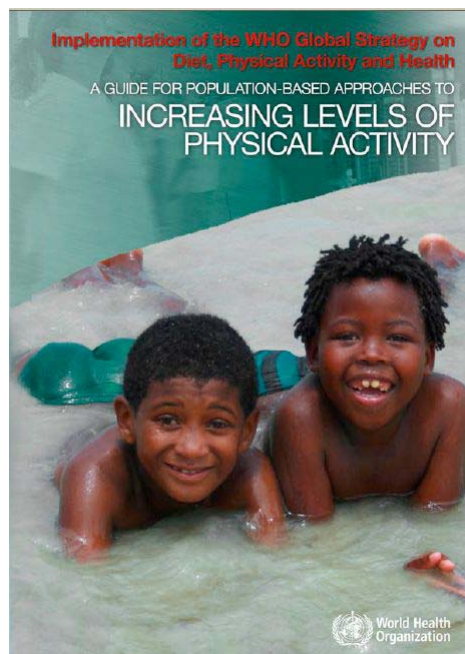
Vuori I, Lankenau B, Pratt M. Physical Activity Policy and Program Development: The Experience in Finland. Public Health Reports 2004; 119: 331-345

## Barriers in implementing PA promotion strategies

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- Lack of governmental support
- Low profile of PA and poor understanding of its impact
- Lack of infrastructure
- Lack of leadership
- Inexperience in partnerships
- Competing demands
- Lack of resources and funding
- Need for training, guidelines and programme examples

Bull CF, Pratt M, Shephard RJ, Lankenau B. Implementing national population-based action on physical activity – challenges for action and opportunities for international collaboration. *Promotion & Education* 2006; 13: 127-132



2007

## Important elements of successful policies and plans

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- High-level political commitment
- Integration in national policies
- Identification of national goals and objectives
- Overall health goals
- Objectives
- Funding
- Support from stakeholders
- Cultural sensitivity
- Integration of physical activity within other related sectors
- A coordinating team
- Multiple intervention strategies
- Target whole population as well as specific population groups
- Clear identity
- Implementation at different levels within “local reality”
- Leadership and workforce development
- Dissemination
- Monitoring and evaluation
- National physical activity guidelines



## The role of evidence in important elements of policies

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- Integration of physical activity within other related sectors
- National physical activity guidelines



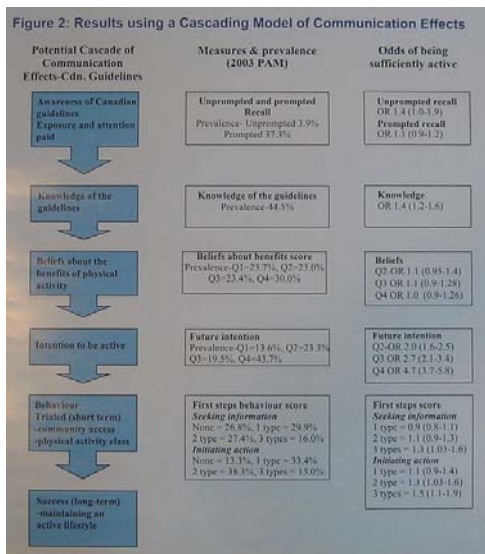
## The role of evidence in national physical activity guidelines

- Role of evidence obvious for development of guidelines
- Question in discussion: „Have the recommendations had any impact?“
- Bill Kohl: „ The demonstration of lack of evidence during the elaboration of the recommendations has fostered creation of new science“
- Neville Owen: „ If we dig up the right data, we will dig up a lot of change at the intermediate level, not at the behavioural level“

ICPAPH 2008 Symposium: Development of National Guidelines for Physical Activity and Health –Experiences from Canada and the United States.

## The role of evidence in national physical activity guidelines

Figure 2: Results using a Cascading Model of Communication Effects



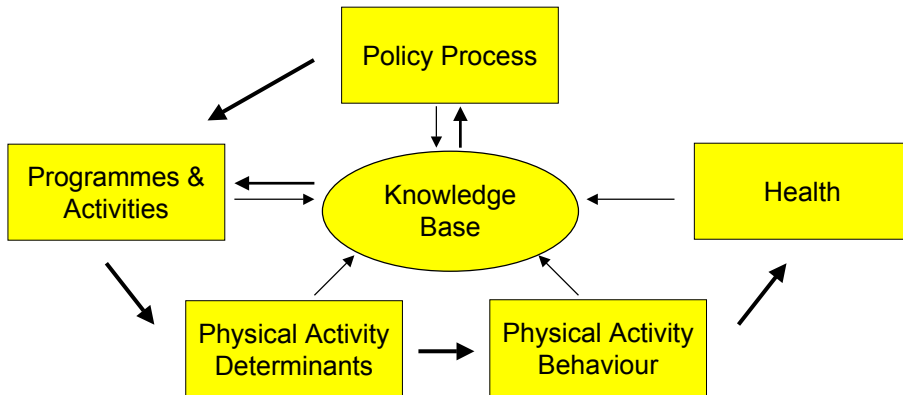
Systematic assessment of impact of release of national recommendations in Canadian Physical Activity Guidelines Project

ICPAPH 2008 poster: Christine Cameron C, Craig CL, Bull FC, Bauman A. The potential effects of national physical activity guidelines: The Canadian experience.

Mark Tremblay in ICPAPH 2008 Symposium: Development of National Guidelines for Physical Activity and Health –Experiences from Canada and the United States.

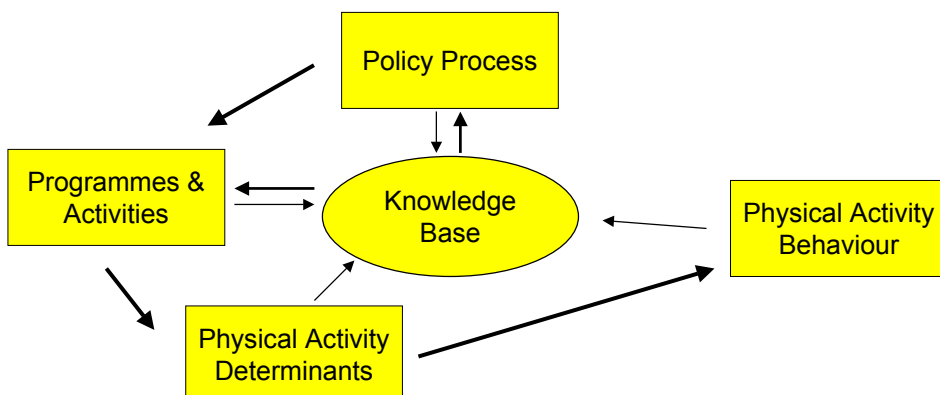
## Framework for evidence-based HEPA Promotion

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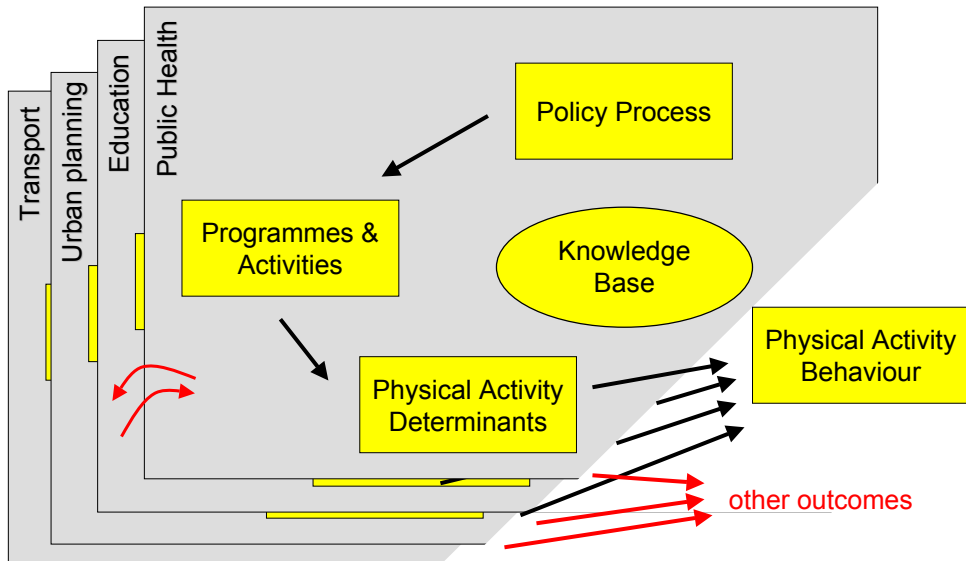


## Framework for evidence-based PA Promotion

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## Framework for evidence-based PA Promotion



## Examples of good practice in multi-sectoral approaches

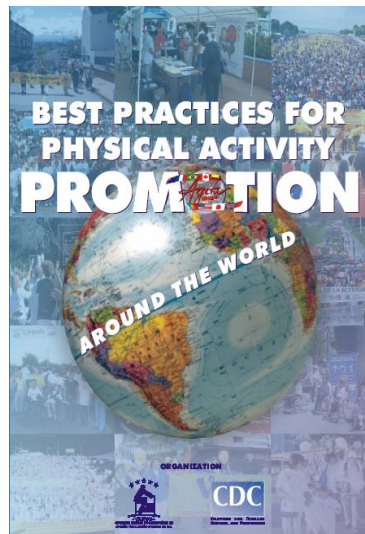
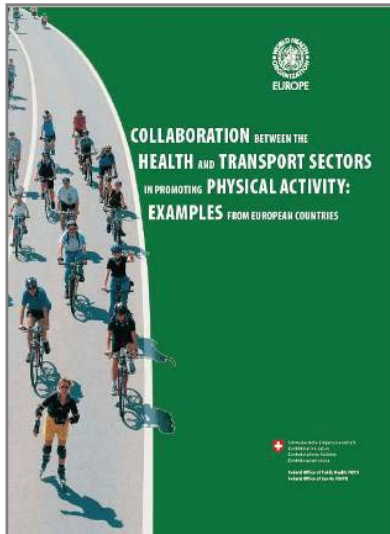
Sorocaba, Sao Paulo

Cortesia do Dr Vitor Lippi



Victor Matsudo in ICPAPH 2008 Symposium: Large scale and regional physical activity networks: getting the message through in developed and developing countries

## Examples of good practice in multi-sectoral approaches



## The role of evidence in multi-sectoral approaches

*„However, promoting and sustaining engagement between sectors is a core priority for improved population outcomes. The need for this engagement is prompted by the recognition that the evidence required to design, implement and evaluate public health interventions is held sometimes by geographers, town planners and agricultural scientists, for example, for whom public health practice is as much a mystery as pest control to a public health practitioner.“*

Armstrong R, Doyle J, Lamb C, Waters E. Multi-sectoral health promotion and public health: the role of evidence. Cochrane update. Journal of Public Health 2006; 28: 168–172

## The role of evidence in multi-sectoral approaches



Fig. 1 Know the place of evidence.


Armstrong R, Doyle J, Lamb C, Waters E. Multi-sectoral health promotion and public health: the role of evidence. Cochrane update. Journal of Public Health 2006; 28: 168–172

## The role of evidence in multi-sectoral approaches

**Social Mobilization Impact**

Social Perception of the Risk =

Relative Risk x Indignation



**Social Mobilization**

Victor Matsudo in ICPAPH 2008 Symposium: Large scale and regional physical activity networks: getting the message through in developed and developing countries

## The role of evidence in multi-sectoral approaches

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Bogotá: Very impressive physical activity infrastructure linked to public transport. Excellent evidence-base. Efforts for reduction of active transport infrastructure failed public of public resistance. Continuing improvement of infrastructure.

*But... "Health and physical activity promotion were not primary factors guiding the change"*

*"Range of different reasons, quality of life and popularity important ones"*

Tom Schmid. Evidence based policy: Using qualitative and quantitative data to assess policy outcomes and guide policy development in Bogotá Colombia. In ICPAPH08 Session: Evidence based policy & practice.

## The role of evidence in multi-sectoral approaches



NICE guidance development as a multi-step process (similar to CDC community guide) including stakeholder involvement and fieldwork testing.

*"Currently there is insufficient evidence to judge the impact of the evidence-based NICE guidance on the national level"*

Fiona Bull. Evidence-based guidelines: policy and politics. In ICPAPH08 Symposium: Producing evidence-based guidelines on physical activity: a look behind the scenes

## The role of evidence in multi-sectoral approaches



Qualitative study with 79 individuals from different sectors on the usefulness of the 2008 NICE guidelines.

*“There is a risk of stating the bleeding obvious for our cross-sectoral partners”*

*→ issue of differences in experiences, knowledge and standards between sectors*

Nick Cavill. Turning evidence into guidance: exploring the views of stakeholders. In ICPAPH08 Symposium: Producing evidence-based guidelines on physical activity: a look behind the scenes

## What do other sectors expect from us?

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*“Evidence on best practice and effectiveness of interventions”*

*“Funding”*

Radomira Pliskova. Health promotion through implementation of the National Cycling Strategy and programs related to public health enhancement: the case of Czech Republic. In ICPAPH08 Symposium: Physical activity promotion: developments and directions for policy development in Europe

## The role of evidence in multi-sectoral approaches

Kuwait is in the process of developing a national physical activity plan. A National PA Committee has been formed and stakeholders from different sectors of society were very motivated to participate in it.

What were the reasons for this surprisingly great interest?

- *“Immersion in arguments for PA promotion*
- *Credibility of message and messenger*
- *Exposure to international trends and developments”*

What will be the key factor for budgetary decisions?

*“Economic estimates”*

Jasem Ramadan. History of Physical Activity Promotion in Gulf Cooperation Council Countries: The Kuwait Model. In ICPAPH08 Symposium: Physical Activity in the Gulf Cooperation Council Countries

## The role of evidence in multi-sectoral approaches

**Health Economic Assessment Tool for Cycling**

Fill in the **red** fields in Step 1, with your values and read the corresponding results in Step 3. You can use the **default parameters** specified in Step 2 or **adjust them according to your needs**. The population parameters used to calculate the results are displayed at the bottom of the sheet.

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

Number of trips per day	10500
Mean trip length (km)	4

**Step 2: check the parameters**

Mean number of days cycled per year	100
Proportion of trips that are one part of a return journey (or 'round trip')	0.5
Proportion undertaken by people who would not otherwise cycle	0.5
Mean proportion of working age population who die each year	0.000147
Value of life (in Euros)	EUR 7,000,000
Discount rate	5%

**Step 3: read the economic savings resulting from reduced mortality**

<b>Maximum annual benefit</b>	EUR 7,000,000
Savings per km cycled per individual cycler per year	EUR 100
Savings per individual cycled per year	EUR 700
Savings per trip	EUR 2.10

**Present value of mean annual benefit**

Present value of mean annual benefit	EUR 7,000,000
Based on:	EUR 7,000,000
5% discount rate	
5 year build-up of benefit and 1 year build-up of costs, averaged over 10 years	

**Population parameters used to calculate results**

Population that cycle to benefit	2700
Mean proportion of working age population who die each year	0.000147
Expected deaths in the target population	39.66
Inclusive benefit, according to actual distance travelled	0.17
Value of life	7,000,000

**Notes on how to use this tool.** For additional instructions, hold the mouse over any red triangle.

**Notes on how to use this tool.** For additional instructions, hold the mouse over any red triangle.

**Notes on how to use this tool.** For additional instructions, hold the mouse over any red triangle.

Harry Rutter. Economic appraisal of walking and cycling. In ICPAPH08 Symposium: Economic evaluation of physical activity interventions.



Mike Pratt. Using Cost and Cost Effectiveness Analyses for Physical Activity and Public. ICPAPH08 keynote lecture.

## **The role of evidence in physical activity promotion – An attempt at conclusions I**

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- Type I evidence (*“Why should something be done?”*) is essential for putting and keeping physical activity on the public health agenda
- Type II evidence (*“What should be done?”*) will be the key to the optimal use of resources
- Type III evidence (*“How can be done what should be done?”*) will decide about long term population level success
- Cultural differences are more relevant for type II and III than for type I evidence

## **The role of evidence in physical activity promotion – An attempt at conclusions II**

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- Adhering to our standards is essential for acceptance within our peer group, but also for external credibility
- We must continue to learn about the experiences, knowledge and standards in our partner sectors
- Find partners with high credibility in partner sectors
- Scientific evidence can only lead to change if embedded in comprehensive physical activity advocacy\*

\*Trevor Shilton. Promotion and Education 2006; 8: 118-126.

## **The role of evidence in physical activity promotion – An attempt at conclusions III**

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- The political process is usually not a continuous and only seldom a smooth one → have your evidence ready when a window of opportunity opens up
- As stakeholders, the media and the public become more educated, the importance of scientific evidence will increase
- We must never forget what it's all about