Physical Activity Interventions for NCD prevention and health promotion:

Settings & Evaluation…"What Works"

Estelle V. Lambert, Research Unit for Exercise Science & Sports Medicine, University of Cape Town Vicki.lambert@uct.ac.za CDC/IUHPE *Building Capacity for CVD Health Promotion and Chronic Disease Prevention and Control in Africa*,

IUHPE
INTERNATIONAL UNION FOR HEALTH PROMOTION AND EDUCATION
www.iuhpe.org

Objectives of this session:

- to briefly revise some important effects of of physical activity on the pathophysiological processes of disease;

- to consider physical activity interventions within a policy framework;

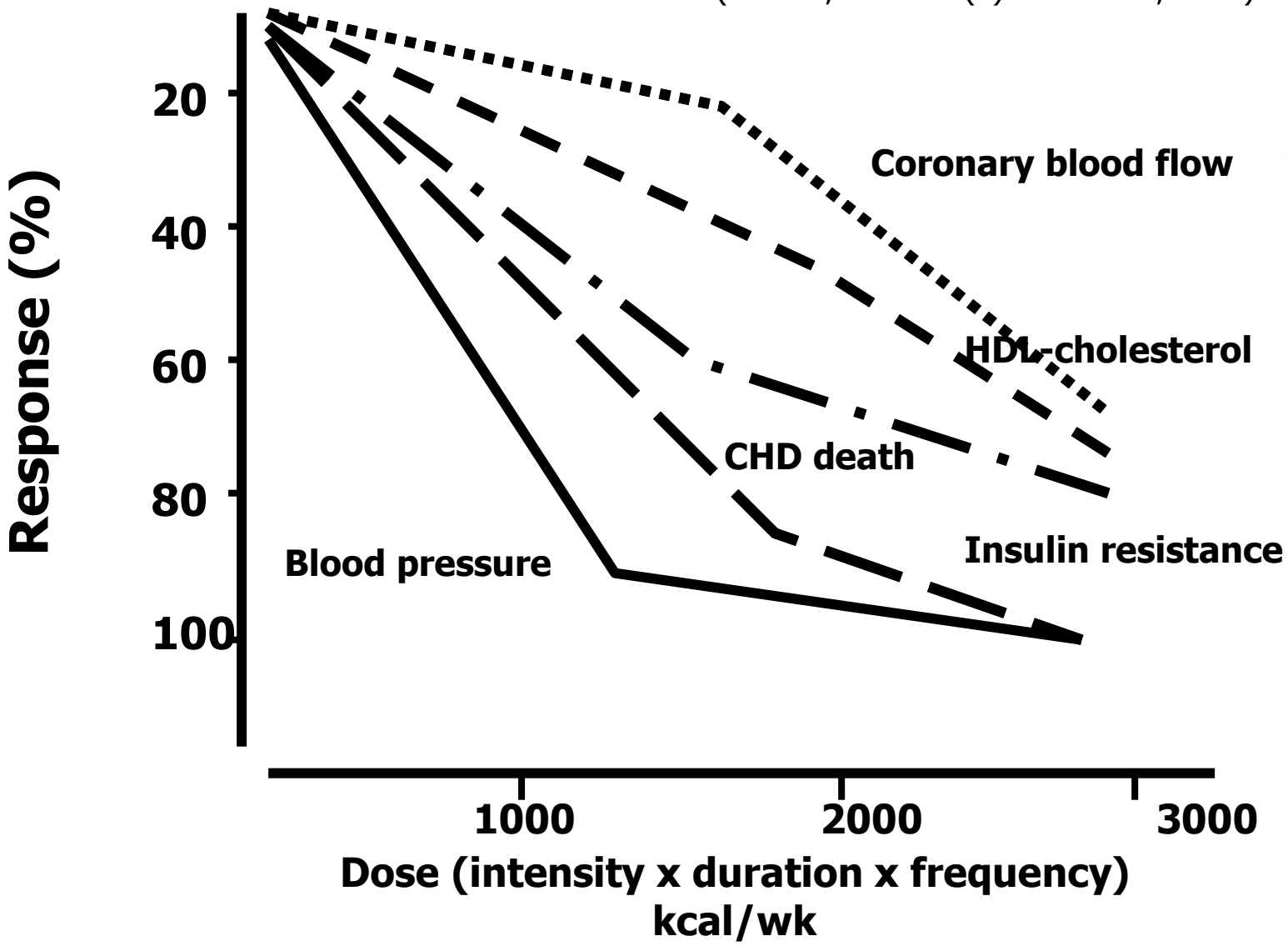
- to become aware of resources which may assist in devising PA interventions as part of NCD prevention and health promotion;

- to examine some examples of "what works" in different settings to promote physical activity;

- to introduce some promising new models and to consider new partners & practitioners

Why physical activity?

(Haskell, MSSE 33(6): S454-458, 2001)



Evidence-Based Public Health Practice: Physical Activity

- Policy Framework
- Surveillance
- Evidence-Based Interventions
- Guidelines
- Evaluation
- Communication
- Partnerships and Networks

Population-based approach to health

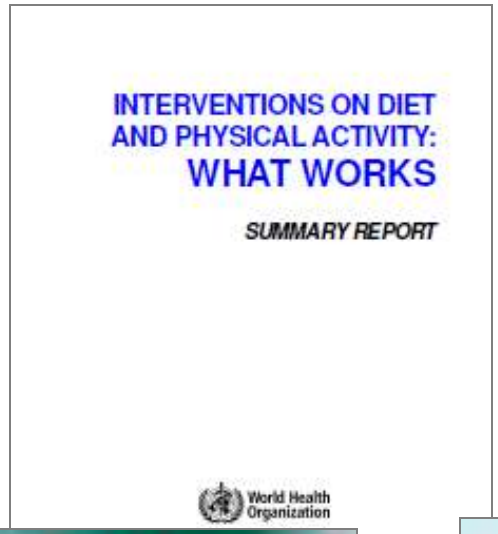
"A comprehensive social and political process, not only embracing action directed at strengthening skills and capabilities of the individual but also action directed at changing the social environment and economic conditions.

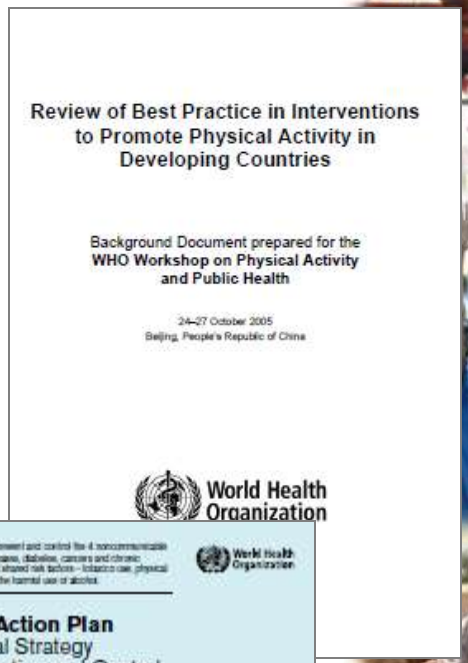
…is the process of enabling people to increase control over the determinants of health and thereby improve their health. Participation and partnership is essential to sustain health promotion action."

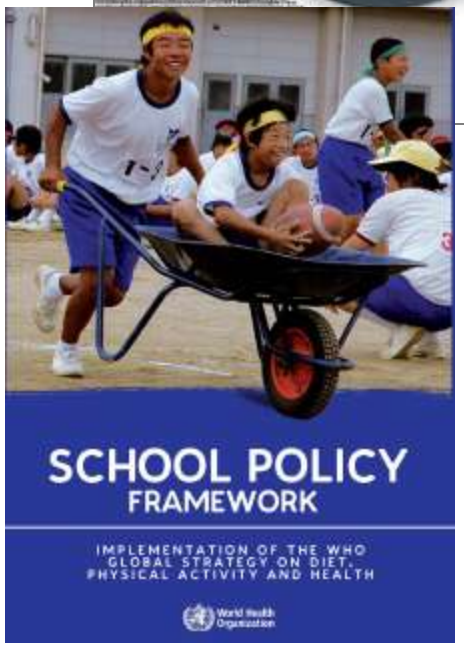
WHO Glossary, 2003

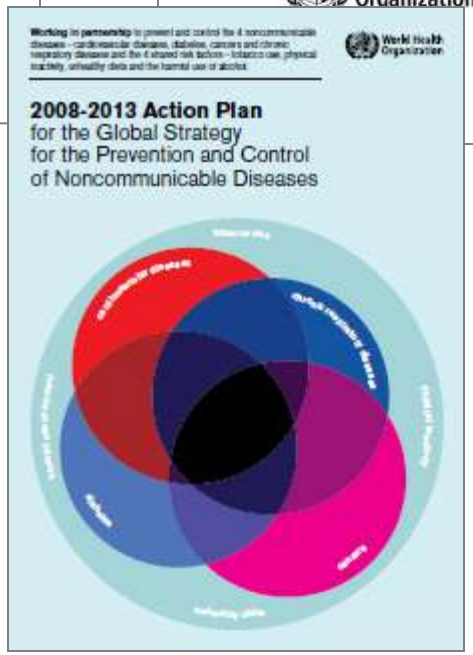
Socio-ecological model: physical activity & health promotion in settings

WHO DPAS strategy & NCD action plan, implementation/monitoring, best practice









“What works”: Search and evaluation strategies:

Interventions within settings	Outcomes			Process & Policy Implications	References
	Knowledge and Attitudes	Behaviour Change	Clinical markers		
Policy & Environment					
Mass Media					
Primary Health Care					
Worksite					
Schools					
Faith-based					
Community & web-based					

Behaviour	Intervention	Objectives	Outcome measure
Nutrition & healthy diet	Intervention	Health	Best practice
Diet*intake	Program/me	Health promotion	Effectiveness
Fruit intake	Project	Health behaviour	Environment
Fat intake	Campaign	Health practice	Evaluation
Vegetable intake	Initiative	Health knowledge	Economic evaluation
Diet* habits	Strategy	Health education	Cost-effectiveness
Diet* knowledge		Disease prevention	Decision-analysis
Diet* practices			Guideline
Nutrient intake			

- 937 nutrition studies and 776 physical activity studies after duplicates were removed;

•. A total of 261 interventions, represented by the 395 peer-reviewed publications, met the inclusion criteria, with 119 interventions focused on nutrition interventions and 67 on physical activity interventions and 76 combining physical activity and nutrition.

Integrating physical activity into a national plan; multi-sector approach

WHO Global Strategy on Diet, Physical Activity and Health

A guide for population-based approaches to Increasing levels of physical activity

Dr Timothy Armstrong
World Health Organization
Geneva

World Health Organization

Integrating physical activity into a national plan; multi-sector approach

Purpose of the Guide

- Assist the Ministry of Health and other stakeholders in the development and implementation of a national physical activity plan and provide guidance on policy options for effective promotion of physical activity at national level and sub-national level.

World Health Organization

Integrating physical activity into a national plan: what is needed?

Key elements

- High level political commitment.
- Integration in national policies.
- Funding.
- Support from stakeholders.
- Cultural sensitivity.
- A coordinating team.
- Integration of physical activity within other related sectors.

World Health Organization

National physical activity plan: areas for action in multi-sector approach

Examples of Areas for Action

Areas for action	Examples	Level of action
Policy	1. Develop or integrate into national policy the promotion of physical activity, targeting change in a number of sectors.	National population
	2. Review existing policies to ensure that they are consistent with best practice in population-wide approaches to increasing physical activity.	National population
	3. Review urban planning/town planning and environmental policies (national and local level) to ensure that walking, cycling and other forms of physical activity are accessible and safe.	National and sub-population
	4. Ensure transport policies include support for non-motorized modes of transportation.	National population
	5. Review labor and workplace policies to ensure they support physical activity in and around the workplace.	Sub-population
	6. Encourage sports, recreation and leisure facilities to take up the concept of sports (and physical activity) for all.	Sub-population
	7. Ensure school policies support the provision of opportunities and programs for physical activity (consider staff as well as children).	Sub-population
	8. Explore fiscal policy that may support participation in physical activity	National population

World Health Organization

National physical activity plan: areas for action in multi-sector approach

Examples of Areas for Action

Areas for action	Examples	Level of action
Supportive environments	Implement strategies aimed at changing social norms and improving community understanding and acceptance of the need to undertake physical activity in everyday life. 1. Encourage environments that promote and facilitate physical activity, supportive infrastructure should be set up to increase access to, and use of, suitable facilities	
Partnerships.	1. Ministries of health should take the lead in forming partnerships with key agencies, and public and private stakeholders 2. In partnership, draw up jointly a common agenda and work plans aimed at promoting physical activity 3. Form networks and action groups to undertaken advocacy activities and promote access and opportunity for physical activity 4. Create multi-sectorial collaborations 5. Develop shared work plans for strategy implementation with community groups and sports and religious organizations, as appropriate 6. Develop guidelines for appropriate public-private partnership to promote physical activity	

World Health Organization

WHO/CDC Recommended Physical Activity Policy Framework

1. VISION- Sustainability, credibility, data linked to policy, adaptation, equity & social justice

Global advocacy

2. MAKING THE CASE

- High prevalence of inactivity;
- Burden of disease due to inactivity;
- Health and social benefits of physical activity;
- Economic costs of inactivity;
- As little as 30 min of moderate PA per day.

3. DEFINING THE PROBLEM

Local context

- Prevalence of inactivity;
- Identify target populations or "at risk" groups;
- Determinants of physical inactivity;
- Barriers to physical activity policy and practice.

4. SOLUTIONS

- Effective evidence-based interventions;
- Population and public health focus; in multiple domains (sport, transport, leisure, etc.); Use of multiple settings;
- Regulatory and legislative approaches;
- Good governance and accountability;
- Cultural specificity and adaptation; links to health & other priority issues.

5. IMPLEMENTATION & ELEMENTS OF SUCCESSFUL PROGRAMMES

- Consultation and needs assessment;
- Written plan and objectives;
- Surveillance of PA, policy, public opinion, and environments;
- Stable base of support; clear message and identity;
- Coalitions, partnerships, leaders, champions, and inter-sectoral action;
- Multiple intervention sites, populations at all levels, strategies;
- Integration of PA w/other health promotion initiatives for NCD's
- Focus on PA enjoyment and social interaction;
- Evaluate throughout the process.

Broad consultation; Gov, NGO, & other stakeholders

6. EVALUATION- Formative, process and impact (outcomes)

Shephard et al., Public Health Reports 119: 346-351, 2004)

Vuka South Africa: Logic Model 2005-2006

Assumptions

The Vuka South Africa Move for Health Campaign will increase the number of South Africans participating in regularly physical activity which is sufficient to achieve a health benefit.

Input

Tertiary, private, NGO and governmental partnerships

Consistent message

Money –

Promotional materials – educational and event related.

Outputs: Activities

Promote the Vuka Move for Health Message

Accrediting physical activity programmes with Vuka

Identifying new opportunities for physical activity

One day celebrations.

Research and monitoring

Outputs: Participation

NGO's, community based organisations, private sector, tertiary institutions.

South African population is the recipients of the message, and would be encouraged to adopt a physically active lifestyle.

Outcomes - Impact

Immediate Outcomes:

Increased awareness of Vuka Message.

Improved perception of PA – especially in terms of "doability"

Increased motivation to start becoming / maintaining a PA lifestyle.

Increased knowledge of the benefits of physical activity.

Intermediate Outcomes:

Increased awareness of what the Vuka Move for Health message states.

Policy environment facilitate promotion of PA.

Sustained implementation of PA programmes.

Long Term Outcomes:

'x %' brand awareness.

'x %' knowledge of Vuka Move for Health message.

Increased prevalence of PA as measured by DHS 2007.

Improved health (↓ NCD prevalence).

Increased transport, recreational facilities to encourage PA

Environment

Policy, transport, accessibility to physical activity recreational facilities, education (if most materials are written for example),

Agita São Paulo, Brazil: Global best practice mass media campaign

Agita São Paulo *is a mass media campaign with the primary goal of* increasing population levels of PA.

Agita *involves over 300* institutions collaborating with multiple stake-holders. *Agita's message is to do* 30 min of PA on at least 5 days/wk.

Agita aims to empower existing initiatives by coordinating and promoting activities & interventions in schools, workplaces and for seniors, with an emphasis on fun.

Agita *is well-known, with more than half of the* local population aware of the campaign

Agita Galera: logic model example

Figure 1 Logic model for Agita Galera

INPUTS

Human Sources:
General Coordination of Agita São Paulo Programme.
Partners of Agita São Paulo Programme
School teachers
Community leaders
Volunteers.

Finance (Direct):
Budget from State Secretariat of Health
State Secretariat of Education
Provides in-kind printing of materials

Finance (Indirect):
Agita Sao Paulo Program Partnerships

Materials:
Manual
Posters
Flyers
Video
T-Shirt
Balloon
Stickers

ACTIVITIES

Capacity:
Lectures
Meetings
Video-conference

Dissemination Formats:
Internet
Intranet
E-mail
Media
Banners on the street

Activities:
Walking around the city
Recreational activities
Games
Festival
Educational materials produced by students
Artistic presentation activities
Integration with different subjects

OUTPUTS

Number of:
Schools
Teachers
Students involved
Partnerships
Reports received
Media Impact
Teachers trained

Description of:
Events
Policies & programs

Public Policies:
Changes in policy
Permanent programmes

OUTCOMES

Preliminary Results:
Written Report for the physical education teachers

6,000 schools opened to public use on the weekend – "Family School Program"

Dissemination of programme message to 6 million students each year for 7 years.

Increased capacity of teachers

10 Million People Participate or are informed
– 4 Million Students Participate
– 6 Million Staff, Parents and Citizens reached via media and school events

All Sao Paulo State cities (N= 645) participate.

Inclusion of physical activity and health information in other subjects besides physical education.

Permanent/ ongoing programmes to promote physical activity in schools adopted.

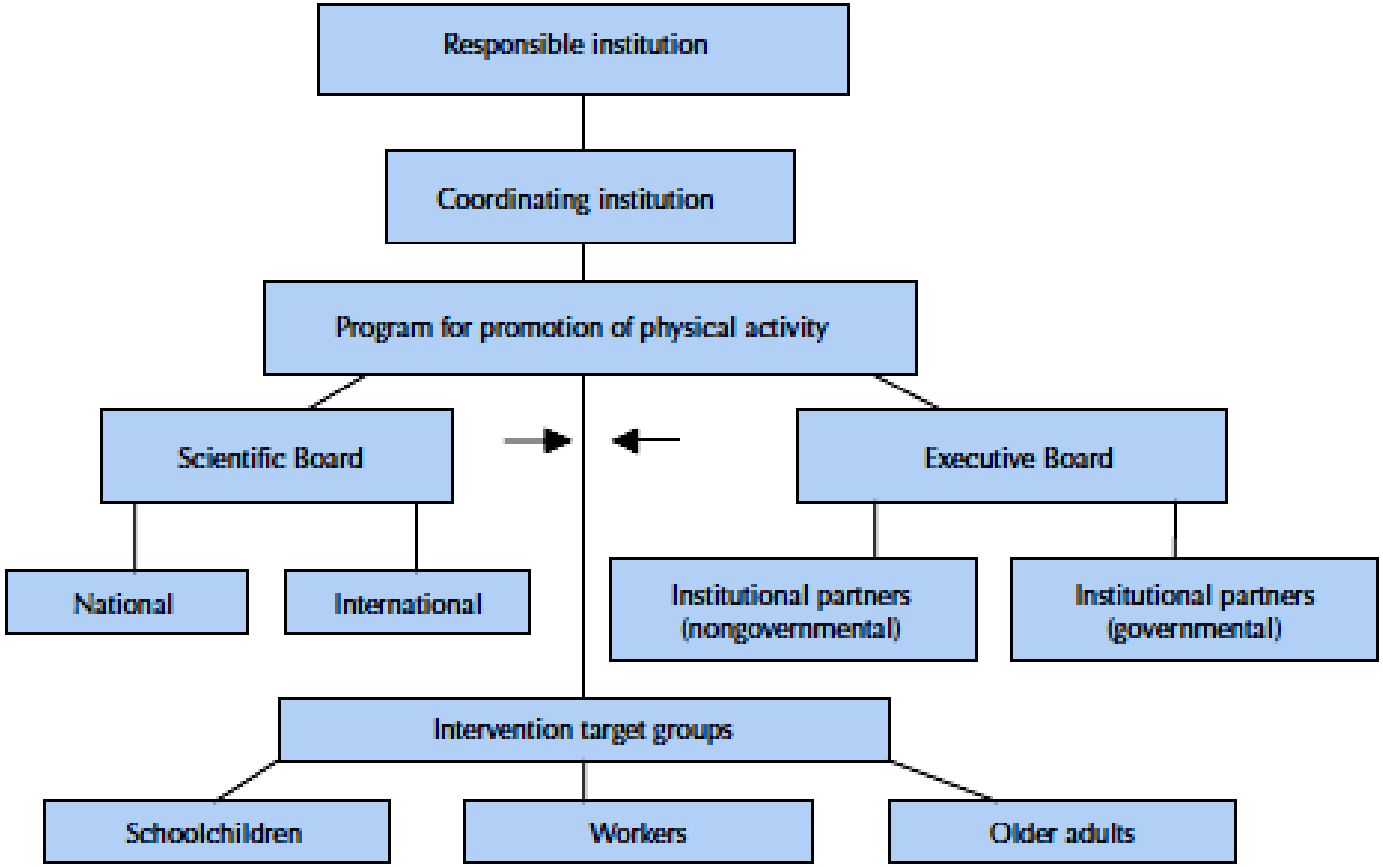
Implementation of Agita Galera in others countries of Latin America.

Influential Factors
Related Programmes- Agita Sao Paulo; Economic Conditions- Devaluation of the Real; Political Climate- strong support by current administration; International- WHO adoption of Global strategy on Diet, Physical Activity and Health

(Schmid, T et al., IUHPE – PROMOTION & EDUCATION VOL. XIII, NO. 2 2006)

A network of partners: Agita São Paulo program

FIGURE 1. Organizational structure of scientific and executive-level partnerships.

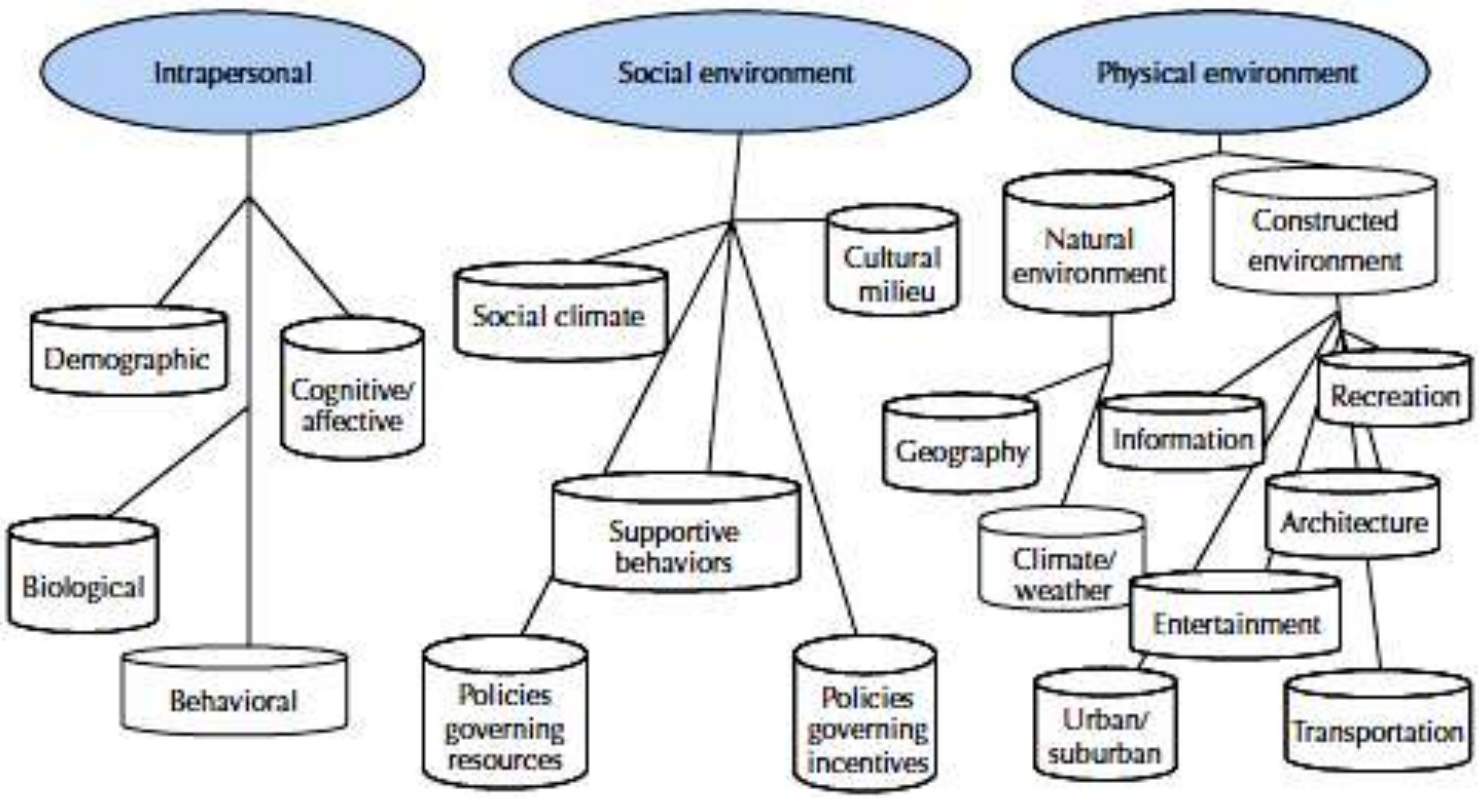


Partnerships among governmental and private sectors and civil society, **s**trengthening of **mutual** agendas; one single objective lending itself to a **diversity of actions**; **high visibility** in the mass media; **clear messages** that are easy to understand; strategies that are practical, which can be **adapted** to local realities.

(Matsudo SM, et al. J *Phys Activity Health* 2004;1:81–97)

Ecological model to promote physical activity: Agita São Paulo program

FIGURE 3. Mobile ecological model to promote physical activity developed by the Agita São Paulo Program showing multiple dimensions of influence on behavior.



Source: Matsudo VKR, Andrade DR, Matsudo SMM, Araújo TL, Andrade E, Oliveira LC, et al. "Construindo" saúde por meio da atividade física em escolares. *Revista Brasileira de Ciência e Movimento* 2003;11(4):111–118.

(Matsudo SM, et al. J *Phys Activity Health* 2004;1:81–97)

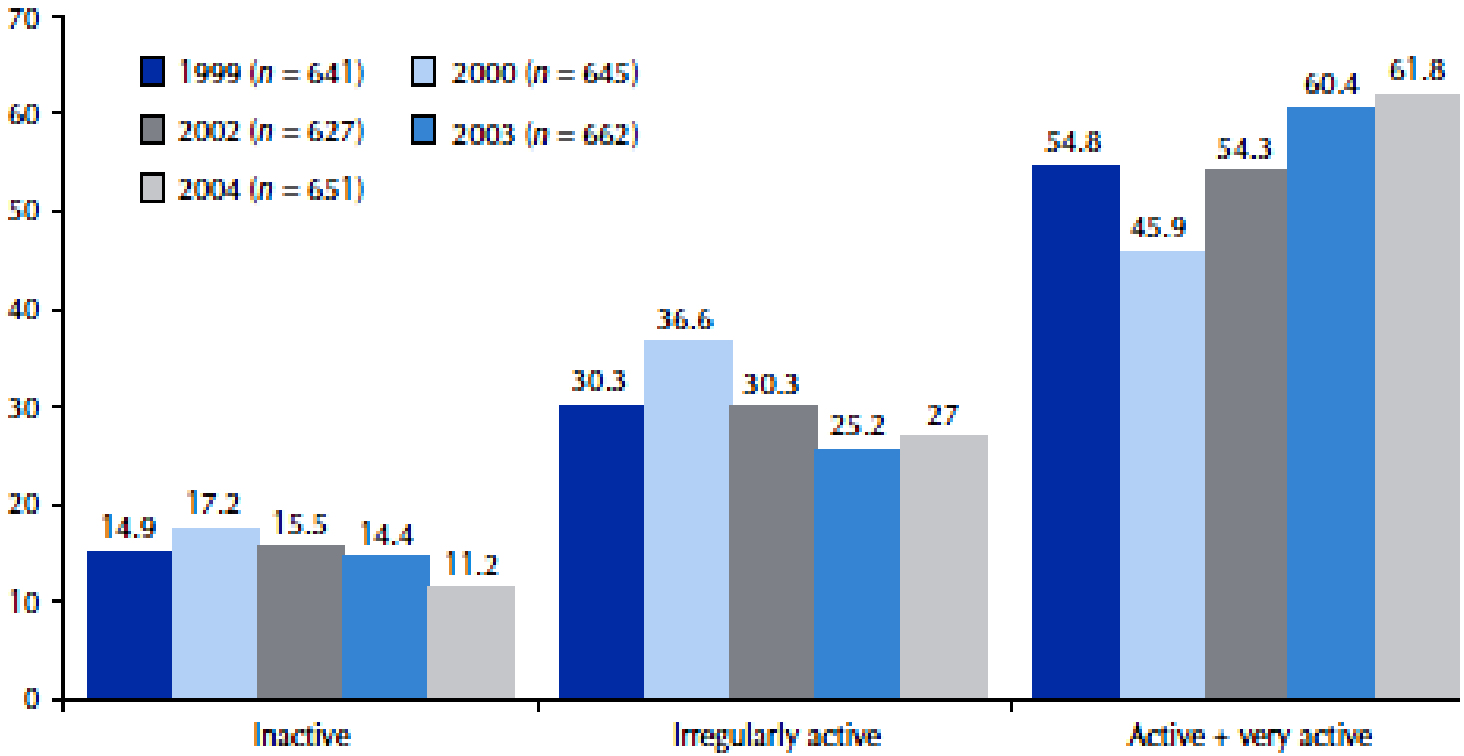
Agita São Paulo: Examples of multi-sectoral activities

Specific Actions	Permanent Measures
MINISTRY OF EDUCATION	
• Mobilization of 6,000 schools in the state's public network to celebrate Agita Galera • Physical Activity Day commemorated on 6 April in the public school network by decree no. 46.664/2002 • Implementation of the Agita Familia program, in which children and their families participate in joint educational and sociocultural weekend activities, such as 30-minute physical activity sessions at the beginning or end of the day. Currently more than 400,000 people and 5,306 public schools are involved in the program.	• Organization of physical activities at schools; among them, Agita Night for students and teachers of night classes • Physical activity sessions (stretching and relaxation) at the beginning of the day and at the beginning of some classes • School rumbas adopted by some schools, incorporating a variety of Latin rhythms to accompany physical activities • Diploma awarded to teacher whose class has the most "movement"

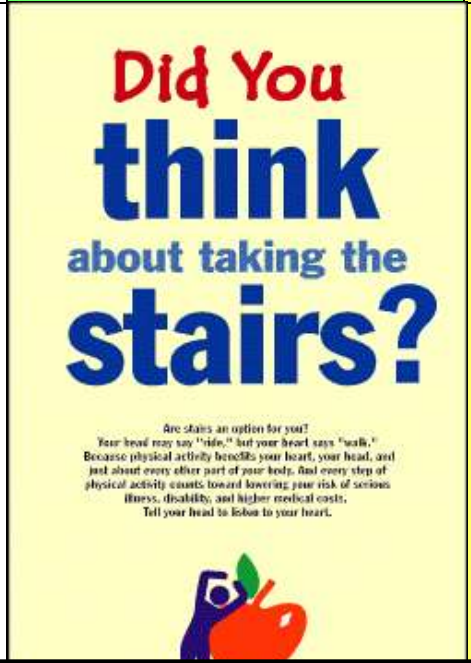
More than 6000 schools participate in Agita Galera, schools are the centre of communities in Agita Familia, reaches > 400,000 persons

Year-on-year changes in physical activity prevalence in São Paulo, Brazil

FIGURE 5. Level of physical activity of population (percentages of inactive, irregularly active, active, and very active) in metropolitan São Paulo, 1999, 2000, 2002, 2003, and 2004.

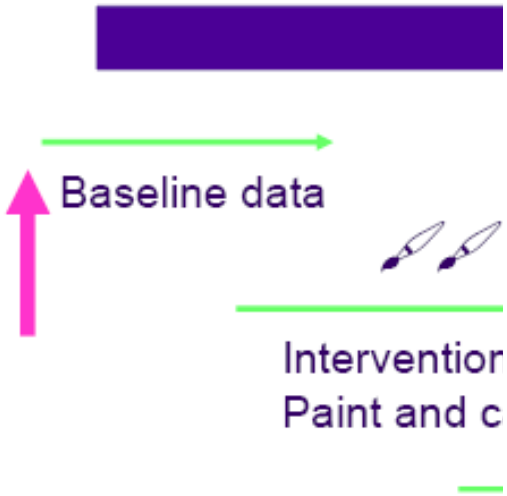


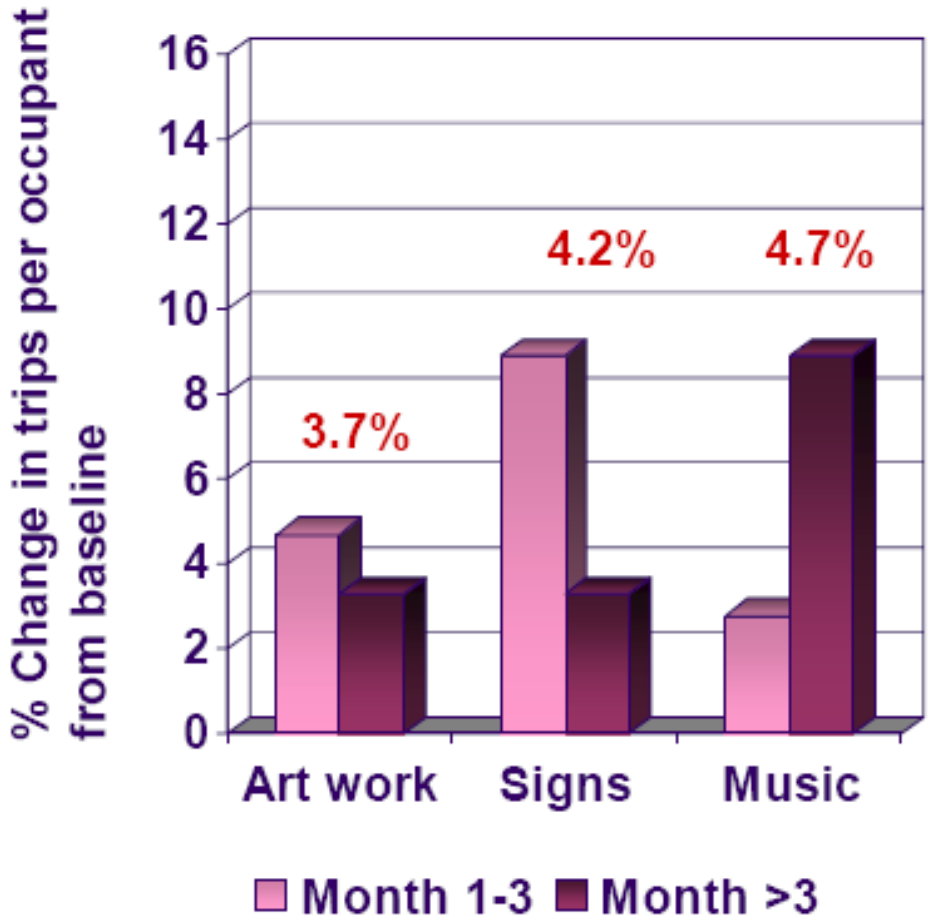
Nutrition & Physical Activity interventions for reducing risk for NCD's

Areas for Action	Strongly recommended	Recommended/ Promising	Not likely to be effective
Policy (Government) & Environment (nutrition & physical activity)		• Pricing strategies, signage, point-of-purchase prompts in grocery stores, vending machines, cafeterias and restaurants to support healthier choices • Multi-targeted approach to encourage walking and cycling to school, commuting and leisure by	• Government programs comprising nutrition education only to vulnerable groups such as low income women

"Making the healthy choice… the easy choice"

Physical activity & point of decision prompts: CDC Stairwell Project





ars

data

With thanks to: Dr. Fiona Bull

BHF National Centre physical activity+health

Loughborough University

Environmental factors influencing PA & health promotion to prevent NCD's

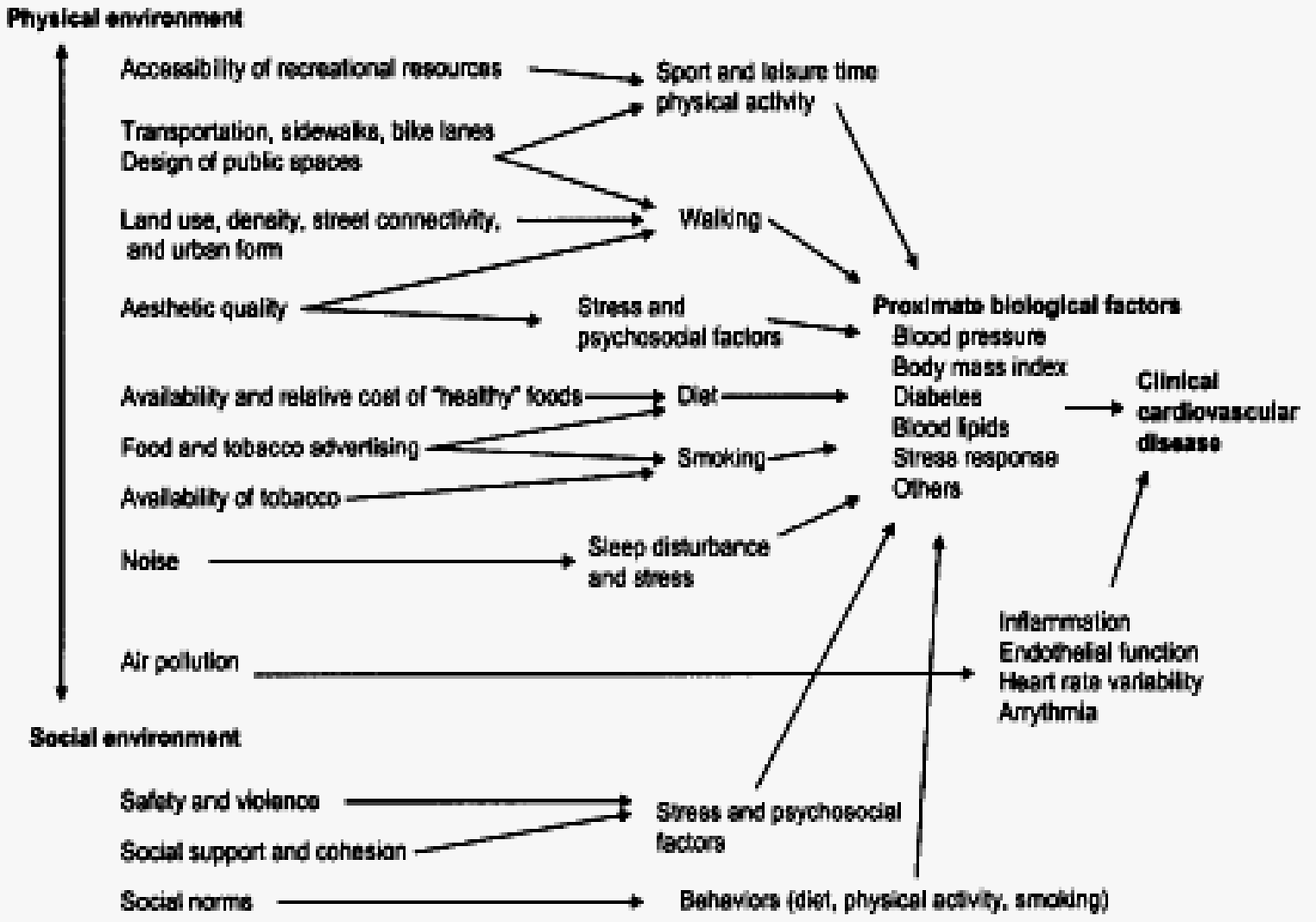


FIGURE Schematic representation of possible pathways linking residential environments to cardiovascular risk.

(Diez-Roux, A. 2003; J of Uban Health 80: 569-589)

Neighborhood Walkability: how to measure? What does it mean?

v Med

Physical activity: barriers including the built environment (can we extrapolate from Global North?)

London

Dar Es Salaam

Kampala

Copenhagen

Nairobi

(Forrest KY et al., Med Sci Sports Exerc. 2001 Sep;33(9):1598-604)

Environmental barriers/facilitating factors to physical activity in South Africans

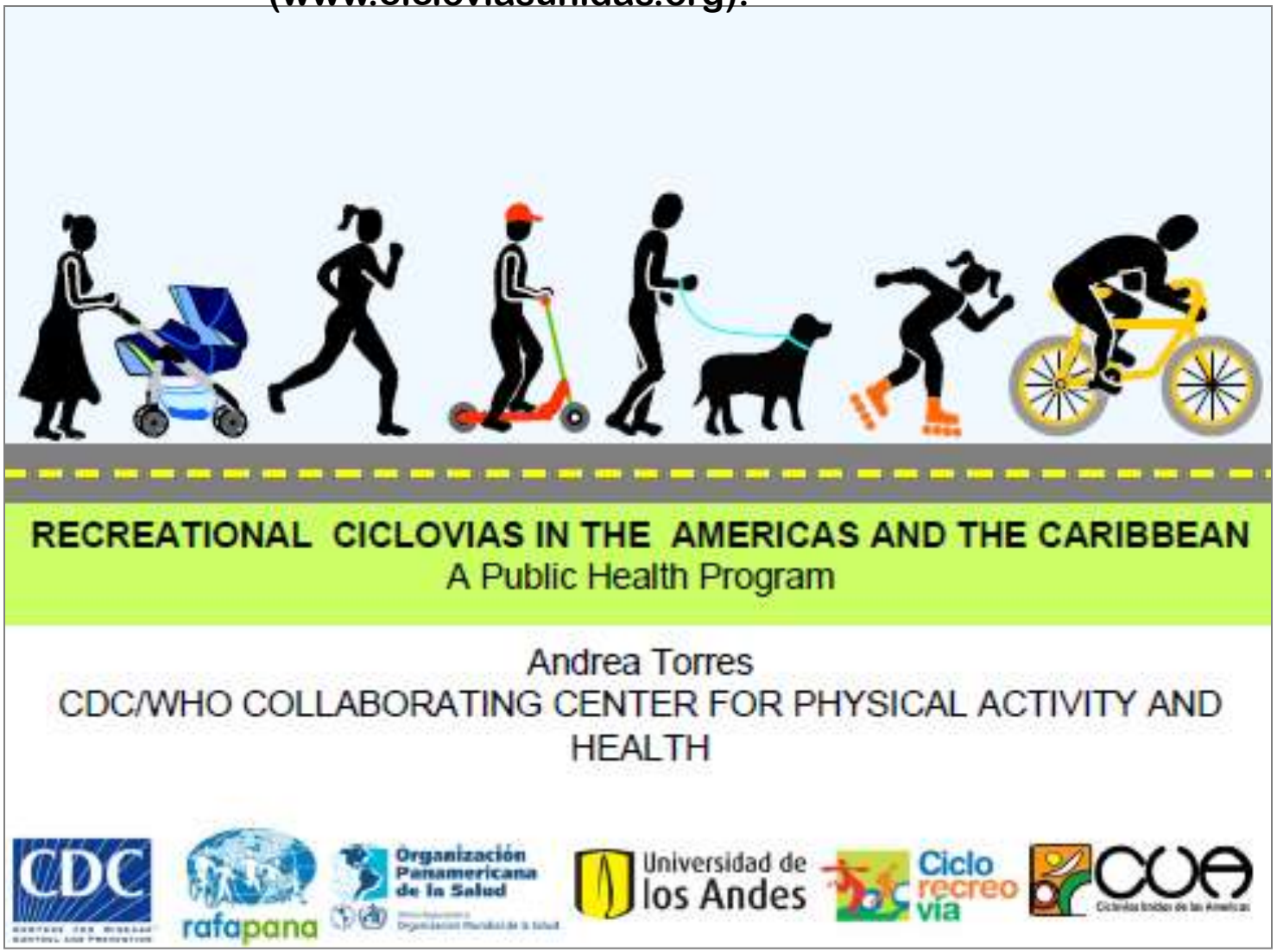
(Tshabangu et al., in preparation)

- 40% Perceive crime in the neighbourhood to be a barrier
- 18% Perceive that they have an offering of recreational facilities close to home
- 8.4% Recognise dedicated cycling and walking paths within their communities
- 40% Have bus-stops or transit stops within 10-15 min walk from their houses;
- 34% Have "destinations" for shopping within walking distance to their homes

Physical activity & built environment: A barrier or a matter of perspective?

Ciclovia..best practice intervention for the social structural environment & PA

Ciclovías Unidas de las Américas
(www.cicloviasunidas.org).



(Andrea Torres, Centers for Disease Control, USA)

Ciclovia..best practice intervention for the social structural environment & PA

Ciclovías Unidas de las Américas (www.cicloviasunidas.org).

Recreational Ciclovia definition

- Community based regular mass program in which streets are temporary closed to motorized transport allowing only access to individuals for leisure activities at least 2 days per month, at least 1 kilometer within the active period.
- Yearly mass events such as marathons, car free day, marches, bike trips, festivals, parades, and the critical mass event were excluded.

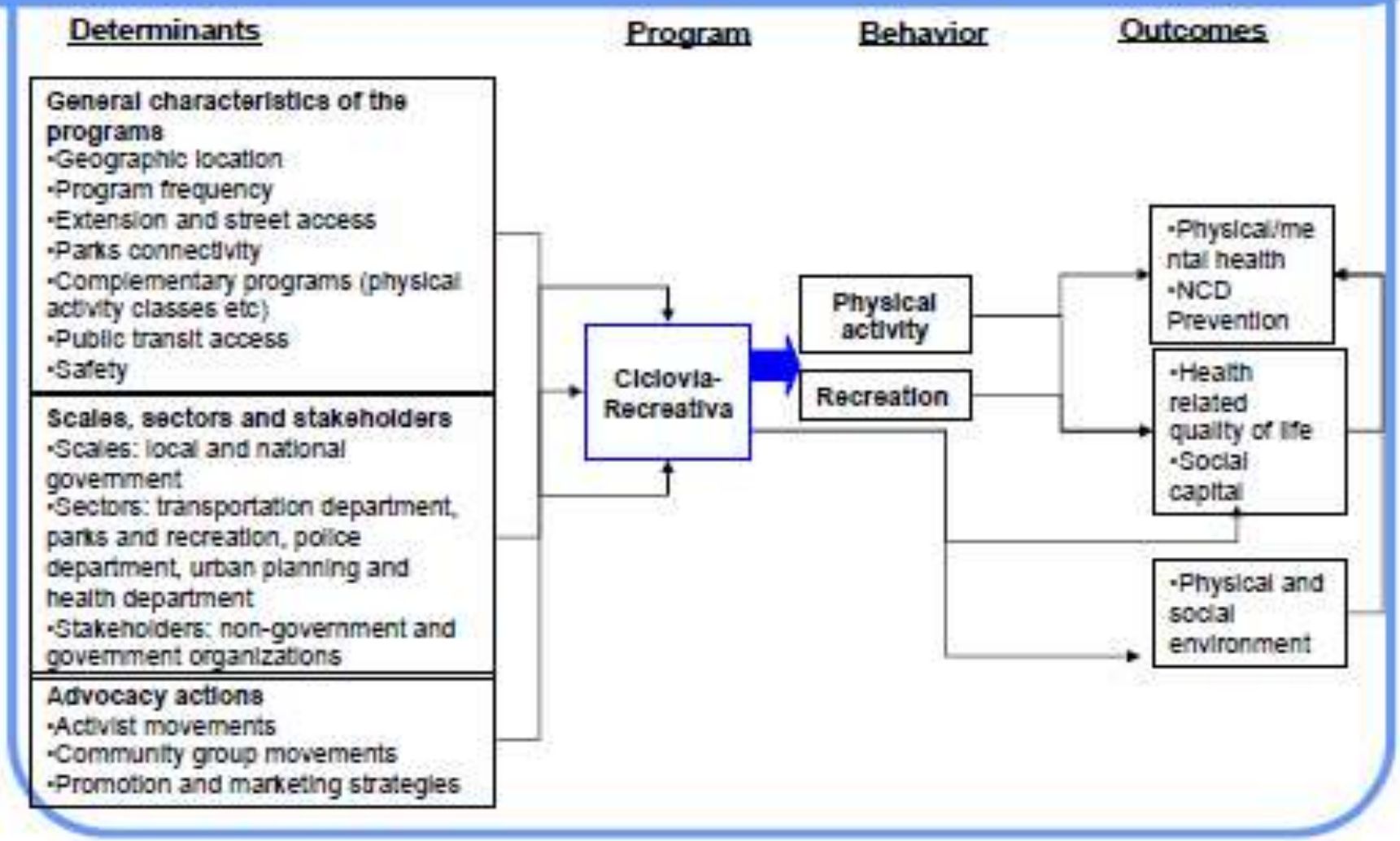
PERMANENT CICLOVIA

RECREATIONAL CICLOVIA

(Andrea Torres, Centers for Disease Control, USA)

Ciclovia Logic model

Ciclovías Unidas de las Américas (www.cicloviasunidas.org).



(Andrea Torres, Centers for Disease Control, USA)

Multi-sector process: Ciclovia Bogota-establishing a supportive environment for PA in a LMIC

Political Authority and Stability:

- Consolidation of political and administrative authority for the City of Bogotá (1992 on)
- Leadership by Mayors

Civic Engagement:

- Promote the use of the city
- Change social norms
- Pride in the City of Bogotá

Urban Reform:

- New regulations were implemented in order to improve the built environment, parks and transportation

Administration:

- New ways to manage public space and urban renewal.
- "Better" collaboration and coordination

Special thanks to Dr. Mike Pratt, Centers for Disease Control and Prevention, USA, WHO Collaborating Center for Physical Activity

Principle components of Cicolvia, Bogota

Cicloruta: Network of 300 kilometers of dedicated bike paths designed to reduce vehicular congestion and air pollution.

Transmilenio: Bus Rapid transit system with dedicated roads and lanes and fixed stations.

Public Space Recovery / Parks: Reclaiming space for pedestrians lost over the preceding years to street vendors, cars /1,000 district parks linked in a network

Special thanks to Dr. Mike Pratt, Centers for Disease Control and Prevention, USA, WHO Collaborating Center for Physical Activity

Principle components of Cicolvia, Bogota

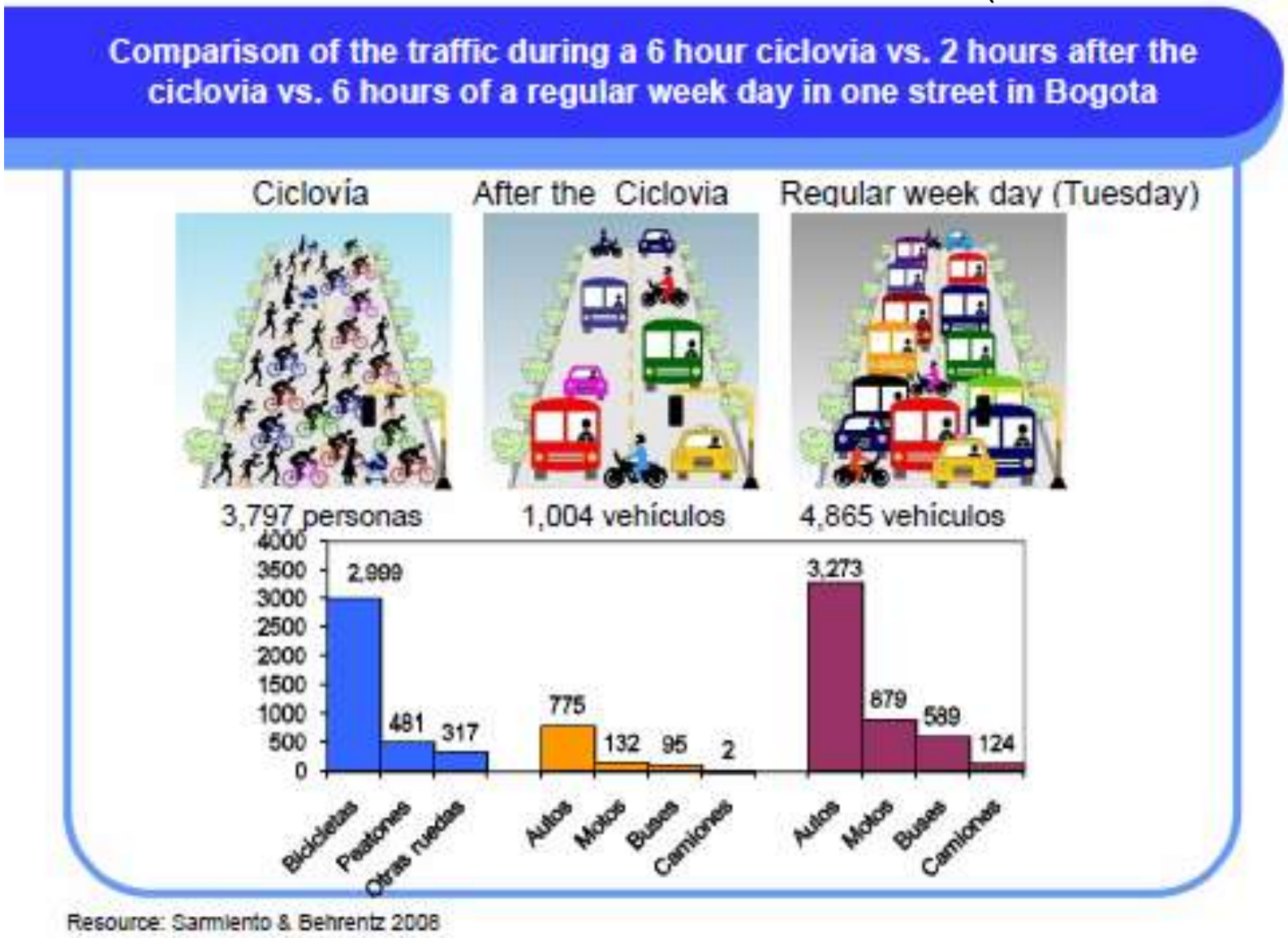
Ciclovía / Recreovía: Sundays and Holidays, 128 kilometers of the city's main streets are exclusively open for recreational and sports activities, from 7 a.m. to 2 p.m . Aerobics classes, are provided at 19 different points around the city.

Car-free Day: Strategy to reduce vehicular congestion and pollution levels. During this day, citizens employ alternative means of transportation, such as bicycling, walking, or public transport.

Special thanks to Dr. Mike Pratt, Centers for Disease Control and Prevention, USA, WHO Collaborating Center for Physical Activity

Proximal outcomes of Cicolvia, Bogota: traffic congestion

Ciclovías Unidas de las Américas (www.cicloviasunidas.org).

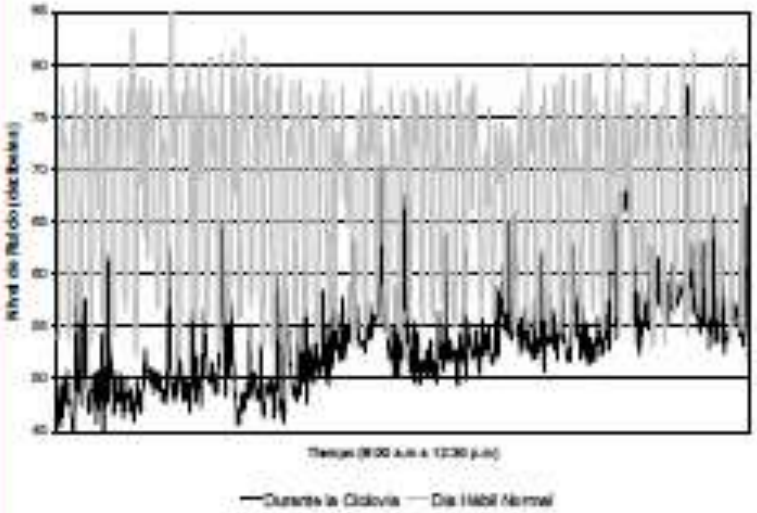


(Andrea Torres, Centers for Disease Control, USA)

Proximal outcomes of Cicolvia, Bogota: noise

Ciclovías Unidas de las Américas (www.cicloviasunidas.org).

Noise level in a street in Bogota



In a regular day the regulations about environmental noise in residential areas are not met. Noise level is 7 times greater than during the Ciclovia (56dBA:Ciclovia vs. 73dBA: (Regular week day Normal)

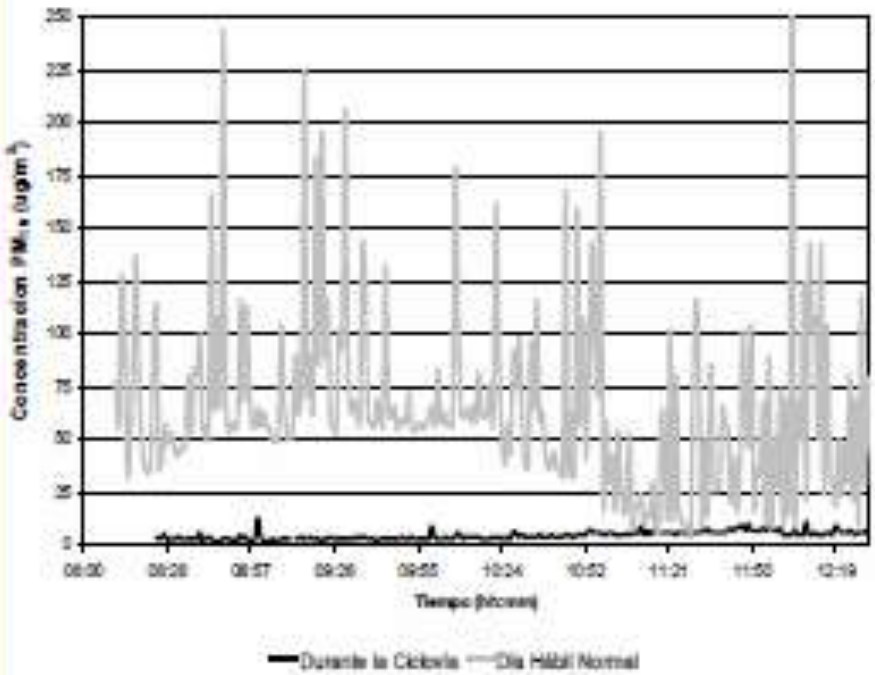
Resource: Sarmiento & Behrentz 2008

(Andrea Torres, Centers for Disease Control, USA)

Proximal outcomes of Cicolvia, Bogota: pollution

Ciclovías Unidas de las Américas (www.cicloviasunidas.org).

Particulate Material (PM) in a street in Bogota



In a regular day the WHO recommendations are exceed and the PM is 13 times greater than the average of PM_{10} during the Ciclovía (5 µg/m^3:Ciclovia vs. 65µg/m^3: regular week day)

Resource: Sarmiento & Behrentz 2008

(Andrea Torres, Centers for Disease Control, USA)

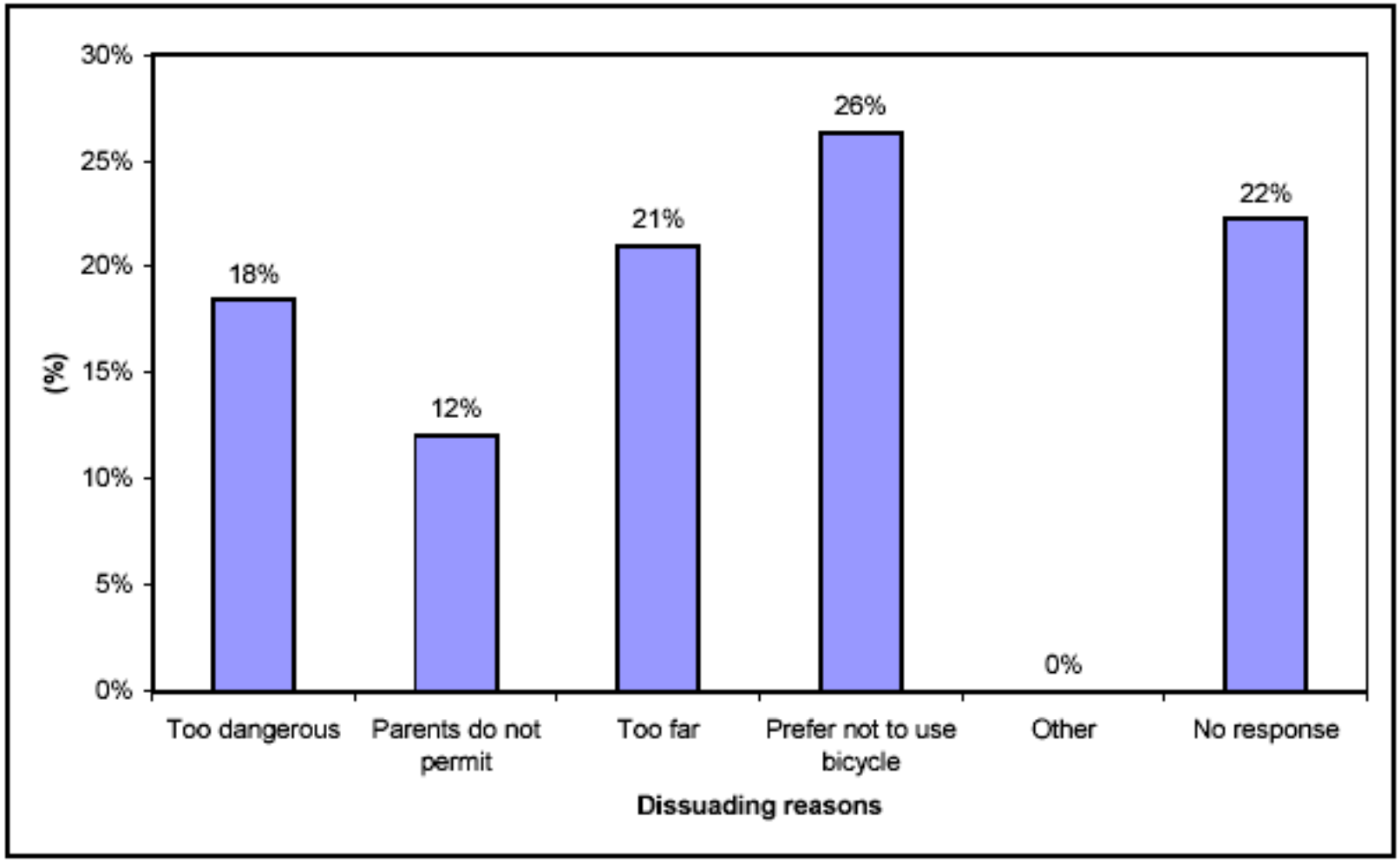
What next for Cicolvias?

Ciclovías Unidas de las Américas
(www.cicloviasunidas.org).

Future studies should integrate different sectors such as public health, transportation, urban planning, sports and recreation, environment and architecture. A multi-sectoral task force will go beyond the traditional barriers among disciplines and institutions; to understand more the association between Ciclovias and public health.

(Andrea Torres, Centers for Disease Control, USA)

School transport survey: not cycling to school



Data source: Blaauwberg Bicycle Study (City of Cape Town, 2002)

Figure 4. Reasons for not using a bicycle to school.

(Pretorius and Bester, 2004)

NMT initiatives in South Africa:

The Road to Safety 2001-2005 strategy has as its mission to ensure an acceptable level of quality in road traffic, with the emphasis on road safety, on South African urban & rural road networks.

A key outcome required of this strategy has been identified as "safer pedestrians and cyclists". The Shova Kalula (Pedal Easy) Project forms part of the programme to promote the safety of cyclists & pedestrians.

(Pretorius and Bester, Proceedings of the 23rd Southern African Transport Conference (SATC 2004)

BEN- Bicycle Empowerment Network:

The mission of BEN is poverty alleviation through the promotion of the use of the bicycle in all of its forms, in order to enhance low-cost non-motorised transport, and improve health through linking exercise and mobility. In collaboration with local and international partners, BEN facilitates the transportation of bicycles from Europe, the Americas and Asia to Southern Africa; the establishment of bicycle workshop projects; distribution of these bicycles to strategically selected groups of recipients; and the planning and introduction of bicycle user paths and integrated linking networks.

http://www.benbikes.org.za/BEN_AR.pdf

BEN- Bicycle Empowerment Network:

Entrepeneural activities

Cycle refurbishment & redistribution;
Small business training

Bike to school programme

Cycle to work savings plan
for new California bikes

Non-motorised transport advocacy

LEVERS TO ENCOURAGE CYCLING

• Provision of financial assistance to projects and planning processes which
integrate NMT into the transport development programmes;
• Expanding the relations beyond South Africa, e.g. through the Bicycle
Partnership Programme and pursue the South-South co-operations;
• Pool resources with key role players, local partners and stakeholders;
• Trade facilitation and reducing import duties / discounted shipping costs
(Senegal and Kenya have no import tax on bicycles);
• Political support and commitment of stakeholders;
• Set up a good institutional arrangement and funding mechanism;
• Regulatory and monitoring systems for the implementation of NMT and
municipal by-laws that promote multiple modes of transport;
• Prioritise cycling over motorists especially at road intersections; and
• Build a common goal with communities to reinforce the integration of
cycling.

An idea gets traction- adoption & dissemination

transport

Department:
Transport
REPUBLIC OF SOUTH AFRI

A
ROLL-OUT PLAN FOR
SHOVA KALULA BICYCLE PROJEC

06 August 2007

SHOVA KALULA BICYCLE PROJECT

3. VISION

The vision of the Department is to maximise the use of bicycle transport services to enable communities to access social and economic opportunities in an affordable, safe, reliable and integrated manner.

4. MISSION

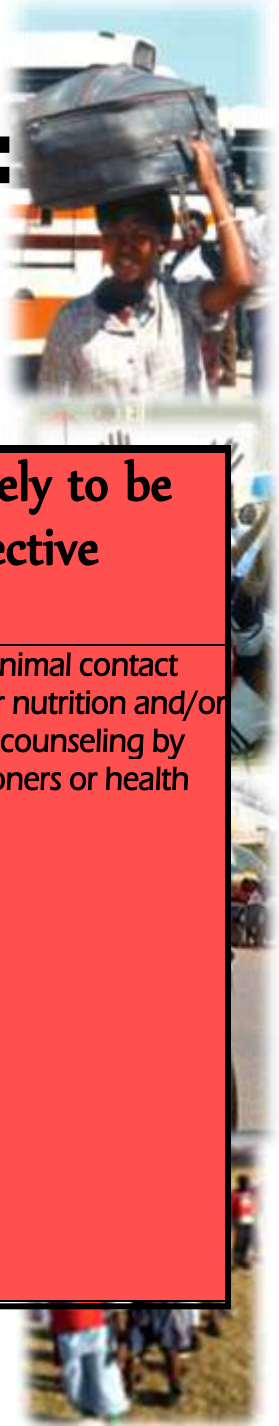
- To ensure that communities experience improving levels of mobility and accessibility by integrating rural, peri-urban and urban people into an effective transport system;
- To facilitate an enabling environment that will mainstream cycling and related intermediate transport operations into public transport system through the provision of an appropriate institutional support mechanism; and
- To develop a cadre of micro-businesses that can manage Shova Kalula bicycle shops independently in the long run.

5. OBJECTIVE

To promote cycling as a low cost mobility solution, which shall enhance rural accessibility and urban mobility to enable the underserved communities to participate in socio- economic opportunities, through developmental support to vulnerable groups as identified in the target group.

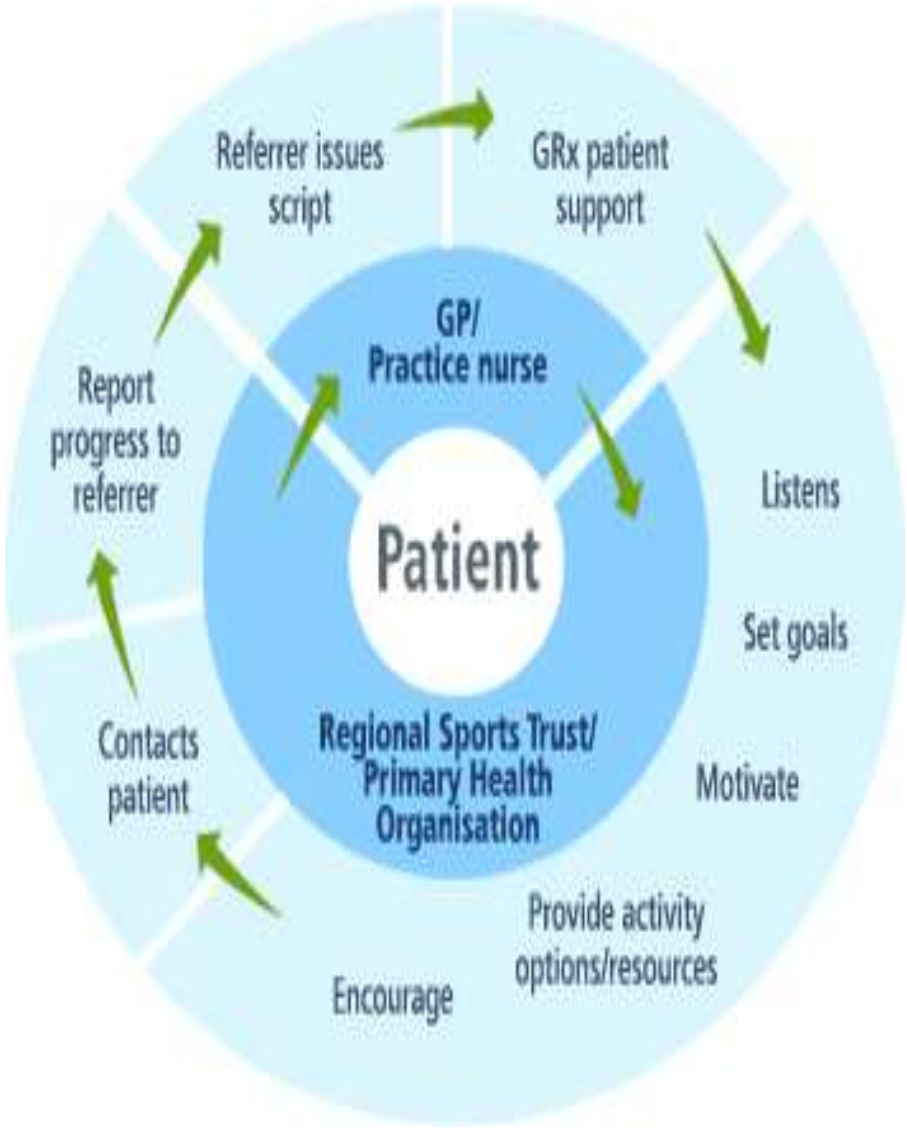
Socio-ecological model: physical activity & health promotion in settings

Cost-effective primary health care interventions for the promotion of PA:



Areas for Action or Settings	Strongly recommended	Recommended/ Promising	Not likely to be effective
Primary Health Care Settings (nutrition & physical activity)	• Health risk appraisal, exercise consultation and exercise referral from medical practitioner to community physical activity programme coordinator (Green Prescription); utilizing existing infrastructure ensures cost-effectiveness . • Targeted lifestyle intervention for at-risk individuals, with the primary health care setting (overweight, diabetic, low-income, women, WISEWOMAN)	• Counseling of callers to a health information service eg. cancer information service. Callers are given a brief proactive message and are followed up with mail comprising health promotion materials • Weight loss programs using health professionals for personal or phone consultations over a period of at least 4 weeks and a self-help program which includes self-monitoring	"Once-off" or minimal contact interventions for nutrition and/or physical activity counseling by medical practitioners or health promoters

Green Rx: Example of a recommended intervention for PHC settings



GP or practice nurse screens patient & issues GRx,

Script is forwarded to nearest GRx Patient Support Person (PSP).

PSP encourages the patient to become more active:

- monthly telephone calls for 3-4 months or;
- face to face meetings for 3-4 months or;
- group support in a community setting for 3-6 months.

Patient's progress is reported back to the referring health professional.

(Elley et al., BMJ 326:2-6, 2003)

Effectiveness of counselling patients on physical activity in general practice: cluster randomised controlled trial

C Raina Elley, Ngaire Kerse, Bruce Arroll, Elizabeth Robinson

Measure	Intervention* (n=451)	Control*	(n=878)	P value
Primary outcomes:				
Total energy expenditure (kcal/kg/week)	9.76 (5.85 to 13.68)	0.37 (–3.39 to 4.14)	9.38 (3.96 to 14.81) (975 kcal/week)	0.001‡
Leisure physical activity (kcal/kg/week)	4.32 (3.26 to 5.38)	1.29 (0.11 to 2.47)	2.67 (0.48 to 4.86) (247 kcal/week)	0.02§
Leisure exercise (minutes/week)	54.6 (41.4 to 68.4)	16.8 (6.0 to 32.4)	33.6 (2.4 to 64.2)	0.04§
Systolic blood pressure (mm Hg)	–2.58 (–4.02 to –1.13)	–1.21 (–2.57 to 0.15)	–1.31 (–3.51 to 0.89)	0.2
Diastolic blood pressure (mm Hg)	–2.62 (–3.62 to –1.61)	–0.81 (–1.77 to 0.16)	–1.40 (–3.35 to 0.56)	0.2
4 year risk of coronary heart disease (%)	0.42 (0.23 to 0.60)	0.52 (0.32 to 0.72)	–0.10 (–0.43 to 0.23)	0.6
SF-36 quality of life scores:				
Physical functioning	3.16 (1.61 to 4.71)	1.63 (–0.04 to 3.31)	1.23 (–1.35 to 3.81)	0.3
Role physical	10.53 (6.8 to 14.3)	4.16 (0.63 to 7.68)	7.24 (0.16 to 14.31)	0.045§
Bodily pain	6.51 (4.28 to 8.74)	2.50 (0.15 to 4.86)	4.01 (0.78 to 7.24)	0.02§
General health	5.95 (4.43 to 7.47)	1.60 (0.22 to 2.99)	4.51 (2.07 to 6.95)	0.000‡
Vitality	5.36 (3.76 to 6.96)	3.06 (1.44 to 4.68)	2.30 (0.03 to 4.57)	0.047§
Social functioning	3.02 (0.68 to 5.36)	2.85 (0.57 to 5.13)	0.36 (–3.53 to 4.26)	0.9
Role emotional	5.32 (1.43 to 9.21)	5.70 (2.07 to 9.32)	–0.38 (–5.70 to 4.94)	0.9
Mental health	2.61 (1.17 to 4.04)	1.63 (0.28 to 2.98)	0.98 (–0.99 to 2.95)	0.3
Other variables:				
Body mass index (kg/m^2)	–0.11 (–0.25 to 0.02)	–0.05 (–0.18 to 0.07)	–0.06 (–0.24 to 0.12)	0.5
Cholesterol concentration (mmol/l)	–0.019 (–0.08 to 0.05)	0.01 (–0.06 to 0.06)	–0.02 (–0.12 to 0.09)	0.7

*Unadjusted for clustering.
†Adjusted for clustering by medical practice.
‡Significant at 0.01 level.
§Significant at 0.05 level.

Leisure time physical activity and self-reported quality of life improved in those receiving Green Rx (12 mos)- No change in BP, cholesterol or weight.

(Elley et al., BMJ 326:2-6, 2003)

Green Rx: Self reported activity is different between groups & sustained

What this study adds

Counselling patients in general practice on exercise is effective in increasing physical activity and improving quality of life over 12 months without evidence of adverse effects

The intervention may reduce blood pressure by an average of 1-2 mm Hg over 12 months

No changes in the risk of coronary heart disease were observed

The intervention is sustainable in usual general practice

Prompting practice staff to deliver the intervention may have increased its effectiveness

The incremental cost of converting one additional 'sedentary' adult to an 'active' state over a twelve-month period was NZ1,756 dollars in programme costs. (Elley etal., N Z Med J. 2004 Dec 17;117)

(Elley et al., BMJ 326:2-6, 2003)

Physical activity promotion to prevent NCD's: what about schools?

Areas for Action	Strongly recommended	Recommended/ Promising	Not likely to be effective
School-based settings (nutrition & physical activity)	Comprehensive and multi-component school-based interventions of at least 2 years duration	• A more focused approach may also be successful, if accompanied by supportive	• Low intensity interventions (short-term or minimal exposure)
	• a food service component • parental involvement and which become institutionalized within the curriculum.		community programmes

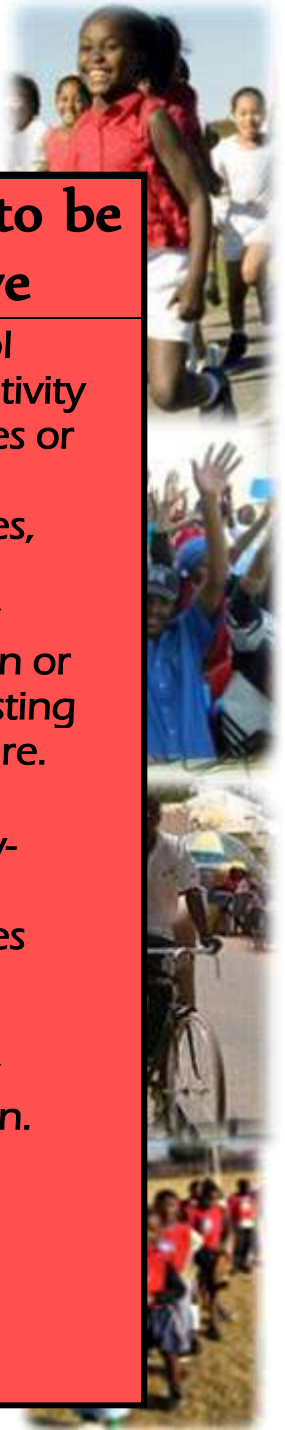
Schools are an established setting for health promotion activity with the advantage of influencing health-related beliefs & behaviors early in the 'health career' of learners.

Physical activity promotion to prevent NCD's: what about worksites?

Areas for Action	Strongly recommended	Recommended/ Promising	Not likely to be effective
Worksite-based settings (nutrition & physical activity)	• Multi-component, worksite based interventions promoting healthy eating and physical activity; supportive environment including a "healthy " food service component and worker participation in planning and implementation of the program	• Multi-component, worksite based interventions promoting healthy eating and physical activity, with a supportive environment (food service, showers, flexitime, setting and location, incentives and recognition)	• Intervention without recognition and reward system, and without supportive environment, and without worker participation

Physical Activity interventions for reducing risk for NCD's: community support

Areas for Action	Strongly recommended	Recommended/ Promising	Not likely to be effective
Community-support Settings (nutrition & physical activity)	• Healthy Lifestyle programmes in homogenous or "high risk" groups such as post-meno-pausal or obese women; multi-component incorporating education, awareness and behavioural interventions • Physical activity interventions for senior adults, in meeting places or clubs where seniors typically gather (can be low intensity, peer-led)	• Programmes aimed at lowering the barriers for participation (access, cost for training, food baskets) • Web-based interventions with interactive "coaching", targeting specific interest groups (weight loss, diabetes, etc.) • "Meals on wheels" type nutrition, home-based intervention for senior adults; utilizing existing infrastructure	• After-school physical activity programmes or holiday programmes, without community participation or outside existing infrastructure. • Community-based programmes developed without community participation.



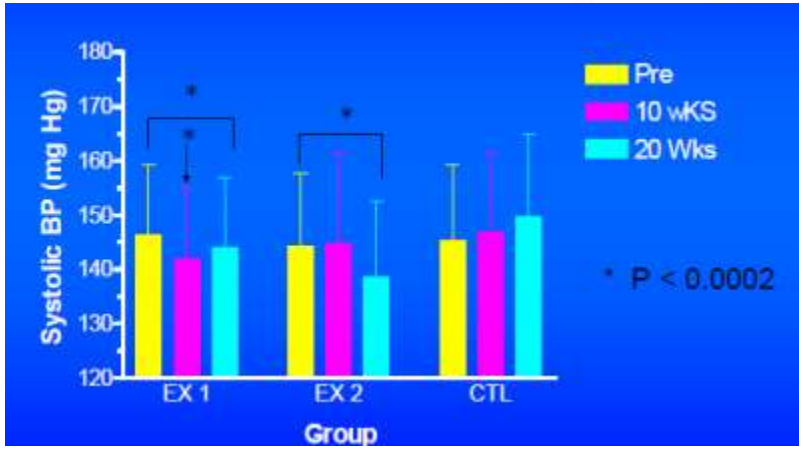
The Journal of Nutrition, Health & Aging©
Volume 7, Number 6, 2003

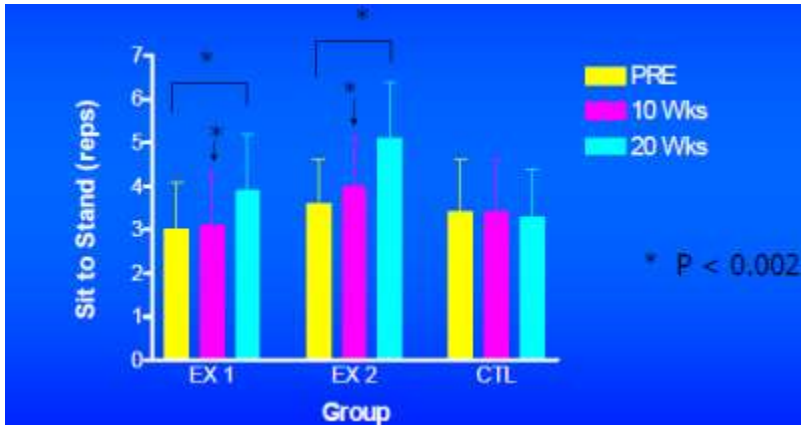
THE JOURNAL OF NUTRITION, HEALTH & AGING©

EFFECTIVENESS OF A COMMUNITY BASEDLOW INTENSITY EXERCISE PROGRAM FOR OLDER ADULTS

T.L. KOLBE-ALEXANDER[1], E.V. LAMBERT[1], K.E. CHARLTON[2]

1. UCT / MRC Research Unit for Exercise Science and Sports Medicine, 2. Nutrition and Dietetics Division, Department of Medicine, University of Cape Town and Chronic Diseases of Lifestyle Unit, Medical Research Council, South Africa. Address for correspondence: Estelle V. Lambert: MRC/UCT Research Unit for Exercise Science and Sports Medicine, Department of Human Biology, Faculty of Health Sciences, University of Cape Town, Sports Science Institute of South Africa, PO Box 115 Newlands, 7725, Email: vlambert@sports.uct.ac.za, Tel: 27-21-6504571, Fax: 27-21-6867530





Promising PA initiatives undergoing evaluation:Extreme Parks

In a 24 hour period, South Africa municipal parks and recreation join hands with sport and recreation, community organisations and local authorities and complete 24 hour extreme parks- this is the third park completed last year.

Promising PA initiatives undergoing evaluation: partnering in the sports sector

Physical activity and health promotion in Africa:

- **Little evaluation;**
- **Minimal dissemination;**
- **Innovative and promising intersectoral models**

Physical activity: New partners for health, who are the "practitioners"?

- Physical educators
- Sports coaches
- Sport for social development programmes
- Religious & culture & youth organizations

Key issues for physical activity on the NCD ageda in Africa

- Data gathering via STEPS focuses attention on physical activity; develops capacity, places it on the national health agenda;

- We need to consider the nature of physical activity accumulation

Cautionary note: we must be careful not to "over-medicalise" physical activity

- The focus on multi-sectoral approaches in countries undergoing rapid urbansation and development is key to prevent mistakes of the past, and to contextualise environmental barriers in the Global South;

- There is a need to recognise and recruit from a different and new cadre of practitioners in Africa.