

The 3rd annual conference and 7th annual meeting of HEPA Europe is hosted by Netherlands Institute for Sport and Physical Activity (NISB) and HEPA Europe – the European Network for the Promotion of Health-Enhancing Physical Activity

11–13 October 2011 in Amsterdam

Netherlands Institute for Sport and Physical Activity (NISB)

NISB/2011/61.124/DDK/itd

Ede, oktober 2011

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On behalf of the Netherlands Institute for Sports and Physical Activity (NISB) and HEPA Europe – the European Network for the Promotion of Health-Enhancing Physical Activity - I would like to welcome all participants to the 3rd conference and 7th annual meeting of HEPA Europe: 'Bridging the gap between science and practice'.

We are proud to receive you all in Amsterdam, the touristic capital of the Netherlands, with the motto I AM: 'I amsterdam'. In a city in which the number of bicycles corresponds with the number of inhabitants (around 750.000), we have a perfect setting for a conference and meeting in which the promotion of physical activity is the main theme. More over: Amsterdam is a city with 1281 bridges. During the conference, together we will try to bridge the metaphorical gap between science and practice.

This is something we at NISB always aim at: we link policy, research and practice, because knowledge is not truly valuable until it is applied by administrators, policymakers and professionals. Not a one-way link from science to policy and practice: it also works the other way round. In the Netherlands, NISB has a pivotal position in the knowledge chain as a whole. During this conference, we will share our experience and of course we are anxious to learn more about your prevention and promotion actions for physical activity.

The conference organisation has tried to create a program that gives you many opportunities to communicate with each other. Let this HEPA-conference be the most interactive yet! I am sure that afterwards you can truly say: 'I AM bridging the gap between science and practice!'

Clémence Ross
CEO Netherlands Institute for Sports and Physical Activity

MONDAY 10 OCTOBER

12:30 – 14:00	<i>Marmeren Hal</i>	Lunch (only for members of Agita Mundo)
13:00 – 14:00	<i>Registration desk</i>	Registration for Agita Mundo meeting
14:00 – 17:00	<i>Mauritszaal</i>	Agita Mundo annual meeting (open to all participants)
15:00 – 17:00		Preparatory work meetings of HEPA Europe working groups (for working group members only)
17:30 – 19:00		Informal meeting of the HEPA Europe Steering Committee (for committee members only)
18:00 – 21:00	<i>Indonesië</i>	Registration and welcome for conference participants
18:00 – 21:00	<i>NH Tropen Hotel</i>	Distribution bicycles (see information circular)

TUESDAY 11 OCTOBER

7:30 – 8:00		Physical activity
8:00 – 9:00	<i>Registration desk</i>	Registration
9:00 – 10:15	<i>Grote zaal</i>	<p>OPENING</p> <ul style="list-style-type: none"> - Erik de Winter, COO of NISB is the chairman of the day and leads you through the program. - Clémence Ross, CEO of the Netherlands Institute for Sport and Physical Activity (NISB), opens the conference and welcomes the participants. - Remco Boer, Manager Program Office (NISB) will inform you about NISB as a knowledge institute with practical experience. - Henk Stokhof, director of Department of Sport and the Olympic Ambition of the city of Amsterdam and Fatima Elatik, District Mayor of Amsterdam Oost at city of Amsterdam represent their city. They will show the situation of sport and physical activity in Amsterdam city. - Willem van Mechelen, VU Medical Centre Amsterdam will welcome you as Chairman of HEPA Europe and Brian Martin, University of Zurich as Chairman of Agita Mundo. - Francesca Racioppi of the WHO Europe will introduce Joao Breda, Programme Manager Nutrition, Physical Activity and Obesity Programme, WHO Regional Office for Europe. He will present 'Recent developments on physical activity promotion and NCD prevention in WHO'.
10:15 – 10:35	<i>Grote zaal</i>	<p>KEYNOTE LECTURE 1</p> <p>Bridging the gap – a Dutch perspective Prof. Dr. M. van Bottenburg (University Utrecht, the Netherlands)</p>

TUESDAY 11 OCTOBER - CONTINUED

10:40 – 11:05	<i>Grote zaal</i>	KEYNOTE LECTURE 2 Evidence-based policy making: Bridging the gap between research and policy in physical activity promotion Prof. Dr. A. Rütten (Institute of Sport Science and Sport, University of Erlangen-Nürnberg, Germany)
11:05 – 11:35	<i>Marmere Hal</i>	Coffee and tea break
11:35 – 11:55	<i>Grote zaal</i>	KEYNOTE LECTURE 3 How sickening is sitting? Dr. M. Chin a Paw (EMGO Institute for Health and Care Research and VU University Medical Center, the Netherlands)
12:05 – 12:25	<i>Grote zaal</i>	KEYNOTE LECTURE 4 The sitting easy blues: can we reduce sedentary behaviour? Prof. S. Biddle (School of Sport, Exercise & Health Sciences, Loughborough University, United Kingdom)
12:30 – 12:50	<i>Grote zaal</i>	KEYNOTE LECTURE 5 An African Footprint: from evidence to advocacy. Dr. T. Kolbe-Alexander (Department of Human Biology, University of Cape Town, South Africa)
13:00 – 13:05	<i>Marmere Hal</i>	Group picture
13:00 – 14:00	<i>Marmere Hal Balustrade</i>	Lunch and poster sessions
		PARALLEL SESSIONS / WORKSHOPS 1
14:00 – 15:30	<i>Raadzaal</i>	<u>SESSION 1: SOCIETAL DIMENSION 1: WALKING PROGRAMS IN COMMUNITIES</u> SODI.17 - Walking for Health: a qualitative study of the links between community engagement, social capital and health outcomes within volunteer-led health walks Jane South (Leeds Metropolitan University, United Kingdom) SODI.04 - Meeting for walking, talking, coffee and pie: Evaluation of a walking intervention in a social organization for older adults Johan Pelssers (Katholieke Universiteit Leuven, Belgium) SODI.02 - Applying the framework: Evaluating the feasibility of a novel and strategic recruitment framework for walking promotion in a practice setting Graham Brennan (University of Strathclyde, United Kingdom)

TUESDAY 11 OCTOBER - CONTINUED

14:00 – 15:30 *Raadzaal* **SODI.20 - Walk – a unique program for intersocial walking in Israel**
Edna Buckshtein (OTZMA – Israel Centre of Sport Clubs, Israel)

Panel discussion

14:00 – 15:30 *Mauritszaal* SESSION 2: SEDENTARY BEHAVIOUR: POSITION STATEMENT

SEBE.30 - Position statement on sedentary behaviour
Ingrid Hendriksen (TNO, Expertcentre Life Style, the Netherlands)

SEBE.18 - Sedentary behaviour of Irish females participating in a mass physical activity event
Aoife Lane (Waterford Institute of Technology, Health, Sport and Exercise Science, United Kingdom)

PHAC.64 - Long-term effectiveness and mediators of need-supportive coaching on physical activity and well-being among sedentary employees
Ann-Sophie van Hoecke (Katholieke Universiteit Leuven, Belgium)

SEBE.13 - The role of active gaming in physical activity in Dutch adolescents
Monique Simons (TNO, Expertcentre Life Style, the Netherlands)

Panel discussion

14:00 – 15:30 *Mali* SESSION 3: PHYSICAL ACTIVITY PROMOTION POLICY 1: ACTIVE TRANSPORT

PHAC.30 - Active travel, physical activity and body weight: a systematic review
Miriam Wanner (University of Zurich , Switzerland)

PHAC.44 - Replacing car trips up to 7.5 kilometres with bicycling trips; preliminary results from the AVENUE project
Eline Scheepers (National Institute for Public Health and the Environment, the Netherlands)

PHAC.17 - Health Economic Assessment Tools for Active Transport: HEAT for Cycling and Walking
Nick Cavill (Cavill Associates, United Kingdom)

Panel discussion

TUESDAY 11 OCTOBER - CONTINUED

14:00 – 15:30	<i>Indonesië</i>	<u>SESSION 4: PHYSICAL ACTIVITY PROMOTION POLICY 3: LIFE-STYLE INTERVENTION IN LOCAL SETTINGS</u> PHAC.46 - Healthy lifestyle campaign for middle-aged men. Part I: Basic elements based on research and surveys Jyrki Komulainen (LIKES research Centre for Sport and Health Sciences, Finland) PHAC.18 - BeweegKuur: development of a combined lifestyle intervention and implementation in local settings Liesbeth Preller (Netherlands Institute for Sport and Physical Activity (NISB), the Netherlands) SODI.08 - Economic evaluation of lifestyle interventions: the 'BeweegKuur' study MARIKE HENDRIKS (Maastricht University Medical Centre, the Netherlands) SODI.07 - Winning without conquering 'Evaluation of teachers' perspectives on a primary school health promotion initiative Nadine Zillmann (University of Vienna, Austria) Panel discussion
14:00 – 15:30	<i>Emmazaal</i>	<u>SESSION 5: BUILDING POLICY CAPACITIES: EXPERIENCES FROM THE PASEO PROJECT (WORKSHOP)</u>
14:00 – 15:30	<i>Clauszaal</i>	<u>SESSION 6: HEALTHY CHILDREN IN SOUND COMMUNITIES (WORKSHOP)</u>
14:00 – 15:30	<i>Bestuurskamer</i>	<u>SESSION 7: IMPALA IMPROVING INFRASTRUCTURES FOR LEISURE-TIME PHYSICAL ACTIVITY IN THE LOCAL ARENA (WORKSHOP)</u>
15:30 – 16:00	<i>Marmere Hal</i>	Coffee and tea break incl. poster sessions
16:00 – 17:30	<i>Raadzaal</i>	PARALLEL SESSIONS / WORKSHOPS 2 <u>SESSION 8: SOCIETAL DIMENSION 2: DISADVANTAGED COMMUNITIES</u> SODI.12 - Physical activity interventions in socio-economically disadvantaged communities: a qualitative study of experiences of social and societal influences Claire Cleland (Queens University Belfast, United Kingdom) SODI.18 - How to support physical activity among adults with disabilities - a review Maria Hagstromer (Karolinska Institutet, Sweden) SODI.13 - Join-in: Social integration of migrant youth Willie Westerhof (Netherlands Institute for Sport and Physical Activity (NISB), the Netherlands)

TUESDAY 11 OCTOBER - CONTINUED

- 16:00 – 17:30 *Raadzaal* **SEBE.20 - Physical activity counselling for older unemployed persons in a jobcentre setting**
Lars Gabrys (Goethe University Frankfurt, Germany)
- Panel discussion**
- 16:00 – 17:30 *Mauritszaal* SESSION 9: SEDENTARY BEHAVIOUR 2: ENERGY EXPENDITURE
- PHAC.19 - Validation of Nordic monitoring system of self-reported physical activity and sedentary behaviour for children and adolescents**
Rosa Olafsdottir (University of Iceland, Iceland)
- SEBE.10 - How much do we NEAT?**
Hans Savelberg (Maastricht University Medical Centre, the Netherlands)
- SEBE.24 - Increased muscle activation may mediate the increase in energy cost during office work in different postures**
Tibor Hortobágyi (University Medical Centre Groningen, the Netherlands)
- SEBE.04 - Sedentary behaviour as a risk factor for mortality independent of moderate to vigorous physical activity**
Annemarie Koster (National Institute on Aging, the Netherlands)
- Panel discussion**
- 16:00 – 17:30 *Bestuurskamer* SESSION 10: PHYSICAL ACTIVITY PROMOTION POLICY 2: NATIONAL STRATEGIES
- PHAC.08 - Embedding HEPA Policy into the 2011 Modification of the 2007 Hungarian Sport Strategy**
Judit Farkas (Semmelweis University, Hungary)
- PHAC.62 - Conceptualization of physical activity promotion**
Makoto Chogahara (Kobe University, Japan)
- PHAC.33 - Mapping the HEPA sector through SANTE project: an European overview**
Giovanni Capelli (University of Cassino, Italy)
- Panel discussion**
- 16:00 – 17:30 *Indonesië* SESSION 11: PHYSICAL ACTIVITY PROMOTION POLICY 4: BARRIERS TO PHYSICAL ACTIVITY
- SODI.15 - The barriers to participation in recreational physical activity of the disabled from rural areas of eastern Poland**
Jaroslaw Zbikowski (Pope John Paul II State School of Higher Education In Biala Podlaska, Poland)

TUESDAY 11 OCTOBER - CONTINUED

16:00 – 17:30	<i>Indonesië</i>	PHAC.71 - Sports Club for Health - Guidelines MSc Eerika Laalo-Häikiö (Finnish Sport for All Association) PHAC.21 - Synergies of Science and Practice: Elderly People in Outdoor Activity Parks Rosa Diketmueller (University of Vienna, Austria) PHAC.65 - Children's exercise behaviour in the Netherlands: Prevalence, heritability, and tracking over time Charlotte Huppertz (VU University Amsterdam, the Netherlands) Panel discussion
16:00 – 17:30	<i>Clauszaal</i>	<u>SESSION 12: PHYSICAL ACTIVITY AND AGING: A CHALLENGING COUPLE (EUNAAPA WORKSHOP)</u> <i>Marijke Hopman-Rock (TNO Quality of Life), Nina Waaler Loland (Oslo University College, Norway), Federico Schena (University of Verona, Italy), Christophe Delecluse (Katholieke Universiteit Leuven, Belgium)</i>
16:00 – 17:30	<i>Emmazaal</i>	<u>SESSION 13: NATIONAL HEPA POLICIES: 7 CASE STUDIES FROM EUROPE: EXPERIENCES AND LESSONS LEARNED (WORKSHOP)</u> <i>Karen Milton (Loughborough University, United Kingdom), Sonja Kahlmeier (University of Zurich, Switzerland), Alberto Arlotti (Emilia Romagna Region, Italy), Eva Martin (University of Zurich, Switzerland), Ana Valente (University of Porto, Portugal), Tommi Vasankari (UKK Institute for Health Promotion Research, Finland), Anita Vlasveld (Netherlands Institute for Sport and Physical Activity, the Netherlands)</i>
17:30 – 19:30		Optional: Social program: excursions (see information circular) A walk through a part of Amsterdam A bicycle tour through Amsterdam A canal cruise through Amsterdam
20:00 – 22:00		Optional: Dinner at Spargo's (see information circular)

WEDNESDAY 12 OCTOBER

7:30 – 8:00		Physical activity
8:00 – 9:00	<i>Registration desk</i>	Registration
9:00 – 11:00	<i>Grote zaal</i>	2 nd meeting of the HEPA Europe – EU Contact Group
11:00 – 11:30	<i>Marmere Hal</i>	Coffee and tea break
11:30 – 12:30	<i>Grote zaal</i>	HEPA Europe working groups
	<i>Mauritszaal</i>	HEPA promotion in socially disadvantaged groups

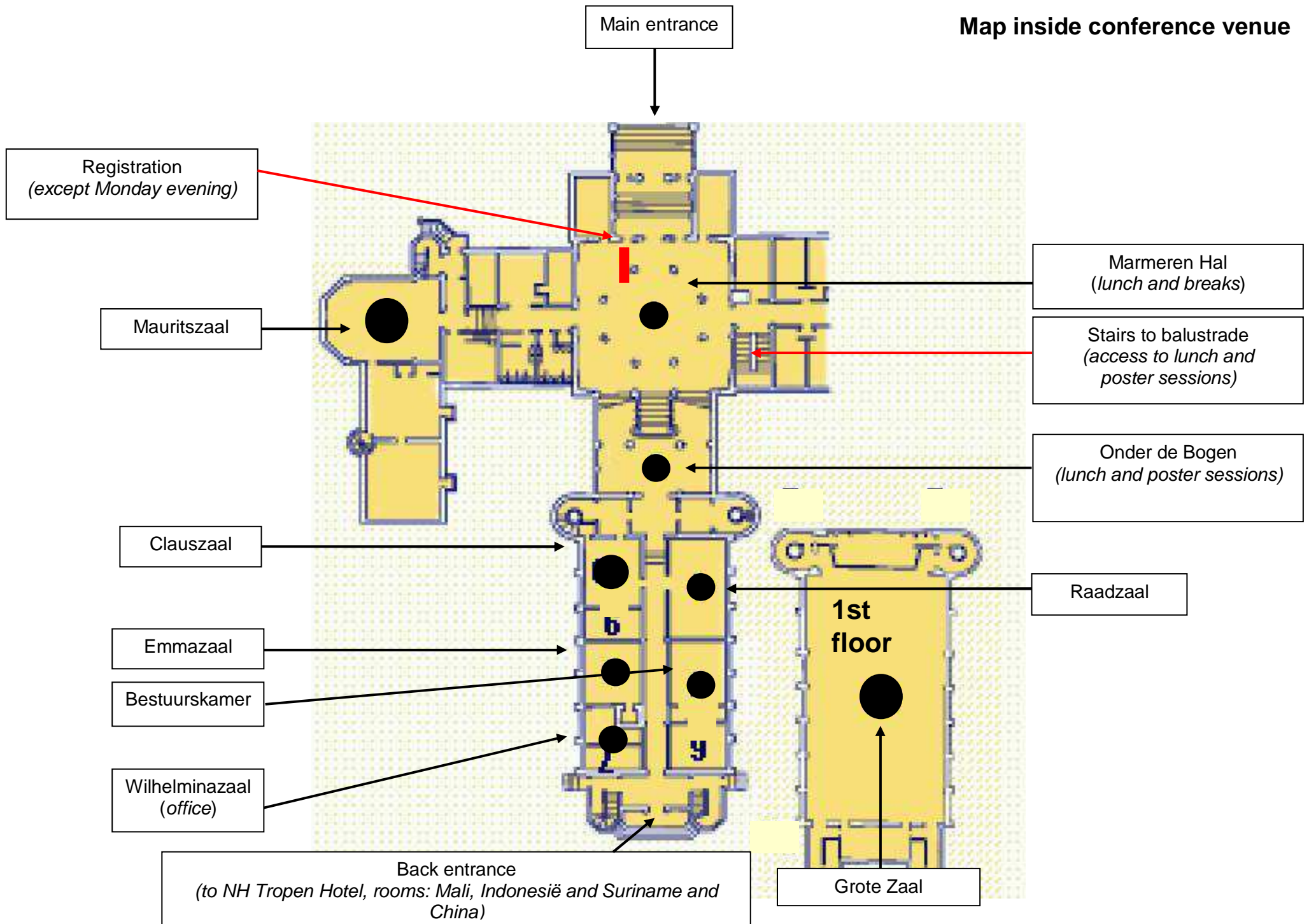
WEDNESDAY 12 OCTOBER – CONTINUED

11:30 – 12:30	<i>Grote zaal</i>	HEPA Europe working groups
	<i>Clauszaal</i>	Sport clubs for health
	<i>Indonesië</i>	National approaches to HEPA promotion
	<i>Raadzaal</i>	Physical activity and sport promotion in youth
	<i>Besturskamer</i>	HEPA promotion in health care settings
	<i>Mali</i>	HEPA promotion and injury prevention
	<i>Suriname</i>	Active aging
12:30 – 14:00	<i>Marmere Hal</i>	Lunch and poster sessions
14:00 – 15:30		Continuation HEPA Europe working groups
	<i>Mauritszaal</i>	HEPA promotion in socially disadvantaged groups
	<i>Clauszaal</i>	Sport clubs for health
	<i>Indonesië</i>	National approaches to HEPA promotion
	<i>Raadzaal</i>	Physical activity and sport promotion in youth
	<i>Besturskamer</i>	HEPA promotion in health care settings
	<i>Mali</i>	HEPA promotion and injury prevention
	<i>Suriname</i>	Active aging
15:30 – 16:00		Getting ready for study visits
16:00 – 19:00	<i>Marmere Hal</i>	Study visits (see information circular)
		BeweegKuur: adults with obesity and overweight
		BigMove: adults with mental and physical illnesses
		The healthy neighbourhood: children, adults and the elderly
16:00 – 19:00	<i>Marmere Hal</i>	Jump-in sports and fitness offerings: children aged between 4-12 years
		Topscore: secondary school students aged between 12-19 years
20:00 – 22:00	<i>Fifteen</i>	Conference dinner (see information circular)
22:00 – 24:00	<i>Fifteen</i>	Conference party (see information circular)

THURSDAY 13 OCTOBER – 7th ANNUAL MEETING OF HEPA EUROPE

9:00 – 9:30	<i>Registration desk</i>	Registration
9:30 – 9:45	<i>Grote zaal</i>	Opening and welcome
9:45 – 10:00	<i>Grote zaal</i>	New applications for membership
10:00 – 10:15	<i>Grote zaal</i>	Results of the Steering Committee elections Willem van Mechelen, chairman HEPA Europe
10:15 – 10:45	<i>Grote zaal</i>	HEPA Europe survey: key results and discussion Sonja Kahlmeier, University of Zurich
10:45 – 11:15	<i>Marmere Hal</i>	Coffee and tea break
11:15 – 12:15	<i>Grote zaal</i>	Activity report 2009-2010: overview and selectec activities and Work programme 2010-2011 and possible future activities – introduction and discussion Willem van Mechelen, chairman HEPA Europe and working group leaders
12:15 – 12:20	<i>Grote zaal</i>	Formal approval of the work programme 2010-2011 Willem van Mechelen, chairman HEPA Europe
12:20 – 12:30	<i>Grote zaal</i>	Other business
12:30 – 13:30	<i>Marmere Hal</i>	Lunch

Map inside conference venue



Blue = Parallel sessions and workshops on Tuesday
(1st round: 14:00-15:30 or 2nd round: 16:00-17:30)

Green = HEPA Europe working groups on Wednesday

Grote zaal

- Opening of the conference
- HEPA Europe – EU Contact Group
- 7th annual meeting of HEPA Europe

Mauritszaal

- Agita Mundo annual meeting
- Sedentary behavior 1: position statement (1st round)
- Sedentary behavior 2: energy expenditure (2nd round)
- HEPA promotion in socially disadvantaged groups

Clauszaal

- Healthy children in sound communities (1st round)
- Physical activity and ageing: a challenging couple (EUNAAPA) (2nd round)
- Sport Clubs for Health WG

Emmazaal

- Building policy capacities: experience from the PASEO project (1st round)
- National HEPA policies 7: case studies from Europe; experiences and lessons learned (2nd round)

Bestuurskamer

- IMPALA improving infrastructures for leisure-time Physical Activity in the Local Arena (1st round)
- Physical activity promotion policy 2: national strategy's (2nd round)
- HEPA promotion in Health care settings

Raadzaal

- Societal dimension 1: Walking programs in communities (1st round)
- Societal dimension 2: disadvantaged communities (2nd round)
- Physical Activity and sport promotion in children and youth

Mali (Room in NH Tropen hotel)

- Physical activity promotion policy 1: Active transport (1st round)
- HEPA promotion and injury prevention

Indonesië (Room in NH Tropen Hotel)

- Physical activity promotion policy 3: Life-style intervention in local settings (1st round)
- Physical activity promotion policy 4: Barriers to the physical activity (2nd round)
- National Approaches to HEPA promotion

Suriname (Room in NH Tropen Hotel)

- Active ageing

Main entrance
Royal Tropical Institute

Start canal cruise at the
pier (just across the road)

Walking route between NH Tropen
Hotel and Royal Tropical Institute

Royal Tropical
Institute

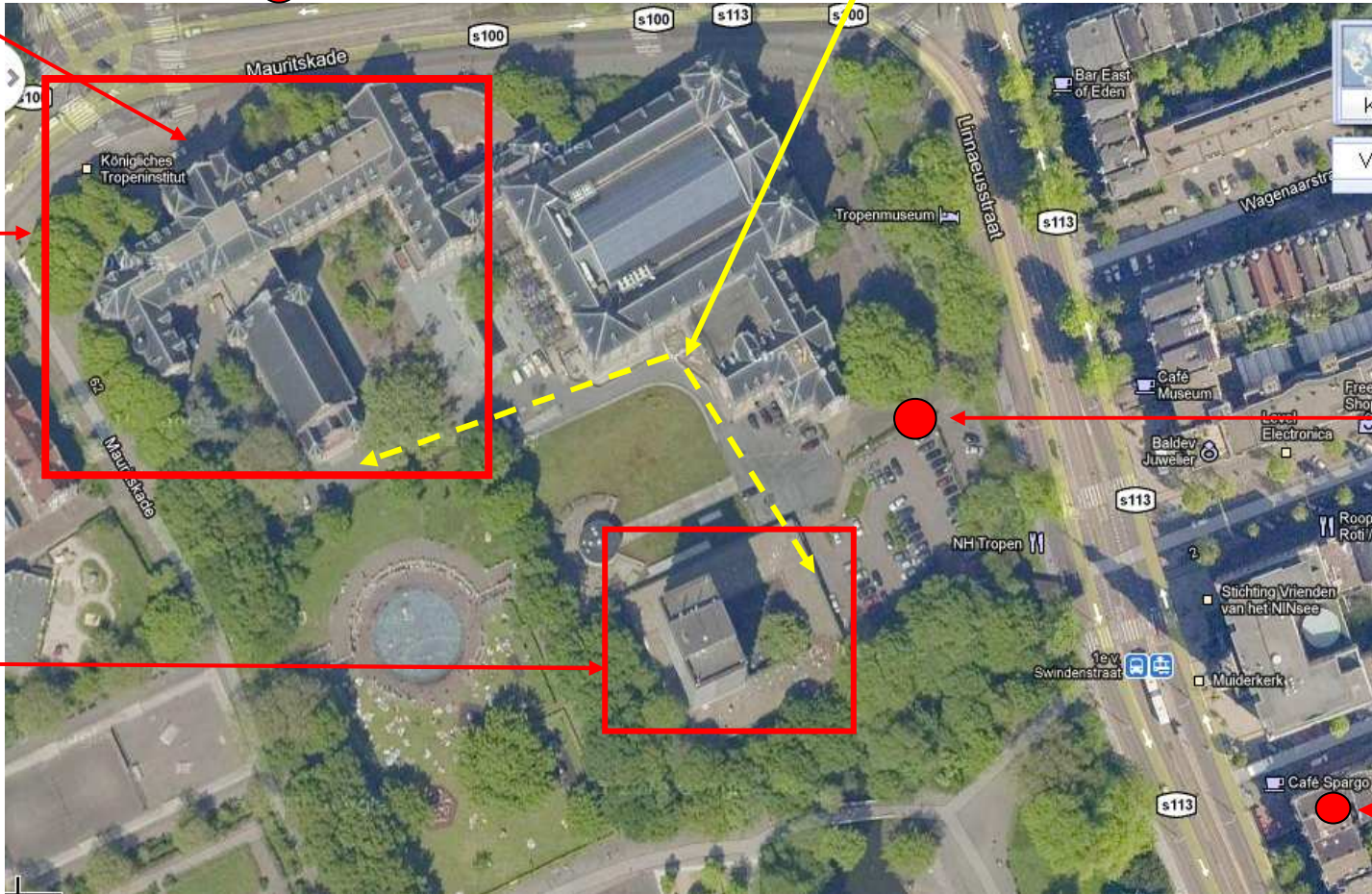
Rooms:

- Marmeren Hal
- Grote Zaal
- Mauritszaal
- Raadzaal
- Emmazaal
- Clauszaal
- Bestuurskamer

NH Tropen Hotel

Rooms:

- Indonesië
(registration on
Monday)
- Suriname
- Mali



Meeting point for:

- Physical activity
- Bike tour on
Tuesday
- Study visit by bus
to BeweegKuur
- Shuttlebus or
bicycle guidance
to conference
dinner

Optional dinner
at Spargo

Map surroundings conference venue

Dear participant,

We are pleased to provide you with the following information regarding the practical arrangements for the conference.

Conference organizer

The Netherlands Institute for Sport & Physical Activity (NISB)

Postbus 643
6710 BP Ede (GLD)
The Netherlands

Telephone: +31 (0)318 490 900
Fax: +31 (0)318 490 995
Email: info@nisb.nl
Website: www.nisb.nl/international

Coordinator HEPA Europe conference 2011

Mrs. Dorien Dijk

dorien.dijk@nisb.nl

Website conference

www.hepaeuropeconference2011.nl
www.euro.who.int/hepa

Venue of the meeting

The Royal Tropical Institute (KIT)
Mauritskade 63
1092 AD Amsterdam

Central reception & information:
Telephone: +31 (0)20 568 8711
Fax: +31 (0)20 668 4579
Website: www.kit.nl

In line with WHO's policy on tobacco, smoking is not permitted during sessions of meetings organized or co-sponsored by the Regional Office for Europe.

Language

The official language at the conference is English.

Registration

Registration will take place:

- on Monday 10 October between 18:00 and 21.00 in meeting room Indonesie at NH Tropen hotel, which is opposite the meeting venue. In the evening you are also welcome for a drink, to meet other participants informally, to take part in a typical 'Dutch' game competition, you can win a price and pick up your bicycle. We encourage you to make use of this opportunity to reduce waiting time on Tuesday morning.
- on Tuesday 11 October between 08:00 and 09:00 in the "Marmeren Hal" of the Royal Tropical Institute.

Registration of participants to the 7th annual meeting of HEPA Europe will take place on Thursday 13 October between 09:00 and 09:30 in the Marble hall of the Royal Tropical Institute.

Working hours, breaks and refreshments

The working hours will be from 09:00 to 17:30 with a 30-minute break for refreshments in the morning and afternoon and a 60-90-minute lunch break.

We take care of participants with special dietary requests (according the notification, done while registering).

In the Netherlands tap water is drinkable. It is very normal to bring your own water bottle to the conference venue. You can refill your bottle at every tap.

Please see below an outline of the conference programme.

Programme Monday October 10

12:30-14:00: Lunch (only for members of Agita Mundo)
13:00-14:00: Registration for Agita Mundo meeting
14:00-17:00: Agita Mundo annual meeting (open to all participants)
15:00-17:00: Preparatory work meetings of HEPA Europe working groups (members only)
17:30-19:00: Informal meeting of the HEPA Europe Steering Committee
(committee members only)
18:00-21:00: Registration and welcome for conference participants
18:00-21:00: Distribution bicycles

Programme Tuesday October 11

07:30-08:00 Physical activity
08:00-09:00 Registration
09:00-10:15 Opening of the conference
10:15-11:05 Keynote speakers
11:05-11:35 Coffee and tea break
11:35-13:00 Keynote speakers
13:00-13:05 Group picture in Marmeren hal
13:00-14:00 Lunch and poster sessions
14:00-15:30 Parallel sessions / workshops 1
15:30-16:00 Coffee and tea break, incl. poster sessions
16:00-17:30 Parallel sessions / workshops 2
17:30-19:30 Optional; social program: excursions
20:00-22:00 Optional: Dinner at Spargo's

Programme Wednesday October 12

07:30-08:00 Physical activity
08:00-09:00 Registration
09:00-11:00 HEPA Europe – EU Contact Group
11:00-11:30 Coffee and tea break
11:30-12:30 HEPA Europe working groups
12:30-14:00 Lunch and poster sessions
14:00-15:30 Continuation HEPA Europe working groups
15:30-16:00 Getting ready for study visits
16:00-19:00 Study visits
20:00-22:00 Conference dinner
22:00-24:00 Conference party

Programme Thursday October 13

09:00-09:30 Registration
09:30-10:45 7th annual meeting of HEPA Europe (open to all participants)
10:45-11:15 Coffee and tea break
11:15-12:30 Continuation 7th annual meeting of HEPA Europe
12:30-13:30 Farewell Lunch

See also chapter 'programme and maps' or www.hepaeuropeconference2011.nl

Floorplan of The Royal Tropical Institute and map surroundings

See chapter 'programme and maps'.

WiFi / E-mail access

Free WiFi is available in the entire conference venue of the Royal Tropical Institute. Please note that there might be limited access for some users at certain times as on lunchtime and breaks. If you cannot get access at a certain time, please try again later.

Social activities

Tuesday 11 October

Participants can choose one of the following 3 activities taking place in the afternoon:

- A walk through a part of Amsterdam
meeting point: Marmeren hal.
- A bicycle tour through Amsterdam
meeting point: see map surroundings conference venue.
- A canal cruise through Amsterdam
meeting point: see map surroundings conference venue.

Time: 17:30-19:15 hours

Fee: €10,-

An optional social dinner will be organized at the following restaurant:

Café Spargo

Linnaeusstraat 37a

1093 EG Amsterdam

www.cafespargo.nl

Time: 20:00 hours

Fee: €20,- for a 3-course dinner, including 2 consumptions

Wednesday 12 October

Participants can visit one out of 5 local or national interventions in Amsterdam city where science is put into action:

- BeweegKuur; Adults with obesity and overweight
Meeting point: see map surroundings conference venue. Transport: bus.
- BigMove; Adults with mental and physical illnesses
Meeting point: Marmeren hal. Transport: guided walk.
- The healthy neighbourhood; Children, adults and the elderly
Meeting point: Marmeren hal. Transport: tram (tickets and guidance will be provided)
- Jump-in Sports and Fitness offerings; Children aged between 4-12 years
Meeting point: Marmeren hal. Transport: guided walk.
- Topscore; Secondary school students aged between 12-189 years
Meeting point: Marmeren hal. Transport: guided walk.

Official conference dinner and dance party will be

Location: Restaurant Fifteen

Time: 20:00-01:00 hours

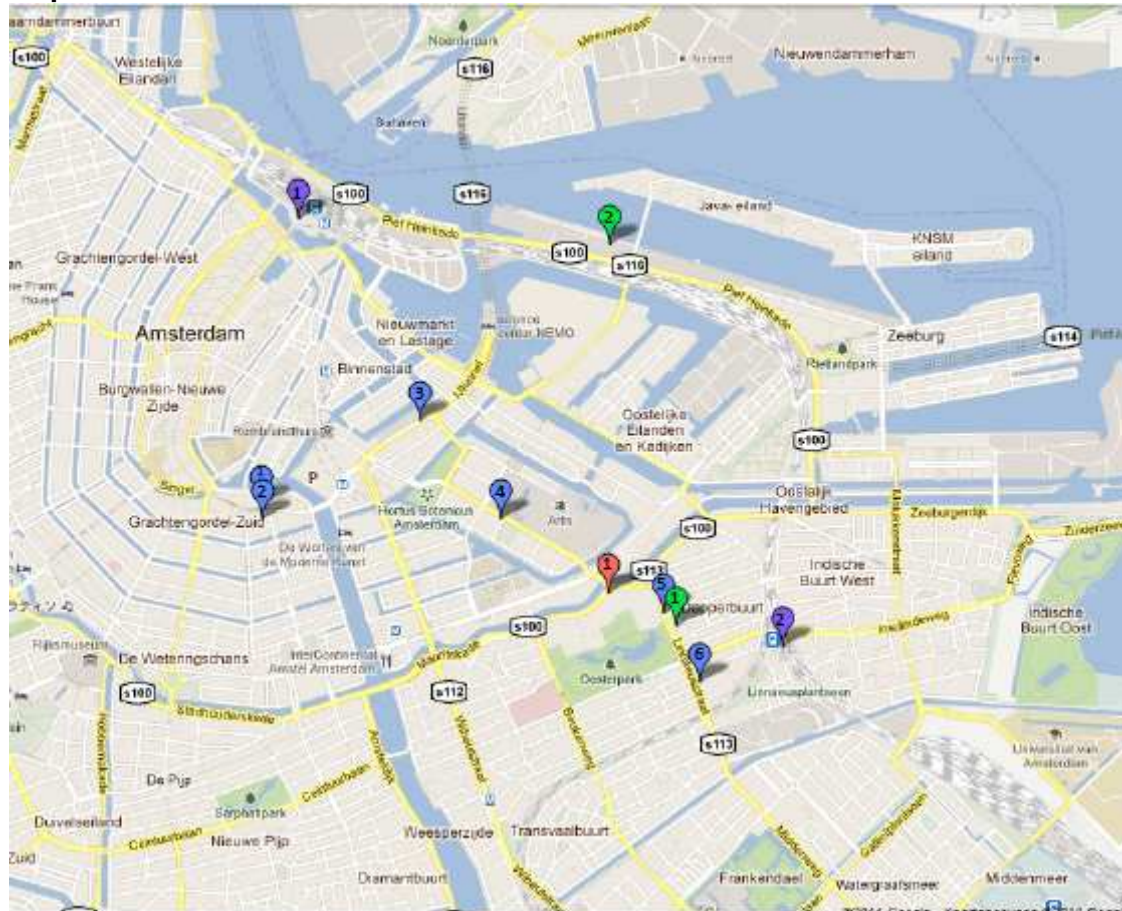
Fee: €0-, excluding drinks

A shuttle buss will be available to transport participants to restaurant Fifteen. Participants can also choose to travel by bicycle. The meeting point to restaurant Fifteen is in both cases in front of the NH Tropen hotel (see position meeting point on map surroundings conference venue).

Departure shuttle bus to restaurant Fifteen at 19:15 and 19:45.

Departure shuttle bus back to meeting point at 00:00 and 01:00.

Map of different locations



- Bleu 1: NH Caransa (hotel)
- Bleu 2: NH Schiller (hotel)
- Bleu 3: IBIS Amsterdam City Stopera (hotel)
- Bleu 4: EDEN Lancaster (hotel)
- Bleu 5: NH Tropen (hotel)
- Bleu 6: EDEN Amsterdam Manor (hotel)
- Green 1: Spargo (Dinner location Tuesday October 11)
- Green 2: Fifteen (Location conference dinner and party Wednesday October 12)
- Red 1: Conference location
- Violet 1: Amsterdam central station
- Violet 2: Amsterdam Muiderpoort station

Climate

Holland can be rainy and windy in October. You can check the weather forecast at: http://www.knmi.nl/index_en.html.

Visa

Please check if a visa is required for your travel or hotel booking. If so, kindly apply for one as soon as possible. A letter of invitation to participate in the meeting should facilitate the issuance of your visa. Please let us know if you need one.

Currency

At any bank you can exchange your money for Euros. There is a GWK Bank/Travelex inside the main hall at Schiphol Airport and at Amsterdam Central Station. There are several banks near the meeting venue.

Transportation

From Schiphol Airport to the city centre of Amsterdam

A direct rail link connects Schiphol International Airport with Amsterdam central station (Amsterdam Centraal); this is the fastest and most convenient way to get within 10 minutes to the city center. Trains run every 10 minutes from platforms 1 and 2 in the main arrival plaza at Schiphol airport (see map below) and cost just €3.60 for a single journey. Make sure you have change with you to use the ticket machines to avoid the lines; it costs € 0.50 surcharge if you go to the ticket office which is situated close to the red/white-checked cube at Schiphol Plaza. The journey planner on the NS website will provide you with the travel information, including details of temporary timetable changes: <http://www.ns.nl/reisplanner-v2/index.shtml?language=en>. It is also possible to buy a combined rail-link and public transport-pass, see “Public transportation in Amsterdam” below.



Airport shuttles run by Connexion depart every 10 minutes with service to more than 100 hotels throughout the city (<http://www.airporthotelshuttle.nl/site/home.asp>). Tickets can be purchased at the Connexion desk on Schiphol Plaza near the Arrivals hall 4 (€11 one way, €17.50 for a return journey). Guests of major hotels should check the shuttle area to see if their hotel provides a complimentary service (more information see also here: <http://www.schiphol.nl/Travellers/ToFromSchiphol/PublicTransport/HotelCourtesyBuses.htm>).

Public transportation in Amsterdam

GVB (www.gvb.nl) is the public transport company of Amsterdam, providing integrated metro, tram and bus service throughout Amsterdam and its surrounding areas. In 2010, one comprehensive OV-chipcard ticketing system has been introduced allowing you to travel on trams, metro, busses and even trains using one OV-chipcard. If you are in Amsterdam only for a visit, the most cost-effective option are “All-in-One Travel Tickets”. They allow for the train journeys from Schiphol Airport to Amsterdam Central Station when you arrive and back to Schiphol when you leave, and also include 24-, 48- or 72-hour OV-cards for the public transport system in Amsterdam.

Please visit the websites: <http://www.amsterdam.info/public-transportation-chipcard/> and <http://www.amsterdam.info/transport> for more information.

Bicycle

Of course biking is the preferred Dutch way to travel and some would say the only way to truly experience the city. As organisers, we strongly advise HEPA Europe visitors to make use a bicycle. If you want to have a bicycle during your stay in Amsterdam, you can indicate this when registering for this conference. Since Amsterdam is a busy city and people from Amsterdam all interpret the traffic rules differently, we give you a short introduction on bicycle skills before you get on the road. This is the same course that is offered to schoolchildren as part of health stimulation projects. The objective of these projects is to stimulate schoolchildren to go to school by bicycle instead by scooter or public transport.

During your stay you can use a bicycle for transportation between your hotel, the conference venue and study visits*. Therefore, you can make a reservation for a bicycle during your registration. You have to be able to pick up the bicycle on Monday 10 October between

18:00 - 21:00 on Tuesday 11 October between 8:00 - 9:00. The use of a bicycle during your stay is free of charge, however you have to sign a contract for your responsibility of using the bicycle. You will receive instructions on how to use your bike, followed by a cycle test.

The bicycle needs to be back on Wednesday 12 October between 19:00 -20:00 (mostly for participants who won't be able to return their bicycle on Thursday morning) and Thursday 13 October between 08:00-13:00.

Luggage room

There will be a small luggage room available at Thursday 13 October for participants who have to travel directly to the airport after closure of the conference. We strongly recommend all participants to store luggage as much as possible at the hotel and to pick-up after closure of the conference.

PARALLEL SESSION 1

Tuesday 11 October, 14:00 – 15:30

Session 1: Societal dimension 1: walking programs in communities

Room: Raadzaal

SODI.17 - Walking for Health: a qualitative study of the links between community engagement, social capital and health outcomes within volunteer-led health walks

Author(s)

Dr. Jane South¹, K. Kinsella¹, G.Giuntoli¹, Professor J. McKenna², Professor J. Long²,
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Presenting author: Jane South

Introduction: Walking for Health is a national network of volunteer led health walks, coordinated by Natural England, UK, and endorsed by the National Health Service. The network aims to increase physical activity in the sedentary population through volunteers leading short 'health walks' in their local areas. The volunteer walk leader role is a key mechanism to facilitate and sustain engagement, but research is needed on how social processes within groups link to health outcomes and what wider social benefits result. The presentation will be report on a pilot study of a befriending scheme connected to a regional health walks programme based in the North East of England. The aim of the presentation will be to explore the social model that allows health walks to flourish and how processes of engagement based on independent volunteer action lead to health and social outcomes.

Activities undertaken: Qualitative methodology was used to examine the volunteer role and the links between participation and wellbeing. A Theory of Change was subsequently developed to map activities, mechanisms and outcomes. Eight semi-structured individual interviews and ten focus groups were conducted with a sample of 87 individuals participating in health walks. The sample reflected the diversity of geographical areas and included groups in both rural and urban areas. Thematic analysis of the transcribed focus group and individual interviews was undertaken.

Results: Both new and existing walkers identified the significance of social aspects in motivating them to undertake physical activity, both within and outside the group. The volunteer walk leader was a critical role that facilitated participation, however, peer support processes between the group members were also significant enablers. The presentation will discuss how group activity was linked to social outcomes in the wider community, with evidence of both bonding and bridging social capital. Psycho-social benefits were seen to provide an explanation of sustainable participation in community led walks and were not merely unintended consequences of a physical activity intervention.

Conclusions: Participation in Walking for Health is facilitated by a volunteer model that widens access to community walks and is reinforced by peer support within those groups. We will present a Theory of Change that attempts to link the community organisation of health walks with the outcomes at individual and community level. Understanding these social processes and how they link to health outcomes will help policy makers, practitioners and researchers design more effective engagement strategies that are sustainable over time and across different communities.

SODI.04 - Meeting for walking, talking, coffee and pie: Evaluation of a walking intervention in a social organization for older adults

Author(s)

J. Pelssers¹, C. Delecluse¹, E. van Roie¹, E. Kennis¹, J. Opdenacker¹, A. Schotte¹, F. Boen¹

¹Department of Kinesiology, Katholieke Universiteit Leuven

Presenting author: MSc Johan Pelssers

Introduction: Social organizations constitute valuable and low-cost platforms for wide-scale physical activity interventions. By weaving physical activity interventions into social activities, organizations can stimulate their sedentary members to participate in physical activity in a trusted and supporting environment. This study evaluated the effects of a structured, tailored and pedometer-based walking intervention (Every step counts!) in a social organization for older adults on physical activity, walking fitness and well-being. The intervention was offered as a social activity in the community meeting points of the organization. More specifically, the intervention consisted of ten individually tailored, weekly walking schedules that prescribed walks of a fixed number of aerobic steps (> 10 continuous minutes). The walking schedules were structured to create a training effect (progressive overload). Participants were issued pedometers to complete the prescribed walks. Weekly group walks were organized to help individuals complete their personalized walking schedules.

Methods: In order to evaluate intervention effectiveness, measures of physical activity, walking fitness and well-being were obtained at the start- (week 1 – pre-test) and end-meeting (week 10 – post-test) of the intervention in 29 meeting points (intervention condition; n = 432; age = 69,40; BMI = 26,69). At corresponding times, these measures were also assessed in 10 meeting points that had confirmed to participate in the intervention during the subsequent activity season (waiting-list control condition, n = 148; age = 70,34; BMI = 26,93). Measures included: Godin Leisure-Time Exercise Questionnaire (GLTEQ) for physical activity; six-minute walking test (6MWT) for walking fitness and functionality; State-Trait Anxiety Index (STAI); Marcoen Scale for Well-being (Marcoen).

Results: Intention-to-treat mixed models revealed significant 2 (Condition) x 2 (Time) interactions for: moderate intensity physical activity (F = 7.276, p < .01); total physical activity (F = 6.185, p < .05); the number of steps (F = 11,719, p < .01), distance covered (F = 9.486, p < .01), and the total score (F = 7.408, p < .01) on the 6MWT; anxiety (F = 4.971, p < .05); and self-reported health (F = 4.526, p < .01). The intervention condition improved significantly on total physical activity (GLTEQ), fitness and functionality (6MWT), and self-reported health, while the changes over time on these measures were not significant in the control condition. Moderate physical activity (GLTEQ) decreased in the control condition, while it remained stable over time in the intervention condition. A decrease in anxiety (STAI) was found in the intervention condition, while anxiety remained stable over time in the control condition. No significant interactions were found on other measures.

Conclusions: The results indicate that implementing a structured, tailored and pedometer-based walking intervention in a social organization is an effective strategy in promoting moderate intensity and total physical activity, walking fitness and well-being among older adults. The findings suggest that social organizations are valuable and low-cost platforms for wide-scale physical activity interventions.

SODI.02 - Applying the framework: Evaluating the feasibility of a novel and strategic recruitment framework for walking promotion in a practice setting

Author(s)

G. Brennan¹, Dr. C. Fitzsimons¹, Professor N. Mutrie¹

¹University of Strathclyde

Presenting author: Graham Brennan

Introduction: Walking has been advocated as a 'near perfect form of exercise' and as the mode of physical activity most likely to increase physical activity levels among the Scottish population. However, translating promotion into participation remains a challenge with a key focus being on recruitment. Recruitment is operationally defined as the process of 'inviting, negotiating and facilitating participation in an organised activity'. The Glasgow Housing Authority (GHA) approached our group for help in setting up a walking programme for men living in deprived areas, which provided an opportunity to evaluate recruitment. Using evidence from a recent systematic review, workshops with practitioners and focus groups with members of walking groups, a framework for recruitment was developed and evaluated. This pre-planned strategy was implemented by the practice organisation and overseen by the primary researcher.

Methods: Our aim was to assess the feasibility of using a pre-planned strategy for recruitment. This involved multiple phases of passive and active recruitment; firstly distributing print material, then working with local mediators to establish community links, and lastly conducting face to face recruitment where the men lived. The objectives were to monitor whether the target goals of the strategy could be achieved, identify the factors affecting strategy implementation and gather stakeholders' reactions and opinions. An action research approach was taken and a mixed method approach was applied. Outcome measures included tracking the response rates and the number of participants attending the walking group. Process measures included monitoring the fidelity of the recruitment strategy using a case-specific checklist and qualitative interviews with participants and stakeholders.

Results: We successfully designed and implemented an evidence based recruitment plan and strategy in the target site. However, a substantially longer period for recruitment was required and resulted in a twelve week recruitment phase rather than four weeks. Major challenges we faced included: a three week delay in printing posters/fliers; a loss of communication with the recruitment team; limited availability of key contacts at each site, for example concierge staff and a smaller recruitment team than had been expected. These factors were critical to our model for recruitment which emphasised the need for awareness building, establishing trust, and the timely execution of active recruitment methods in order to achieve success. Initial interviews with participants indicate that trust and familiarity with the recruiter and the timely delivery of a programme as it was advertised were important to the participant. The information will be used to develop a comprehensive recruitment toolkit for future use.

Conclusions: A key theme of our work is that recruitment is an active process and an action at the level of the recruiter. This study captures the outcomes of our approach to recruitment in a real-world setting, and the feasibility of following a strategic multi-phasic, multi-methods design. From this perspective we can conclude that the major difficulties we encountered were at the level of the recruiter and not the participant. From the participants' perspective, trust is key, and networking with individuals familiar to the target group helped to build trust.

SODI.20 - Walk – a unique program for intersocial walking in Israel

Author(s)

Edna Buckshtein¹

¹ OTZMA the Israel Center of Sport Clubs

Presenting author: Edna Buckshtein

Introduction: The "Israel Sport for All Association" conducts since 1992 of physical activity (PA) surveys. Walking is the most common PA in Israel. A significant increase in the rate of walkers was found between 1992 to 2006: from 9% to 35% respectively. Several public and private organizations have been leading a joint project to promote wellbeing by operating walking clubs in 90 communities throughout Israel. The program has been implemented during the last 7 years.

Physical activity intervention program: The program is based on collaboration of the communities from initial planning to implementation, answering unique cultural and social needs of the various sectors, such as walking in traditional clothing and separated groups for men and women in the religious communities. The main goals of the program are: To increase the # of sedentary individuals to start a walking program; To evaluate walking adherence during a 12 week follow-up; To penetrate within various demographic population; To spread walking intervention along variety Israeli cities and communities; To encourage co-existence among participants in Arab and Jewish communities with specific input for each community; To increase awareness to the health benefits of walking. Within each community, a sports leader who was previously trained to promote walking encouraged the participants to walk & have an active life routine. Each participant received a pedometer to monitor the number of steps accumulated daily for 12 weeks. The intervention program offers lectures on health promotion and organized activities such as walking group with specific input for the different sectors, including Jews (Orthodox & secular), Arabs (both Muslims & Christians), Druze, and Bedouin.

Results: The program was conducted in 34 selected communities during 2006, from which 10 were in the Arab sector, 3 in the Jewish orthodox sector, and the rest in the Jewish secular sector. 1,180 persons participated on the project. The evaluation was conducted among 25% of the participants using pedometer monitoring. During the first 6 weeks, an increase in step-counts was observed from 5,600 steps/day (low activity rate) to 9,700 steps/day (basic activity rate). Between the 7th-12th weeks, a more moderate increase in step counts was observed reaching 10,200 steps/day. Findings from the semi-structured interviews indicate that the program created agents of change in the communities. Walking became a leading activity within the communities. The awareness to healthy life style increased during the program. In addition, beyond the aspects of physical activity, the program indirectly increased community cohesion.

Conclusions: All participants increased number of walking steps during the intervention program. It is difficult to compare steps number between different communities due to the heterogeneous climate and terrain. Nevertheless, the data demonstrates a successful implementation of a walking intervention in Israel.

Session 2: Sedentary behaviour 1: position statement

Room: Mauritszaal

SEBE.30 - Position statement on sedentary behaviour

Author(s)

I.J.M. Hendriksen PhD^{1,2}, C.M. Benaards PhD^{1,2}, V.H. Hildebrandt MD PhD^{1,2}

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Presenting author: Ingrid Hendriksen

Introduction: In the last decade, research findings that excessive engagement in sedentary behavior (i.e. too much sitting) is a substantial risk to health have increased rapidly. However, many questions remain to be answered. These include consensus on how to define and measure sedentary behavior, better insight in the association with adverse health effects and the underlying biological mechanisms, the prevalence of sedentary behavior in different target groups and defining standards for sedentary behavior. Drawing up a position statement on sedentary behavior is important to indicate the way to deal with these dilemmas in the near future.

Methods: Before defining a meaningful policy, insight in the current prevalence of sedentary behavior in the Dutch population is warranted. This was gathered using data from the “TNO-monitor Physical Activity and Health”, which includes sedentary behavior since 2006. A representative sample of approximately 8.000 respondents participates in the monitor each year. While using telephone interviews, sedentary behavior has been measured using four questions on the average number of hours spend on sitting during a regular weekday (both at work/school and in leisure time) and during a weekend day, and on the number of hours respondents spend on lying in bed. Furthermore, the current international scientific evidence on sedentary behavior was studied to formulate a position statement.

Results: Sedentary behavior has been relatively stable since 2006. In 2009, the mean number of hours of sedentary behavior in adults during working hours was 3,5 and during leisure time 3 hours per day. Adolescents were the most sedentary group (5,9 hours per day during school/working hours and 3,2 hours per day during leisure time). On weekend days, adolescents were more sedentary (mean 5,8 hours) than older people, even more than people aged 75+ (mean 5,1 hours). Well over 57% of the Dutch children (4-11 years) meet the guideline for sedentary behavior for youth, i.e. they spend less than two hours per day in leisure time on sedentary behavior (computer use and/or watching TV/DVD).

Sedentary people are less likely to meet the guidelines for moderate-intensity physical activity, but they are slightly more likely to meet the guidelines for vigorous-intensity physical activity compared to non sedentary people.

Current literature indicates that sedentary behavior can be identified by posture (i.e. sitting or lying down) combined with a low energy expenditure (i.e. below 1.8 MET). Because there is a lack of standards for adults and adolescents, the recommendation is to reduce total sitting time and breaking up prolonged sitting time at least 2 to 3 times an hour.

Conclusions: Sedentary behavior is widespread, in particular among adolescents. Our findings indicate that complying with the guidelines on health enhancing physical activity is not an equivalent of a non sedentary lifestyle. In the future, the prevention of sedentary behavior should be a new focus in public health which should be integrated in the current policy to promote healthy physical activity. Further evidence is required to confirm current findings, including recovering the determinants and the development of effective interventions to reduce sedentary behavior.

SEBE.18 - Sedentary behaviour of Irish females participating in a mass physical activity event

Author(s)

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²School of Public Health, University of Sydney, Australia

Presenting author: Aoife Lane

Introduction: Sitting and TV viewing have both been identified as potential independent risk factors for mortality (Katzmarzyk et al., 2009; Healy et al., 2008), which is concerning as individuals can spend up to 9.5 hours per day being sedentary (Healy et al., 2007). Owen, Bauman and Brown (2009) noted that if sedentary time decreased then participation in physical activity (PA) should increase. However, being active and being sedentary are not exact 'opposites' or correlates of each other and reducing sedentary time does not necessarily always equate to higher PA levels.

Objective: To assess the prevalence of sedentary behavior (SB) in participants in a mass PA event and any potential relationship between SB and activity status, both cross-sectionally and over time.

Method: All women who registered for the Dublin **10 km** Mini Marathon in 2008 were assessed prior to their participation in the event (n=9,523) and consenting participants were also contacted three months post event (n=3,764). PA and sedentary (sitting and TV time) data were collected using IPAQ, which has comparable validity and reliability to other self report measures (Craig et al., 2003). Analysis was conducted using SPSS 17.0 on a matched sample of n=3,505 participants.

Results: Participants reported 290 minutes of SB per day at baseline and this increased to 312 minutes at follow up ($p < .05$). Single women, non parents, those without medical cards (an indicator of high SES), women living in urban areas and with tertiary education reported higher sedentary time ($p < .05$) than their counterparts who were married, had children, owned medical cards, lived in rural areas and did not have third level education. Also, insufficiently active participants consistently engaged in significantly more SB than their counterparts who were meeting minimum PA guidelines; 420 v 374 minutes at baseline and 332 v 288 minutes at follow up. Despite this, both insufficient and sufficiently active groups demonstrated increases in SB from baseline and those who relapsed to insufficient PA levels over time displayed comparable ($p > .05$) increases in SB to those who maintained or improved their engagement in PA. Similarly, women who increased or decreased their SB over time reported comparable decreases in PA (43 and 33 minutes, $p < .05$).

Conclusion: The Mini Marathon was a useful prompt for PA (Lane et al., 2010) but many women never reached minimum requirements for health benefits and others decreased their participation over time (Lane et al., in press). These particular participants also demonstrated higher levels of SB than their more active counterparts prior to the event and increases in SB during the follow up period. This latter pattern of increased SB over time was also apparent in women who managed to sustain or improve their involvement in PA. It is likely that the SB data collected are significantly underestimated due to the subjective mode of collection but it still indicates that sedentarism is independent of PA in this population of mass event participants and subsequent ancillary efforts to promote the public health impact of such events should consider strategies to decrease SB as well as increasing PA.

PHAC.64 - Long-term effectiveness and mediators of need-supportive coaching on physical activity and well-being among sedentary employees

Author(s)

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²Department of Biomedical Kinesiology, Faculty of Kinesiology and Rehabilitation Sciences, K.U.Leuven, Belgium

Presenting author: Ann-Sophie van Hoecke

Introduction: This study examined the long-term and mediation effects of a need-supportive physical activity program on physical activity and well-being.

Methods: Sedentary employees (n = 92) of the university of Leuven received four months of physical activity coaching, based on the self-determination theory, by coaches with a bachelor's degree in kinesiology who are specializing in health-related physical activity (n = 30). The coaching program consisted of a limited number of individual contact moments (i.e. an intake session, three follow-up contacts and an outtake session), either face-to-face, by phone or by e-mail. Self-reported physical activity, well-being, social support, self-efficacy and autonomous motivation were assessed in the coaching group (n = 92) and a control group (n = 34) at three moments: before the intervention (i.e. pre-test), after the intervention (i.e. post-test) and one year after pre-test measurements (i.e. follow-up-test).

Results: Results revealed significant 3 (time) x 2 (group) interaction effects on strenuous and total physical activity. Moreover, whereas the control group remained stable from pre- to post-test, the coaching group increased significantly in moderate, strenuous and total physical activity. Additionally, the coaching group increased significantly in mild, moderate, strenuous and total physical activity from pre- to follow-up-test, whereas the control group did not change. Concerning well-being, significant 3 (time) x 2 (group) interaction effects were found on physical and general well-being. Furthermore, the coaching group increased significantly in physical and general well-being from pre- to post-test, while no changes emerged in the control group. No significant 2 (time) x 2 (group) interaction effects from pre to follow-up were identified. Bootstrapping analyses indicated that self-efficacy and autonomous motivation significantly mediated the intervention effect on physical activity from pre- to post-test, while social support significantly mediated the long-term effect. Furthermore, results showed that strenuous and total physical activity mediated the intervention effect on physical and general well-being, from pre to post as well as from pre to follow-up. Additionally, long-term changes in psychological well-being were mediated by changes in total physical activity.

Conclusion: This study provides evidence for the long-term effectiveness of a need-supportive physical activity program that might be efficient at community level.

SEBE.13 - The role of active gaming in physical activity in Dutch adolescents

Author(s)

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³TNO, Expert Center Life Style, Leiden, the Netherlands

Presenting author: Monique Simons

Background: Adequate levels of physical activity are part of a healthy lifestyle and in this way linked to better health outcomes. For children and adolescents, the physical activity guideline recommends at least 60 minutes of moderate-to-vigorous physical activity every day. However, many adolescents are not physically active enough and they spend a lot of their time on sedentary activities (such as video games). A new generation of video games that require body movements to play them, the so-called "active games", could serve to increase physical activity in adolescents. The activity level while playing these games is comparable to light-to-moderate intensity physical activity. The current study aims to increase our understanding of 1) the demographic characteristics of adolescents who play active games regularly (≥ 1 hour per week) and non-regularly (< 1 hour per week), 2) time spent on active games, 3) the contribution of active games to daily physical activity and 4) the type of activities being replaced by active gaming.

Methods: A cross-sectional survey was conducted in a Dutch internet panel, questioning adolescents in conjunction with one of their parents. A random sample of 320 households (with stratification on gender of the parent and the adolescent, the age of the adolescent and the region of the household) was selected that owned a console or application for active video games and that had a child aged 12 through 16 years. 201 child-parent couples (63% response) completed an internet survey with questions about demographics, physical activity and sedentary behaviour, and gaming behaviour. The questionnaire also contained questions designed to assess whether and how active gaming replaces other activities. Besides descriptive analyses, independent t-test, Pearson's chi-square and Mann-Whitney test (when data was not normally distributed) were used for comparisons between regular and non-regular active gamers.

Results: Eleven percent of the adolescents with an active game in their household never used the game. There were no significant differences in gender, education level (of adolescent and parent), ethnicity and sedentary behaviour between regular ($n=65$) and non-regular active gamers ($n=114$). Total time spent on active gaming was 80 (± 136) minutes a week; this amounts to 11% of total physical activity. When time spent on active gaming was included in the calculation of the percentage adolescents that met the physical activity guideline, the percentage increased significantly from 67 to 73% compared to not taken into account active gaming. According to the adolescents, active gaming mainly replaces sedentary screen time like TV viewing, internet and non-active gaming. Parental opinions concurred with this appraisal.

Conclusions: The results of this study confirm the idea that active gaming may contribute to an active lifestyle in adolescents, primarily because it contributes substantially to time spent on physical activity. Secondly, active gamers indicate to spend time on active games which they would have spent otherwise on less active activities.

Session 3: Physical activity promotion policy 1: Active transport

Room: Mali

PHAC.30 - Active Travel, Physical Activity and Body Weight: A Systematic Review

Author(s)

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¹Physical Activity and Health Work Unit, Institute of Social and Preventive Medicine, University of Zurich, Switzerland

Presenting author: Miriam Wanner

Introduction: Active travel can contribute considerably to total physical activity and thus also have favourable effects on body weight. For children and adolescents, the literature on associations between active travel, physical activity and body weight has been reviewed up to 2008, however no systematic review is available for adults. The present study reviewed such associations in adults, and updated evidence for children and adolescents published between 2008 and 2010.

Methods: Systematic reviews of the literature were conducted using different databases and a combination of search terms on active travel, physical activity and body weight. For adults, 14'216 references were screened for relevance, for 95 articles full texts were retrieved and 32 articles were included. For children/adolescents, 951 references were screened, for 37 articles full texts were retrieved and 16 papers were included.

Results: Regarding active commuting and physical activity in adults, 4 of 9 studies found exclusively or mostly significant associations in the expected direction (more active travel associated with more physical activity), 4 studies found some significant associations and 1 study did not report any significant associations. Regarding active travel and body weight in adults, 11 of 26 studies reported exclusively or mostly significant associations in the expected direction (more active travel associated with lower body weight), 9 found some significant associations and 5 did not report any significant associations. One study found an inverse association (more active travel associated with higher body weight).

Two earlier reviews in children/adolescents concluded that there is evidence for an association between active travel to school and higher physical activity levels, while evidence for an association with lower body weight was inconclusive. In the updated review regarding active travel to school and physical activity, 5 of 10 studies reported exclusively or mostly significant associations in the expected direction, 3 found some significant associations and 2 did not report any significant associations. Regarding active travel to school and body weight, 2 of 13 studies found exclusively significant associations in the expected direction, 3 reported some significant associations and 8 did not report any significant associations.

Conclusions: There is fairly consistent evidence for an association between active travel and physical activity in children/adolescents and adults; between active travel and body weight there are fairly consistent associations only in adults, while evidence is inconclusive in children. However, study heterogeneity, predominantly cross-sectional designs, and crude measures for active travel and physical activity impede quantitative conclusions. Good quality, longitudinal studies using more precise measurement methods are necessary to disentangle the causal nature of these associations.

PHAC.44 - Replacing car trips up to 7.5 kilometres with bicycling trips; preliminary results from the AVENUE project.

Author(s)

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²VU University Amsterdam, Faculty of Earth and Life Sciences

³National Institute for Public Health and the Environment, Centre for Environmental Health Research

Presenting author: Eline Scheepers

Introduction: The AVENUE project studies the impact of stimulating active transport in urban environments in contrast to passive transport. This is done by studying the characteristics (who, where and why) of short car trips and by gaining insight into personal and contextual motivations of choosing the car over active forms of transport such as bicycling and walking. A key element of AVENUE is the fact that the project includes a multidisciplinary team, including experts in the field of environmental health (air quality, noise), acoustic quality, traffic safety, architecture, urban development and health. As a consequence, the information gathered within this project can be used to tailor sustainable transport measures to those potentially willing and able to change policies affecting car use at short distances.

Methods: Data were derived from 'mobility research Netherlands (2004-2009)' (in Dutch: Mobiliteitsonderzoek Nederland: MON). This dataset includes transpositions made by members of households (n=± 23 500 households per year). Households were representatively sampled from the general population through the general population register. One transposition consisted of one or more trips, with a trip being made with one and the same means of transport. Short car trips were defined as car trips up to 7.5 kilometres. Characteristics of the individual were derived from the same dataset, as were some of the contextual characteristics. In addition, contextual characteristics, including neighbourhood characteristics, came from a number of other datasets.

Results: Preliminary results show that more than 70% of the total trips made could be classified as short trips. Short car trips were predominantly made to go (grocery) shopping, to commute, to go and visit or stay with friends, and for other social and/or recreational activities. For bicycling a distance of up to 7.5 kilometres, a similar pattern was found with the particular difference that bicycling was more prevalent than car use for the purpose of commuting. More than ninety percent of the population owning a car, also owned one or more bicycles. Thirty per cent of short car trips are made within the neighbourhood as opposed to 50 % of bicycling trips. Address density as an indicator of degree of urbanization seems to be associated with transport mode in a non-linear way. In very highly urbanized areas people tend not to take the car or bicycle, whereas in highly urbanized areas taking the car and bicycling are more prevalent. In areas with a very low urbanization, taking the car and bicycling seems to get less prevalent again. Walking is more prevalent in very highly urbanized areas and decreases with a decline in urbanization. Though compared to less urbanized areas an increase in walking is seen in non-urbanized areas.

Conclusions: These explorative analyses using data from mobility research Netherlands show a large potential target population for substituting the car by active transport such as a bicycle at distances up to 7.5 kilometres. In the future, additional data collection linked to these kinds of studies, both quantitatively and qualitatively will give more detailed information for tailoring policy measures involving sustainable transport.

PHAC.17 - Health Economic Assessment Tools for Active Transport: HEAT for Cycling and Walking

Author(s)

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Presenting author: Harry Rutter

Introduction: Walking and cycling for transport are important components of total physical activity, and there are potentially significant benefits to public health through increasing active travel. However, interventions to increase active travel are mainly in the hands of transport professionals, who have a different decision-making paradigm to public health professionals. Transport professionals increasingly rely on economic appraisal, notably cost-benefit analysis. At last year's HEPA Conference we reported on the development of WHO's Health Economic Assessment Tools (HEAT) for cycling and walking as novel approaches to foster inclusion of health into economic transport assessments. This year we will present the new online version of the tools and their first applications.

Methods: the HEAT is now a fully functional online tool that integrates cycling and walking calculations into one easy to use interface. The updated HEAT allows different input options which are converted to average minutes of walking and cycling per person. The tool then applies relative risks determined from a meta-analysis (for walking) and a large cohort study (for cycling), to calculate risk reduction for all-cause mortality. Avoided deaths are further valued applying value of statistical life, a standard measure used by transport planners. The new tools provide interactive user guidance and links to further materials, as appropriate.

Results and Discussion: The HEAT provides an evidence-based tool that can be used to guide decision-making and advocate for active transport interventions.

Session 4: Physical activity promotion policy 3: Life-style intervention in local settings

Room: Indonesië

PHAC.46 - Healthy lifestyle campaign for middle-aged men. Part I: Basic elements based on research and surveys

Authors

J. Komulainen, M. Malvela, L. Kinnunen, Fit for Life Program (Finland)

Presenting author: Jyrki Komulainen

Introduction: Fit for Life Program (KKI) promotes health-enhancing physical activities for adults by developing, improving and increasing appropriate conditions and services at local as well as national level in Finland. One of the main interests of the government funded KKI is to develop activities to improve healthy lifestyle among sedentary middle-aged men. This task is based on Finnish government resolution on development guidelines for health enhancing physical activity and nutrition (2008). Thus there was a great need for tailored programs focusing on the salient actions for effective interventions. A campaign called “Adventures of Joe Finn” was carried out aiming to encourage middle-aged men to take up a healthy lifestyle.

Activities undertaken and results: The data derived from the compulsory military service of young Finnish men revealed that the aerobic fitness and muscle endurance has clearly decreased and mean body mass increased 5 kg during the period of 1995 – 2004 (Santtila et al. 2006). The tendency towards today has continued to deteriorate. In the study of Rovio et al. (2010) nationwide data derived from the annually repeated “Health behavior among the Finnish adult population” survey for adults showed eight different subgroups of physically inactive adults. Among these there were clearly 3 target groups for Joe Finn campaign: working men (mean age 33 y), overweight persons with health problems (mean age 37 y) and proper fathers (mean age 38 y). The difference between groups was the result of their background and lifestyle variables such as age, gender, work situation, education, physical and mental health, obesity level, alcohol consumption and smoking. Kaasalainen et al. (2011) found that men in high exercise health literacy (EHL) group exercise more and they had better physical fitness among working Finnish working men aged 25 -64 years. Thus the evaluation of EHL among physically inactive groups could contribute designing and aiming exercise counseling with easy readable material to sedentary people. The results from the surveys that carried out during the first Joe Finn lorry tours (2007-2008) revealed four lifestyle groups among men belonging to lower social class. Media behaviour such as watching the television more than 3 h/day, daily listening the YLE radio channel and reading the tabloid newspapers were prevalent among certain subgroups of Joe Finn target population. On the other hand, the commercial radio campaign in connection with Joe Finn campaign failed. Finally, measurements, information and time for individual counselling were the most desired, while additional fun shows and sports demonstrations on stage provoked only a minor interest.

Conclusions: All the middle-aged men are not beer drinking sausage eating persons with nearly all the risks of noncommunicable diseases. Lifestyle profiles play a critical role when planning actions for target population including several subgroups. The knowledge of Joe Finn media behaviour is particularly valuable when choosing the communication channels for campaign. Instead of thick guidance books the use of easy readable booklets is recommendable.

PHAC.18 - BeweegKuur: development of a combined lifestyle intervention and implementation in local settings

Author(s)

L. Preller¹, J. Helmink², D. Schaars¹, M. Aalbers¹, A. Wagemakers³, F. van Brussel-Visser¹

¹Netherlands Institute for Sport and Physical Activity (NISB),

²Maastricht University, Dept. Health Promotion

³Wageningen University, Health and Society, Dept Social Sciences

Presenting author: Liesbeth Preller

Introduction: In 2006, the Ministry of Public Health presented its Prevention policy document stressing the relevance of prevention for public health improvement. It focuses on a local and neighbourhood oriented approach. Preventive and curative health care should act more closely together. Physical activity (PA) is seen as a tool to enhance health. Within this framework, the Ministry asked NISB to develop a – nationwide accessible- lifestyle intervention (LSI) for the primary care setting, focusing on increase in PA. This intervention, called BeweegKuur (BK), is now a combined LSI with a duration of 12 months, directed on PA enhancement by stimulating daily PA and guided transfer to suitable organized PA, on healthier eating habits, and on behavioural change. The target group consists of overweight and obese adults with weight related health risk, with insufficient PA, and who are motivated to change lifestyle. Different programmes are available varying in level of guidance on PA. The BK is carried out in the primary care setting with a role for general practitioners, physical therapists, dieticians, and a central role for the life style counsellor (LSC).

Activities undertaken: The BK is based on existing and evidence based LSIs. It started at a few locations in 2008. Concurrent development and implementation, guided by formative evaluation by means of forum discussions, questionnaires etc., was chosen as implementation strategy. Evaluations were carried out by independent scientific organisations among regional intermediate structures for collaboration in primary care (ROS), health care providers, PA providers, and participants, as well among regional and local networks. Topics were: role of stakeholders, time investment, rating of the intervention, needs and performance of professional education and (preliminarily) change in lifestyle. Results are used to adjust contents as well as the implementation process. In addition, scientific studies have been started on the process evaluations, (cost-) effectiveness, and on network development.

Results: BK is available at 160 locations. Adjustments in contents based on evaluations are a.o. employing physiotherapists as LSC next to practice nurses and the design of the diet programme. Health care providers value the BK on average with 7.3 out of 10, with a range of 1 to 10. Cooperation between these providers has improved markedly by the BK, and less with stakeholders outside care. Regional networks are developed further than local ones. Increase in unorganized biking and walking and in sporting at fitness centres leads to increase in total PA, more often than by activities at sport clubs and other organized activities. 50% of the participants maintain increased PA levels still one year after the end of BK, with motivation at start being a strong determinant. Registered health information shows a decrease in BMI of 3%, and 5-8% in blood glucose.

Conclusion: Concurrent and continuous development, implementation and evaluation is found to be very successful in the implementation process. The BK enhances cooperation between relevant stakeholders in prevention, at best at the regional level and between health care providers. Results suggest a positive effect on PA and health in motivated participants. Current actions are directed on improvement of local networks and on better accessibility to local PAs, supporting maintenance of lifestyle change.

SODI.08 - The effectiveness of 'BeweegKuur', a combined lifestyle intervention in the Netherlands: rationale and design of a controlled trial

Author(s)

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Presenting author: Brenda Berendsen

Background: Improving physical activity and dietary behaviour of overweight and obese adults is of increasing interest. An increase in physical activity can reduce risk factors for chronic diseases, even regardless of weight loss. In addition, sedentary time appears to be related to chronic disease and standing time has been shown to contribute to physical activity level. By using accelerometry we can measure physical activity and time spent in postures objectively. Primary aim of our study is to compare in patients with very high weight-related health risk the effects of the 'start-up exercise programme' and the more intensively guided 'supervised exercise programme' of the 'BeweegKuur' on amount of physical activity and time spent in different postures.

Intervention: The BeweegKuur is a combined lifestyle intervention embedded in primary care and is aimed at improving physical activity and dietary behaviour in overweight and obese adults. The one-year intervention comprises of guidance by a team of a lifestyle counsellor, a physical therapist and a dietician. Patients receive physical therapist guidance until they are able to maintain exercise activities in local exercise facilities without supervision. Three BeweegKuur settings are developed to which patients can be referred to, based on severity of overweight and presence of (risk factors for) co-morbidities. The amount of guidance by the physical therapist varies from no guidance ('independent exercise programme'), several weeks of guidance ('start-up exercise programme') to several months of guidance ('supervised exercise programme'). The 'independent exercise programme' and the 'start up exercise setting' have been shown to be effective as well as cost-effective in people with (an increased risk of) type 2 diabetes. However, whether the 'supervised exercise programme' has additional effects in overweight and obese people with very high weight-related health risk is not known.

Methods: The measurements in this controlled trial will be performed at baseline, after the one-year intervention and after two-years of follow-up. Thirty GP practices are allocated to the experimental ('supervised exercise programme') or control condition ('start up exercise programme'). Amount of moderate to vigorous physical activity will be measured by means of accelerometry and the short format version of the International Physical Activity Questionnaire (IPAQ). This offers the possibility to assess physical activity and time spent in postures measured subjectively and objectively. Moreover, we measure dietary habits, risk factors for co-morbidities, physical fitness and functional capacity as they may play a role in the effects. In addition, an economic evaluation and a process evaluation will be executed to evaluate the involved expenses, execution of the intervention and the participants' beliefs regarding the intervention.

Discussion: Our study will provide valuable information regarding the effects of a combined lifestyle intervention on physical activity. Additionally, possible mechanisms of effects of the intervention might be demonstrated by measuring secondary outcomes and performing a process evaluation. Moreover, new insights in physical activity and inactivity patterns in an overweight/obese population can be established.

SODI.07 - Winning without conquering 'Evaluation of teachers' perspectives on a primary school health promotion initiative

Author(s)

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¹Institute of Sport Science, Centre for Sport Science and University Sports, University of Vienna

Presenting author: Nadine Zillmann

Introduction: In previous years, primary schools (and their students) have been ever more in the focus of health promotion initiatives in an effort to counteract children's escalating levels of physical inactivity and unhealthy eating habits. Typically, these initiatives are conducted by governmental or health organisations. However, not only in Austria are alternative providers, such as sports associations, increasingly approaching schools offering proprietary health promotion initiatives. The project UGOTCHI, designed and conducted by one of Austria's sports associations, aims at improving eating habits and positively influencing physical activity levels in children 6-10 years. In 2011, about one third ($n=951$) of all Austrian primary schools enrolled in the project, thus targeting approximately 40.000 children from about 2.340 primary school classes. UGOTCHI is designed as a 4-week "challenge" amongst primary school classes across Austria. Thereby, the children independently collect points for healthy eating and physical activity behaviour during school and leisure time hours (e.g., engaging daily physical activity, eating fruit and vegetables, etc.). The weekly results are being submitted class-wise by the teachers through an online portal. The sports association also provides teachers and children with information and teaching aids on physical activity and healthy eating for the duration of the project, furthermore offering workshops on physical activity and health aspects for the teachers.

It is agreed that the implementation of projects like UGOTCHI is heavily reliant on the support and engagement of the teachers involved. Therefore, the objective of this study was to evaluate teachers' motives for participation in UGOTCHI as well as their assessment of the project and its outcomes.

Methods: As part of the overall project evaluation, all participating primary school teachers with available email addresses ($N = 2223$) were invited to complete an online questionnaire (via *globalpark*, EFS survey). This survey assessed teachers' perceptions of the project in general, and in particular the short- and long term effects of the 4-week initiative on children's health behaviour (i.e., physical activity and eating behaviour). In addition, this study investigated teachers' reasons to register for UGOTCHI as well as their thoughts on current and future cooperation with local sports clubs. Data was analysed applying primarily descriptive statistics procedures.

Results and Conclusion: In this presentation, results of the online questionnaire based survey will be revealed. Teachers' assessment of the health promotion initiative UGOTCHI and its (long-term) effects on children's health behaviour will be discussed against the background of sports associations' engagement in school health promotion programs.

This study offers stimulating insights into primary school teachers' motives for participation in and their perceptions of a meanwhile well-established Austrian health promotion initiative for primary school children. The results will provide the base for suggestions on how to further improve the UGOTCHI initiative.

Session 5: Building policy capacities: experiences from the PASEO project

Policy-related interventions are an increasingly relevant topic in health and physical activity promotion, with efforts to build policy capacities becoming more and more popular. At the same time, the evidence base is becoming increasingly relevant not only for health promotion interventions but also for health promotion policy. This has led to a lively debate on how to best translate knowledge on effective interventions, policies, and policy development from research into policy. This symposium will present experiences from an EU sponsored project that has attempted to combine both discourses, building policy capacities for physical activity promotion for older people through an exchange of knowledge between researchers and policy-makers.

While all PASEO partners employed the same concept of knowledge translation and capacity building, differing contextual variables in the participating countries led to a significant variance between cases with respect to alliance setups, alliance topics, planning processes, and outcomes. The speakers of the symposium will present experiences from four select countries to illustrate differences and similarities:

Speaker: Peter Gelius (Germany)

University of Erlangen-Nürnberg, Germany

Subject: he will introduce the project and its knowledge translation/capacity building concept. He will also present experiences from the German branch of PASEO, where a regional alliance focused on developing local-level pilot projects to build policy capacities for physical activity promotion among older people.

Speaker: Michael Kolb (Austria)

University of Vienna, Austria

Subject: he will present PASEO Austria, where a regional alliance resulted in a very comprehensive action plan that received widespread support, among others by the regional and national ministries of health.

Speaker: Jorge Mota (Portugal)

University of Porto, Portugal

Subject: he will report on experiences from Portugal, where the national PASEO alliance was built around a specific issue, i.e. walking and running for older people.

Speaker: Alvydas Kalvenas (Lithuania)

Lithuanian Academy of Physical Education

Subject: he will report on PASEO in Lithuania, where the national alliance did not focus on older people alone but on HEPA in general. As a matter of fact, the PASEO alliance is the first national network ever to deal with health-enhancing physical activity in this country.

The presentations will be followed by discussion between the audience and the present country experts. A moderator is available for leading the discussions.

Session 6: Healthy children in sound communities (workshop)

The common purpose of the two “Healthy children In Sound Community” projects (the Dutch – German gkgk- Interreg IV-A Euregio project 2008-2012; the EU-based HCSC preparatory action project 2009-2011) is to transfer/diffuse and implement the multi-actor strategy of the projects to 12 local Euregio-municipalities in Germany and the Netherlands and another 10 municipalities in 6 EU countries (HCSC project). Local municipalities establish “front offices” with stakeholders of the different education, sport and health representatives of the municipality. A “community moderator” serves to implement health-enhancing PE-classes and co-curricular physical activities as HEPA which are provided via special “health courses” given by local sport clubs as partners of the gkgk- and HCSC-affiliated schools in order to have in summary daily physical activity units for about 60 to 90 minutes.

In the workshop two papers are related to the longitudinal development of BMI, physical, fitness and motor development of German and Dutch cohorts (K 1 DE, K 2 DE and K 2 NL) of the gkgk-intervention project including the assessments of their parents` social lifestyle context.

Two other papers highlight the EU-cohort of the HCSC project with 852 pupils of two age groups (7/8 years old; 10/11 years old) and their parents who participated for about 5 month in 10 EU-municipalities. Results from both European studies will be presented.

Outcome show effects of BMI reduction for overweight and obese children and an increase of motor abilities which finally are documented on different performance levels of the sample. The practical implementation and useful tools will be presented during this workshop.

Speaker: Professor, PhD Roland Naul (Germany)

Willibald Gebhardt research Institute, Essen

Subject: Healthy Children in Sound Communities (gkgk/HCSC) - two European-based intervention projects to enhance an active lifestyle for children.

Speaker: Dorothee Schmelt & PhD Dirk Hoffmann (Germany)

University of Duisburg-Essen

Subject: gkgk - The Durch-German Euroregion project (2008-2012): longitudinal BMI, physical fitness and motor development: a comparative view on German and Dutch young people.

Speaker: PhD Monique L'Hoir (the Netherlands)

TNO, Youth Health, Leiden

Subject: gkgk - the Dutch-German Euregio project (2008-2012): physical and motor development of children and the social parental lifestyle context.

Speaker: Dennis Dreiskaemper & Roland Naul (Germany)

University of Münster, Willibald Gebhardt Research Institute, Essen Subject: HCSC – the EU-based preparatory work project (2009-2011): “physical and motor development of young European children compared to normal weight and obese parents` assessment of their children`s physical activity, media and nutrition lifestyle factors compared to their personal attitudes towards these lifestyle factors.

Session 7: IMPALA Improving infrastructures for leisure-time physical activity in the local arena (workshop)

In the IMPALA project, in a collaboration of 13 European countries, Good Practice Guidelines were formed for the improvement of planning, financing, building and managing infrastructures for leisure-time physical activity (LTPA) with a focus on social equity, intersectoral collaboration and participating of population subgroups. The guidelines can serve as an assessment tool as well as a step-by-step guideline how to improve policy and the current local status in developing infrastructures for LTPA. This workshop will present content of the guideline accompanied by two related presentations within the context of IMPALA.

In this workshop three speakers will set the context:

Speaker: Alfred Rutten (Germany)

University of Erlangen, Germany

Subject: he will give an introduction and he will lead the discussion after the other speakers.

Speaker: Nienke Boneschansker (the Netherlands)

University of Groningen, the Netherlands

Subject: Mapping the message: walkability maps as a tool to guide urban development in the Netherlands

Speaker: Jantine Slinger (the Netherlands)

TNO Lifestyle, the Netherlands

Subject: Physical activity behavior of urban children using GPS and GIS; results from the SPACE study

Speaker: Luuk Engbers (the Netherlands)

TNO Lifestyle, The Netherlands

Subject: The IMPALA team of Germany and The Netherlands will present the most recent version of the good practice guidelines (i.e., goal, content and operating procedure).

After the presentations we will ask the participants for specific feedback on the guideline and we hope to address specific topics like:

- What recommendations do you have for the use of the IMPALA checklist?
- How could walkability maps be used in spatial planning?
- Should policy be directed to stimulate children to spend more time in places where they are highly physically active?
- How could guidelines be used to stimulate (policy towards) physical activity?

PARALLEL SESSION 2

Tuesday 11 October, 16:00 – 17:30

Session 8: Societal dimension 2: disadvantaged communities

Room: Raadzaal

SODI.12 - Physical activity interventions in socio-economically disadvantaged communities: a qualitative study of experiences of social and societal influences

Author(s)

C.L. Cleland¹, D. Scott¹, M. Donnelly², R.F. Hunter¹, M.A. Tully², L. Prior², F. Kee², M.E. Cupples²

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Presenting author: Claire Cleland

Introduction: There is an urgent need for research into the effectiveness of environmental interventions, particularly within socially excluded sectors of the population who have the highest prevalence of physical inactivity (NICE, 2006). It is recognized that a comprehensive inter-sectoral approach is needed to reduce levels of physical inactivity, which are a significant risk to health and a cause of preventable death. Whilst we know that physical activity benefits health, we know less about how to encourage people to be physically active. The objective of this research was to explore experiences of statutory and voluntary sector leaders and residents in a socio-economically disadvantaged community in relation to physical activity (PA) interventions and to identify key issues for future planning.

Activities undertaken: Leaders from health, business, education, local government and voluntary sectors were purposively sampled and invited to participate in semi-structured interviews (11, participants). Members of a range of community organisations within a socio-economically disadvantaged area of Belfast were invited to focus groups (14, focus groups). Interviews and focus groups were audio recorded and transcribed verbatim and analysed independently by two researchers using a thematic framework.

Results: We identified four major themes. **Awareness of schemes:** leaders' and residents' comments both showed little evidence of linkage or shared communication between or within the statutory and voluntary sectors. Statutory agencies appeared to target specific groups and activities for PA interventions; voluntary organizations generally did not focus on increasing PA. **Successful intervention components:** respondents considered that successful implementation was likely if initiatives encouraged residents' participation in planning and organization, tailored interventions to local communities, supported volunteers, obtained funding and planned an exit strategy. **Designing future initiatives:** both residents and leaders identified key barriers (apathy, inaccessible services, poor communications, personal circumstances) and facilitators (community engagement, defined ownership, strategic planning). **Identifying target groups:** interviewees felt that schemes should either focus on geographical areas or target specific groups whilst a majority of focus group participants felt that future interventions should target the whole community.

Conclusion: The promotion of PA in a socio-economically deprived area is a complex issue that needs to take account of community-level norms. Strategic planning with better linkage between and within community organizations and sectors of societal management is necessary in order to translate knowledge in promoting PA effectively in socio-economically disadvantaged communities.

SODI.18 - How to support physical activity among adults with disabilities – a review

Author(s)

M. Hagströmer^{1,2}, H. Bergström^{1,2}, L. Schäfer Elinder²

¹Division of Physiotherapy, Department of Neurobiology, Care Sciences and Society (NVS), Karolinska Institutet, Huddinge, Sweden

²Division of Social Medicine, Department of Public Health Sciences, Karolinska Institutet, Stockholm, Sweden

Presenting author: Maria Hagstromer

Introduction: People with disabilities have a higher risk for illness and disease compared to the general population. The prevalence of disability in the population is high. A Swedish report showed that it is 10 times more common with low perceived health among adults with disability compared to the general population. A lower proportion of adults with disabilities reach the current recommendation for physical activity (55%) compared to 68 % of the general Swedish population. However, according to the Physical Activity Guidelines Advisory Committee (PAGAC) report it is clear that physical activity leads to positive health benefits in people with disabilities. However, little is known how the health care and the community can support people with disabilities to become more physically active.

The aim of this review was to a) explore barriers and facilitators of adults with disabilities to be physically active, and b) explore interventions to enhance physical activity.

Methods: To explore barriers and facilitators PubMed was searched using the following search terms: disability, intellectual disability, mental retardation, developmental disability, mental health, physical activity, exercise, health promotion, barriers and facilitators. In total 19 studies were found, four were on adults with intellectual disability, two on adults with psychological disability and 13 on adults with functional limitations. Nine of the studies used a quantitative approach and 10 a qualitative approach.

To explore interventions to enhance physical activity PubMed was searched using the following search terms: disability, intellectual disability, mental retardation, developmental disability, mental health, physical activity, exercise, health promotion and intervention. In total 19 studies were found, 10 targeted adults with intellectual disability, three adults with psychological disability and six adults with functional limitations. Eight of the 19 included studies were RCT, the others had a simpler study design.

Results: Disability is a complex concept and the definition differs between different studies. Perceived barriers and facilitators to be physically active for adults with disabilities are self-efficacy, social support and availability of and access to facilities. These factors are the same as those in the general population. However, for people with disabilities availability and access can mean different things compared to a healthy population.

Although it is difficult to tell which components should be included for an effect on physical activity, health or quality of life, the studies indicate that exercise, individually or group-based should be included, possibly in combination with education. Information alone is not sufficient. Only one of the included studies was based on theory, which is important in order to identify active components in a program.

Conclusions: Research in the area is insufficient and results from different studies are difficult to compare. Theory-based interventions to enhance physical activity among adults with disabilities need to be developed and evaluated.

SODI.13 - Join-in: Social inclusion of migrant youth

Author(s)

W. Westerhof¹

And other international partners

¹Netherlands Institute for Sports and Physical activity

Presenting author: Willie Westerhof

Introduction: Sports and physical activity presents possibilities for the improvement of social skills, contacts and cooperation and therefore has a positive effect on social inclusion of migrant youth. However, not all EU-citizens benefit from sport. Data reveals rising inequalities in physical activity between EU-countries. Transnational collaboration in networks bridges these differences by promoting synergy and exchanging knowledge and experience. The 'Join in!' project initiates and sustains such a network, involving policy makers, researchers and professionals who want to improve 'social inclusion of migrant youth through sports'. In the Join-in project eight Member States work together to gather, share and enrich knowledge on this topic.

Members of 'JoinIn':

NL- NISB, Netherlands Institute for Sports and Physical activity, Ede,

S- Universidad de Extremadura, Cáceres,

UK- Wales, South East Wales Racial Equality Council, Newport,

UK- (Northern Ireland), University of Ulster, Newtownabbey,

IT- Federazione Italiana, Aurobica E fitness, Rome,

D- Deutsche Sportjugend (German Sports Youth (DSJ), Berlin,

AU- Arbeitsgemeinschaft für Sport und Körperkultur Österreich, Vienna,

IE- Waterford Institute for Technology, Waterford.

In some Member States, sports are already included in social inclusion programs for young immigrants. In the Netherlands, for example, the 'Meedoen' intervention and 'Communities on the Move' approach have generated substantial successes.

Despite these examples, the exchange of best practice and lessons learned in the field of sports at European level is limited, and mainly focused on certain mainstream sports or specific groups.

A broader approach is required'. 'The specific needs and situation of under-represented groups need to be addressed, and the special role that sport can play for young people and youth from less privileged backgrounds must be taken into account'. Data also reveals rising inequalities in PA between EU-countries.

Activities undertaken: During the course of 18-months (1 January 2011 – 30 July 2012), this project targets the creation of an effective, *transnational network* of policy makers, researchers and professionals in the field of 'social inclusion of migrant youth through sports'. The network enables the members to search and disseminate knowledge, *experience* and support in order to improve the *social inclusion of migrant youth through sports*.

To create a common language between network members: meetings will be held, good practices and knowledge are identified and shared, key issues and best principles are determined.

To support continuity of the network national actionplans will be developed and a digital social network will be constructed.

Results: At the time of this abstract this project is in an early phase of development. The end of June we have our first international workconference so we expect to have some results after this meeting. In the poster or oral presentation at the HEPA meeting in October 2011 we can present an overview of key principles, indicators and international good practices.

Results at the end of the project:

- 8 good practices
- a set of key issues and best principles
- action plans drawn up by every participating partner.
- digital social network (including a website) similar to LinkedIn and Facebook. This project has the ambition to involve 54 users of the network.
- a presentation to disseminate project results.

- Sustainability of this project is warranted through the action plans and the implementation and use of the digital social network.
- share results with the 'inclusion' workgroup of HEPA.

Conclusion: When it comes to social inclusion of migrant youth through sports, sports and exercise are a vehicle to reach other (social) goals. In the Join-in project eight Member States work together to gather, share and enrich knowledge on this topic. In this we connect different kinds expertise by involving policy makers, researchers and professionals and thereby 'bridging the gap between practice and science'.

The project is still running and at this moment is in an early phase. At the HEPA meeting in October we expect to be able to present a list of key principal, indicators and some good practices. These results contribute to the international knowledge about how to stimulate social integration of migrant youth through sports.

SEBE.20 - Physical activity counselling for older unemployed persons in a jobcentre setting

Author(s)

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Presenting author: Lars Gabrys

Introduction: Although strong evidence suggests that physical activity confers significant health benefits and that unemployment increases health risks, the participation rate in prevention programs among unemployed men is still low. The present paper evaluates the accessibility of older unemployed persons to exercise programs and the acceptance of the described physical activity counseling approach.

Method: A sports medical counseling service (AGILer – Aktivierende GesundheitsInitiative für Langzeiterwerbslose; - activating health initiative for long term unemployed), based on the transtheoretical model, was installed at regional job centers in 2006 to refer unemployed persons into local exercise for health programs. During an 18 month period, participation rate from 741 long term unemployed persons (54.3 ± 3.6 years, 447 men 297 women) was analyzed in respect to gender, body composition (BMI), self reported health (VAS 1-100) and physical activity status (IPAQ 7 day short version).

Results: Following the counselling 97 men (21.7%) and 83 women (28.2%) started participating in a local exercise for health program. Women were more active than men ($p=.038$). Among men, those who became physically active differed from non-active persons in BMI, activity status and self reported health status ($p<.05$). Especially in men with lower fitness, health and activity status initially, there was a greater rate of exercise for health program beginners compared to those who had a higher level of fitness, health and activity status at the beginning ($p<.001$). The odds ratio for exercise participation of men with lower fitness, health and activity status was 2.8 (95% CI 1.8 – 4.3) compared to persons with lower risk factors.

Discussion: The results indicate that physical activity counselling at jobcentres is a promising and feasible intervention approach for unemployed people to start being more active in structured exercise prevention programs and to increase their daily amount of physical activity. Networking with existing local exercise for health providers may help to exploit the enormous preventive potential of regular moderate physical activity, especially for specific target groups. It is particularly encouraging to note that a large percentage of men with increased health risk factors can be successfully motivated to begin exercise participation. Further research is needed on the sustainability of the intervention.

Session 9: Sedentary behaviour 2: energy expenditure

Room: Mauritszaal

PHAC.19 - Validation of Nordic monitoring system of self-reported physical activity and sedentary behaviour for children and adolescents

Author(s)

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⁵ Academy of Finland, Helsinki, Finland.

Presenting author: Rosa Olafsdottir

Introduction: The objective of this study was to validate a common, low cost, Nordic monitoring system of physical activity and sedentary behaviour for children and adolescents. The system is able to classify whether the subjects meet physical activity recommendations and to quantify the physical activity of the respondent within each category.

Methods: The questionnaires were composed by an expert panel in English and checked by a native English speaking person, translated to each language (Finish, Icelandic and Norwegian) and back translated. Participants were asked for total time spent in MVPA over the last seven days. The questionnaires included also questions about TV and computer time. Pilot tests were conducted in Iceland, Norway and Finland in August 2009. From the middle of October to the middle of March 2010 the data was collected in all three countries. Accelerometers (ActiGraph models GT1M and GT3X) were handed out to participants (13-17 y adolescents; n=102 and 7-12 y children; n=158). Eight days later each participant was called by telephone and the PA survey was administered. Adolescents answered the surveys for themselves whereas one of the parents (usually the mother) answered for the children. Only data from participants who had at least 5 days of valid accelerometer data were included in the analysis. Non-wear time was defined as ≥ 30 min of no activity recording. To count as a valid day, at least 10 hours of activity should be recorded. A bout was defined as activity above a given threshold that did not contain more than two separate or consecutive minutes of activity below respective threshold within each 10 min segment. Threshold for moderate-to-vigorous physical activity (MVPA) was defined as 2000 cpm. For sedentary activities thresholds were defined as at least 10 min of continuous activity below 100 cpm.

Results: For all countries fair to moderate correlations ($r=0.32$ to 0.62) were found between the self-reported PA answers and accelerometer data. However, the self-reported values were significantly higher than the accelerometer data indicate. Adolescents reported 6.4 hours/week (SD: 3.8) of MVPA and the accelerometers registered 5.6 hours/week (SD: 2.9). Children reported 8.2 hours/week (SD: 4.2) of MVPA and the accelerometers registered 6.5 hours/week (SD: 3.4). For adolescents, no correlation was found between TV and computer time and sedentary time according to the accelerometer data. For children, significant correlation was observed between TV and computer time and sedentary time according to the accelerometer data ($r=0.23$). Significantly more sedentary time was registered by the accelerometers than by the questionnaires both for the adolescents (3.9 vs. 2.7 hours/day; SD: 1.7 and 1.3, respectively) and children (2.8 vs. 1.8 hours/day; SD: 1.7 and 1.1, respectively).

Conclusion: The Nordic, low-cost, monitoring system of physical activity and sedentary behaviour for adolescents and children, shows similar correlation with accelerometer data as has been reported for more extensive questionnaires. However, considerable discrepancies exist between self-reported data and objectively measured data.

SEBE.10 - How much do we NEAT?

Author(s)

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Presenting author: Hans Savelberg

The major focus of guidelines for physical activity is on energy expenditure (EE). Current guidelines stress the importance of half an hour moderate to vigorous physical activity (MVPA). This 30 minutes of MVPA can be combined with 23,5 hours of sedentary behaviour. Evidence on the independent, adverse influence of time spent sedentary on health is increasing. As a consequence, current guidelines that meet EE criteria might at the same time concur with risks associated to a sedentary life style. Alternatively EE criteria can be met by longer but less intense physical activity (Non Exercise Activity Thermogenesis (NEAT)). As NEAT requires a longer time to spend the same amount of energy, it will concur with less time spent sitting, reducing the health risk associated to a sedentary life style.

In this study 20 healthy subjects were included. Each participant followed three different physical activity regimes for four days. Between each regime 10 days of unrestricted living were allowed. During the 'sitting regime' participants were asked to sit as much as possible; walking and standing for self-care was allowed, other activities were restricted. In the 'cycling regime' subjects spent one hour per day cycling at an intensity to spend 450kcal, for the rest of the day they were restricted to sedentary behaviour as in the sitting regime. Under the third condition, the 'NEAT regime' subjects had to walk for five hours in order to spend the same amount of energy as during the one hour cycling. Thus three conditions were created that differed in sedentary time and EE. The sitting regime was characterized by low EE and long sitting time, the cycling regime combined high EE and long sitting time, and the NEAT regime combined high EE and shorter sitting time. Physical activity was assessed by an activity monitor (ActivPAL3) and a diary. As markers for health risk, before the first intervention period and at the end of each four day regime participants performed an oral glucose tolerance test (OGTT), also blood samples were drawn to assess blood lipids (triglycerides, total, LDL- and HDL-cholesterol), apolipoprotein AI and B and glucose and insulin concentration.

In this study sitting time and EE were successfully manipulated: during the sitting regime EE of participants was 2047 ± 294 kcal; participants sat for 13.2 ± 1.2 hours and stood for 1.2 ± 0.5 hours, 0.8 ± 0.3 hours were spent moving. Under the cycling regime these values changed respectively to 2572 ± 347 kcal, 12.2 ± 1.7 h sitting, 1.4 ± 0.7 h standing, 1.1 ± 0.2 h walking and 1 hour cycling time and in the four NEAT days 2696 ± 348 kcal, 7.3 ± 0.8 h sitting, 3.2 ± 0.8 h standing and 5.1 ± 0.4 h walking time. Data on blood values will be available at the conference.

To our knowledge this is the first study that separately manipulated sedentary time and EE. It will show whether too much sitting compromises the positive effects of exercise, and thus whether apart from spending enough energy a minimal daily amount of non-sitting time should be promoted.

SEBE.24 - Increased muscle activation may mediate the increase in energy cost during office work in different postures

Author

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Presenting author: Tibor Hortobágyi

Introduction: One cause for weight gain may be due to the increase in sedentary time leading to reduced energy expenditure, especially in the workplace. A preventative measure could be to perform clerical work in different postures such as sitting on a therapy ball or standing and accumulate excess energy expenditure throughout the day. We examined the hypotheses that the energy cost while performing clerical work standing or sitting on a therapy ball is higher than when sitting on a chair and this increase in energy cost is mediated by an increase in muscle activation.

Methods: Subjects (n = 10, mean age 21.2) copied printed text into a Word document under three randomized and standardized conditions: sitting on a chair, sitting on a therapy ball, and standing. EMG activation in two upper extremity muscles, four lower extremity muscles, and two trunk muscles, in addition to passive energy expenditure were recorded for 15 minutes during each condition. A basal measurement was taken while lying down for 15 minutes. Quality of typing was calculated by assessing correct word count.

Results: Average VO₂ was 3.40 ml/kg/min (SD ±0.53, lying), 4.57 (±1.02, ball), 4.40 (±0.88, chair), and 4.60 (±0.58, standing) ml/kg/min (p < 0.05). Average EMG in 8 muscles was 0.007 mV (±0.001, lying), 0.034 (±0.009, ball), 0.022 (±0.006, chair), and 0.030 (0.001, standing) mV (p < 0.05). Increase in EMG activity explained 52% of variance in increase in oxygen uptake. Average word count per minute was 48.5 (±9.7, ball), 46.5 (±12.4, chair), and 49.6 (±12.5, standing) (p > 0.05).

Conclusion: These preliminary data suggest that there is a parallel and correlated increase in energy expenditure and muscle activation while performing clerical work in non-standard postures.

SEBE.04 - Sedentary behaviour as a risk factor for mortality independent of moderate to vigorous physical activity

Author(s)

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Presenting author: Annemarie Koster

Introduction: Sedentary behavior has emerged as a novel health risk factor independent of moderate to vigorous physical activity (MVPA). Previous studies have shown that self-reported sedentary time to be associated with mortality; however, no studies have investigated the effect of objectively measured sedentary time on mortality independent of MVPA. The aim of our study was to examine the association between objectively measured sedentary time and all-cause mortality.

Methods: 7-day accelerometry data of 1906 participants aged 50 and over from the U.S. nationally representative National Health and Nutrition Examination Survey (NHANES) 2003-2004 were analyzed. All-cause mortality from the date of examination through December 31, 2006.

Results: Over an average follow-up of 2.8 years, there were 145 deaths reported. In a model adjusted for sociodemographic factors, lifestyle factors, multiple morbidities, mobility limitation, and MVPA, participants in third quartile (hazard ratio (HR):4.05; 95%CI:1.55-10.60) and fourth quartile (HR:5.94; 95%CI: 2.49-14.15) of having higher percent sedentary time had a significantly increased risk of death compared to those in the lowest quartile.

Conclusions: Our study suggests that sedentary behavior is a risk factor for mortality independent of MVPA. Considering our results and the results of recent other studies showing the importance of sedentary behavior as a health risk factor, it is essential to both promote MVPA participation and also support reduction of prolonged periods of sedentary time.

Session 10: Physical activity promotion policy 2: national strategy's

Room: Bestuurskamer

PHAC.08 - Embedding HEPA Policy to the 2011 Modification of the 2007 Hungarian Sport Strategy

Author(s)

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Presenting author: Judit Farkas

Introduction: In 2007 the Hungarian Parliament unanimously passed the bill on the Sport Strategy of Hungary. It was progressive, but was not followed by the Action Plan including identifying the financial resources. The term/acronym HEPA cannot be found in the document, however some of the national level actions served HEPA programmes at local levels with great success in 2007 & 2008.

In 2010/11 all elements of the sport system are re-designed via modifying both the Hungarian Sports Law and the Sports Strategy. In this study the authors focus on the later one. Along with the structural changes a contemporary approach is taken with a strong consideration of the published documents on sport of the European Union and several European/World professional networks/bodies. Within months, one major public body will be set up (to be called as the Hungarian Olympic Sports Association) via integrating the current five public bodies (each being responsible for Olympic sports, non-Olympic sport, Paralympics, recreational sport and sports for people with disabilities).

The objective of the presentation is to study and follow the process of including the health enhancing physical activity (HEPA) in the modified Hungarian Sport Strategy.

Activities Undertaken: The authors have reviewed the relevant documents and conducted interviews with key persons of the significant stakeholders. The list of documents include, e.g. national (progress) reports of the GO and NGOs between 2008 and 2010, reports prepared for the European Commission's Sport Unit, WG on Education and Training about the implementation of the EU Guidelines on Physical Activity and Health, the National social dialogue event held before the Sport Forum during the Hungarian EU Presidency and the compiled and processed remarks received during the professional and public on-line consultation of the Sport Strategy's modification.

As a last minute support, the recently published EU Work Plan on Sport is also considered by the legislators. The Resolution (2011/C 162/01) of the Council and the Member States on an EU Work Plan for Sport for 2011-2014 creates a favourable political environment for promoting HEPA. The document calls HEPA as one of the elements of the societal role of sport (similarly to the White Paper, 2007 and the Communication on the European Dimensions of Sport, 2011).

Results: Although the two key documents are going to be taken to the final decision to the Prime Minister's Cabinet meeting only in July (a month after the submission of this abstract), it is already concluded that the modified National Sport Strategy includes HEPA. The legislation was performed on a wide basis and it made it possible for the academia and advanced sports organisations that have embraced the philosophy and have learnt about good practices to channel in their ideas.

Conclusions: The close cooperation of GOs and NGOs, as well regular consultation with major sport, health, and education stakeholders along with the public was fruitful for the policy development of the health enhancing physical activity. The Government is dedicated to begin working on the National Action Plan with the same methodology: plenty of consultations and setting up working groups. In case of HEPA the re-structuring of the health care system and the educational system calls for intensive activity from each stakeholder.

PHAC.62 - Conceptualization of physical activity promotion: Content analysis of policy and academic information on physical activity promotion around the world

Author(s)

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³Faculty of Human Development, Kobe University, Japan

Presenting author: Makoto Chogahara

Introduction and methods:

The objectives of the present paper were to consolidate and conceptualize the physical activity promotion based on content analyses of policy and academic information on physical activity promotion around the world in an attempt to establish scientific objectives and practical tasks that may assist in the future promotion of these physical activities. Previous policy and academic information is classified into the following categories:

- 1) Benefit information, which indicate, both individually and socially, the beneficial effects of participation in physical activities;
- 2) Behavior information, which indicate the level of participation in physical activities of targeted population;
- 3) Determinant information, which indicates the individual and social factors that influence participation in physical activities; and
- 4) Project information, which indicate the programs and interventions that effectively facilitate the participation in physical activities.

Results: Numerous benefit and determinant information have accumulated useful scientific findings for the promotion of physical activities, while project information have primarily focused on the evaluation of large-scale promotions, which employed mass media campaigns and counseling strategies at both national and local government levels. Based on policy and academic information, a scenario model (project→determinant→behavior→benefit) which shows an effective physical activity promotion was proposed. Applying to the evaluation of physical promotion plans the process model as an analysis framework, the question of whether the plan has a scenario (domino effect) was examined. As a result of the content analysis of policy information collected from the agencies and governments of physical activity promotion all over the world, the following problems and tasks have been clarified in the case of ineffective promotion. 1) The promotion purpose is not clear, and they only have a slight interest toward prerequisite (internal) factors. 2) There is a lack of awareness of the objective of reducing the number of people who are not engaged in physical activity. 3) Process evaluation, impact evaluation and outcome evaluation are not carried out.

Conclusions: From these results, it was suggested that the understanding of the causal relationships regarding promotions, determinants, behavior and benefits, and research activities that support it were considered to be necessary for the development of physical activity promotion plan in the future. Especially, the findings of previous benefit and determinant information should be considered in the design of future project studies in order to promote greater participation in physical activity. Furthermore, scientific information must be provided for the communication strategies for promoting physical activity. The future challenges are also discussed by reviewing policy and academic information, and then behavioral objects needed to create a lifelong exercise and sports society are proposed.

PHAC.33 - Mapping the HEPA sector through SANTE project: an European overview

Author(s)

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⁶Advisory Group of the SANTE Project – International Sport and Culture Association (ISCA)

Presenting author: Capelli Giovanni

The Social Action of Network Europe (SANTE) project, led by the International Sport and Culture Association, was developed out of recognition that sport collectively holds great potential for promoting health-enhancing physical activity. SANTE had a special focus on supporting and promoting cross-sector innovative partnerships to foster learning across Europe's borders and inform future actions within health enhancing physical activity.

Within the project, an Advisory Group (AG) was established with the aim to implement a scientific framework through which defining, identifying and selecting European good practices implementing projects in the field of HEPA. The AG was required to provide an overview of the state of art of the HEPA sector with the large European ISCA network. To the purpose, an ad-hoc definition of good practice was adopted basing it on four main criteria/pillars: evidence of success in connection with defined goals; innovation, with new and creative solutions to common problems; transferability and sustainability, both in terms of durability of programme results and efficient use of resources at disposal.

Based on that, data collection was carried out with a multidimensional approach combining both qualitative and quantitative techniques. Particularly, a survey among partners of the project and their own networks was implemented in order to collect information about the projects implemented at European level. Moreover, in-depth interviews were administered to some project managers of the (n=35) projects selected as good practices in order to gain a better comprehension of the critical factors determining the success of the project carried out. On the basis of data collected, summarized in the SANTE Handbook (Tomat, S., Tharsgaard, A., Streber, A., ISCA, Eds., 2011) the following considerations can be maintained: at the European level, projects implemented in the HEPA sector can be included in four main categories: education, campaigns, festival and quality mark framework. However, multidimensional approaches combining more categories are also widely adopted. The activities implemented tend to address a large array of target populations with a particular preference for youth and seniors. Furthermore, sport clubs are inclined to be used as preferred setting, even though it is worth noting the tendency toward a multi-setting approach. Finally, it is worth noting that promoting organisations, in order to enlarge the impact of the activities carried out, establish collaboration with key stakeholders and public entities such as municipalities and national government or are involved in projects led by public entities.

Results: The results show a large sensitivity of the organizations to the HEPA theme in regard to the national and regional different backgrounds, and a tendency to adopt a multidimensional approach combining more categories. Notwithstanding, the concept of HEPA and the awareness of specific knowledge and training at organizational, technical, and didactical levels have to be implemented for a better common understanding between scientific evidences and sports organizations and to keep the pace to for the development of the whole sector.

Session 11: Physical activity promotion policy 4: barriers to physical activity

Room: Indonesië

SODI.15 – The barriers to participation in recreational physical activity of the disabled from rural areas of eastern Poland

Author(s)

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Presenting author: Marian Stelmach

Introduction: Studies of many authors indicates that people with disabilities by the mere fact of having specific dysfunctions are in the vast majority outside of the mainstream of social and economic life, and their recreational activity is definitely much lower compared with other social groups. The aim of this study was to search for motives, benefits, and the major barriers to the participation of disabled people living in rural areas, in the area of recreational physical activity. The publication presents selected results from the research on "The social determinants of participation in tourism and leisure activities of disabled people from Eastern Poland", which were conducted in the years 2005 - 2007 among a randomly selected group of people with disabilities, residing in the three provinces in Eastern Poland: Podkarpackie, Lubelskie and Podlaskie.

Methods: In the following studies there was used the method of diagnostic survey and the research material was collected by means of complementary research methods: questionnaire, interview and observation.

Results: The results have shown that the level of recreational physical activity and the choice of forms depend mainly on the place of residence. Although a large proportion of respondents see a significant benefits from being active, limited variety of offers and access to it are insufficient. The main factors hindering participation in recreational physical activity are not only high costs, lack of support from governmental and non-governmental organizations and support the one's closest but also a poor choice of activities and the large distance between place of residence and the place of recreational services.

Conclusions: To improve the situation, the information about the recreational offer addressed to the disabled need to be improved and enhanced, and emphasis on the training of specialist staff should be placed, and above all the environment for people with disabilities regardless of the degree and type of disability should be provided.

PHAC.71 - Sports Club for Health – Guidelines for HEPA activities in a club setting and international networking

Author(s)

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Presenting author: Eerika Laalo-Häikiö

The Sports Club for Health (SCforH) project was initiated in 2008 by the Finnish Sport for All Association. The project was supported at early stage by The Association For International Sport for All aka TAFISA. Subsequently SCforH was elected as a working program for HEPA Europe (The European Network for the Promotion of Health-enhancing Physical Activity). SCforH received funding by the European Union's Directorate General of Education & Cultures' Sport Unit as one of the first EU preliminary actions for sport (Health and Physical Activity) in 2009. The purpose of this paper is to describe the process and outcomes of the SCforH project during the EU funding.

The SCforH project had two main objectives. Firstly, the aim was to develop advanced guidelines for sports clubs to develop HEPA-oriented activities in a club setting. The development work of the SCforH guidelines was based on a preliminary version of the guidelines (Kokko et al. 2009) and a prior HEPA guidelines (Foster 2000). The EU-project consisted of 5 partners lead by the Finnish Sport for All Association. The actual work was realised through seven work packages i.e. guideline development and networking, certification system, instructor education, health profile, funding system, leadership and evaluation. Secondly, the project aimed to generate European-level networking in the field of HEPA with special focus on sports clubs. Networking was enforced mainly through SCforH workshops culminating in the concluding symposium early 2011.

Both objectives of the SCforH project were achieved. Advanced SCforH guidelines (Kokko et al. 2011) are based on materials from the seven work packages. They consist of ten specific guidelines on three project stages – planning, implementing and documenting and communicating. The European-level networking began to proliferate with early commitment for further development of SCforH by the following organizations: TAFISA (The Association For International Sport for All) and its European Sport For ALL Network (ESFAN), ENGSO (European Non-Governmental Sport Organisations), ISCA (International Sport and Culture Association), EFSC (European Federation of Company Sport) and HEPA Europe.

In conclusion, the SCforH project has successfully produced guidelines for HEPA-oriented activities in sports club setting and set in motion the generation of respective European-level networking. Both are open for further development and exploitation by all interested parties.

PHAC.21 - Synergies of Science and Practice: Elderly People in Outdoor Activity Parks

Author(s)

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Presenting author: Rosa Diketmueller

Introduction: The City of Vienna has recently constructed several outdoor activity parks to promote physical activity for elderly people. Although there is no evidence yet as to whether the target group is actually using these parks, politicians are intrigued to set up similar parks across the city.

The project „Let’s go outside!“ focuses on: who is using the existing parks in what manner, how elderly people evaluate the parks and what are the specific needs of elderly people to exercise in open spaces. The aim was to develop guidelines for planning and managing outdoor activity parks for the city.

Methods / Activities undertaken: Following McKenzie’s System for Observing Play and Recreation in Communities (2006) an observation method was developed to qualitatively describe and quantitatively evaluate elderlies’ usage patterns of outdoor activity parks (n=161 hours). Five outdoor activity parks were systematically observed and analysed focusing on the target group (60+). A subgroup of elderly was invited to inspect the parks, to assess and to evaluate the equipment and the suitability of the infrastructure for their target group.

Results: The results show that elderly people, for whom the parks were explicitly constructed, only seldom use the outdoor activity parks (9 to 15% were 60+). The five analysed cases are very different and appeal to heterogeneous user groups. In order to encourage the use of the parks it is essential to consider the setting of the equipment, the material quality, physical activity instruction and programmes and accessibility. The outcomes of the park observations, interviews and focus group discussions provided the basis for the guidelines, which were developed in a participatory process with elderly people, park advisors, as well as social workers, planners and experts in the field of physical activity and sports.

Conclusions: The results illustrate the importance of the specific needs of the heterogeneous target group for the planning of new outdoor activity parks. Supervised physical activity programmes support elderly in their engagement in public open space. The integration of the results of the focus group into the urban planning guidelines have been a major contribution from a setting-based (health promotion) perspective.

PHAC.65 - Children's exercise behavior in the Netherlands: Prevalence, heritability, and tracking over time

Author(s)

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Presenting author: C. Huppertz

Introduction: The aim of this study was to investigate Dutch children's regular leisure time exercise behaviour, with a focus on the prevalence across different age groups and tracking over time. In addition, the relative influence of genes and environment was estimated based on the classical twin model. "Environment" was split into shared family environment and environmental influences unique to an individual. Previous research has shown substantial heritability of exercise behaviour in 16- and 18-year-old adolescents for both sexes (Van der Aa et al., 2010). For 13-year-old girls, shared environmental influences played a significant role. This study includes children aged 7 to 12 years.

Methods: Data were taken from twins registered in the Netherlands Twin Register. The twins' parents were approached with the request to complete surveys about their children's health and behaviour. They indicated the children's participation in 20 common exercise activities. Frequency and duration were assessed allowing an estimate of weekly METs spent on leisure time team- as well as individual sports and exercise activities. Three age groups were included: age 7 (N=3,966 subjects), 10 (N=3,562) and 12 (N=8,687), with data on more than one age available for 27% of the sample. Data were analysed separately for boys and girls.

Results: For roughly half of the children the surveys were filled out by both parents, for the remaining ones only the mothers reported on the child. The correlations between fathers' and mothers' ratings were very high with most of them exceeding .8. Averaged weekly MET hours were therefore used when both parents had reported on the same child. Average weekly MET hours spent on leisure time sport and exercise activities increased with age for both boys [age 7: 13.99 (SD=11.78); age 10: 22.57 (18.69); age 12: 28.39 (24.93)] and girls [9.74 (9.47); 15.29 (15.12); 19.33 (19.80)]. Within each age group, the majority of girls participated in individual activities only (70% - 53%), whereas boys participated in all types of exercise activities. In general, tracking of exercise behaviour from age 7 to age 12 was modest ($r \approx .4$).

Estimated monozygotic and dizygotic twin pair correlations revealed sex differences regarding the relative influence of genes and environment on leisure time exercise behaviour. For boys, additive genetic effects accounted for 23.2% of the variance at age 7, 67.2% at age 10 and 36.4% at age 12. Shared environmental influences explained 71.2%, 22.8% and 51.5% of the variance across the age groups. For girls, genetic effects accounted for around 20% of the variance at ages 7 and 10 and 30% at age 12. Within all three age groups, shared environmental factors accounted for the largest part of the variance, but the influence waned over time (69.8%, 66.1%, 57.6%). Individual exercise activities tended to be more environmentally driven than team sports.

Conclusions: Within this sample, weekly METs spent on leisure time exercise behaviour increased with age. Tracking from age 7 to age 12 was modest. Our analyses confirmed the important role of shared environmental factors on children's exercise behaviour that gradually give way to genetic influences when they reach adolescence.

Session 12: Physical activity and aging: a challenging couple (EUNAAPA workshop)

European nations face increasing numbers of older people. It is a fact that exercise/physical activity (PA) for community-dwelling as well as institutionalized older people has beneficial effects on physiological, psychological and social health. Reviews have demonstrated an overwhelming amount of evidence on the positive effects of PA on risk of mortality, onset of co-morbidity, and delay of the onset of dependency and frailty. Promotion of PA in older people will contribute to maintaining and improving the quality of life and to reducing the (economic) burden of disease and disability.

One might think that –knowing the beneficial effects- older persons are lining up for exercise classes or other physical activities. However, in real life the proportion of seniors being physically active (meeting the recommended levels), decreases with advancing age.

This challenge in health care is important and is topic of the workshop.

Marijke Hopman-Rock (the Netherlands)

TNO Quality of Life / VU university medical Center, Amsterdam the Netherlands

Subject: she will address the evidence on the merits of PA and the knowledge about changing behaviour of older patients in clinical practice and care.

Nina Waaler Loland (Norway)

Oslo University College, Faculty of health Sciences

Subject: she will address ageism as a barrier for PA and how to overcome this by both professionals and patients. She will also give an overview of the work from the European Network for Action on Ageing and Physical Activity (EUNAAPA)

Federico Schena (Italy)

University of Verona, Faculty of Exercise and Sport

Subject: he will give examples of successful programs and interventions.

Christophe Delecluse (Belgium)

Faculty of Kinesiology and Rehabilitation Sciences, K.U.Leuven

Subject: he will discuss the success factors and the limitations of different approaches to promote exercise and physical activity in the old and the very old.

The presentations will be followed by discussion between the audience and the present country experts. A moderator is available for leading the discussions.

Session 13: National HEPA policies: 7 case studies from Europe; experiences and lessons learned (workshop)

This workshop will present a methodology to collect case studies on national approaches to HEPA promotion and results of its pilot testing from 7 countries across Europe.

On behalf of the WHO Regional Office for Europe, a policy appraisal template was developed by the University of Loughborough, the University of Western Australia and the University of Zurich for the collection of case study “stories” on the development, content and implementation of national policy supporting physical activity. The template was pilot-tested in a set of 7 European countries; Finland, Italy, Portugal, the Netherlands, Norway, Slovenia and Switzerland.

The workshop will introduce the question-and-answer template and within-country process to gather the necessary information. Highlights from the pilot-test countries will be briefly presented, addressing different aspects such as: how were key stakeholders involved in the development of the policy? How is scientific learning integrated into the practice of physical activity promotion? How can collaboration with the local level be ensured? How is surveillance and evaluation undertaken? The examples will focus on “good practice” and also point out challenges and experiences in overcoming them. In addition, lessons learned from the comparative between-country analysis will be presented.

The presentations will be followed by discussion between the audience and the present country experts, moderated by the workshop organizers. As time allows, specific aspects will be developed further in small groups, e.g. focusing on the different aspects presented as country-highlights.

K. Milton (Loughborough University, Leicestershire, United Kingdom), S. Kahlmeier (University of Zurich, Switzerland), A. Arlotti, Emilia Romagna Region, Italy), E. Martin (University of Zurich, Switzerland), A. Valente (University of Porto, Portugal), T. Vasankari (UKK Institute for Health Promotion Research, Finland), A. Vlasveld (Netherlands Institute for Sport and Physical Activity (NISB), the Netherlands)

TUESDAY 11 OCTOBER 2011 – LIST OF POSTER ABSTRACTS

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PHAC.03 - Together for better health! – Overview of the ongoing information based physical activity and nutritional intervention in school setting

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Introduction: Scientific studies showed a high prevalence of physical inactivity among children and adults in Croatia and Slovenia (WHO, 2008). With the aim of improving physical activity in these populations, we created and implemented an information based physical activity and nutritional intervention in school setting. Intervention was the joint project of the three institutions: Institute of Public Health Međimurska Zupanija, Institute of Public Health Murska Sobota, and University of Zagreb, Faculty of Kinesiology.

Activities undertaken: The intervention lasted for 16 weeks and encompassed 10 schools (5 elementary schools in Croatia and 5 in Slovenia). During the first week, the students attending the above mentioned schools, their teachers, and parents filled out questionnaire regarding physical activity and nutritional habits, and their anthropometric measures were taken. In addition, the teachers and parents attended the introductory lecture on health benefits of physical activity and healthy nutrition. Within each of the following 15 weeks, we provided all participants with 3 leaflets containing information on: 1) health-enhancing physical activity, 2) healthy nutrition, and 3) cooking tips and recipes.

Immediately after the last week of the intervention, we reapplied the questionnaires and repeated the anthropometric measurements in order to evaluate the short-term effects. We plan to determine long-term effects by conducting 6 month follow up examination. The students from another 10 schools, as well as their teachers and parents were also included in evaluation as control group.

Results and Conclusion: Since this is an ongoing project, preliminary results and conclusions will be presented on the conference venue.

1. World Health Organization (WHO). Inequalities in Young People's Health: Health Behaviour in School-aged Children International Report From the 2005/2006 Survey. Copenhagen, Denmark: WHO Regional Office for Europe; 2008

PHAC.05 - Prescribing exercise in primary care settings: nurses' opinions, barriers and knowledge

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Introduction: Healthcare professionals play a key role in promoting physical activity to the population. Primary care-based nurses have been identified as having a major role in improving the health to their communities. The purpose of this study was to analyse the opinions, barriers and knowledge associated with advising patients about physical activity and describe the characteristics of this advice.

Methods: The study sample consisted of 76 primary care nurses from 11 primary health care centres (Castellón, Spain) who completed a self-administered questionnaire. Test-retest reliability for each measure was acceptable. About eighty percent of the sample were women with a mean age of 48.9 ± 11 .

Results: Regarding physical exercise advice, 100% of the nurses recommended their patients to get involved in some physical activity. Nurses reported to spend almost 5 min during their consultation when advising patients about physical activity. The exercise prescription consisted of 39.1 ± 14.6 min per session, 4.5 ± 1.6 times per week. The type of exercise most frequently recommended was walking (94.7% of the nurses) and those nurses who specified the intensity mainly recommended taking moderate exercise (82.9%). Those nurses who received education about *physical activity and health* during their nursing studies had more positive opinions towards prescribing exercise, perceived fewer barriers and showed more knowledge about the existence of evidence of beneficial effects of physical activity. However, differences were only significant in relation to the opinions ($p < 0.05$). In addition, nurses who were insufficiently active (less than 600 MET·min/week) tended to perceive more barriers when advising exercise.

Conclusions: In conclusion, this study shows the importance of education about *physical activity and health* during health studies and the positive influence that being physically active may have in exercise prescription.

PHAC.07 - Example of Exercise on Prescription Approach from Primary Healthcare Settings in Southern Europe: The 'Let's Walk Program' (*Programa CAMINEM*) from the city of Lleida, Spain

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Introduction: Physical inactivity is known to be one of the major risk factors for cardiovascular diseases as well as other non-communicable diseases. Physical activity and exercise may be successfully used as a prevention or treatment for many of them. Promotion of physical activity may be done from different settings but healthcare centres are perhaps the easiest to approach the target group. In Spain, citizens averaged 8.9 consultations to their primary healthcare on 2008. Several researches assessing programs of physical activity prescription from healthcare have been done. Most of these programs come from countries with different environments than Spain (i.e. most of healthcares do not staff physiotherapists and General Practitioners (GP) consultations last over six minutes per patient). However, Puig Ribera et al showed that the attitudes of Catalan GPs towards promoting physical activity are similar than other studies.

Methods: An Exercise Prescription program was developed in two primary healthcare centres of Lleida for eighteen months. All GPs and general nurses from the staff were invited to refer their patients to an Exercise Specialist (ES) who set Individual Home-Based Exercise Prescriptions (IEP), monitored and assessed each client until twelve months of participation, or abandonment. IEPs were based on the *Let's Walk Program*, aimed to promote exercise counselling based on urban routes for aerobic exercising. IEPs were written following a regular drug prescription form with exercise dose-response information. Inclusion criteria for clients were to be above eighteen years-old and suffer from a chronic disease that may be benefit from exercising. Regular face-to-face consultations with the ES at the PHC were scheduled once the client gave the consent for his/her participation. Each consultation included motivational interviews and assessment of the previous IEP together with a new IEP increasing the dose-response of the exercise if any health problem had not been reported. Regular feedback of clients' evolution was reported to practitioners.

The RE-AIM method was used to measure the approach, which will be completed on July 2011. It includes health checking (physiological and quality-of-life measurements), clients and professional satisfaction and ratios of participation for both, clients and professionals.

Results: Results will be ready on September 2011. However, qualitative information has been collected as well as data concerning clients' and practitioners' participation. After fifteen months 36 out of 52 (69%) practitioners referred 221 patients. 193 started the program, 109 abandoned, 41 have been active more than six months from which 19 fully concluded the participation. Those attending more than six months 24 (58%) reported to feel better than the first day, 7 (17%) the same condition, 0 to feel worst and 10 (24%) did not yet attend a consultation. Only one episode of serious harm or injury due to IEPs has been reported.

Conclusion: With lack of deeper analysis, this approach succeeded on increasing physical activity levels of all clients who had not quitted. IEPs had been safe even without supervision by ES. Practitioners who participate actively increased their interest on the referrals and showed interest to implement the exercise prescription approach permanently. There is still the gap about where should the budget come from to include an ES working with health professionals.

PHAC.11 - Walk and Cycle to School – experiences from Sweden

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Presenting author: Camilla Bergholm

Background: In 2003 the Swedish Government made a supplement in the Swedish curriculum. The supplement meant that both nine-year compulsory school and upper secondary school, should offer their pupils, physical activity each day during school hours. This should be done in addition to regular Physical Education. The schools should also endeavour pupils to be physically active on their way to and from school, for example by walking or bicycling. As a result of this supplement, a National Centre Promoting Physical Activity amongst Children and Youth (NCF) was established. In 2006 the mission of the centre was extended as its name National Centre for Child Health Promotion.

Activities undertaken: In September and October of 2006, NCF is promoting Swedish National Walk and Cycle to School Campaign/Competition. The response around the country has been great. The campaign goes between September and October for optional two weeks. This means that every school decides themselves which two weeks are most suitable for them during the campaign time. After completing the campaign each attending school sends their results on how many pupils walked or cycled during the two weeks. First prize goes to the school that managed to get most pupils walking or cycling.

Results: The national challenge to Swedish schools “Walk and Cycle to School 2010” was a success as seen from the participation rate. An national winner among the schools was appointed and 41 453 pupils and teachers from 220 schools participated. They had cycled or walked over 350 000 kilometres and contributed to a reduction of the carbondioxid emission of 52 500 kg. New last year was that an individual winner was also presented. Moreover, the pupils could also document their paths to the school by different form of art, in writing or by making photos or films. More than 200 contributed to this competition. The winner received a new bicycle given by a sponsor to the campaign. Since three years a national network (R)ESA, National Alliance for Eco-smart, Safe and Active roads to schools, has supported the effort to increase active transport to and from schools and other leisure time activities, promotion of safe and healthy roads to schools for a more sustainable development and being a national coordinator and clearinghouse supporting local actors.

Conclusion

International Walk to School Month gives children, parents, school teachers and community leaders an opportunity to be part of a global event as they celebrate the many benefits of walking. In 2009, millions of walkers from around the world walked to school together for various reasons — all hoping to create communities that are safe places to walk. In Sweden the Walk and Cycle to School has attracted increasing number of schools and pupils. Moreover, a more extensive collaboration with other partner in the program have evolved over the years, which maintains the positive momentum.

PHAC.15 - Toward closing the Gap between Physical Education Theory and Practice – perspectives from PE teachers in Sweden

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Introduction: Physical activity is an important health determinant. In the comprehensive school system all children are included. Today, PE in Sweden is known as Physical Education and Health, and the change of name from 'Sports' to 'Physical Education and Health', together with the new syllabi introduced in 1994, implies that *health* has become the main focus for PE in Sweden. The aim of the Swedish physical education is to at developing pupils' physical, psychological and social abilities, as well as providing knowledge of the importance of lifestyle for health. Meeting the physical needs of all pupils is a basic challenge. Even with the use of teaching strategies such as differentiation, different learning and teaching styles, this may not be enough to overcome the difficulties some pupils face due to a lack of time to reinforce their learning. Swedish officials and experts in sport medicine have long proposed that allotting more times to PE is one way to set this problem right. But is it that simple?

Activities undertaken: The national evaluations of PE in Swedish schools showed that PE is valued highly by both pupils and parents. Pupils active in sports enjoy PE the most, and the subject content is characterized by enjoyment in movement. The majority of the pupils are physically active during the lessons although at the same time a significant minority of the girls are present but inactive during PE. The most important determining factors affecting grades in PE are leisure sport activity, parents' educational levels, gender and cultural capital. For many pupils PE is both interesting and a source of enjoyment. Pupils want to learn more in PE and have more teaching hours.

The Government introduced in 2004 that every school child should be offered opportunities for daily physical activities as part of the school day. A Handshake was made with the Swedish Sports Confederation to promote among other things the collaboration between the sport clubs and the schools. The National Centre for Child Health Promotion was opened.

Different support measures as well as continuing education have been offered to PE teachers and recently a new syllabus was developed and introduced 2011.

Methods

Questionnaires were mailed to a national sample of PE teachers as part of a national evaluation of PE in 2002 and as part of a study of dance in Swedish schools in 2007. The study included 142 teachers in primary schools and 78 from secondary schools in 2002 and 187 and 78 in 2007 respectively.

Results: The dominant basic perspective for both groups of teachers and in both years was that the pupils should develop a positive relationship with their body. Both years the PE teachers in the primary schools viewed as most important aspects for the pupils: Enjoyment through physical activities, Learning to co-operate, Enhanced physical fitness and Better self-confidence. The largest increase was seen in 2007 with regard to Learning about health and smaller increase for Developing a positive view of one's body, and Trying many different sport activities. Among PE teachers in secondary schools a large increase was seen in the emphasis on Learning about health.

Conclusions: The PE teachers have increased the emphasis on learning health in their teaching. Moreover, the new syllabus gives a further strengthen that PE is more than an activity subject and the learning aspect is highlighted. However, in previous evaluations a gap has been seen between theory and practice. The observed changes may be a step in the right direction but more is needed.

PHAC.20 - Validation of Nordic monitoring system of self-reported physical activity and sedentary behaviour for adults

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Introduction: The Nordic monitoring system is a low cost survey of physical activity and sedentary behaviour and is able to classify adults in five categories: 1) not meeting physical activity recommendations; 2) meeting moderate-intensity recommendations; 3) meeting vigorous-intensity recommendations; 4) meeting the recommendation by a combination of moderate- and vigorous-intensity physical activity; 5) meeting both moderate- and vigorous-intensity recommendations. The objective of this study was to validate the Nordic monitoring system of physical activity and sedentary behaviour for adults.

Methods: The questionnaire were composed by an expert panel in English and checked by a native English speaking person, translated to each language (Finish, Icelandic and Norwegian) and back translated. Participants were asked for total time in a week, both for moderate-to-vigorous intensity physical activity (MVPA) and vigorous physical activity (VPA) only. The questionnaires also included questions about TV and computer time. Pilot tests were conducted in Iceland, Norway and Finland in August 2009. From the middle of October to the middle of March 2010 the data was collected in all three countries. Accelerometers (ActiGraph models GT1M and GT3X) were handed out to participants (18-65 years old volunteers, n=164). Eight days later each participant was called by telephone and the PA survey was administrated by telephone interview. Only data from participants who had at least 5 days of valid accelerometer data were included in the analysis. Non-wear time was defined as ≥ 60 min of no activity recordings. A valid day was defined as at least 10 hours of activity recordings. A bout was defined as activity above a given threshold that did not contain more than two separate or consecutive minutes of activity below respective threshold within each 10 min bout. Threshold for moderate activity was defined as 2020 cpm and for vigorous activity as 5999 cpm. For sedentary activity the threshold was defined as at least 10 min of continuous activity below 100 cpm.

Results: For all countries, fair to moderate correlations ($r=0.33$ to 0.45) exist between the self-reported values and the accelerometers values for MVPA. Except for the Icelandic data, the correlations were similar for the VPA ($r=0.36$ to 0.46). However, the self-reported values were always significantly higher than the accelerometer data. Self-reported MVPA was 4.7 hours/week (SD: 4.3) and according to the accelerometers it was 1.7 hours/week (SD: 1.9)($p<0.001$). Self-reported VPA was 1.5 hours/week (SD: 2.6) and according to the accelerometers it was 0.3 hours/week (SD: 0.7)($p<0.001$). Except for responses in Iceland there was fair to moderate correlation between TV and computer time and sedentary time measured by accelerometers ($r=0.36-0.46$). However, the accelerometers indicated that participants performed significantly more time doing sedentary pursuits (4.5 hours/week; SD: 2.0) than the TV and computer questions showed (2.5 hours/day; SD: 1.5)($p<0.001$).

Conclusion: The Nordic, low-cost, monitoring system of physical activity and sedentary behaviour for adults shows similar correlation with accelerometer data as has been reported for

other, more extensive, questionnaires. However, considerable discrepancy between self-reported data and objectively measured data is confirmed.

PHAC.24 - Finnish Schools on the Move – A national project to enhance physical activity in school settings

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Finnish Schools on the Move is a national action project that aims to enhance physical activity in school settings. The goal is to implement national physical activity recommendations for school-aged children to all comprehensive schools in Finland. A two-year pilot phase of the project was launched in autumn of 2010. Altogether, twenty-one pilot projects, including 45 comprehensive schools all over Finland and 10,000 pupils from grades 1 to 9 (ages 7 to 15), will attend the project between 2010 and 2012. These 21 projects applied for and received governmental funding (4600-40000 € per pilot project per year) in order to implement their own individual and local action plans.

Extensive follow-up research linked to this project aims to evaluate the progress of plans that are designed to enhance physical activity at the school level, as well as changes in physical activity and well being both at the school and student levels.

A process evaluation of the 21 pilot projects will be conducted by interviewing the coordinators and key persons of the pilot projects several times during the two-year period. The pilot projects and the pilot project's mentors keep a follow-up diary of their operations. The success factors and obstacles to enhancing physical activity in school settings will be evaluated in different pilot projects.

Effects of the project at the student level will be evaluated by collecting data from self-administered questionnaires four times during the two-year pilot phase from a total of 2500 pupils. The questionnaires will ask the participants to estimate the amount of physical activity they engaged in during recess, during the commute to school, and during their leisure-time. Objective measures of physical activity by accelerometers will be implemented in four pilot schools. In addition, questionnaires will contain questions regarding students' social relationships, school climate, and bullying.

The results of the baseline measurements show that the proportion of pupils who meet the recommended minimum 60 minutes of moderate-to-vigorous intensity physical activity per day range from 5 to 50% at different schools. Based on objective measurements calculated by accelerometers, the proportion of children who meet this recommendation are, on average, 50% for pupils in grades 1-6, but only 13% for pupils in grades 7-9. Sedentary time spent playing computer games was high, and the highest amounts were observed among boys in grades 7-9. Reducing excessive sedentary screen time seems to be an important element in promoting physical activity, especially for adolescent boys.

A process evaluation of the first year period shows that coordinators of local pilot projects had in some schools experienced challenges in regards to school personnel's commitment to the project's plan and with the activation of the oldest pupils (from grades 7-9) in different activities.

Intensive research and evaluation linked to the Finnish Schools on the Move project and the 21 different pilot projects will provide important information that can be used by policy-makers and financiers in the development of the project. Documentation of the processes and practices invented and applied at schools will be important when the aim is to enlarge the project and implement the ideology in other schools in Finland.

PHAC.25 - Overweight, sports participation and media consumption: a cross-cultural comparison among 9-10 year olds in Belgium and Italy.

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Introduction: Based on the prevalence of overweight and obesity among children in several European countries, a North–South trend in overweight can be identified (Lobstein et al., 2003). It is still unclear if cross-cultural differences in overweight-related behaviours such as physical activity level and sedentary behaviours can help to explain this trend. Therefore, the first aim of this study was to conduct a cross-cultural comparison of overweight-related behaviours in Belgian (low prevalence of overweight) and Italian (high prevalence of overweight) children. Secondly, the country-specific association between overweight (including obesity) and overweight-related behaviours was analysed.

Methods: Data are from a larger research project “Children today – couch potatoes, fast food junkies, media freaks? – a lifestyle analysis” (Brandl-Bredenbeck et al., 2009). In the present study, 1008 Belgian (BE) pupils (mean age 9.3yrs; 51.6% boys) and 1005 Italian (IT) pupils (mean age 9.7yrs; 49.6% boys) completed a written questionnaire on sports participation and media use. Validated instruments were used. Children’s height and weight was measured to calculate BMI. According to the IOTF criteria (Cole et al., 2001), children were classified into normal weight, overweight and obese groups. χ^2 -square test was used for analysing country differences in prevalence. Logistic regression analysis was then performed to examine the associations between overweight (including obesity) and behavioural variables.

Results: A significantly higher prevalence of overweight (including obesity) was found in Italy (34%) compared with Belgium (15%). Despite this higher prevalence, Italian children spent significantly more time in sport clubs than Belgian children (>3h/week: 37% vs. 31%) but were less busy with outdoor play (daily: 34% vs. 39%). Belgian children reported a significantly higher level of TV viewing and PC use per weekend day than Italian children (TV >4h/day: 21% vs. 16%, PC >3h/day: 15% vs. 5%). A high level of electronic game playing per school day (>3h/day) was more prevalent among Italian children compared with Belgian pupils (9.4% vs. 6.4%). Results of the gender-adjusted logistic regression analysis showed that non-involvement in sports club activities was significantly associated with greater odds of overweight in both countries (BE: OR = 1.73, $p < 0.05$; IT: OR = 1.47, $p < 0.05$). Playing outdoors once a week or less was significantly associated with greater odds of overweight in Belgian pupils (OR = 1.66, $p < 0.05$). Belgian pupils reporting high levels of PC use per weekend day tend to be more overweight than those who don't (OR = 1.57; $p < 0.10$), while Italian children with high levels of electronic game playing per weekend day were significantly more likely to be overweight (OR = 1.91, $p < 0.05$).

Conclusions: Irrespective of the country of origin, promoting sport clubs involvement and reducing sedentary behaviour during weekend days (BE: computer use; IT: electronic game playing) seems to be valuable strategies to prevent overweight in children aged 9-10 years. In addition, providing a safe and accessible physical outdoor environment can stimulate children’s outdoor play (Aarts et al., 2010) which in turn may contribute to prevent overweight.

PHAC.29 - The Potential of Physical Activity and Health Promotion in Large Sport Organisations

Author(s)

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Introduction: Large sporting organisations such as FIFA (Fédération International de Football Association) can reach large populations world-wide and can thus contribute to physical activity and health promotion. Promotional approaches of such associations implemented in some countries may be adapted to be used in other regions of the world. The aim of this study was to review experiences made in current and past activities of FIFA and other large sports associations, and to develop recommendations for the adaptations of a FIFA health campaign implemented in Africa to be useful for a country such as Switzerland.

Activities undertaken: Web-based searches were conducted to explore physical activity and health promotion activities by FIFA and other sport for all organisations and international sport federations. The well-documented FIFA's "11 for Health" campaign, implemented first in South Africa, then in Mauritius, Zimbabwe and other countries, was selected. In a systematic approach, suggestions were developed to culturally adapt the campaign for a possible dissemination in other regions, with Switzerland used as an example. First, adequate settings and target groups for Switzerland were identified. Second, existing prevention messages from relevant national stakeholders (national federations, governmental or non-governmental organisations, etc.) were reviewed based on the burden of disease in Switzerland and compared to the "11 for Health" messages. Finally, each "11 for Health" message was adapted based on existing national messages and representing the cultural and public health situation in Switzerland. One version was developed close to the original "11 for Health" messages, one more broadly adapted to the situation in Switzerland.

Results: FIFA runs different health campaigns focussing on injury prevention, health in general including physical activity promotion, and communicable diseases in developing countries. Only very few promotional activities were identified from other sport associations and federations. "11 for Health" was developed for disease prevention and healthy lifestyle promotion based on 11 simple messages which can be related to different football skills. The program is disseminated in eleven 90-min lessons in schools or football clubs. For Switzerland, such an approach was not deemed feasible. Therefore, youth in sport clubs and middle-aged fans and spectators were defined as target groups and communication strategies were identified as possible dissemination channels. In further adaptation steps, the messages on health risks not prevalent in Switzerland were omitted (e.g. Malaria, clean water) and messages on health risks more prevalent in Switzerland were included (e.g. sun protection, mental health). Some messages were adapted (e.g. "respect women" adapted to "respect each other").

Conclusions: Large sport organisations have the potential to contribute to physical activity and health promotion internationally. However, programs developed for specific world regions, target groups and settings will have to be substantially adapted in order to be of use in other countries. Systematic approaches are needed to identify and review in the specific countries: 1) the burden of disease and the potential target groups, 2) the national stakeholders involved in health promotion, 3) existing health campaigns and messages, and 4) the feasibility of different dissemination strategies.

PHAC.37 - 5 x 30 mins per day or 150 mins per week: how are the physical activity guidelines interpreted by sedentary individuals?

Author(s)

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Introduction: Recently, several national physical activity guidelines have been updated with the volume of physical activity required for health benefit being expressed as a weekly total of 150 minutes rather than a daily total of 30 minutes on 'most days of the week'. The purpose of this study was to compare the amount, intensity and pattern of physical activity undertaken between sedentary adults given weekly or daily physical activity guideline messages.

Methods: 54 participants (29 female 25 male mean age 36.1 years) not currently meeting physical activity guidelines (<600 MET-min/week as determined by IPAQ) and unaware of the current guidelines participated in the study. Participants wore an accelerometer (Actigraph GT3X) for 7 days prior to and following a physical activity consultation in which they were given either a "150 mins per week" (n=21) or a "30 mins per day on 5 days per week" (n=23) guideline messages. Participants were randomly assigned to receive one or other of the two messages. Physical activity data were collected at 1 minute epochs with 1952 counts being used as the cut-off point for moderate intensity (Freedson et al 1998). The volume and pattern of moderate to vigorous intensity physical activity (MPVA) in bouts of 10 minutes or more was compared from pre to post message and between the two messages using a 2x2 mixed measures ANOVA.

Results: There was a main effect for time but no time vs group interaction. MVPA increased from 63 mins per week to 145 mins per week following the information session ($F=39.86$ $p<0.01$) but there was no difference in the magnitude of this increase between the two messages.

Conclusion: Providing information on physical activity guidelines increased physical activity during the following week in a group of previously sedentary individuals. Weekly volume or daily volume messages are equally effective in achieving this short term increase in physical activity. Further analysis of a larger dataset including the pattern of physical activity (distribution and bout length) is currently underway and will be reported.

PHAC.39 – Physical and mental well-being of the Flemish secondary school teacher

Author(s)

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Introduction: Current Flemish governmental data shows an increased rate of absenteeism amongst teachers due to psychological (39%) and musculoskeletal problems, especially low back problems (10%)^a. Also international studies concluded that teachers suffer from high levels of stress and musculoskeletal disorders^{1,2}. Regular physical activity (PA) is believed to improve physical and mental health³. The purpose of this study is to examine PA and mental well-being of Flemish secondary school teachers. The reason why teachers are a good targetgroup for health promotion interventions is twofold. Not only can they benefit themselves on a physical and mental level, but they can also have an influence on pupils health behavior.

Method: An online survey, consisting of several validated questionnaires was used in a representative sample of Flemish secondary school teachers. The International Physical Activity Questionnaire (IPAQ) estimated the amount of moderate-to-vigorous PA (MVPA) active transport (to work) and sitting time, while general health was measured by the Short Form 36 Health Survey (SF 36). Respectively the FABQ en the PAW were included to obtain information regarding Fear Avoidance Beliefs and Psychosocial Aspects at Work. Also data concerning musculoskeletal pain caused by work, teaching aspects and demographics were collected. Descriptive analyses were performed.

Results: Results of the survey among Flemish teachers (n=1167, age 40.25±9.7 years, 68% female) indicate that 66% met the current PA guidelines of more than 30 minutes of MVPA a day. One third of the respondents is using active transport weekly to commute to and from school. Teachers experience a high level of job satisfaction and social support, but also high levels of mental stress. They feel their job is mentally demanding and involves a great deal of mental concentration and responsibility. In terms of pain awareness, the teachers describe high levels of pain especially in the neck (40%) and the back (47%). Teachers reported an average sitting time of 277.8 ± 167.151 min/day.

Discussion & Conclusion: Flemish teachers have a relatively physically active lifestyle. They are 20% more physically active than the average Flemish population^b. Compared to office workers and laborers⁴, teachers experience higher job satisfaction and social support at work. They do however experience higher levels of mental stress and more musculoskeletal problems compared to the general Belgian population^b. Future research may indicate whether the mental stress and physical problems arise from the high job demands.

PHAC.42 - Applying the REAIM Framework to an Evaluation of a 'Natural Experiment': The PARC Study

Author(s)

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Introduction: Physical inactivity has been identified as one of the top five causes of mortality and morbidity (WHO, 2010). Recent European figures show that less than 30% of the adult population are sufficiently active (i.e. meeting current physical activity guidelines). Active living has been proven to have many physical and mental health benefits, and thus the promotion of physical activity is a public health priority. Increasingly, the importance of the built environment to public health is being acknowledged. The Foresight report emphasised the need to improve our understanding of the relationships between individuals, communities and their social capital, statutory and non-statutory agencies, *and the environment*, in order to design effective population approaches that reduce sedentary living.

Methods: The Connswater Community Greenway (CCG) is a £32 million regeneration project in Belfast, Northern Ireland. It aims to provide safe and accessible space for recreation and active travel, and improve the quality of life for the 40,000 people living nearby. The PARC (Physical Activity and the Rejuvenation of Connswater) study is a five year evaluation of the effects of the CCG on physical activity and health.

The RE-AIM (Reach, Effectiveness, Adoption, Implementation and Maintenance) framework has been proposed as the basis for planning and evaluating public health interventions (King et al, 2010). This allows the concurrent evaluation of dimensions considered relevant to real-world implementation, such as the capacity to reach socially-disadvantaged populations and the changes in health related outcomes, such as physical activity.

This current study puts theory into practice by appraising the usefulness of the REAIM framework in developing an evaluation of a 'natural experiment', the CCG, outlining the challenges faced and suggested improvements.

Results: The RE-AIM Framework was used to plan a comprehensive evaluation of the public health impact of a major urban regeneration project in a socially-disadvantaged community. The importance of using mixed methods and incorporating a trans-disciplinary approach are emphasised. In addition, the framework needs to take account of contextual factors, for example, weather, crime, road safety which have been shown to affect physical activity levels. The measurement of the actual change to the built environment needs to be considered as an adjunct to the framework.

Conclusion: Comprehensive assessment requires trans-disciplinary approaches in order to assess the effects of environment change on complex health-related behaviours. The RE-AIM Framework provides a useful template in which to plan a comprehensive evaluation of a natural experiment.

PHAC.48 - Healthy lifestyle campaign for middle-aged men. Part II: Actions

Author(s)

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Introduction: One of the main tasks for government funded Fit for Life Program (KKI) addressed in the Finnish government resolution on development guidelines for health enhancing physical activity and nutrition (2008) is to develop activities to improve healthy lifestyle among sedentary middle-aged men. Approximately 60 percent of men should improve their physical activity or eating habits in Finland.

Activities undertaken: A successful small local KKI project, Adventures of Joe Finn, was further developed into a nationwide campaign. In 2006 KKI coordinated a network for designing activities for sedentary men, such as physical activity trialing courses (by regional offices of Finnish Sport Federation (SLU-areas)) as well as cooking and physical activity courses (by Finnish Adult Education Centres). Material including a website and a fitness guide booklet was produced by KKI. In 2007- 2008 two lorry road tours (18 events) providing fitness tests and feedback were organised by KKI with main partners being Etera, a mutual employment pension insurance company, SLU-areas and local municipalities.

In 2010, in the second stage of the campaign, 19 one-day seminars were organised to prepare local health, physical activity, and nutrition professionals for the campaign. A television series was created in cooperation with the public-service broadcasting company YLE. In May 2011 a lorry tour was organised including 15 events providing easy fitness tests for men in a mobile test laboratory. At events several associations and local organizations provided information and services, such as microspirometry, blood sugar measurement, type 2 diabetes risk test, advice about healthy eating, and trials of sport. Another lorry tour will be organised in September 2011.

Results and further development of actions: Several improvements were done after first lorry tours (2007-2008). Extra program with music and humour on stage was left out as the mobile test laboratory in a lorry caught the interest of men. Advertising on a commercial radio channel was not successful. On the second stage selection of media partners was based on survey results. A strong cooperation was built with regional radio channels of YLE. The target group was specified according to age (30-60 y). A booklet containing ideas for lifestyle adjustments was produced according to men's age and life style.

Conclusions: Information about the target group based on research and surveys helped in designing the campaign. To build a good media cooperation was a necessity to save financial funds in delivery of information about the events as well as key messages. One aim of the campaign was to create and strengthen professional networking on local level, and create physical activity services for the target group. A strong commitment from all partners involved in the campaign was essential. In 2007 and 2008 persuasion was needed to get men to step into the lorry for tests. In 2011 men were queuing to get into the mobile test laboratory. In May 2011, during three weeks, about 5,000 men were tested. Test data will be analyzed and used for further development of actions for the target group.

PHAC.54 - Nordic Walking Project

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Introduction: The ASL TO4 area is full of mountains, hills and forests and the population density is low and is therefore suitable for Nordic Walking (NW), a kind of walking with poles resulting from cross-country skiing. To meet the demand of physical activity on the part of the family practitioners to their patients suffering from chronic diseases and sedentary, the Sports Medicine Service organized a project to promote Nordic Walking in the context of health plans to combat physical inactivity.

Activities undertaken: Following the concepts of Sports Club for Health, ASL has entered into an agreement with the two clubs of the area that organize and teach the Nordic Walking. The NW Andrate and the NW Torino Sports Clubs organized over thirty sessions of Nordic walking open to free participation in all four sites, two for each club, located in four different districts of the ASL. The sites are in the towns: Chivasso, Cascinette d'Ivrea, Settimo and Villanova Canavese. Six instructors with sixty pairs of poles have been engaged twice a week on Wednesdays and Thursdays. At least two sites on four are open every week from April to June 2011, further dates will be scheduled in September and by the influx and needs of participants. At each site works in days and hours established a station manned by qualified instructors of the sports clubs, which provide the poles and driving on the test participants. Will detect the presence, frequency and the type of participants, which will be offered an annual membership for the price of € 10,00 in a national sports promotion organization for insurance coverage. Those who wish may attend a full course of NW on three modules, in order to acquire the skills for independent practice and gain access to the excursions of sports clubs outside the project. For the new members IPAQ questionnaires are administered and provided WHO written recommendations on physical activity. Some people are made up of the measurements of energy consumption with portable metabolimeter.

Results: By the end of May, more than one hundred people have tried to engage the NW and have over forty members. The average age of participants is 45 years and 60% are women. Some people are sent by the services of ASL, such as rehabilitation services. It is expected to create groups of diabetic patients, ex-smokers, patients of mental health service, women breast surgery sent by ASL services and/or by family practitioners.

Conclusions: The project was welcomed by the local press and has been recognized among the top three posters in the competition for the national project to promote physical activity "Actions". A draft order will be processed the final data of the participants and measuring the consumption of calories. Data evaluation will consider the possible continuation and adaptation activities.

PHAC.56 - National HEPA policies: 7 case studies from Europe – experiences and lessons learned

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There is increasing interest in the development of national policy approaches to promoting and supporting HEPA. Although several papers have been published on the content of physical activity policy, there is much to learn from the processes of development and implementation of national policies within the health sector and integration with policy developments in other sectors. It would also be of benefit to understand how scientific evidence is used to inform the development of public policy and if and how this is integrated into the practice of physical activity promotion.

This workshop will present a methodology to collect case studies on national approaches to HEPA promotion and results of its pilot testing from 7 countries across Europe.

On behalf of the WHO Regional Office for Europe, a policy appraisal template was developed by the University of Loughborough, the University of Western Australia and the University of Zurich for the collection of case study “stories” on the development, content and implementation of national policy supporting physical activity. The template was pilot-tested in a set of 7 European countries; Finland, Italy, Portugal, the Netherlands, Norway, Slovenia and Switzerland.

The workshop will introduce the question-and-answer template and within-country process to gather the necessary information. Highlights from the pilot-test countries will be briefly presented, addressing different aspects such as: how where key stakeholders involved in the development of the policy? How is scientific learning intergrated into the practice of physical activity promotion? How can collaboration with the local level be ensured? How is surveillance and evaluation undertaken? The examples will focus on “good practice” and also point out challenges and experiences in overcoming them. In addition, lessons learned from the comparative between-country analysis will be presented.

The presentations will be followed by discussion between the audience and the present country experts, moderated by the workshop organizers. As time allows, specific aspects will be developed further in small groups, e.g. focusing on the different aspects presented as country-highlights. However, in order to fully engage the audience, the organizers feel that for this last part, 75-90 minutes are needed for the workshops.

PHAC.59 – Physical activity and sedentary behaviours of adolescents from eastern Poland

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Presenting author: Marian Stelmach

Introduction: Few studies have described patterns of sedentary behavior and examine how these relate to patterns of physical activity. This is especially important among adolescents because the growing prevalence of overweight and obesity in this social group is an anxiety-provoking situation. The newest evidence for Polish young populations are ranking Poland as a leader of this occurrence.

It is interesting what physical activity level of Polish adolescents is compliance with physical activity guidelines, and how much time young people allow for sedentary behaviors? This survey is the pilot study assessment of diversity in physical activity the adolescents are coming from Eastern Region of Poland. The purpose of this study was to examine the level of physical activity and amount of time spent for sedentary behaviors among adolescents and relations between these factors and overweight.

Methods: The survey was conducted in autumn 2010 on adolescents 16–18 years of age randomly selected from high schools of Eastern Poland. The pupils were interviewed about physical activity by an experienced interviewer using the questionnaire IPAQ-L. Additionally anthropometry measures were done; weight, height and waist circumference allowed to assess overweight and/or obesity.

Results: Physical activity level of the majority of the respondents don't comply with "Global recommendations on physical activity for health". The overall median value is 2317 METmin. This PAL isn't enough to meet current guidelines: one hour or more of at least moderate intensity on five or more days a week. Among different domains of physical activity, the time spent for active transport (walking and cycling) was the most important part.

Conclusions: There is a need to conduct survey in wider scale for full diagnosis the reasons of decline of physical activity level among youth and increase sedentary behaviors. It is especially important in regions with low SES like Eastern Region of Poland. The authorities of schools should provide many opportunities to encourage pupils for participate in a variety of physical activities, especially in recreational domain

PHAC.66 - Health benefits of cycling; a systematic review

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Presenting author: Pekka Oja

Introduction: Active commuting and recreational cycling can theoretically meet a population's need for health enhancing physical activity. The appeal of cycling relates to its low cost and potentially high population reach. Cycling can be accessed by all ages and social groups, and infrastructure support for cycling is now increasingly considered in urban development frameworks in many European countries. The purpose was to update the evidence on the health benefits of cycling in order to provide current science base for promotional efforts.

Methods: Published and peer reviewed articles were searched from seven electronic databases and from articles available to the authors. The search identified 16 cycling-specific studies meeting the inclusion criteria for this systematic review.

Results: Cross-sectional and longitudinal studies showed a clear positive relationship between cycling and cardio-respiratory fitness in youth. Prospective observational studies demonstrated a strong inverse relationship between commuter cycling and all-cause mortality, cancer mortality, and cancer morbidity among middle-aged to elderly subjects. Intervention studies among working-age adults indicated consistent improvements in cardiovascular fitness and some improvements in cardiovascular risk factors due to commuting cycling. Six studies showed a consistent positive dose-response gradient between the amount of cycling and health benefits. Systematic assessment of the quality of the studies showed most to be of moderate-to-high quality. According to standard criteria, used primarily for the assessment of clinical studies, the strength of this evidence was strong for fitness benefits, moderate for benefits in cardiovascular risk factors, and inconclusive for all-cause mortality, coronary heart disease morbidity and mortality, cancer risk, and overweight and obesity.

Conclusions: While more intervention research is needed to strengthen the knowledge base of the health benefits of cycling, the existing evidence is considered sufficient to reinforce the current efforts to promote cycling as an important contributor to public health. As the percentage of trips taken by bicycling in Europe is up to 25 % in the most advanced cycling countries but less than 10 % in the majority of countries, there remains a large unmet potential to increased cycling across Europe.

PHAC.68 - Supporting the physical activity

Author(s)

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Presenting author: Khishigtokh Dashpuntsag

Introduction: Recently, NCD has become one of the five leading cause for the death and illness in Mongolia. Physical inactivity is considered as a main risk factor for NCD. Nowadays over 60% of the total population lives in the urban area and number of school age children occupy more than 40% of the population.

According to the result of the study on "Determination body development of the population", 40.1% of preschool children, 48.6% of the adolescent and 42.6% of adult got insufficient evaluation on the body development index.

Thus, this study was done to determine current situation of the physical inactivity among school children and to evaluate hygiene condition of the gym and playground, where schoolchildren take related classes.

Objectives

1. To study current situation of physical activity among school children
2. To analyze laws and regulations related to public sports
3. To evaluate hygiene condition of the gym and playground of the schools

Materials and Methods: School based cross sectional study was used to evaluate physical activity among school children; laws and regulation analyze related to public sports was done by document review. 1504 children, 6-18 aged, from 28 private and public schools of 5 districts of the Ulaanbaatar were involved in this survey by their age groups (primary, middle and high schools). Hygiene condition of the gym and playground of the 42 schools in UB was evaluated.

Result: Physical education class is being thought 2 times a week in 77.1% of the surveyed schools, whereas only 1 times for rest of them. About 28.8% of the students were joined some kind of after-school physical activities. The reasons for not enrolling in the after-school activities were determined as follows: 42.5% of the students don't have spare time, 35.1% and 18.2% are due to tuition and inconvenient location, respectively. Students do sedentary work with low energy expenditure, after class. They watch TV for 3.53 ± 1.24 hours and work on computer 2.83 ± 1.07 hours a day. 85% of the surveyed schools don't have playground and 58% of the private schools doesn't have own gym in it. 86% of the schools, which had playground before, don't have it anymore. Within last 10-15 years those playground were and are being used for construction of new building or parking. Number of students in a class is exceeded from normative; approximately 2-3 classes have physical education class in one gym at the same time. Schools lack sport facilities, equipments and tools, moreover, there is no plan for restoring and renewing of necessary equipments.

During the last 10 years, more than 40 laws, regulations, resolutions, guidelines and standards related to public sports were adopted by Parliament and other bodies. However, there are enough laws, resolutions and regulations, supporting public sports, the structure and activity of the units that implement, evaluate and control these laws and regulations are inefficient.

Conclusion

1. After school students usually do sedentary work with low energy expenditure. They watch TV for 3.53 ± 1.24 hours and work on computer 2.83 ± 1.07 hours a day.
2. Percentage of the students who involved in some kind of sports activities is 28.8%, indicating the lack for possibilities and opportunity.
3. Although the laws, resolutions and regulations, supporting public sports, are enough, the capacity of the units that implement, evaluate and control these laws and regulations is weak.

85% of the surveyed school don't have playground and 58% of the private schools doesn't have own gym in it.

PHAC.75 - Validation of the SenseWear Armband at different intensity levels

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Introduction: When conducting epidemiological and interventional studies, it is important to select the appropriate assessment tool. Multi-sensor activity monitors such as the SenseWear Pro3 Armband (SWA) have been shown a valid and practical tool in measuring the energy expenditure (EE) of daily living activities. Recent validation studies however have reported inconclusive results for the measurement of vigorous intensity activities and found significant errors in predicting EE of activities of very vigorous intensity. Therefore the purpose of this study is to assess the accuracy of the SWA in measuring EE at different intensity levels.

Methods: Data was obtained from 44 students (24 male and 20 female), averaged 21.1 (± 1.4) yr of age, performing an incremental running test. The activity protocol included walking activities of moderate (3 - 6 METs) intensity and running activities of vigorous (6 – 9 METs) and very vigorous intensity (> 9 METs). By means of a paired t-test, the differences in EE estimated from the SWA with the EE measured from the Indirect Calorimetry (IC), used as the criterion measure, were analyzed. Agreement between the two methods was assessed by the Bland and Altman method and by means of correlation coefficients.

Results: The SWA underestimated EE for vigorous (-1.36 ± 1.17 kcal/min) and very vigorous activities (-5.80 ± 3.71 kcal/min). No significant difference in EE was found for moderate intensity activities ($p=0.586$). The Bland-Altman analysis indicates that the 95% limits of agreement between the two methods ranged from -1.76 kcal/min to 1.85 kcal/min for moderate intensity, from -3.66 kcal/min to 0.94 kcal/min for vigorous intensity and from -13.06 kcal/min to 1.47 kcal/min for very vigorous intensity. The two methods do not consistently provide similar measures for very vigorous intensity activities because there is a level of disagreement that includes an underestimation of up to 13.06 kcal/min. EE measured by the SWA and IC were significantly correlated for moderate ($r = 0.64$, $p < 0.0001$), vigorous ($r = 0.65$, $p < 0.0001$) and very vigorous intensity ($r = 0.69$, $p < 0.0001$) activities.

Conclusions: According to our results, the SWA is a valid tool in estimating EE of moderate intensity activities and can be used in daily life. Since exceeding this intensity results in a significant underestimation of EE, the SWA cannot be used for predicting the EE of vigorous to very vigorous intensities such as running. In future the EE equation needs to be adjusted to give an accurate estimate of EE for high intensity exercises.

PHAC.79 - Use of Global Positioning Systems (GPS) to study physical activity and the environment: a systematic review

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Introduction: The built environment is an important determinant of health-enhancing physical activity. Social ecological models of health posit that policies and changes in the built environment to encourage physically active lifestyles may be as important as interventions at the individual or social level (Sallis et al., 2006). The quantification of potentially relevant environmental characteristics related to physical activity depends on accurate assessment of the locations where physical activity takes place. Therefore, the Global Positioning System (GPS) represents an innovative possibility to objectively assess the spatial locations of outdoor physical activity behaviour. The aim of the review (Krenn et al., 2011) was to identify factors that influence the capability of GPS to collect data on the location of physical activities in research to examine the relationship between environmental characteristics and physical activity behaviour.

Methods: Published and unpublished articles in any language were identified by searching seven electronic databases, reference lists, bibliographies and websites up to March 2010. Studies were eligible for inclusion if they used GPS to measure the spatial locations of physical activity in humans and included some form of environmental analysis related to the GPS data. Each of the included studies was appraised against eight quality criteria to get an overall impression of the quality of the available evidence.

Results: 24 studies of mostly high quality met the inclusion criteria. Data loss was positively correlated with the measurement period for which participants were asked to wear the GPS device ($r=0.81$, $p<0.001$). Major reasons for data loss included signal drop outs, loss of device battery power, and poor adherence of participants to measurement protocols. Data loss did not differ significantly between children and adults or by study sample size, year of publication or GPS device manufacturer.

Conclusions:

GPS is a promising tool for improving our understanding of the spatial context of physical activity. Our findings suggest that the choice of an adequate device and efforts to maximise participant adherence are key to minimizing data loss, especially over longer study periods. The combination of the physical activity behaviour data measured by GPS and the analyses of those data with digital maps in a Geographic Information System (GIS) facilitates studying the relationship between environmental characteristics and physical activity. This would provide useful quantitative information for policy makers to guide environmental interventions for the promotion of physical activity.

SEBE.05 - Promotion of Health Enhancing Physical Activity (HEPA) through the european project Life Cycle in Slovenia

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Introduction: LIFE CYLCE is the EU project which aims to integrate cycling as the natural mean of transportation and as a daily physical activity routine by creating a lifelong approach on cycling. LIFE CYCLE's general objective is to change the increasingly sedentary lifestyles by adding physical activity to the daily routines of people. Thus LIFE CYCLE aims to reduce the main problems of public health like overweight, cardiovascular diseases and diabetes II. Furthermore, it wants to tackle social inequality as well since cycling is more affordable than car transportation.

Activities undertaken: The project's activities are oriented toward all stages of life from kindergarten through to retirement. In kindergartens the aim of the project is to influence children in such a way that cycling becomes a topic with a positive emotional feeling already at this early age. Cycling is promoted through play and parents are encouraged to bring their children to the kindergarten by bicycle. In the framework of the project LIFE CYCLE, »Orientation cycling for kindergarten children« has been developed and implemented at the Car Free Day for two years and will be used for promotion of cycling in the future.

Within the school activities cycling is promoted through various cycling events and competitions. In the framework of the project LIFE CYCLE, »Cycling circle«, the annual cycling event during European Mobility Week for pupils to improve their cycling skills, has been enhanced with a station about health aspects of cycling.

Among adults we encourage cycling to work and/or in leisure time. In collaboration with different partners a Cycle Safety Training Course for general population and educators has been developed. Through education of health professionals we are trying to incorporate cycling in Health Educational Workshops for adults with risk factors of cardiovascular diseases. For seniors we promote outdoor cycling for those who are able to cycle on regular bikes and indoor cycling under the supervision of a physiotherapist or sport professional for those who are not able to cycle on regular bikes.

All our target groups and their families are encouraged to participate in various cycling events on important days like »Car-Free Day«, etc.

In order to inform people about the health benefits of cycling, we prepared informational leaflets targeting specific groups and we continuously collaborate with the media and many other institutions to spread information about our project activities as wide as possible.

Results: In Slovenia, because of the differences in health related behaviour between urban and rural residents two geographically diverse samples have been chosen and as an evaluation tool a questionnaire was being used. During two implementation phases different measures have been developed and implemented for each target group. Due to health and safety reasons a special battery of tests for seniors has been developed and implemented in collaboration with the Faculty of Health Sciences of Ljubljana (Department of Physiotherapy). Seniors have been tested with this group of tests before the practical part of the Cycle Safety Training Course and after it.

Conclusions: By changing people's mobility behaviour and perception of cycling, physical activity is integrated into daily routines without the need for additional time. Thus the LIFE CYCLE project tackles the current increase of sedentary lifestyles and thereby facing health related issues observed in all European countries.

SEBE.07 - Leisure-time physical activity and TV viewing in relation with aerobic fitness in Flemish adolescents.

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Introduction: Higher levels of cardiorespiratory fitness are associated with a healthier cardiovascular profile in children and adolescents (Ortega et al., 2008). Cardiorespiratory fitness is in part genetically determined, but it can also be greatly influenced by environmental, social and lifestyle factors. With respect to lifestyle, physical activity (PA) has been identified as one of the main determinants (Ortega et al., 2008). There is also growing evidence that increased involvement in sedentary pursuits present a major health problem (Hills et al., 2007). Whether or not sedentary behaviour displaces PA is a topic of debate. It has been shown that sedentary children (i.e. >4h TV viewing/day) can also engage in large amounts of PA (Biddle, 2007). Given this background, the objective of the present study was to test the hypothesis that children in whom low levels of PA coexist with high levels of TV viewing will be less fit than children reporting high levels of PA combined with high or low levels of TV viewing.

Methods: In this study, 300 Belgian adolescents (mean age 11.3 years) completed a written questionnaire on their engagement in leisure-time physical activity (LTPA) and TV viewing. Validated instruments were used. High LTPA was defined as >3h/week and high TV viewing was defined as >4 hours/day. Based on the combination of their level of self-reported amount of LTPA and TV viewing, all children were allocated to one of 4 behavioural profiles: (1) high LTPA-low TV (comprised 24% of our sample); (2) high LTPA-high TV (comprised 17% of our sample); (3) low LTPA-high TV (comprised 28% of our sample); (4) low LTPA-low TV (comprised 31% of our sample). Furthermore, all pupils performed a 20-m shuttle run field test to assess their level of aerobic fitness (Léger et al., 1988). ANOVA analysis was performed with aerobic fitness as dependent variable and LTPA-TV profile as independent variable.

Results: The distribution of the sample across the 4 LTPA-TV profiles showed that boys formed the majority of the profiles with high levels of LTPA (high LTPA-low TV: 56% boys; high LTPA-high TV: 62% boys; low LTPA-high TV: 68% girls; low LTPA-low TV: 57% girls). After controlling upon gender distribution, a significant relationship between shuttle run test performance and profile membership was observed (F-value = 21.45, $p < 0.001$). Post-hoc tests revealed that the level of aerobic fitness of children in the high LTPA-low TV category as well as the high LTPA-high TV category was significantly higher compared with the boys and girls in the low LTPA-high TV and low LTPA-low TV profiles.

Conclusions: Irrespective of the level of TV viewing, children reporting high levels of LTPA demonstrated higher levels of aerobic fitness compared with children reporting low levels of LTPA. The lowest level of aerobic fitness was found in children of the low LTPA-high TV profile. From a health perspective, the question appears to be whether or not a large volume of sedentary behaviour is compensated by a large enough volume of PA. It may therefore be more appropriate to speak of a sedentary behaviour compensation effect (Van den Bulck & Hofman 2009).

SEBE.09 - The effectiveness of 'BeweegKuur', a combined lifestyle intervention in the Netherlands: rationale and design of a controlled trial

Author(s)

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Background: Improving physical activity and dietary behaviour of overweight and obese adults is of increasing interest. An increase in physical activity can reduce risk factors for chronic diseases, even regardless of weight loss. In addition, sedentary time appears to be related to chronic disease and standing time has been shown to contribute to physical activity level. By using accelerometry we can measure physical activity and time spent in postures objectively. Primary aim of our study is to compare in patients with very high weight-related health risk the effects of the 'start-up exercise programme' and the more intensively guided 'supervised exercise programme' of the 'BeweegKuur' on amount of physical activity and time spent in different postures.

Intervention: The BeweegKuur is a combined lifestyle intervention embedded in primary care and is aimed at improving physical activity and dietary behaviour in overweight and obese adults. The one-year intervention comprises of guidance by a team of a lifestyle counsellor, a physical therapist and a dietician. Patients receive physical therapist guidance until they are able to maintain exercise activities in local exercise facilities without supervision. Three BeweegKuur settings are developed to which patients can be referred to, based on severity of overweight and presence of (risk factors for) co-morbidities. The amount of guidance by the physical therapist varies from no guidance ('independent exercise programme'), several weeks of guidance ('start-up exercise programme') to several months of guidance ('supervised exercise programme'). The 'independent exercise programme' and the 'start up exercise setting' have been shown to be effective as well as cost-effective in people with (an increased risk of) type 2 diabetes. However, whether the 'supervised exercise programme' has additional effects in overweight and obese people with very high weight-related health risk is not known.

Methods: The measurements in this controlled trial will be performed at baseline, after the one-year intervention and after two-years of follow-up. Thirty GP practices are allocated to the experimental ('supervised exercise programme') or control condition ('start up exercise programme'). Amount of moderate to vigorous physical activity will be measured by means of accelerometry and the short format version of the International Physical Activity Questionnaire (IPAQ). This offers the possibility to assess physical activity and time spent in postures measured subjectively and objectively. Moreover, we measure dietary habits, risk factors for co-morbidities, physical fitness and functional capacity as they may play a role in the effects. In addition, an economic evaluation and a process evaluation will be executed to evaluate the involved expenses, execution of the intervention and the participants' beliefs regarding the intervention.

Discussion: Our study will provide valuable information regarding the effects of a combined lifestyle intervention on physical activity. Additionally, possible mechanisms of effects of the intervention might be demonstrated by measuring secondary outcomes and performing a process evaluation. Moreover, new insights in physical activity and inactivity patterns in an overweight/obese population can be established.

SEBE.12 - Self-reported screen based sedentary behaviours and physical activity are independently associated with BMI in adolescents – cross-sectional findings from HBSC-Germany

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Introduction: Most studies show an inverse association between physical activity (PA) and BMI. In addition time spent in sedentary behaviours (SB) (especially TV viewing) is positively related to weight status. There is also growing evidence that PA and sedentary behaviour are independently associated with weight status. The aim of our analyses was to build on this evidence and to examine whether moderate-to-vigorous intense PA (MVPA) and different types of screen-based SB were independently of each other related to weight status in adolescents.

Methods: Data were collected in Germany as part of the 2010 HBSC (Health Behaviour in School aged Children) WHO collaborative cross-sectional study. The study is representative for the 11, 13 and 15 year olds attending school. Participants filled in a self-report questionnaire. We used SDS- BMI as the dependent variable to take into account the age- and gender-dependent variation of BMI according to the current German reference values. Independent variables were a modified MVPA-Index (originally proposed by Prochaska et al. (2001)) and three items assessing screen-based SBs (i.e. watching TV, using electronic games, using computer). MVPA was divided into low, middle and high amount of PA and each of the SBs was dichotomised into less or more than 2 hours/weekday.

We tested for interaction between MVPA and each of the SBs in relation to weight status (SDS-BMI) using sex-specific two-way ANOVAS controlling for family affluence. In a second step we evaluated whether age moderates the PA/SB-weight status association.

Results: 1877 boys and 1977 girls were included in the analyses. In boys we did not observe any interaction between MVPA and SBs. In all models main effects of both MVPA (range of $\eta^2=.008$ up to $\eta^2=.011$; range of effect size of MVPA depends on the SB simultaneously included in the model) and SBs (range of $\eta^2=.005$ up to $\eta^2=.013$) were significantly associated with SDS-BMI. In addition we found an interaction between age and using electronic games but no three-way interactions of age \times SBs \times MVPA. In girls we did not observe an interaction between MVPA and watching TV nor between MVPA and using electronic games. The main effects of MVPA (range of $\eta^2=.007$ up to $\eta^2=.011$) and watching TV ($\eta^2=.011$) as well as using electronic games ($\eta^2=.002$) were significantly associated with SDS-BMI. A three way interaction (age \times PC-use \times MVPA) surprisingly showed for 13 and 15 year old girls a lower SDS-BMI for higher PC-use and low MVPA.

Conclusions: In boys and girls watching TV and MVPA both were independently associated with weight status. This finding supports recommendations with respect to reducing TV consumption and increasing MVPA as separate means of obesity prevention. Using electronic games might also be an important target for obesity prevention for both girls and boys. Using the computer for homework, chatting etc. was only negatively associated with weight status in boys. The observed interaction of age, PC use and MVPA in girls needs further research to fully understand the association with body weight.

SEBE.15 - Adherence to HEPA level and Mediterranean Diet among adults with CV risk factors.

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Introduction: Physical activity (PA) and Mediterranean Diet (MD) improve the control of CV risk factors (CVRF) and prevent cardiovascular diseases and some types of cancer. The Plan of Physical Activity, Sport and Health (PAFES program) promotes PA prescription in primary care centers and refers adults with ≥ 2 CVRF to supervised exercise groups.

The aims of this study are: first, to identify the baseline level of Health Enhancing Physical Activity (HEPA) and MD adherence of the referred adults. Second, to identify the relationship within HEPA level and MD with: age, gender, self-perceived health-related variables and smoking habit.

Methods: 350 subjects (63.4 ± 8.6 yr.; 71.4% women) with ≥ 2 CVRF (hypertension, dislipemia, obesity, diabetes type 2, sedentary behavior) but without cardiovascular disease, were referred from primary care centers to a supervised exercise program during a year. HEPA level, MD adherence, self-perceived health and smoking habit were assessed with validated questionnaires: IPAQ, Predimed questionnaire and SF-12, respectively. IPAQ classified according to HEPA level. Predimed, a 14-item questionnaire, classified according to the level of compliance of MD in low, moderate and high adherence. Health self-perception was assessed by SF-12.

Results: 71.4% reached HEPA level: high (21.6%); moderate (49.8%); low (28.6%). Adherence to Mediterranean Diet was: high (24.4%); moderate (65.9%); low (9.7%). According to the MD recommendations, positive results were: the use of olive oil as a principal dietary fat, the consumption of ≤ 1 portion/day of red meat and the consumption of ≤ 1 portion/day of butter products. Negatively, was found less adherence to the following recommendations: the consumption of ≥ 3 portion/week of pulses, ≥ 3 portion/week of fish or ≥ 1 portion/week of nuts and dried fruits.

In relation to health, those who reported perceiving a “bad general health” and “having never energy during the last month”, tended to have lower levels HEPA adherence ($p < 0.05$) and MD ($p < 0.001$). The most active subjects tended to feel less depressive ($p < 0.05$). No significant difference between HEPA and MD; or those variables with age, gender or smoking habit were found.

Conclusions: The sample presented a high proportion of adherence to HEPA level but low adherence to MD. HEPA level and MD adherence were related to health and energy self-perception. Depression were inversely related to HEPA level.

Adherence to a Mediterranean diet and healthful lifestyle (physical activity, non-smoking, moderate alcohol use) is associated with a more than 50% lower rate of all-causes and cause-specific mortality (Knoops et al. 2004). Southern countries have lower levels of PA in compared to Nordic countries. However, coronary deaths in Northern Europe and the United States greatly exceed those in Southern Europe, even when were controlled for age, cholesterol, blood pressure, smoking, physical activity, and weight (Keys, 1984). The difference between those countries is the presence of the Mediterranean Diet in Southern countries, which is associated to a better quality of life and a longer survival. In conclusion, the promotion of the Mediterranean diet and a healthy lifestyle is equally important that PA. More promotion of MD should be encouraged among this group population to improve the control of CVRF.

SEBE.17 - Interaction of different patterns of physical activity and sedentary behaviour on obesity.

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Introduction: The obesity epidemic is attributed in part to a lack of physical activity (PA). Sedentary behaviours (SB) are those that involve sitting and low levels of energy expenditure (1.0-1.5 metabolic equivalent units (METs)). The effects of extended periods of SB show metabolic alterations (Hamilton, 2008) and are associated to elevated risk of mortality from all causes and from cardiovascular diseases (CVD) (Katzmarzyk, 2009). Independent of PA level, SB is associated with significant elevated risk of obesity and type 2 diabetes, whereas even light to moderate activity is associated with substantially lower risk (Hu, 2011). Although there is good evidence that higher levels of moderate-to-vigorous physical activity (MVPA) lead to substantial health benefits, evidence supports that reducing time spent sitting, regardless of activity, may improve the metabolic consequences of obesity.

The aims of this study are to describe obesity prevalence among the Spanish population and to examine various patterns of SB with MVPA in relation to weight circumference (WC) and Body Mass Index (BMI).

Methods: A cross-sectional study was conducted among a random sample of 1595 Spanish adults (18 to 70 years) from the Catalan Nutrition Survey (ENCAT 2002-03). Obesity index was objectively assessed by WC and BMI. The WHO cut-off point was applied to define overweight and obesity. Time spent in MVPA and sitting time were assessed by the IPAQ (International Physical Activity Questionnaire) (short-version). Leisure-time physical activity (LTPA) was also analysed. Different patterns of PA level and SB were recoded: engaging in ≥ 60 minutes MVPA with high/low sitting tertile; engaging in < 60 minutes MVPA with high/low sitting tertile, engaging in ≥ 60 minutes MVPA with sedentary/active leisure time and engaging in < 60 minutes MVPA with sedentary/active leisure time. Independent associations between the different patterns with WC and BMI were investigated.

Results: 27.8% of the sample presented overweight/obesity (OW/OB) according to WC and 50.8% according to BMI. Higher prevalence of OW/OB were among women, older adults (≥ 55 yrs.), those with low education level, the retired and housewives, married people, those living alone and the non-smokers. No significant differences between WC and sitting hours or community size were found.

According to the relation between different PA patterns with BMI and WC, no significant differences were found. Only the relationship between the leisure time PA patterns with WC was significant. Those who reported sedentary LTPA and engaging in less or more than 60 minutes of MVPA, showed higher prevalence of OW/OB than those who reported active LTPA. Those engaging in ≥ 60 minutes MVPA and reported active LTPA presented the lowest prevalence of OW/OB compared to all the other groups ($p < 0.001$).

Conclusion: Although PA is important in the prevention and treatment of chronic disease, there is increasing evidence that it will not offset the deleterious metabolic effects associated with SB during leisure time. 60 minutes of MVPA per day are recommended to help to prevent weight gain. However, the present results showed that being sedentary during leisure time was more related to OW/OB than engaging in 60 minutes of daily MVPA. In contrast with previous literature, significant differences between WC and sitting time or between different PA patterns and BMI

were found. More studies are needed to explore the relationship between obesity, SB and PA level.

SEBE.22 - Physical activity, function, and quality of life: design and methods of the *FlexToBa*TM Trial

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Introduction: The population of adults 65 years and above in the USA is expected to grow from approximately 38 million in the year 2008 to nearly 89 million by the year 2050. Increased life expectancy, however, is associated with multiple co-morbidities resulting in compromised functional performance, increased functional limitations, and reductions in quality of life. Evidence suggests that regular physical activity can enhance physical function and attenuate functional limitations. Delivering physical activity interventions to older adults, however, can be expensive, have limited reach, and be difficult to implement. One innovative approach to delivering physical activity interventions to older adults is via digital video/versatile discs (DVDs). Such an approach can have broad reach, is convenient for use at home, does not involve travel to an activity center, and is unaffected by climate. Additionally, this approach is easy to implement, requires few resources, and has the potential for broad dissemination (e.g., home, community, or senior living facilities).

Methods: The *Flexibility, Toning, and Balance (FlexToBa*TM*) Trial* is a two-armed randomized controlled trial which will contrast the effects of a DVD-delivered, home-based, physical activity intervention and a *Healthy Aging* attention control condition on physical activity, functional performance, functional limitations, and quality of life in low active, older adults. This innovative trial will recruit 300 participants across central Illinois who will be randomized into the intervention arm or control arm of the study. The intervention will last 6 months with a 6 month follow-up. Assessments at baseline, post intervention and follow-up will include physical activity (self-report and accelerometry), a battery of functional performance measures, functional limitations, quality of life, and an array of psychological health measures. In addition, measures of external validity will be included to determine public health significance of a successful outcome. Participants will engage in a progressive series of activities focusing on flexibility, strengthening, and balance exercises which are led by a trained exercise leader and age-appropriate models in a series of DVDs. Delivery of the intervention has its basis in social cognitive theory. The specific aims of the trial are (a) to determine the effects of the DVD-delivered *FlexToBa*TM program on physical activity, functional performance, functional limitations, and quality of life, (b) to examine the mediators of the relationship between physical activity and functional limitations and quality of life, (c) to assess external validity indicators relative to the intervention, and (d) to determine differential effects of the intervention on psychosocial health.

Conclusions: The design of the *FlexToBa*TM trial has implications for advancing clinical practice as a function of knowledge gained. The approach will be easily distributable to practitioners and underscores the implementation of social cognitive factors in physical activity programs by focusing on modifiable factors to promote function and well-being. Findings are likely to have implications for concepts, methods, and treatments by underscoring the importance of low-cost, targeted delivery of physical activity programs of flexibility, toning, balance, and endurance as a *whole package* in protecting against functional limitations in late life.

SEBE.25 - Sedentary behaviour in Germany - How long do the German sit every day?

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Introduction: Recently reviewed physical activity guidelines recommend 30 minutes of moderate intense physical activity on at least 5 days per week or 20 minutes of vigorous intense physical activity for at least 3 days per week to maintain health without referring to sedentary time. Current research ascribes sedentary behaviour a meaningful independent health risk factor. The aims of the present study are 1) to document sedentary behaviour of the German population and 2) to analyse the influence of gender, age and Body Mass Index.

Methods: Through a representative telephone-based survey across Germany a total of 2509 inhabitants (1092 male; 49.0 ± 16.7 years; 25.2 ± 4.7 kg/ m²) were asked concerning their self-reported physical activity behaviour. For the survey the Global Physical Activity Questionnaire (GPAQ) was used to ask for moderate and intensive physical activity during work, transport and recreation and for the usual daily duration of sitting time.

Results: On a regular day, Germans sit for 322 ± 185 minutes. Men sit for 45 minutes longer than women (347 ± 193 vs. 302 ± 176 minutes per day; p<0.001). The youngest age group of 18-29-years report highest sedentary time of 376 ± 189 minutes per day (p<0.001). The oldest age group of 65 years and older declare the smallest amount of sitting time with 269 ± 152 minutes per day (p<0,001). No significant differences were revealed concerning Body Mass Index and sedentary times.

Conclusion: First findings about sedentary behaviour of the German population are documented. Men and younger adults report the highest sedentary times. With regard to health, the field of research on sedentary behaviour requires increased attention and there is a need of interventions on reducing prolonged sitting time.

SEBE.28 - Daily Step counts and Fear of Falling in Community Dwelling older adults.

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Introduction: According to previous studies mean pedometer-determined PA of older adults ranges from a low of 2,015 steps/day in a sample of 85+ years old to a high of 8.938 steps/day. Additionally, daily step counts <5,000 represent a step range indicating a sedentary way of life. Fear of falling refers to the concern that an individual has about falling during particular activities. Reduced quality of life, decreased mobility, decreased step length and greater anxiety have been reported for individuals concerned about falling. The purpose of the present study was to determine the relation of daily step count and fear of falling in community dwelling older adults 65+ residing in Greece.

Methods: Participants in this study were 300 older adults 161 men (69.8 ± 7.3 years) and 139 women (70.75 ± 7.03 years). Group A was formed with older adults performing <5000 steps/day and group B was formed with the participants that performed >5000 steps/day. The Yamax model SW200 pedometer was worn by the participants for 7 consecutive days in order to record daily step counts. Fear of falling was assessed with the Greek version of the Survey of Activities and Fear of Falling in the Elderly, the instrument that assesses fear of falling during performance of 11 activities, and gathers information about participation in these activities as well as the extent to which fear is a source of activity restriction.

Results: Participants in group A (n=191), performed (3.654 ± 885) steps/day and participants in group B (n = 109), performed (6.210 ± 1.036) steps/day. According to one way ANOVA significant differences were reported between the participants in group A and B for all three variables provided by SAFFE: a. fear of falling ($F_{(1,299)} = 37.000$, $p < .000$), with higher scores being reported for participants in group A when compared to participants in group B, b. number of activities performed ($F_{(1,299)} = 31.670$, $p < .000$), with higher scores being reported for participants in group B when compared to participants in group A, and c. number of activities the respondents stop performing within the last 5 years ($F_{(1,299)} = 15.270$, $p < .000$), with higher scores being reported for participants in group A when compared to participants in group B.

Conclusions: According to the results of this study older adults with low pedometer determined PA were more concerned about falls and performed less activities when compared to older adults that their daily step count exceeded the 5.000 limit that in the literature represents sedentarism. Future studies should examine this relation in order to clarify its cause and elements concerning the nature of the activities that older adults stop performing as their fear of falling increases.

SODI.03 – NEREU Program: Physical Activity and Diet healthy prescription for children and youngsters with overweight/obesity or sedentary and their families.

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Introduction: The obesity is a metabolic disorder very frequent and of a ascending tendency. As NAOS strategy says, in the Spanish state 13,9% of children and youngsters between 6 and 17 years old are obese, and 12,4% present overweight¹. Overweight in children and youngsters is a serious problem as one of the principal worry of child obesity it's the resistance and persistence in adult age. From these alarming figures from INEFC of Lleida (2006) started the NEREU program. During 2009-10 school course there has take place the 3rd edition of NEREU program.

Method: Objective: The main aim of our project is to change and maintain diet and physical activity behaviours to achieve healthy habits for a healthier lifestyle. Criteria inclusion: children between 8 and 14 years of age; sedentary: physical activity <3 weekly extra activity hours; overweight/Obesity: BMI > 85p; no contraindications to practice physical activity; sign the inscription of compromise and consent. Valuations and procedures: the parameters that we've used to evaluate the child are: habits physical activity (7 Day Recall²); diet Habits (Krece Plus³); physical condition (TM6⁴, Medicinal ball throwing⁵, length jump⁵); anthropometry (weight, height and abdominal perimeter); psychological test (self-esteem).

Structure and operation of the program:

1. The paediatricians prescribe the families who comply with the inclusion criteria of the program.
2. An information meeting to formalize the inscription. The intervention of the program is nine months of duration.
3. Once the program started there's two parts. First the intervention with children: the children practice physical activity one hour three days a week with a weekly theory session of diet assessment. Secondly the assessment: parents/tutors receive a weekly theory-practical session with Sports Science and Nutrition professionals. In some occasions parents and children do activities together. Also organize extra activities like excursions (FC Barcelona, Ski and water park) and summer camps.
4. Monitoring phases. Following the process during 5 years by phone and e-mail contact

Results: The sample was 44 with an average age of 9,5% (DE: 2,0) years old where 22 male and 20 female. In total the attendance was of 79,52% of the regular sessions. The reduction of time dedicated to sedentary activities confers on the hours dedicated to watching TV (-5,3; IC95%: de -0,8 a -9,7 h-set-1). On the other hand there are significant differences in the weekly hours dedicated to light intensity activities (-4,1 IC95%: de -7,5 a 0,7 h-set-1) which represents 6,5% of the total weekly hours (p<0,05). In relation with Krece Plus, there is an statistic increase between the initial and the end with the practice of physical activity in school timetable (3,75; IC95%: de 4,61 a 2,89 points).

Conclusions: The adhesion obtained in the program can incite to continue these new healthy habits and as a consequence avoid possible cosmobilities. One of the important aims of public health.

SODI.06 - Sports clubs as 'new' partners in health promotion: the case of Flanders

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Introduction: Findings regarding the health behaviours of youth in Flanders are not comforting: of the 11, 13 and 15 year olds about 1 in 10 is overweight or obese while less than 20% of boys and girls in these age-groups reports at least one hour of moderate-to-vigorous daily activity. Clearly, Flanders needs to increase its health promoting efforts aimed at this population. While existing evidence-based activities should be continued, new approaches should also be considered. In this respect the WHO emphasizes the value of settings for health promotion. With regard to young people, Rutten identified leisure time as one of three important contexts with regard to their development. As about half of the Flemish adolescents is member of a sports club (SC), this setting seems a very promising setting from a health promotion perspective. However, it is uncertain whether Flemish SC are willing and able to take up this new role. The Flemish Ministry of Sport commissioned this study to explore the current state of affairs within SC and the opportunities and barriers they perceive with regard to taking up health promotion as an additional responsibility.

Methodology: From a representative panel of SC the subset of clubs with members under the age of 18 was asked to fill out an on-line questionnaire on their club's policies, attitudes and practices with regard to health promotion in SC. Officials of 140 SC (47% response rate) scored the statements on a 5-point Likert scale (1 = not at all agree, 3 = neutral, 5 = totally agree) (data collection is ongoing).

Results: The sample is representative for SC in Flanders with regard to size (small: 34%, medium:45%, large: 21%), sport type (solo: 43%, duo: 29%, team: 29%) and socio-economic profile of the training location. Even though SC highly agree that health promotion is an important task (mean score = 4,6) and state that they want to contribute to the health of youth members (mean score =4,1), this is not always reflected in their activities. For example: most clubs do not collect health data (60%), do not have a written policy regarding health and health promotion (57%) and do not ensure health promotion is carried out (49%). SC also mention specific barriers. In general, the top three barriers are: 1) other priorities, 2) lack of time and 3) lack of knowledge and expertise. Further analyses will explore differences in attitudes and perceived barriers due to determinants at SC level (e.g. size, sport type...). These additional results will be reported at the conference.

Conclusion: This study concludes that Flemish SC are willing to expand their focus to include health promotion but may not be able to do so due to a perceived lack of expertise. Close collaboration between sports organizations and health promotion experts is therefore essential if SC are expected to take on the challenge of integrating health promotion into their core activities.

SODI.11 - Electric bikes as a new active transportation modality to promote health

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Alternatives to motorized transportation have shown a great potential for increasing physical activity and enhancing health. Although commuting by bicycle can be an excellent choice for health, it can be too much of a physical challenge in hilly urban environments. Electrically assisted bicycles (EAB) are an emerging transportation modality favoured for environmental reasons, but could also offer an interesting alternative when the regular bike is too demanding. Some physical effort is required to activate the supporting engine, making it a potential active commuting option, and it could help overcome some typical barriers to active commuting (effort required, need to shower and change clothes at the workplace).

Purpose: We hypothesized that using an EAB in a hilly city allows sedentary subjects to commute comfortably, while providing a sufficient effort for health-enhancing purposes.

Methods: Sedentary subjects performed 4 different trips at self-selected pace: walking 1.7 km uphill from the train station to hospital (WALK), biking 5.1 km from lower part of town to hospital, with a regular bike (BIKE), or EAB at 2 different power assistance settings (EAB_{high}, EAB_{std}). These trips were chosen because they represent typical routes employees at our Institution use on a daily basis. Heart rate, oxygen consumption and need to shower were recorded.

Results: 18 sedentary subjects (12 female, 6 male) aged 36 ± 10 were included, $\dot{V}O_2\text{max}$ $39.4 \pm 5.4 \text{ mL}\cdot\text{min}^{-1}\cdot\text{kg}^{-1}$. Time to complete the course was 22 (WALK), 19 (EAB_{high}), 21 (EAB_{std}) and 30 min (BIKE). Mean % $\dot{V}O_2\text{max}$ was 59.0%, 54.9%, 65.7% and 72.8%. Mean %HRmax was 71.5%, 74.5%, 80.3% and 84.0%. No significant difference was seen between WALK and EAB_{high}, but all other comparisons were different ($p < 0.05$). 2 subjects needed to shower after EAB_{high}, 3 after WALK, 8 after EAB_{std} and all 18 after BIKE. WALK and EAB_{high} elicited 6.5 and 6.1 MET (no difference), whereas it was 7.3 and 8.2 for EAB_{std} and BIKE.

Conclusions: EAB is a comfortable and ecological transportation modality, helping sedentary people commute to work and meet physical activity guidelines. 4 one-way trips per week would be sufficient to accumulate more than 450 MET·min per week. Subjects appreciated ease of use and mild effort needed to activate the engine support climbing hills, without the need to shower at work. EABs can be promoted in challenging urban environment to promote physical activity and mitigate pollution issues. Companies should be aware of this potential to improve the health and comfort of employees, while addressing environmental issues.

SODI.19 - Promotion of nutrition and physical activity in Dutch general practice

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Introduction: Promotion of nutrition and physical activity is important to slow down the increase of overweight. General practitioners (GPs) are in an unique position to communicate with their patients about nutrition and physical activity, because of the high referral score, high perceived expertise and reach to nearly all segments of the population. Our research group has a large history in the field of nutrition guidance practices by GPs. The aim of the present study is to gain insight into the similarities and differences in patterns between nutrition and physical activity guidance practices by GPs.

Methods: In 1992, a mail questionnaire (The Wageningen GPs Nutritional Practices Questionnaire) was developed and sent to a nationwide sample of 1000 Dutch GPs, who had 5-15 years of practice experience. Altogether, 633 GPs participated. All eligible 488 participants from 1992 were asked to participate again in the 2007 study. In total, 255 GPs (in practice for 20-30 years) returned the questionnaire. The response rate appeared to be 52%. Additionally, a new cohort of GPs was asked to fill in the questionnaire, resulting in another 217 GPs in practice for 5-20 years. The questionnaire was developed on the basis of qualitative research. Self-reported nutrition guidance practices, task perceptions, self-efficacy expectations and perceived barriers regarding this practices were assessed in the questionnaire. In 2007, the questionnaire also included questions about physical activity guidance practices and its determinants. This makes it possible to study whether GPs, who are communicating about nutrition, are the same GPs, who communicate about physical activity. In addition, special attention has been given to literature reviews about nutrition and physical activity guidance practices by GPs.

Results: Around 80% of GPs mentioned that they often noticed their patients' weight. Our study showed that GPs are more likely to communicate with overweight patients about physical activity than about nutrition. Moreover, GPs perceived their tasks concerning physical activity guidance more preventive than their tasks concerning nutrition guidance. Also, self-efficacy for physical activity guidance appeared to be higher than for nutrition guidance. Furthermore, 71% of GPs perceived lack of time as barrier for nutrition guidance, although only 54% mentioned this as barrier for physical activity guidance.

Conclusions: This study indicates that Dutch GPs are more often inclined to promote physical activity than to promote nutrition to overweight patients. Likewise, they tend to rate determinants of physical activity guidance more positively than determinants of nutrition guidance. The preliminary results of in-depth analysis of the similarities and differences between nutrition and physical activity guidance practices will be discussed at the conference.

WEDNESDAY 12 OCTOBER – LIST OF POSTER ABSTRACTS

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PHAC.05	Ms.	Queralt	Spain	Prescribing exercise in primary care settings: nurses' opinions, barriers and knowledge
PHAC.09	Mr.	Gusi	Spain	Building capacities and policies to develop and adapt the HEPA Exercise Looks After You program: research, governmental service and social economy
PHAC.14	Ms.	Muller	United Kingdom	The UK's National Cycle Network - findings from 10 years of data collection
PHAC.16	Mr.	Cavill	England	England's Cycling Demonstration Town Programme: did it increase cycling?
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PHAC.26	Mr.	Rzewnicki	Belgium	Getting Babies on Bikes & Grampas on Trikes
PHAC.32	Ms.	Huijg	The Netherlands	Stakeholders' perspectives on factors influencing the implementation of physical activity interventions in primary health care
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PHAC.40	Mr.	Rutten	The Netherlands	The BeweegKuur: Expectations and experiences of participants with a combined lifestyle intervention for overweight and obesity
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PHAC.63	Ms.	Stuij	The Netherlands	School, Exercise and Sports. Relations between the school environment and young people's exercise and sports behaviour in the Netherlands.
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Topic	Gender	Last name	Country	Titel abstract
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SEBE.11	Ms.	Williams	United Kingdom	Beyond the Binary: Understanding differences in levels of physical activity and participation in outdoor recreation.
SEBE.14	Mr.	De Baere	Belgium	Secular trend in physical activity and sedentary behavior in Flemish adolescents and adults.
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SEBE.29	Ms.	Beruchashvili	Georgia	Sedentary behaviour in Georgia
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SODI.01	Ms.	De Martelaer	Belgium	PE teacher as expert in health education in teamwork
SODI.10	Mrs.	Vokoun	Czech Republic	The Economic Burden of Physical Inactivity in the Czech Republic: The Empirical Analysis of External Costs
SODI.14	Ms.	PARDO	Spain	Factors associated to HEPA level. A population based cross-sectional study in Spain.

PHAC.04 - Adaption and testing of the German version of the Neighborhood Environment Walkability Scale (NEWS)

Author(s)

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Presenting author: J. Bucksch

Introduction: There are only a few German studies examining perceived environmental correlates of physical activity (PA). The selection of self-reported questionnaires covering a wide range of environmental themes is small. The German version of the 'ALPHA environmental questionnaire' is one of the first more comprehensive questionnaires on this issue. Most of the studies on PA and the perceived environment have been conducted in the US and Australia by using the 'Neighborhood Environment Walkability Scale' (NEWS). Thus, the objective of the current study was to adapt the original US-American version of NEWS to German language and culture and to test whether the adaptation 'NEWS-G(ermany)' is reliable and valid.

Methods: We used the guideline of the 'International Society for Pharmacoeconomics and Outcomes Research' for cross-cultural adaptations of the original NEWS version 12/2002 to develop the NEWS-G. The adaptation process included a comparison with the ALPHA environmental questionnaire, three independent forward and two back translations. The comprehensibility and cognitive equivalence of the translated items of the original NEWS were assessed by Information-Retrieval-Probing (n=6).

To test the NEWS-G for/on reliability and validity we conducted a survey at Bielefeld and Cologne University. 179 participants (mean age 25.2 (SD=8.7), 73% female) were contacted by e-mail and filled in a computer assisted self-administered version of NEWS-G and of the International PA Questionnaire short version. Bivariate correlations between environmental scores and intensity-specific PA were calculated to evaluate predictive validity. One week after their first response, 66 participants completed NEWS-G a second time. We used Intra Class Correlations (ICC) to assess test-retest stability.

Results: The following adaptations (original NEWS to NEWS-G) derived from the findings of the Information-Retrieval-Probing: we culturally adapted 4 out of 83 items and we inverted a 5-point scale used in one section of the original NEWS.

Most of the scales and items of NEWS-G showed a moderate to good test-retest reliability. The ICC of scales ranged from 0.55 to 0.94. We observed only a few significant correlations between intensity-specific PA correlated and different attributes of the perceived environment. All in all, the correlations were low but pointed in the expected direction.

Conclusions: The computer assisted self-administered NEWS-G appears to be a reliable instrument to assess the perceived environment of one's neighborhood for young adults living in Germany. More representative studies are essential to finally evaluate reliability and validity of NEWS-G. Further validity testing should focus on the associations between subscales of NEWS-G and domain-specific physical activity (e.g. using IPAQ long version) and with objectively measured characteristics of the environment.

PHAC.05 - Prescribing exercise in primary care settings: nurses' opinions, barriers and knowledge

Author(s)

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¹Universitat de València

Presenting author: A. Queralt

Introduction: Healthcare professionals play a key role in promoting physical activity to the population. Primary care-based nurses have been identified as having a major role in improving the health to their communities. The purpose of this study was to analyse the opinions, barriers and knowledge associated with advising patients about physical activity and describe the characteristics of this advice.

Methods: The study sample consisted of 76 primary care nurses from 11 primary health care centres (Castellón, Spain) who completed a self-administered questionnaire. Test-retest reliability for each measure was acceptable. About eighty percent of the sample were women with a mean age of 48.9 ± 11 .

Results: Regarding physical exercise advice, 100% of the nurses recommended their patients to get involved in some physical activity. Nurses reported to spend almost 5 min during their consultation when advising patients about physical activity. The exercise prescription consisted of 39.1 ± 14.6 min per session, 4.5 ± 1.6 times per week. The type of exercise most frequently recommended was walking (94.7% of the nurses) and those nurses who specified the intensity mainly recommended taking moderate exercise (82.9%). Those nurses who received education about *physical activity and health* during their nursing studies had more positive opinions towards prescribing exercise, perceived fewer barriers and showed more knowledge about the existence of evidence of beneficial effects of physical activity. However, differences were only significant in relation to the opinions ($p < 0.05$). In addition, nurses who were insufficiently active (less than 600 MET·min/week) tended to perceive more barriers when advising exercise.

Conclusions: In conclusion, this study shows the importance of education about *physical activity and health* during health studies and the positive influence that being physically active may have in exercise prescription.

PHAC.09 - Building capacities and policies to develop and adapt the HEPA Exercise Looks After You program: research, governmental service and social economy

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Presenting author: Narcis Gusi

Introduction: the purpose of the presentation is to critically describe the key factors in the 8-years process of building capacities and policies to progressively develop a successful HEPA program named Exercise Looks After You in Extremadura (Spain).

Activities undertaken : Basically, we developed a regional HEPA service developed at local level linking primary care support and community actions. We will present the major steps: 1) evidence-based knowledge through research, 2) preparation to action by developing inter-sectoral documents and alliances among police-makers and developing policies through political system, 3) implementation of governmental HEPA public health service: building interadministrative (local, regional), intersectoral and interlevel (policemakers, managers, professionals and users) alliances, diffusion keys, and building specific professionals to implement it, 4) maintaining and adding services for disadvantaged persons: a) reinforcement of police-makers through services for politician actions and diffusion of results, b) developing new alliances c) cost-effectiveness, d) optimization of structure and international diffusion of good practice through European Union funded projects PASEO, Senior Sport and WHO databases, 5) facing social economy, building capacities and policies to transform the fully regionally funded public program to private market funding to avoid social and health inequalities.

Results: The program is linked to primary care, social networks (elderly homes, associations for persons with disability, schools, municipalities) and sport sector attending (exercise for health, regular evaluations, etc.) more than 6000 elderly, 300 overweight children and 200 persons with palsy or Down's Syndrome. We promoted a new regional market reducing health inequalities and we describe some barriers and solutions to private companies.

Conclusions: to sum up, we present the evolution from research to a governmental program as tool to build market and capacities for preparing an HEPA program in the social economy paradigm.

PHAC.14 - The UK's National Cycle Network – findings from 10 years of data collection

Author(s)

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¹Sustrans, Research and Monitoring Unit

Presenting author: Lisa Muller

Introduction: The one of the flagship projects of the sustainable transport charity Sustrans is the National Cycle Network, a network of walking and cycling paths across the UK. This development has taken place over the past 16 years and the National Cycle Network is now over 12,600 miles long it passes within a mile of 57% of the population (over 32 million people). The National Cycle Network is therefore a physical activity intervention with huge national potential, both in people's spare time for tourism activities or short walks as well as regular journeys such as commuting. Sustrans' Research and Monitoring Unit has been monitoring the usage of the National Cycle Network over the past 10 years to find out whether, how and why people are using it and to demonstrate to the government and funders that investment is worthwhile from a transport and health perspective. The presentation will look at new findings related to trends in the data collected over this time period as well as new findings related to motivational project delivered locally to promote the usage of the Network.

Historic context: For the past 10 year Sustrans has developed the method of data collection on the network including automatic counts of cyclists and more recently also pedestrians. Automatic counts provide continuous data of the number of trips made within an hour (or 15 minutes) usually distinguishing the direction people travel in. This enables us to determine not only the general level of usage and changes in usage over time and seasonal variation but also whether there are for example morning peaks of commuters going in on direction and returning in the afternoon. In addition we have collected data from users by intercepting them on their journey on the Network at various locations across the UK. This provides information with regards to who is using the network, how they are using it and for what purpose they are making the journey. The questions which were asked as part of these intercept surveys changed due to funding and policy requirements over time, but some key indicators remained the same. Manual counts of all users have also taken place in various locations over the years, these provide additional information on gender, age group and type of usage as well as information of movement at junctions. In 2010 we estimated the number of journeys made on the National Cycle Network to be just under 420 million, this means it carries about a third of the number of journeys made on the UK's rail network. The number of journeys made has increased over the years as the network has grown and become more popular. Since Sustrans began monitoring, the Network's length has tripled, but the number of journeys made appear to have grown even more over the same time frame. Sustrans has found that the Network can be a catalyst for physical activity and active travel. Research indicates that creating the right environment for people of all ages and abilities to walk and cycle in, means people will use it, and may even choose to leave their car behind. During 2010 on the National Cycle Network about 216 million trips were made by bike and 204 trips were made on foot. About 70% of the users say that the Network has helped them to increase their physical activity. From the surveys we also know that about 10% of cyclists are new to, or returning to, cycling indicating that inexperienced cyclists are using the network. Only 42% of users got at least 30 minutes of physical activity on at least five days a week – the recommended levels suggested by health experts – supporting the fact that not only already active people are using the Network. In recent years we found that nearly a quarter of all the journeys made on the Network were for commuting purposes and almost 80% of trips were made by foot or bike alone indicating the Networks potential to provide opportunities for car free journeys.

New research: Sustrans is now reviewing all data collected on the NCN over the past years to investigate trends and changes over time. In particular we are interested to find out where the usage has changed, in terms of the geographical locations as well as the time of the day or the year. Other questions are whether the user profile has changed and for example more

inexperienced cyclists are using the Network now than used to 10 years ago. This poses a analytical challenge do to discontinuity of automatic counter data over the past 10 years (new locations have been added and old ones taken out of service) and survey questions changing as well as survey locations and purposes of the surveys varying over time.

More recent research shows that Network development work involving the nearby community and targeted promotion of the Network as well as activities such as led walks and rides can increase both usages and general awareness of the route. Focus groups and interview with people participating as well as usage numbers in project areas indicate that a mix of infrastructure provision and motivational engagement with the nearby population can lead to higher usage.

Conclusion: Interventions such as a National Cycle Network seem to have considerable potential to provide new and easy to access opportunities for large numbers of people to undertake and participate in physical activity. The new research presented at the conference will give detail about the learning and changes over time based on the trend data as well as the findings related to specific local projects near the Network.

PHAC.16 - England's Cycling Demonstration Town Programme: did it increase cycling?

Author(s)

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Presenting author: Nick Cavill

Background: Increasing cycling is a key public health goal, but there is little published evidence on the effectiveness of population-level strategies to increase cycling. The Cycling Demonstration Town (CDT) programme aimed to increase cycling in six towns in England through new cycle infrastructure; cycle training; campaigns; and workplaces and school programmes.

Purpose: To provide final results from the second wave of the programme, with data from 2006 to 2010.

Methods: Secondary analysis of four waves of Sport England's Active People Survey (APS); and bespoke telephone surveys in the CDTs in 2006, 2009 and 2011. This was complemented by an extensive programme of objective measures of cycling, including automatic and manual traffic counts.

Results: Initial analysis of the first three years of the programme showed an increase in cycling (for at least 30 minutes, once a month and three times a week) in local authorities with a CDT compared to matched local authorities without a CDT. The telephone survey data showed increases in cycling and a decrease in the proportion classed as sedentary. However, these initial increases appear not to have been sustained in the second phase of the programme.

Conclusion: The CDT programme showed initial increases in cycling in the first three years that were generally not sustained in the second phase. Programmes such as this may require significantly more longer-term investment to change ingrained travel habits.

PHAC.22 – Results of the celebration of the World Physical Activity Day (WPAD) in Catalonia in two consecutive years

Author(s)

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Presenting author: Mariona Violán

Introduction: The World Health Organization (WHO) by an official resolution (WHO, 2002) “urges Member States to celebrate a ‘Move for Health’ day each year to promote physical activity (PA) as essential for health and well being”. The main message to transmit is: at least 30 minutes of moderate PA every day for adults. The proposal of the WHO initiative comes from a previous and successful one organised by Agita São Paulo in Brazil and Agita Mundo Network that manages, year after year, to bring together around 5,400,000 events around the world. The Government of Catalonia (7 million inhabitants) established the Plan of Physical Activity, Sport and Health (PAFES) in 2007. The main aim of PAFES is to encourage active changes in lifestyle among the adult population through the prescription of PA mainly from primary healthcare giving advice to increase the level of healthy physical activity, to walk using healthy pathways, or to refer to supervised group exercise in sports facilities. To boost this strategy, PAFES is holding, for the second consecutive year, the WPDA on 6th April and any date between 4th and 10th April.

Activities undertaken: The main objective is to send the main message from the PAFES website to as many people as possible and get institutions to organize events in local areas. These events can be healthy physical activities (as walking), sportive, formative and/or informative about the benefits of PA. In order to reach the population, the Government of Catalonia (Health and Sport Departments) has designed a communication plan for the majority of the public and private sectors: sports centres, clubs, federations, primary care centres and hospitals, schools, enterprise, government departments, professional associations, scientific societies, parents’ associations and different health networks. Downloadable material in www.WorldPhysicalActivityDay.cat both to spread the message and promote the organization of events: a) different graphic material which show the main message and have been designed in exclusive for the yearly celebration, among them one poster; b) leaflet with suggestions of different events for the institutions to organize and a leaflet with 40 tips of PA to be done on a daily basis (at home, transport, at work and in free time) if anyone wants to participate the Day individually. The data of the participation were collected from March to May including the description of the event and the institutions involved.

Results:

Participation	2010	2011	Δ
People	36.890	66.359	80%
Events	116	272	134%
Participating entities	175	493	182%

Field of the entities	2010	2011
Local (Town Council departments)	46	106
Regional Council	NR	15
Autonomous Government (departments)	NR	34
Health centres	20	98
Educational centres	27	92
Sports Entities	60	72

Others	22	76
TOTAL	175	493

Types of Events	2010	2011
Sports events	76	252
Spreading main message (30 minutes)	32	7
Teaching activities (speeches, seminars)	8	13
TOTAL	116	272

Conclusions: The results in 2010 indicate that the celebration of the WPAD is good as a strategy of HEPA because it has managed to mobilize people's awareness and institutions. The increase of events in 2011 (119% more) indicates that without much economic support it is possible to spread the message of PA to all strata of the population to reverse the population trend towards inactivity and create good conditions in which to incorporate PA as a part of everyday life. The low cost of this action is a strong argument for urging communities to celebrate WPAD.

PHAC.24 - Finnish Schools on the Move – A national project to enhance physical activity in school settings

Author(s)

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Presenting author: Tuija Tammelin

Finnish Schools on the Move is a national action project that aims to enhance physical activity in school settings. The goal is to implement national physical activity recommendations for school-aged children to all comprehensive schools in Finland. A two-year pilot phase of the project was launched in autumn of 2010. Altogether, twenty-one pilot projects, including 45 comprehensive schools all over Finland and 10,000 pupils from grades 1 to 9 (ages 7 to 15), will attend the project between 2010 and 2012. These 21 projects applied for and received governmental funding (4600-40000 € per pilot project per year) in order to implement their own individual and local action plans.

Extensive follow-up research linked to this project aims to evaluate the progress of plans that are designed to enhance physical activity at the school level, as well as changes in physical activity and well being both at the school and student levels.

A process evaluation of the 21 pilot projects will be conducted by interviewing the coordinators and key persons of the pilot projects several times during the two-year period. The pilot projects and the pilot project's mentors keep a follow-up diary of their operations. The success factors and obstacles to enhancing physical activity in school settings will be evaluated in different pilot projects.

Effects of the project at the student level will be evaluated by collecting data from self-administered questionnaires four times during the two-year pilot phase from a total of 2500 pupils. The questionnaires will ask the participants to estimate the amount of physical activity they engaged in during recess, during the commute to school, and during their leisure-time. Objective measures of physical activity by accelerometers will be implemented in four pilot schools. In addition, questionnaires will contain questions regarding students' social relationships, school climate, and bullying.

The results of the baseline measurements show that the proportion of pupils who meet the recommended minimum 60 minutes of moderate-to-vigorous intensity physical activity per day range from 5 to 50% at different schools. Based on objective measurements calculated by accelerometers, the proportion of children who meet this recommendation are, on average, 50% for pupils in grades 1-6, but only 13% for pupils in grades 7-9. Sedentary time spent playing computer games was high, and the highest amounts were observed among boys in grades 7-9. Reducing excessive sedentary screen time seems to be an important element in promoting physical activity, especially for adolescent boys.

A process evaluation of the first year period shows that coordinators of local pilot projects had in some schools experienced challenges in regards to school personnel's commitment to the project's plan and with the activation of the oldest pupils (from grades 7-9) in different activities. Intensive research and evaluation linked to the Finnish Schools on the Move project and the 21 different pilot projects will provide important information that can be used by policy-makers and financiers in the development of the project. Documentation of the processes and practices invented and applied at schools will be important when the aim is to enlarge the project and implement the ideology in other schools in Finland.

PHAC.26 - Getting Babies on Bikes & Grampas on Trikes

Author(s)

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Presenting author: Randy Rzewnicki and Benoit Blondel

An example of primary prevention is the EU co-funded Public Health Program project "LifeCycle". It focused on the overall goal of improving the health of EU citizens by fostering more physically active lifestyles, and specifically aimed to integrate cycling as the main means of daily transport. LIFE CYCLE begins by making cycling important in early childhood and promotes it as a habit across the entire lifespan. 10 partners in 9 countries worked on increasing the number of people cycling at every stage of life: from babies to grand-parents.

Best Practice Handbook & Implementation manual were developed and disseminated. Cycling promotion projects in 9 countries were carried out. Practical hands on training workshops were held in 6 countries to stimulate and support the development of new cycling promotion projects.

Cases from the LIFE CYCLE Best Practice collection will be presented, showing how to reach groups across the lifespan, from babies & young children, to working adults and the elderly and get them cycling for daily transport.

The LIFE CYCLE Implementation manual will also be introduced. It is a resource to help you execute actions that will foster life-long cycling. It is packed with ideas, recommendations and experiences from dozens of contemporary cycling/active transport initiatives, covering everything from planning and partnering to implementation and measurement.

One example of a LIFE CYCLE cycling promotion projects is the "**Bike to Work**" in program Belgium, which includes:

- A Bike to Work Team challenge in the summer, based on the successful Bike to Work challenges in Denmark, Germany and Switzerland. Main purpose is to encourage potential cyclists to start cycling to work.
- A Bike to Work Winter Trophy to encourage employees to continue to cycle to work after the summer.
- A loyalty program & reporting of the Cycling Commuting Rate

Results of the "**Bike to Work**" project after 24 months : 200 participating employers, 15,000 registered cyclists, 50 sponsors and 14,000 unique website visitors per month; reporting of 1,000,000 km cycled to work each month; an increasing recognition by different government bodies of Bike to Work as a valuable program.

After the DG SANCO funding ended, many of the individual country projects are continuing. The materials produced are available and used in workshops throughout Europe.

PHAC.32 - Stakeholders' perspectives on factors influencing the implementation of physical activity interventions in primary health care

Author(s)

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Presenting author: Johanna M. Huijg

Introduction: The public health impact of efficacious interventions aimed at enhancing physical activity (PA) in high-risk populations is dependent on their implementation in practice. This study explores stakeholders' perspectives on factors influencing the process of implementation (i.e., adoption, initial use, and maintenance) of such interventions in primary health care (PHC).

Activities undertaken: 28 semi-structured interviews were held with 10 program coordinators and 18 PHC professionals involved in five PA interventions (i.e., (Be)weeg!, BeweegKuur, Beweegwinkel, Bewegen op Recept and Van Klacht naar Kracht) delivered in PHC in the Netherlands. Factors influencing the three phases of the implementation of these interventions were addressed. All interviews were audio-recorded and transcribed. Data were analyzed by means of Atlas.ti using grounded theory principles.

Results: Stakeholders reported a multitude of factors influencing the implementation of PA interventions in PHC. Factors were related to the 1. socio-political context (i.e., the presence of health burden, political support), 2 organization (i.e., management support, team work), 3. adopting person (i.e., skills to motivate patients, the perception that interventions are effective), 4. patient (i.e., curative culture, patients' positive feedback about the intervention), 5. intervention (i.e., intervention success, fit with professionals' routines), and 6. implementation strategy (i.e., involvement of PHC professionals in development of interventions, cooperation between intervention partners). Furthermore, some factors appeared to be particularly important to one of the distinct phases of the implementation process. For the adoption of PA interventions, professionals' motivation and their perceptions on patients' cognitions, motivation, behavior, and characteristics play a prominent role. Professionals' knowledge and skills and the presence of facilities and resources have a strong influence on PA interventions' initial use. Finally, factors most important to the maintenance of PA interventions are typically related to governmental policies about PA promotion and financial support.

Conclusions: This study provides an overview of factors that are perceived by stakeholders to influence the implementation process of PA interventions in PHC. Therefore this study provides new insights with regard to the design of implementation strategies critical to the interventions' impact in practice, with special attention to the distinct phases of the process.

PHAC.38 - Sport promotion policies in the European Union: results of a contents analysis

Author(s)

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Presenting author: Sonja Kahlmeier

Introduction: Physical inactivity is the fourth leading risk factor for mortality globally and is responsible for 6% of deaths worldwide and for around 10% in the WHO European Region. Although sport promotion plays a very important role in achieving the recommended levels of physical activity for health, until now there has been no comprehensive assessment of how sport policies in Europe address health. In order to better understand how the sport sector can contribute to promote physical activity, a joint WHO / European Commission Directorate General for Education and Culture 1-year project on promotion of networking, exchange and greater synergy between sport and HEPA sectors was carried out (NET-SPORT-HEALTH). It included for the first time a systematic collection and content analysis of national sport policies in Europe.

Methods: To identify national sport policy documents in the WHO European Region, already available overviews, targeted Internet searches and a call to the 27 EU Sport Directors were used. Criteria were established for the inclusion of policy documents in the content analysis (national level documents from EU countries, main focus on sport, the most recent strategies/policies/action plans). Non-English documents were translated. Based on previous policy analysis, a grid covering key indicators was developed for systematic content analysis.

Results: In total, 130 documents focusing on sport and physical activity were identified in the WHO European Region. Twenty-five national sport policy documents from 15 EU Member States were included in the content analysis based on the inclusion criteria. Analysis showed that general recommendations for good policy making were followed, such as establishing general goals, specifying timeframe and responsible body for implementation and addressing different target groups. Furthermore, all sport strategies addressed health on an overall level and recognized the importance of Sport for All. However, there was a lack of e.g. measurable targets, specified budgets and evaluation plans.

Conclusion: Sport, together with other forms of physical activity, active transport and work-related activity, can make an important contribution to combating physical inactivity and thus plays a crucial role in the prevention of noncommunicable diseases. There is therefore a great interest for the health sector to work more closely with the sports sector to promote health-enhancing physical activity and sport for all in the future. Moreover, the sports sector seems to be recognizing the important link between health and sport, with health being an important factor to promote sport. The policy analysis uncovered synergies between health and sport promotion, including common areas encouraging intersectoral cooperation, such as activating disadvantaged groups, the elderly and people with low physical activity levels, and combating inequalities in participation in sport and physical activity. Furthermore, there are common interests in improving urban planning and active transportation infrastructure. However, to maximize health benefits, it is essential that sport policies have a clear "Sport for All" focus to increase physical activity levels in the general population, across genders, age bands and socio-economic groups, and beyond the achievement of athletic performance.

PHAC.40 - The BeweegKuur: Expectations and experiences of participants with a combined lifestyle intervention for overweight and obesity

Author(s)

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Introduction: In the past 25 years the percentage of people with overweight has increased from 33% to 50% and the percentage of obese adults has grown from 5% to 11%. Without interventions countering overweight and obesity, the prognosis is that in 2015 15-20% of the Dutch adult population is obese and the prevalence of Diabetes Mellitus type 2 reaches up to 40%. Overweight and obesity are associated with various chronic diseases, and this association is expected to result in a substantial increase in health care costs.

Combined lifestyle interventions, including lifestyle coaching, dietary advice and physical activity, have shown to be an effective approach in the reduction of overweight and obesity, but suffer from a high degree of drop-out. The BeweegKuur is a combined lifestyle intervention that aims to promote physical activity and healthy dietary behaviour among overweight and obese participants. However, little is known about expectations and experiences of participants in the BeweegKuur intervention.

Methods: A sample of 29 practices already participating in the BeweegKuur agreed to include 200 BeweegKuur participants in an observational prospective cohort study including a questionnaire survey with 4 measurements: at baseline (inclusion); at 4 months (physical therapy intervention completed); at 12 months (BeweegKuur completed); at 24 months (1 year follow up). Data will be collected from July 2010 to July 2012. Measures include self reported physical activity and dietary behaviour, BMI, expectations and experiences with the BeweegKuur and types of motivation for behaviour change and maintenance. Analyses will include descriptive statistics and multiple regression analysis.

Results: Preliminary results of baseline data analysis show that people with overweight (BMI 25-30) are under represented, 64% of the participants are female, and participants' mean age is 54 years (SD = 12,0). Almost 75% tried to lose weight before, 58% previously lost 5 kg (11 lb) or more, and 31% succeeded to maintain a lower weight than before their weight loss attempt. Fifty six percent does not meet the national criterion of half an hour moderately intense physical activity a day, 23% eats unhealthy take away or fried food (more than) once a week, and 47% eats snacks or candy (more than) 7 times a week. Almost 60% judges his own health positive to very positive (7 to 9 on a 10 point scale). Experiences with the lifestyle coach are generally positive (3 to 4 on a 5 point scale). Participants show predominantly autonomous types of motivation for physical activity and a mixture of external and autonomous types of motivation for healthy dietary behaviour. More results on expectations and experiences are expected in the coming months and will be reported in the presentation.

Conclusions (preliminary): Lifestyle coaching appears to add value for participants of the BeweegKuur. Types of motivation at baseline differ for physical activity and healthy dietary behaviour. However, the BeweegKuur insufficiently reaches people with overweight. Other sources than the primary care physician might be necessary for case finding.

PHAC.41 - After-School Multidisciplinary Programme for Overweight Children: A Pilot Study

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Introduction: The number of overweight children in The Netherlands has doubled in the past 30 years. The prevalence of overweight in children and youth (2-21 years) is 14%. For children and youth with a Turkish or Moroccan background the prevalence of overweight is even higher, about 30%. Recommended community strategies for obesity prevention are participation in public-private partnerships and increasing opportunities for extracurricular physical activity. Furthermore, multidisciplinary treatment programmes consisting of dietary advice, physical activity and psychological counselling are believed to be more effective in the prevention of obesity than monodisciplinary treatment programmes. This study evaluates the effectiveness of an after-school multidisciplinary programme on body mass index, measures of self-perception and health behaviours in overweight children.

Methods: The programme, called WIJS (Dutch for “What is Your Style”), is a 1-year after-school multidisciplinary programme aimed at overweight children aged 8-12 years. The WIJS programme consists of group sessions of 90-min of activity-based exercise, dietary education, and lifestyle counselling 2 days per week for 14 weeks. After the first 14 weeks, children reduce their group sessions to 1 day per week for the next 20 weeks. The pilot study in 2011 was financed by a public-private partnership of the Municipal Health Service and three private partners; two health insurance companies, and the Round Table 123 The Hague. Children completed a questionnaire that evaluated self-perception, dietary habits and physical activity. The questionnaire included the following self-perception domains: scholastic competence, social acceptance, athletic competence, physical appearance, behavioural conduct, and global self-worth. Body mass index was derived using anthropometric measurements and overweight was defined using age- and sex-specific criteria. Outcomes were assessed at baseline (January 2011) and will be assessed at the end of the programme (May 2011). Measurements were also conducted in twelve control children who did not take part in the WIJS programme.

Results: Twenty-three children (9-12 years) started in the WIJS programme in January 2011. Three children had normal weights, 10 children were overweight, and 10 children were obese. Most children had a Turkish or Moroccan background. Self-perception: scores on athletic competence and physical appearance were in general lower than Dutch norms. Health behaviours: more than half of the children indicated that they did not eat daily breakfast; half of the children consumed 3 sweet drinks or more per day; half of the children spent 3 hours or more per day on sedentary activities (TV viewing, computers, video games). The follow-up results from this study will show if it is possible to improve self-perception and reduce overweight in children.

Conclusions: In May 2011 the health insurance companies decided to continue financial support for the programme in 2011/2012. The follow-up data to be presented at the HEPA conference should indicate the impact of the WIJS programme and provide new insights into the further development of multidisciplinary programmes to prevent obesity in children.

PHAC.51 - Behavior-specific built environmental determinants of walking and cycling among Dutch children: longitudinal results from the SPACE study

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Introduction: This study aimed to examine the influence of changes in the built environment on walking and cycling for different purposes among a sample of Dutch children.

Methods: The population involved 448 children (aged 6- 12 years) in 2004 and 292 children in 2008 from five neighborhoods that were partially restructured between 2004 and 2008 and five controls. Walking and cycling were assessed in 2004 and 2008 by a 7-day physical activity diary. Built environmental characteristics were also collected twice by neighborhood observation. Multilevel linear regression analyses were conducted to identify environmental determinants of children's walking and cycling behavior. Analyses were adjusted for age, sex, parental education level, and ethnicity.

Results: In 2004, children made on average 13.3 walking and 6.6 cycling trips per week for transportation; 3.6 walking and 1.5 cycling trips per week to school; and 0.7 walking trip per week for recreation. Cross-sectional analyses showed that in 2004 both commuting modes were positively associated with the frequency of pedestrian crossings and parallel parking spaces in the neighborhood. About 30% of the variance in walking and cycling for transportation could be explained by the number of recreation facilities in the neighborhood and the walking and cycling infrastructure of the neighborhood. Comparable correlates were found for walking and cycling to school. Longitudinal results will be available in January 2011 and will be presented at the conference.

Conclusions: Built environmental correlates of children's walking and cycling behavior differ by purpose and by commuting mode implying a behavior-specific approach for interventions.

PHAC.55 - Underrepresentation of female students in sports science at the University of Graz. What matters?

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Introduction: In Austria like in other European countries girls and women are less physically active compared to boys and men. There is also an underrepresentation of women studying Sport Science at University of Graz. Only 30% of all sports students are female. Female sports scientists and physical activity educators, however, can be important role models for girls in order to support them to start and maintain regular physical activity and sports. The reasons for the low proportion of female sports students can be manifold such as the study itself, the job perspectives, the image of sports or the entry examination which has to be passed before the registration at the Institute of Sport Science. A certain level in track and field, swimming, ball games, apparatus gymnastics, and music and movement is needed to pass this examination. The aim of the study was to examine whether female and male adolescents in the 12th grade of public school differently assess the difficulty and manageability of the entry examination at the Institute of Sport Science, University of Graz.

Methods: One hundred and thirty one (51%) girls and 124 boys (49%) of five schools in the city of Graz with a mean age of 17.5 years (SD=0.6 years) filled in a questionnaire. To investigate the variables associated with the entry examination, we used least squares linear regression with “perception of the difficulty of the entry examination” and “perception of the manageability of the entry examination” as the dependent variables and the following independent variables: gender, physical activity level (low, medium, high), social norm (low, medium, high), enjoyment of physical activity (yes, no) and membership in a sports club (yes, no).

Results: First model: Those with a high physical activity level perceived the entry examination to be less difficult compared to those with a low physical activity level. However, the explained variance of that model was low ($R^2=0.08$). In the second model two variables were independently associated with the dependent variable: girls were less confident to successfully manage the entry examination compared to boys and those who had a high physical activity level were more confident to pass the entry examination compared to those with a low physical activity level. For the manageability of the entry examination 20% of the variance was explained.

Conclusions: The Institute of Sport Science at the University of Graz searches for strategies how to raise the proportion of female students. One strategy is to learn more about the attitudes of the potential students towards the Institute’s entry examination. Surprisingly, the difficulty of the entry examination was perceived equally among the girls and the boys. However, the girls were less confident to successfully pass the entry examination compared to the boys. In general a high physical activity level raised the likelihood – also among female adolescents – that the entry examination is perceived to be manageable. Further investigations are needed to learn whether other variables such as the lack of self-efficacy, job perspectives or the image of sport are related with the lower confidence of female adolescents to manage the entry examination. A higher proportion of female students in the sport science studies can potentially serve as social norm and can in turn lead to higher levels of physical activity of female youth and adults on population level.

PHAC.57 - Well-being from exercise – A proposal for a national policy programme on physical activity for older adults in Finland

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Finland is one of the fastest ageing countries in Europe. Health exercise has been a central theme in national sportspolicy but **physical activity counseling** and activities have previously not been guided by a specific programme. That is why the advisory council for health-enhancing physical activity suggested a national policyprogramme on physical activity for older adults in Finland. The task was given to the steering group of the national Strength in Old Age programme (2005-2014).

At the same time the EU-funded PASEO project (Physical Activity among Sedentary Older People) was launched in Finland with the similar aim in 20 countries. The PASEO project participated in the preparation of the Finnish policy programme.

The target group of the policy programme included 60+ people with lacking physical activity from the following groups: 1) retiring persons, 2) independently living 75+ persons with early problems of mobility, and 3) persons with diminished functional capacity living with home care, in service homes or in institutions. The programme aims to increase physical activity by combining everyday activity and exercise activity individually or in guided groups. The heterogeneity of older adults has been a starting point of the programme.

The policy programme is based on what we know about the exercise behaviour of Finnish older adults, new international exercise recommendations, the significance of environment for **physical activity** and trained supervisors, and ethical issues. Based on background surveys, we already know that older adults are physically quite active in their everyday lives but they do not actively perform strength and balance exercise. Recommended guided exercise groups or **physical activity counseling** are not readily available. The organizers of activities do not have sufficient knowledge of each other, and exercise services lack coordination.

The suggestions of the policy programme are directed to decision-makers and various actors on national and local levels. Proposals for development and responsibility are offered to six areas: 1) cross-sectorial cooperation and division of responsibilities, 2) environment for **physical activity**, 3) **physical activity counseling** and exercise activities for older adults, 4) public awareness, attitudes and skills, 5) dialogue between research and development, and 6) coordination, evaluation and follow-up of the programme.

The successful execution of the policy programme requires the commitment of decision-makers and the cooperation of actors. The policy proposals will start a round of comments in the summer of 2011 and, based on the comments, the action will take place in the autumn of 2011.

PHAC.63 - School, Exercise and Sports. Relations between the school environment and young people's exercise and sports behaviour in the Netherlands.

Author(s)

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Presenting author: Mirjam Stuij

Introduction: Alarming messages about an increase of overweight and obese children in the Netherlands, has led to more attention for the promotion of exercise and sports behaviour of young people. National research results reveal that half of the youth population does not meet the required level of physical activity. Since the school is an environment in which youngsters spend most of their time outside their homes and where they meet people and exchange ideas, this seems to be an appropriate setting to promote the physical activity among them. Until now, rather less attention has been paid to relations between the school environment and physical activity of pupils, especially in the Netherlands. The aim of the research project School, Exercise and Sport (2008-2011) was to provide in this missing knowledge (Stuij et al. 2011).

Methods: A total of 4.508 pupils from 126 primary schools and 2.200 pupils from 61 secondary schools participated in this research project. The schools were randomly selected. Data were collected using:

- Pupil questionnaires about sports and exercise behaviour (n=7.145);
- ActiGraph accelerometers (worn by n=437 pupils);
- School questionnaires about school policy and school environment (n=187);
- Analysis of the school neighbourhood with *Google Maps* and postal codes (n=187);
- Analysis of the neighbourhood of the pupils and distance between home and school (n=7.145).

Data were analyzed using the clustered robust standard errors method in Stata.

Results: The pupils indicate that they spend on average slightly more time to five distinguished school related physical activities (walking and cycling to and from school, physical education, activity during breaks and participation in school sports) than to five leisure activities. Breaks count for a considerable amount of active time spend, but are not very strenuous on average. For club sports this is reversed, as less time is spent but it's physical intensity is higher. Pupils who visit primary schools with an explicit physical activity policy are more active than other primary school pupils. In secondary schools, this result only is found for certain groups of pupils. Both primary and secondary school pupils from these 'active' schools feel encouraged by the school to participate in sport and exercise. Adequate accommodations and sufficient materials for physical education are also important conditions.

Conclusions: The results of the research project School, Exercise and Sports reveal a (modest) role of the school in stimulating young people to become more active. However, there is room for enlarging this role by offering more school sports and organising more activities during school breaks. Unfortunately, the general measures mostly seem to stimulate the pupils that are more active already. The results of this research project led to several recommendations for policy makers, schools, researchers and other relevant institutions to stimulate the youth to be more active. We certainly think that these results can be used in the daily practice of professionals and policy makers and therefore would like to take part in the discussion about how to bridge the gap between research and practice.

PHAC.67 - Effects of Start to Run, a training program for novice runners, on physical activity

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Presenting author: Linda Ooms

Introduction: The organized sport sector has significant potential to promote physical activity in the population. In the Netherlands, national sporting organizations were funded to develop and implement easy accessible sporting programs to increase physical activity levels, especially among those people who are not physically active enough. Start to Run, a 6-week training program for novice runners, developed by the Dutch Athletics Organization, is one of these programs. In this study, the effects of Start to Run on physical activity were investigated.

Methods: Physical activity levels of Start to Run participants were assessed by means of the Short *Q*uestionnaire to *A*ssess *H*ealth-enhancing physical activity (SQUASH) at baseline, immediately after completing the program, and after six months follow-up. A control group, matched for age and sex, was assessed at baseline and six months follow-up. Compliance with the Dutch physical activity guidelines was the primary outcome measure. Secondary outcome measures were the total time spent in physical activity and the time spent in each physical activity intensity category. Changes in physical activity within groups were tested with paired t-tests and McNemar tests. Changes between groups were examined with multiple linear and logistic regression analyses.

Results: In the Start to Run group, the percentage of people who met the Dutch Norm for Health-enhancing Physical Activity, Fit-norm and Combi-norm increased significantly, both in the short- and longer-term. In the control group, no significant changes in physical activity were observed. When comparing results between groups, significantly more Start to Run participants compared to control group participants were meeting the Fit-norm and Combi-norm after six months follow-up. The differences in physical activity between groups in favor of the Start to Run group could be explained by an increase in the time spent in vigorous-intensity activities.

Conclusions: Start to Run positively influences physical activity behavior of participants. Based on these results, it seems that the organized sport sector can play an important role in physical activity promotion.

PHAC.70 - A Frame for Sports Discipline-specific Health Profile

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There is a massive amount of scientific research showing, that physical activity (PA) is beneficial for health. PA, for example, helps to prevent cardiovascular disease, type2diabetes and osteoporosis, reduces risk of obesity and premature deaths, and promotes cognitive function and maintenance of healthy body weight¹. Due to the widening evidence, PA recommendations have been updated. A new aspect on these guidelines is the highlighted role of vigorous PA that has been associated even greater improvement of many health outcomes. This emphasis, can be interpret as a mandate for sports sector, especially for club activities, to join in health-enhancing PA (HEPA), as sports has not been traditionally considered as HEPA. Similarly, while the evidence on the positive health effects of PA is growing, the association between different sports disciplines and health traits lack of research, except injuries. Thus, our purpose was to produce a tool for sport and health professionals to model sport discipline-specific health profile.

A sport discipline-based frame for health profile was developed as a part of the Sports Club for Health (SCforH) project². The frame was based on the existing literature of the health effects of PA. Thereafter, an international workshop and additional national experts meeting were organized. The development work was based on expert panel type of a working method, in which experts from sport and health sector were brought together to resolve consensus of the elements of the frame.

The fundamental idea behind the health profile frame is that all sports have a link to health through physical activity, and in addition, positive health effects are in focus. However, risks for injuries must be borne in mind. The frame is comprised of two major sections - "measurable health variables" (metabolic function, cardiorespiratory function, aerobic fitness, muscle function, motor skills, balance and bone health) and "physical activity related reduction of disease risks" (type2diabetes, cardiovascular, risk of falls and osteoporosis). Each type of sport is rated on all measures and a summary health profile can be derived. Thus, the profile identifies the particular health-related effects of physical activity of a given sport. It is assumed in the frame, that the duration of exposure on PA is sufficient.

The current health profile of physical activity of sports disciplines is based on the existing literature, thus, it focuses on the physical dimension of health. When more evidence of the benefits of PA/sports on mental and social health is available, the frame can be modified accordingly.

PHAC.77 - Physical activity through social marketing: A critical examination of current health promotion logic

Author(s)

J. Piggin

Presenting author: Joe Piggin

The UK Department of Health (DOH) is responsible for the region's government health policy. Similar to other health departments around the world, the Department of Health makes great effort to influence health outcomes of citizens. One way in which this is done is through mass marketing campaigns to eat healthily and be physically active. The most recent of these is Change4Life. Change4Life attempts to 'drive, coax, encourage and support people ... [to] eat well, move more and live longer' (DOH, 2009a: 3).

The Change4Life programme ostensibly follows the principles of social marketing, a technique popular in contemporary health promotion campaigns. Andreasen (1995: 7) explained social marketing is the 'application of commercial marketing technologies to the analysis, planning, execution, and evaluation of programs designed to influence the voluntary behaviour of target audiences in order to improve their personal welfare'. Grier and Bryant (2005: 325, emphasis added) write that an essential feature of social marketing is a marketer's '*willingness to change the product* to meet consumer preferences'. Further, 'in some cases, *public health professionals must change their recommendations* or modify their programs to provide the benefits consumers value most' (2005: 323, emphasis added). This requirement to 'change' or 'modify' health-related information so it is palatable for consumers is worthy of exploration. Therefore, this research asks a range of questions. What is negotiable when presenting medical information to a public audience? What is non-negotiable? What evidence informs health promotion campaigns, and which evidence is excluded? And how are these decisions made?

These questions are answered by examining the flow of ideas from recent and current UK policy documents to marketing strategies and to the eventual marketing campaigns. Considerations are offered for future health promotion campaign planning.

PHAC.83 - Adherence to physical activity guidelines among Flemish adults, as measured with the SenseWear Armband

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Introduction: In the past decades, several public health recommendations concerning physical activity have been published. The purpose of this study is to evaluate compliance with various physical activity guidelines in Flemish men and women. Furthermore, associations between adherence to different guidelines and socio-demographic and health parameters will be examined.

Methods: Data were obtained from 371 Flemish men and women (41.6 ± 9.9 yrs). Physical activity was assessed for 7 consecutive days using the SenseWear Pro3 Armband. Data were analyzed using 7 different guidelines: 30 minutes of moderate activity on 5 days per week (ACSM/CDC, 1995), 30 minutes of moderate activity on 5 days or 20 minutes of vigorous activity on 3 days per week, accumulated in bouts of at least 10 minutes (ACSM/AHA, 2007), a total of 150 minutes of moderate or 75 minutes of vigorous activity per week, accumulated in 10-minute bouts (U.S. Department of Health and Human Services, 2008), a physical activity level (PAL) of at least 1.75 on 5 days per week (WHO, 2000) and 10000 steps per day on 5 days per week. Associations between adherence to physical activity guidelines and socio-demographic and health parameters were examined using logistic regressions. Analyses were adjusted for gender, age and education level.

Results: 43% to 98% of adults were compliant with guidelines of moderate physical activity, whereas only 9% to 20% met the guidelines concerning vigorous activity. Men had a significantly higher probability of achieving 30 minutes (in 10-minute bouts) of moderate activity on 5 days per week (OR: 2.27, 95% CI: 1.49-3.46), or to participate weekly in at least 150 minutes of moderate (OR: 2.89, 95% CI: 1.71-4.87) or 75 minutes of vigorous-intensity activity (OR: 1.90, 95% CI: 1.13-3.18) and a significantly lower probability of taking 10000 steps on 5 days per week (OR: 0.52, 95% CI: 0.34-0.79), compared to women. Subjects with a bachelor or master degree were 2.4 times more likely to accumulate 75 minutes of vigorous activity per week, than those with a secondary school diploma or less (95% CI: 1.09-5.29). An increase in age was associated with a decline in the odds of achieving a PAL of 1.75 on 5 days per week (OR: 0.96, 95% CI: 0.93-0.98). Subjects who met the different guidelines were less likely to be overweight (BMI ≥ 25 kg/m²) or to suffer from central obesity (waist circumference >94 cm for men and >80 cm for women), compared to those who did not meet these guidelines (OR: 0.12-0.77). Compliance with the different guidelines was not associated with hypertension or high total cholesterol.

Conclusions: Compliance was highest for guidelines of moderate-intensity activity. Men were more likely to attain 150 minutes of moderate or 75 minutes of vigorous activity per week, and less likely to take 10000 steps than women. Compliance with the different guidelines was associated with lower odds of being overweight or having central obesity.

PHAC.84 - Physical activity interventions based on social media and games

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Presenting author: Janienke Sturm

Introduction: A large percentage of people do not meet the Dutch norm for healthy physical activity, prescribing at least 30 minutes of moderately intensive physical activity per day for five days a week. The Serious Gaming lectorate of Fontys University of Applied Sciences is lead partner in two (inter)national, multidisciplinary research projects focused on the design and implementation of activity interventions that use social media and games to increase physical activity.

Activities undertaken: The PlayFit project (<http://www.playfitproject.nl>) aims to investigate, design and develop activity interventions on the basis of games and play, specifically targeted at teenagers at VMBO schools (lower vocational education, age 12 to 16). School youth spends a large part of their day sedentary; in fact, only 15% meets the Dutch norm for healthy physical activity. While existing interventions are often based on awareness and information, in PlayFit we aim to design interventions based on the 'learning by doing' principle, so that children move primarily because it is fun to do so, not because they have to or because it is good for their health. Our interventions are based on providing playful activities and games that stimulate teenagers to move and be active in a casual way at different occasions throughout the day. These activities can take place for instance on their mobile phone on the way to school, in the canteen during school breaks or as part of after-school activities. In this way, we aim to stimulate casual activity that is seamlessly integrated in children's daily lives and reduce sedentary behavior. The PlayFit project consortium consists of several partners with backgrounds in academia, sports and health and game design. The project runs from June 2010 until June 2014. The SIXPAC project (Social interaction to excite physical activity, <http://www.sixpacproject.eu>) aims to investigate using social media and games to stimulate physical activity in public space. Social media, such as Facebook, Twitter and social gaming, are increasingly being used to communicate, organize, and invite people for events, both by individuals and by organizations. Social media are popular among different user groups, they have a wide, even international scope, and they are 'always on'. These characteristics and the strong motivational power of social interaction make for social media to be a potentially effective means for promoting physical activity. In this project we will carry out a number of pilot studies addressing concrete questions from the field concerning the design and implementation of products and services, as well as the social and organizational innovations required by companies to implement activity interventions on the basis of social media and games. The project consortium is composed of 4 international universities and 5 companies and organizations in the area of physical health promotion (for instance, NETHERLANDS INSTITUTE FOR SPORT AND PHYSICAL ACTIVITY, GGD and Digifit). The project runs from May 2011 until May 2013.

Conclusion: Both projects described above aim to investigate the use of digital media to stimulate physical activity. In the PlayFit project several novel concepts for playful activity interventions have been developed for teenagers. These are currently being evaluated. SIXPAC activities have only just started, but the first round of pilot studies is expected to lead to, among others, a community for e-fitness coaching and an exercise game related to big sports tournaments.

SEBE.03 - Sedentary behavior prevention through the promotion of active and healthy lifestyles at work.

Author(s)

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Coming from the Sports and Physical Activity (PA) environment, Athlon S. Coop. has implemented Health Programs in the companies around, and through them, in their workers lives. In the last years, companies of Banking, Insurance, Public Institutions (where the sedentarism is an occupational hazard), have created physical and virtual spaces where the reality of balancing work and physical activity has become visible.

Particularly in the banking sector, the Healthy Lifestyles Promotion Programs started 15 years ago in Caja Laboral S. Coop., with training sessions and "Active Ergonomics", and nowadays have evolved in "Club Salud" (ie Health Club) that is a process by which a person is recommended a PA program in a systematic and individualized approach. Its main objective is to encourage people to adopt an active lifestyle by starting, maintaining or improving their level of regular physical activity.

Its more specific objectives are to enjoy better overall fitness; get advice on improving the function and structure of the musculoskeletal system; Increase knowledge and improve safety when making physical activity; get personal advice on training program for those with sporting ambitions; and reduce risk of future development or recurrence of certain diseases.

These goals are developed in two ways, by direct contact with the workers, and virtually, in all Spanish territory, through different tools: (1) **inquiry and personal interview** on their physical activity habits; (2) **personal advice and follow-up** concerning physical activity, with the possibility of making a sport medical examination, participation to sport events, for example the Behobia-San Sebastian race; (3) **workshops** (back care, Nordic walking, physical activity, healthy eating, stress prevention, self care,...); (4) **Active Ergonomics** (stretching exercises to compensate body postures) (5) **special campaigns**, for example "Athlonpod" -10 000 steps a day (with pedometer), "Mugimetroa" campaign to rise awareness by measuring their activity level, use of pulsemeter, etc.; (6) **spreading of information** through Health Club's webpage with advices, tips and news, about PA, ergonomics, chronic diseases, nutrition, as well as information on the next activities in their area, (7) **personal contact** whenever they want with their Personal Trainer, and (8) **outdoor activities**...

The results of all these activities are very good, being supported by the Health authorities and the trade unions, and particularly with great appreciation and demand by the final user. Satisfaction inquiries have very good results and workers make suggestions about new themes that interest them. The special campaigns are always very successful, and there are a lot of visits at the different sections of the webpage. After giving Nordic walking workshops, for example, people meet again another day to go for a walk.

Being aware of the difficulties for people to change sedentary behavior in active lifestyle, and with the challenge of reaching so many different groups (in age, living area...), the general reception of "Club Salud" has been great.

As workers need specific approach and personal support, the incorporation of new technologies has permitted to reach people spread in a large geographic area.

The change is taking place and lasts in time: Some people from the first training sessions of 15 years ago still meet to play badminton or paddle, and most of them maintain the habit of exercising in one way or another: fitness, walking, cycling, swimming...

SEBE.06 - Who is not adhering to physical activity referrals, and why?

Author(s)

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Presenting author: Matti E Leijon

Introduction: Written prescriptions of physical activity, in Sweden commonly referred to as physical activity referrals (PARs) have increased in popularity in recent years. Studies into the effectiveness of different types of health care-based physical activity interventions have so far reported mixed results. Few studies have evaluated patients' self-reported adherence to physical activity interventions, and there is a paucity of knowledge concerning reasons for non-adherence. The first aim was to identify and analyse patients' self-reported reasons for not adhering to PARs. The second aim was to describe and analyse different patient characteristics associated with non-adherence.

Methods: The study was conducted at PHC centres in the county of Östergötland, Sweden. Patients were recruited prospectively from 37 of its 42 PHC centres in 2004 and 38 of 42 centres in 2005.

Results: The main reasons for non-adherence differed according to baseline characteristics. Significant differences were found in subjects in different age groups, and in those with different activity types and reasons for prescription. Low motivation was a more frequent reason for non-adherence among men, while sickness and pain seemed to be more frequent among women. Sickness and pain were also more common causes of non-adherence in patients in the oldest age group (>65 years) than in those in the youngest age group (18-29 years). The youngest patients instead blamed economy and lack of time more frequently than those in the oldest age-group. Economy was also a more common reason for non-adherence among those referred facility-based activities compared to those prescribed home-based activities. Low motivation was a common cause among those referred home-based activities. Moreover, reasons for non-adherence differed between diagnoses. Lack of time was a common reason given for non-adherence among patients issued PARs due to high blood pressure, while low motivation was a common reason among patients issued PARs because they were overweight.

Conclusions: In conclusion, reasons for non-adherence differ between patients prescribed home-based activities and referred facility-based activities, as well as patients with specific characteristics. The information we have obtained may be valuable not only for professionals working in PHC, but also those working to develop PARs for use in other contexts.

SEBE.08 - Objective measurements of sedentary behaviour in older persons: Age, Gene/Environment Susceptibility(AGES)-Reykjavik Study

Author(s)

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Presenting author: Nanna Yr Arnardottir

Introduction: Physical activity (PA) is an important indicator of health. Self-reported PA decreases with age. However, there is little data from objective assessment of older persons with portable activity monitors including accelerometers. The aim of this study is to describe free-living PA patterns and sedentary behaviours by age and gender using data from 571 participants aged 74 and older in the AGESII-Reykjavik Study cohort (AGESII-Study).

Methods: This project was a part of the AGESII-Study, which is a follow-up of the AGES-Reykjavik Study (AGES-Study). The Reykjavik Study cohort originally comprised a random sample of 30,795 men and women born in 1907-1935 and living in Reykjavik in 1967. In 2002, the AGES-Study began and at that time 11,549 previously examined participants from the Reykjavik Study were still alive. The AGES-Study investigated the contributions of environmental factors, genetic susceptibility and gene-environment interactions to aging of neurocognitive, cardiovascular, musculoskeletal and metabolic factors. The AGES-Study was completed in 2006 with a total sample size of 5,764. In 2007 the follow-up study began recruiting all surviving participants for repeat measurements. During an accelerometry study from April 2009 to June 2010, 1194 AGESII-Study participants were asked to wear an accelerometer (GT3X Actigraph, Pensacola FL, USA) at the right hip for one complete week in free living setting. Subjects took the monitor off during sleeping and any water activities (showers and swimming). Of those, 666 or 56% of the participants received an accelerometer, and 571 had complete data that included for or more days of 10 hours monitoring time. PA data were collected continuously at 1 second epoch in triaxial mode. Only vertical 1-minute data is presented here.

Results: Valid dataset included 354 women (age 80.2±5.2 years) and 217 men (79.7±4.2 years). The average wear time was 13.7±1.5 hours per day (57% of the day). The average PA level during the required 4 valid days varied widely (9,300 to 400,000 counts*day⁻¹), and men had slightly higher average PA counts*day⁻¹ (117,000±62,000) than women (105,000±57,000; p=.051). In all subjects, sedentary time (0-99 counts*day⁻¹) was the largest component of the total wear time, encompassing 75±9%, followed by low-light PA (100-759 counts*day⁻¹), encompassing 21±7%. Moderate-vigorous PA (MVPA; ≥2020 counts*day⁻¹) was less than 1%. The women spent more time in low-light PA but less time in sedentary PA and MVPA compared to men (p<.001). In both men and women, total PA counts, average wear time PA counts, time spent in low-light PA, high-light PA (760-2019 counts*day⁻¹) and MVPA decreased progressively with advancing age while sedentary time increased. In persons less than 75 years of age, 60% of men and 34% of women had at least one bout of MVPA lasting 10 or more minutes. This also declined with age such that only 9% of the women and 26% of men greater than 85 years age had at least one bout of MVPA 10 minutes or longer.

Conclusion: Sedentary time accounts for about 75 percent of all active time during the day for these older persons. Low-light PA adds an additional 21 percent. These data support the decline in PA with age by providing objective evidence of the marked decline in daily activity in this older population.

SEBE.11 - Beyond the Binary: Understanding differences in levels of physical activity and participation in outdoor recreation

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Presenting author: Sue Williams

Introduction: Understanding different levels of physical activity has often been taken as a distinction between ‘active’ participants and ‘inactive’ / ‘sedentary’ people. In order to identify whether this binary division exists, this research explores differences in participation in outdoor recreation activities. Using national recreation survey data, this research analyses the differences in participation in relation to the three attributes of physical activity: duration, frequency, and intensity. The aim of this analysis was to gain an understanding of the contribution that outdoor recreation makes to physical activity targets, and to provide an evidence base to inform targeted interventions and policy development.

Methods: The research was based on the analysis of data from the Welsh Outdoor Recreation Survey (WORS). This large-scale household survey was statistically representative of the adult population of Wales, and covered the following areas:

- Frequency and duration of participation
- Intensity of activity
- Outdoor activities
- Motivations and barriers
- Latent demand
- Demographic profile

The research used multivariate analysis to segment the sample on the basis of different combinations of duration, frequency, and intensity. For each segment, the analysis also identified significant differences within the demographic profile, and determined the participation variables which defined each segment.

Results: The analysis identified seven segments, which were statistically distinct based on differences in frequency, duration, and intensity. It was found that rather than there being only one group which were active enough to derive health benefits from physical activity in the outdoors, there are two distinct segments: those who do moderate to high intensity activities for over 30 minutes, five times a week; and those who do a similar level of intensity of activity less frequently, but for over 150 minutes in one week. Similarly, the ‘sedentary’ group were found to comprise of two segments: those who never use the outdoors for recreation, and those who do so only rarely. Each of these four segments were found to have a distinct socio-demographic profile, and to engage in different outdoor activities.

However, it was also found that there were three additional segments which bridged the gap between the ‘actives’ and the ‘sedentary’. These intermediate groups were each distinguished by having different levels of relative intensity, frequency, or duration of activity. Again, they were found to be statistically differentiated, with distinct profiles of the participants which made up each segment.

Conclusions: In identifying seven distinct segments, the research found that a simple division between ‘active’ and ‘sedentary’ groups does not reflect the diversity of participation in outdoor recreation. Although the spectrum of physical activity does run from the least to the most active, the results indicate that this is not a straightforward linear progression.

This evidence of the range of physical activity participation groups, along with their demographic profiles, activity preferences, and motivations, will influence physical activity policy targets and lead to more appropriately targeted interventions.

SEBE.14 - Secular trend in physical activity and sedentary behavior in Flemish adolescents and adults.

Author(s)

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Presenting author: S. de Baere

Introduction: The purpose of this study was to examine the secular trend in physical activity (PA) and sedentary behavior in a representative sample of Flemish adolescents and adults.

Methods: Data on sports participation, leisure time PA and screen based activities was assessed by means of two PA questionnaires. In adolescents (12-18 yr), a modified version of the Baecke questionnaire was administered in 1997 (n=2966) and 2009 (n=3172), producing three indexes: sport index (SI) leisure time index (LTI) and a total PA index (PAI). In adults, the Flemish Physical Activity Computerized Questionnaire (FPACQ) was administered in 2003 (n=7452) and 2009 (n=2658), producing information on time spent doing sports (Tsport), energy expenditure during sports (EEsport) and time spent on screen based activities (Tscreen). Adults were subdivided into four age-groups: 18-34, 35-49, 50-64, and ≥65 years old. In both sexes, time changes in PA variables were analyzed using a two-way (year x age-group) ANOVA.

Results: Compared with 1997, girls showed a higher SI in 2009. Boys had a significant higher PAI in 2009 compared with 1997. No changes in LTI were found in both sexes. Women aged 50 to 65 reported significantly more Tsport in 2009 (3.26 h/week) compared with 2003 (1.89 h/week), similar results were found for EEsport (12.85 METmin/week in 2009 compared with 7.64 METmin/week in 2003). For men, no secular trend in PA was found. With the exception of the 50-65 age-group, both men and women reported more Tscreen in 2009 compared with 2003.

Conclusions: A positive secular trend in PA was found in adolescents over the 12 year time period. Girls seem to be slowly closing the gap on boys with regard to sports participation. With the exception of the female 50-65 year old age-group, no secular trend in PA could be found in adults. Although the time interval was limited (6 yr), a positive secular trend in sedentary behavior was found in both men and women. These results support the statement that public information campaigns should emphasize on increasing PA as well as reducing sedentary activities.

SEBE.16 - Efficacy of a multifaceted intervention program to increase physical activity in patients with PD; The ParkFit trial

Auhtor(s)

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Presenting author: Arlène Speelman

Introduction: Many patients with Parkinson's disease (PD) lead a sedentary lifestyle. Simply informing patients about the health benefits of physical activity is insufficient to change their sedentary lifestyle. We developed and evaluated a multifaceted behavioural program (ParkFit) aiming to increase the level of physical activity in patients with PD.

Methods: 586 PD patients were randomly assigned to the ParkFit Program or an active control group (ParkSafe Program). The level of physical activity was measured at baseline and at 6 months using a standardized interview-based 7-day recall (LAPAQ, primary endpoint), an ambulatory activity monitor (secondary endpoint) and an activity diary (secondary endpoint). Results were analysed according to the intention to treat concept.

Results: 562 patients (96%) completed both baseline and 6 months assessments. In the ParkFit group, patients increased their time spent to physical activities with 7% as assessed with the LAPAQ; patients in the control group became 1% less active. The difference between both groups was not statistically significant. When we specified the nature of the activities, patients in the ParkFit group increased their 'outdoor and sports activities' (+32%), while their time spent to household activities decreased (-14%). In the control group these differences were less than 4%.

Interpretation: This short term outcome of the ParkFit trial suggests that patients with PD can increase their outdoor activities with a specific multifaceted program. This increase seems to be accompanied by a decrease in time spent to household activities. The potential health consequences of this change in lifestyle are now being studied in the second part of this trial.

SEBE.19 – Enhancing the health and wellbeing of overweight sedentary women using a lifestyle physical activity intervention

Author(s)

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Presenting author: Ailis Brosnan

Introduction: The worldwide increase in prevalence rates of obesity are of concern due to the demonstrated association of obesity with numerous chronic diseases, including cardiovascular disease, type 2 diabetes and various forms of cancer. Physical activity is an important factor in addressing obesity, in terms of long-term weight loss and counteracting the negative influence of body weight on health outcomes. Lifestyle physical activity interventions have been shown to encourage inactive people to become regularly active through the use of behavioural skills associated with adopting and maintaining physical activity. The aim of this study was to explore the impact of a 10 week lifestyle physical activity intervention on the health and well-being of overweight women.

Methods: 140 women (mean age 45±8.61 years) were recruited from the community and randomized to either the intervention group (participating in the Active Women programme) or to a waiting control group (CG). Measures included physical activity levels, fitness, body composition, psychological well-being and psychosocial variables. The ten week intervention consisted of meeting once a week for 90 minutes for behavioural skill training and participation in physical activity. Differences between groups were assessed using a mixed design 2*2 ANOVA for continuous variables and chi-square tests for categorical variables.

RESULTS: After the intervention, the AWG exhibited significant improvements in VO_{2max} (3.39ml.min.kg), body fat percent (-1.45%) and waist circumference (-2.70cm) when compared to the control group ($p<0.05$). Many of the psychological health (positive affect, satisfaction with life, subjective happiness, psychological well-being) and psychosocial measures (decisional balance, self-efficacy and social support from family), also showed significant pre and post-treatment differences across groups, $p<0.05$.

Conclusions: These findings support the hypotheses that lifestyle physical activity can significantly improve physical fitness and produce beneficial changes in body composition and psychological well-being in overweight women. Findings from this study can be used to inform physical activity interventions and ensure their relevance to the overweight population.

SEBE.23 - Walking for Health: do community based led walk interventions increase physical activity levels?

Author(s)

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Presenting author: Dave Stone

Introduction: Walking for Health is an initiative in England with almost 100,000 participants. It is a community based led walk intervention that aims to facilitate an increase in individual physical activity levels by providing regular organized group walks in the outdoors. This study sought to address the question of whether prolonged participation in Walking for Health led to an increase in general physical activity toward the recommended 5*30mins per week.

Method: A random sample of 8,800 participants and former participants took part in a longitudinal survey. The same people were interviewed four times and their response to a Single Item Measure of physical activity recorded. Individual averages were compared to responses recorded at the time the participant originally joined Walking for Health to determine if the intervention had facilitated a change in general physical activity.

Results: 47% of respondents conducted physical activity on three or more days per week compared with a figure of 54% who had done so at baseline. Decreases in the proportion of those doing physical activity on three or more days per week were greater for those in age groups 65-74 and 75+. Overall, the average number of days on which respondents conducted physical activity did increase from 2.91 to 2.98 days.

Conclusions: The results present a mixed picture in respect of the aim of increasing levels of participant physical activity. Overall results for the population sample indicate marginal increases in activity levels but this somewhat confounded by the apparent decrease in activity of the older age groups. However the data suggests Walking for Health for these older age groups may be providing a mechanism for prolonging their active lives even if it is at a reduced levels.

SEBE.26 - Physical activity patterns of employees in office workplaces

Author(s)

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Presenting author: Birgit Wallmann

Introduction: Health surveillance in Germany documents a predominant lack of physical activity over years (Mensink 1999; RKI 2010). Notably the sedentary employees in office workplaces seem to be vulnerable. However German data collection is limited by means of questionnaires and interviews supporting surveys so far (Mensink 1999; Lampert et al. 2005; Ellert et al. 2006; RKI 2010). Physical activity patterns can be measured during the course of a week or day through objective measurement. Physical activity patterns for office workplace employees would assist the planning of reasonable interventions to improve physical activity in the workplace setting. The aim of this study is to provide physical activity patterns based on the walking activity of employees in office workplaces throughout the week and day under consideration of achieving physical activity guidelines (Haskell et al. 2007) and possible factors of influence.

Methods: To identify hour by hour walking activity, 72 employees (48 female/ 24 male; Ø-age: 42.6±10.4 years) wore an individual adjusted and sealed pedometer (Omron HJ-720IT-E) for a duration of at least seven days. Through questionnaires weekly working time, means of used transport to work and the physical activity behaviour in leisure time was additional collected.

Results: On weekdays the walking activity was higher compared to weekend (8156 ± 3625 vs. 6775 ± 4747; $p < 0.01$). During the week, step activity peaks between 7-8 a.m., 12 a.m. -1 p.m. and 5-6 p.m. with an hourly activity between 506 and 784 steps. Twelve participants achieved current physical activity guidelines. No statistical differences were revealed concerning gender or between full-time and part-time employees. Employees reaching the office by car (n=39) showed significant less steps than employees using public or active transport (n=33) (7460 ± 3205 vs. 8979 ± 3909; $p < 0.001$).

Conclusion: Only 16.7% of the participants achieved physical activity recommendations. For participants using public or active transport (to ride by bike or to walk) a higher walking behaviour throughout the week was documented. The results identify the need for action concerning office workplace interventions to interrupt prolonged sitting time and reveal possible approaches through promoting active transport.

SEBE.29 - Sedentary behaviour in Georgia

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Background: Sedentary behaviour and physical inactivity is important risk factors for chronic diseases in Georgia. It is recognized worldwide that overall, about 15% of men and 20% of women (most of which are developing countries) are at risk for chronic diseases due to physical inactivity. The low levels of physical activity and large amounts of inactivity are widely assumed to be important factor in the etiology of obesity. As a result of an unhealthy diet and low exercise that is very common in Georgia the obesity rate is increasing rapidly.

There are limited studies concerning chronic diseases risk factors in Georgia and very few studies related to sedentary behaviour. With backing from the WHO and collaboration with National Center for Disease Control and Public Health of Georgia was conducted National Health Behaviour Survey WHO STEPS, Georgia, 2010, which studied the sedentary behavior among other behavioural risk factors for NCD in Georgia.

Purpose: The *overall objective* of WHO project is to monitor emerging patterns and trends worldwide with the aim of containing and reducing chronic diseases, particularly in developing countries. The WHO Stepwise approach to NCD risk factor surveillance provides an entry point for low and middle income countries to get started on chronic disease surveillance activities to help countries build and strengthen their capacity to conduct surveillance. *Specific objectives* are to identify the prevalence and magnitude of risk factors for Non-communicable Diseases (NCD) in Georgia and establishment of a database for risk factors for predicting future trends of these factors.

Methodology: The study design was a national cross-sectional survey; the WHO STEPwise approach for surveillance of NCD risk factors was used; 7629 participants were selected through multistage random sampling, aged 19-64 years of both sexes, in 243 clusters were visited 7802 households, among them representative were 6839, response rate was 95%. The WHO STEPwise standardized data collection forms were adapted, translated into Georgian and used.

Results: The main results related to sedentary behaviour and Physical Activity (PA): minutes spent in sedentary activities on a average per day for both sexes was 198,9 min/day; this rate was higher in men 210,6 min/day, comparing with women 181,2 min/day, median minutes for both sexes was 180,0; percentage of respondents not engaging in vigorous PA for both sexes was 78.6%; no recreation-related PA 89.3%; no work-related PA 34,4%; composition of total PA 56.3%; activity from work 39,2%; activity for transport 4,5%; overall mean number of days fruit consumption in a typical week for both sexes was 4.9% and vegetables 5.8%.

Conclusion: Physical inactivity and sedentary behaviour is quite common among Georgian population as well as other behavioural risk factors for NCD. Lack of physical activity and unhealthy diet are main risk factors for overweight and obesity in Georgia.

SEBE.35 - Correlates of Sedentary Behaviour in Croatia: a Population-based Study

Author(s)

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Introduction: It is scientifically well-grounded that sedentary behaviour is detrimental to health.¹ Thus, it is highly important to describe sedentary behaviour characteristics in different populations. To enable target specific public health actions with the aim of sedentary behaviour reduction, it is crucial to determine its correlates. Therefore, the aim of this study was to determine the amount of time that the Croatian adult population spends in sedentary behaviours and associated socio-demographic and lifestyle factors.

Methods: Data was collected in a random stratified sample of 1032 Croatians aged 15 years and older using household interviews. Sedentary behaviour was assessed using the official Croatian long version of the International Physical Activity Questionnaire (IPAQ). In addition, we collected information on gender, age, size of settlements, educational level, monthly income, alcohol and tobacco use, and body mass index by a separate set of questions.

Results: Median value of time spent in sedentary behaviour during a usual weekday was 240 minutes (211-269) for males and 200 minutes (171-229) for females, while during a usual weekend day it was 300 minutes (271-329) and 240 minutes (211-269), respectively. In the male sample, time spent in sedentary behaviour was positively related to size of settlements and educational level and inversely related to age. In the female sample, time spent in sedentary behaviour was positively related to size of settlements, educational level, and monthly income, while it was inversely related to age and body mass index.

Conclusion: According to our results, interventions for reducing sedentary behaviours in Croatia should be primarily tailored to males, youths, inhabitants of large cities and those with higher monthly income and higher educational level.

SODI.01 – PE teacher as expert in health education in teamwork

Author(s)

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Presenting author: Kristine de Martelaer

Introduction: As competency-based learning becomes more important in teacher training, there is a need for a thorough analysis of the professional competencies. This contribution aims to map the professional competences a PE teacher should have, focusing on the core task of internal and external cooperation (in health education).

Method: During the first phase, in-depth interviews were used to inquire 37 experts about their opinion on core tasks, competencies and possible problems/trends. During the second phase of the study, a sample of 118 Flemish PE teachers was asked about the relative importance of the competences needed in the field. Based on a selection of these opinions data relevant for teamwork in health education at school can be described.

Results: In phase I, data were analyzed (inductive analysis) by three researchers and categorized in sub- and head categories. This inductive analysis resulted in four head categories of core tasks: (1) teaching/educating, (2) organization of extra-curricular activities, (3) internal and external internal cooperation and (4) continuing professional development. The focus of this contribution is on the third core task in order to discuss the knowledge, skills and attitudes essential in dealing with health education: "The PE teacher can cooperate adequately internal as well as external in order to offer a broad, safe and well structured environment. During the internal cooperation at school the PE teacher functions as a supervisor and works jointly in team by exchanging information and making agreements by regular meetings and evaluations. The PE teacher defends PE as subject and gives colleagues information on health education during consultations at class and school level. For the external cooperation the PE teacher consults organizations such as sports clubs and public authorities in order to gather maximum realizable help and advice and is open to communicate and collaborate with parents." The six competences to accomplish this core task of cooperation are: communication, didactical approach, following evolutions and trends, organizing, pedagogical approach and teamwork. The quantitative part of the study (phase II) showed that the most essential knowledge of a PE teacher consists of: course specific knowledge, methodology, organizing, pedagogy and didactics. The most important skills are: ability to motivate, clear communication, convince pupils and keep oneself healthy. The following five attitudes scored highest: dynamic, enthusiastic, committed, consistent and responsible.

Discussion and Conclusion: As Wolny (2010) stresses the importance to recognize the role of PE as the most suitable subject to carry out health education, it is essential to analyze the competences of the PE teacher. Despite the primary role of PE, health education is also the responsibility of the whole school. Our data supports the importance of having internal and external cooperation. By focusing on the collaboration in the local community, the necessity of a broader school approach in forming a pro-health attitude in pupils and staff members is obvious. Therefore the PE teacher is the architect of combining both the vertical and horizontal line of health education. The vertical line describes the increasing difficulty in approach according to the age of the pupils and the horizontal line explains the cross-curricular tuning of health education which is only possible with teamwork in and outside school.

SODI.10 - The Economic Burden of Physical Inactivity in the Czech Republic

Author(s)

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Introduction: The lack of physical activity is one of the leading risk factors of several serious diseases and contributes considerably to the worldwide disease burden. Furthermore, it has been shown that the percentage of physically inactive population has been globally increasing in the past decades. The lack of physical activity thus represents an extensive economic burden caused by an increased health care utilization by the inactive part of the population, foregone earnings and lost productivity of the inactive individuals due to their premature death or disability. In international literature, the study of economic burden of physical inactivity is quite extensive (1). Yet in the Czech Republic, this kind of research is still missing. The purpose of this paper is therefore an empirical study leading to the quantification of the economic burden of physical inactivity in the Czech Republic.

Methods: The study is carried out with the help of a comparative risk assessment method used by WHO (2). The total burden of physical inactivity is divided into three main components: attributable health care costs, attributable mortality and attributable DALYs. The population attributable fractions are calculated from the relative risks of selected diseases used by WHO and the prevalence of physical inactivity in the Czech Republic obtained from different surveys by different methods of measuring the inactivity level. Therefore, four different PAFs are presented and used afterwards for the quantification of the burden's three main components. The health care costs for selected diseases are calculated from data available at the Czech Statistical Office and with the help of literature review.

Results: The prevalence of the insufficient physical activity in the overall population of the Czech Republic in 2008 was calculated from the European Health Interview Survey and ranged from 18% to 45,5%, depending on the used definition for physically active population. The lowest and highest percentages were then applied in calculation of the PAFs and the range of the economic burden caused by the lack of physical activity. The health care costs attributable to the main 5 diseases associated with physical inactivity ranged from 0,35% to 0,90% of the overall health care costs in the Czech Republic in 2008. The attributable mortality share was 2,33%-5,89% in the same year and the proportion of attributable DALYs was estimated between 1,24%-3,15%.

Conclusions: The quantification of the extent of the physical inactivity's economic burden highly depends on the choice of physical activity measure. The burden of the physical inactivity in the Czech Republic seems to be slightly smaller than in other developed countries which is caused mainly by the lower prevalence of physically inactive population. Still, it was shown that the inactivity represents a considerable financial burden for different subjects and could be therefore lowered by the health-enhancing physical activity policy.

SODI.14 - Factors associated to HEPA level. A population based cross-sectional study in Spain

Author(s)

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Introduction: Physical inactivity is the fourth leading global risk factor for mortality in the world. Together with high blood pressure, tobacco use, high blood glucose and overweight/obesity are responsible for raising the risk of chronic diseases, such as heart disease and some types of cancers. Such conditions represent a high burden of morbidity and mortality across all income groups. In Spain there are not available data about Health-Enhancing Physical Activity (HEPA) level or PA level in all domains.

This study describes HEPA level prevalence of a Spanish sample and examines the influences of socio-demographic and health-related variables on HEPA level.

Methods: A random sample of 1595 adults, (18 to 70 years), living in Catalonia, Spain, were categorised according to the International Physical Activity Questionnaire (IPAQ-short version). Leisure-time physical activity (LTPA) was also analysed. Height and weight were standardised measured. Independent associations between physical activity categories and socio-demographic and health-related correlates were investigated.

Results: 77% of the sample adhered to the HEPA recommendation. 37.9% were in the high active category. Most likely to reach the highest PA level were those aged <35 years (OR=2.0; 95% CI: 1.25-3.21) and those with normal weight (OR=1.46; 95% CI: 1.04-2.03). Being a man (OR=0.72; 95% CI: 0.53-0.96) and aged between 35-54 years (OR=0.67; 95% CI: 0.46-0.97) were negative predictors of moderate physically level but living in medium sized towns (OR=1.60; 95% CI: 1.09-2.35) was related positively. Regarding LTPA, 16.1% reported being active and 55.6% were sedentary. Being a man, those with normal weight, living with a partner and non-smokers increased the odds ratio of active LTPA. HEPA level adherence was high; the most active were males, younger adults, those with normal weight and those living in a medium sized city. LTPA's prevalence was very low; the most active were males, those with normal weight, those living with a partner and non-smoker.

Conclusions: Adherence to HEPA level is high but LTPA's adherence is low among Spanish population. The target groups to encourage PA promotion are middle-aged adults, overweight/obese, housewife, those who are married and those who are sedentary during LTPA and work-related PA. Normal weight was a predictor of high physical activity level and active LTPA.