

***Strategies for Impacting Population Level
Physical Activity and Nutrition Behaviors:***

**Barriers, Interventions, Legislation
and Social Marketing**

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Learning Objectives

- Examine challenges to changing physical activity & nutrition behaviors in children, adolescents, and adults.
- Identify population approaches, including policy and legislation, community intervention & assessment and social marketing programs to address physical activity, nutrition, overweight.

Learning Objective #1

Barriers to Changing Nutrition & Physical Activity Behavior



Challenge #1: We Love Food!

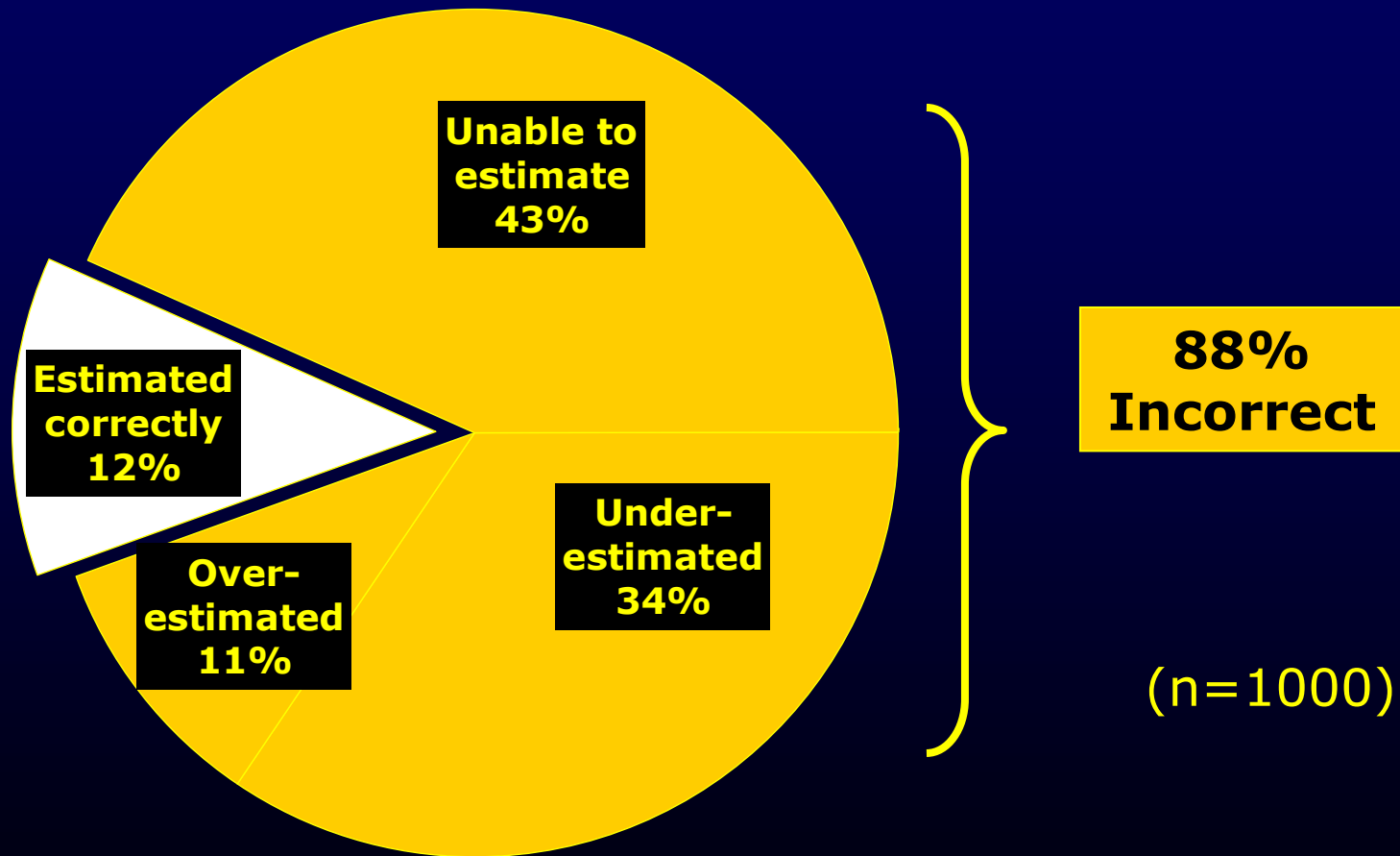
Issue: Consumers lack understanding about portion size & caloric requirements

Never order food in excess of your body weight.

-- Erma Bombeck

Consumers Have Limited Knowledge of Calorie Needs per Day

As far as you know, how many calories should a person of your age, weight, and height consume per day?



Challenge #2: **ADULT EXPECTATIONS**



...IMPOSED ON CHILDREN?

Challenge #3

***“Do as I say, not as I do.
The new epidemic of
childhood obesity.”***

McCordle BW. Can Fam Physician. 2006
Mar;52:284-5, 292-3.



Lack of Role Models – Parents & Professionals

***“Children need models rather
than critics.”***

— Joseph Joubert, French essayist (1752-1824)

Challenge #4

The ability of organizations to implement & sustain interventions



- Little System Change,
- Small Behavioral Impact,
- Lower Expense
- Individual

- Big System Change,
- Large Behavioral Impact,
- Higher Expense
- Population

ZITS

by Jerry Scott and Jim Borgman



Challenge #5: MEDIA INFLUENCE

Friday, Sep

Fat cost group warns

By JEFF NESMITH
hjnsmith@ajc.com

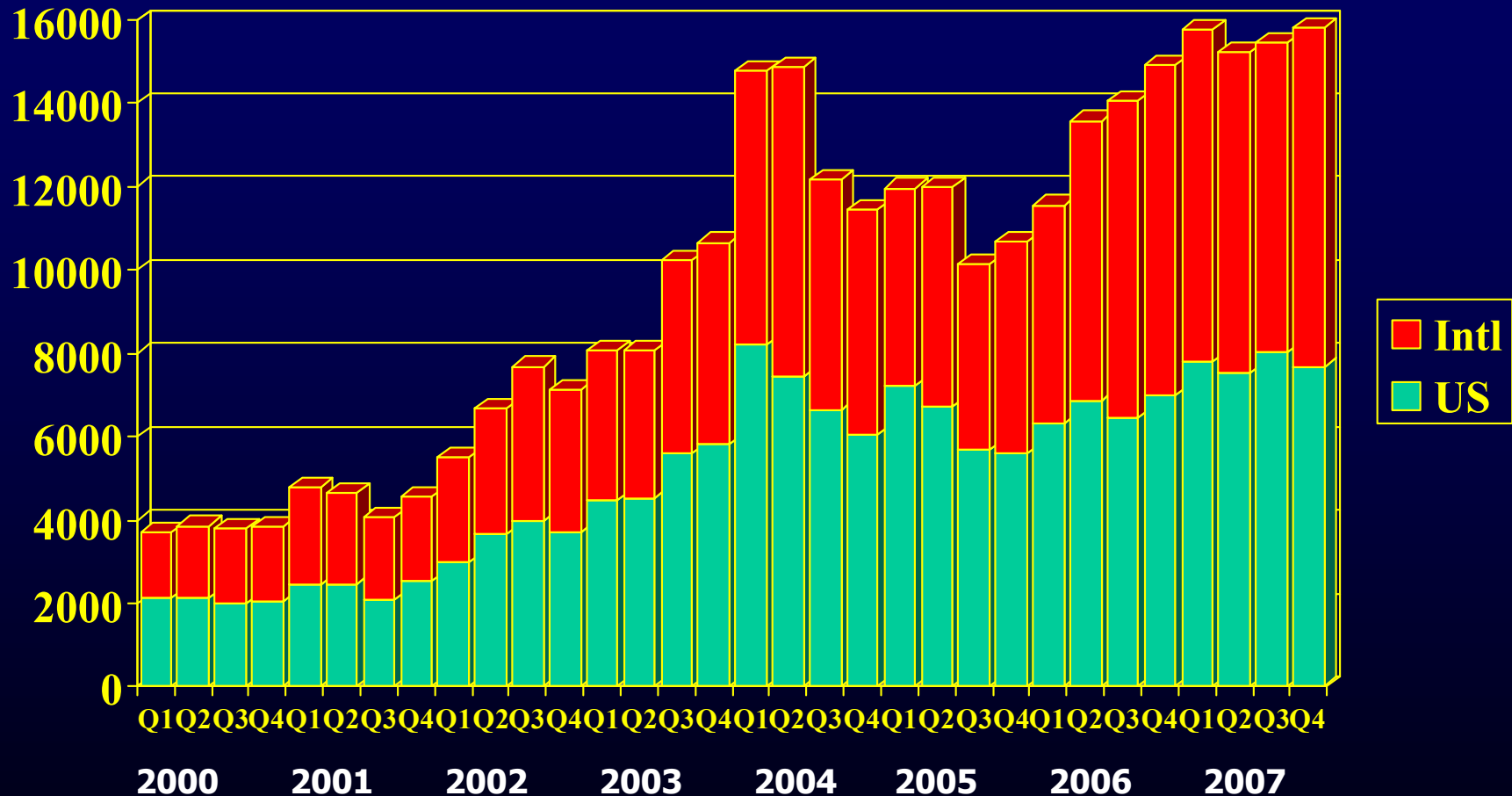
Washington — Low grades and absenteeism among poorly nourished children may

Medicine in Atlanta, is also chairman of Action for Healthy Kids.

"Schools have the unique opportunity, even the responsibility, to teach a model of



Global Trends in Obesity-Related Media Coverage



Note: Figures retrieved from Lexis-Nexis searches on “obesity or obese” in U.S. and international newspapers and newswires.

Challenge #6

Urban, Suburban, Rural Design

- Neighborhood Design
- Who's Important? Drivers vs. Pedestrians
- Lack of Sidewalks, Parks & Trails
- Safety & Security Concerns
- “Wal-Martism” – centralized shopping

Challenge #7

POVERTY

“Food poverty of the past is the major driver for health poverty of the present.”

A. Drewnowski, 2007

-
- **Socioeconomic**
 - **Time**

Learning Objective #2

Identify population approaches, including policy and legislation, and community programs to address PA, nutrition, overweight



Target Sites for Interventions

Population Approaches

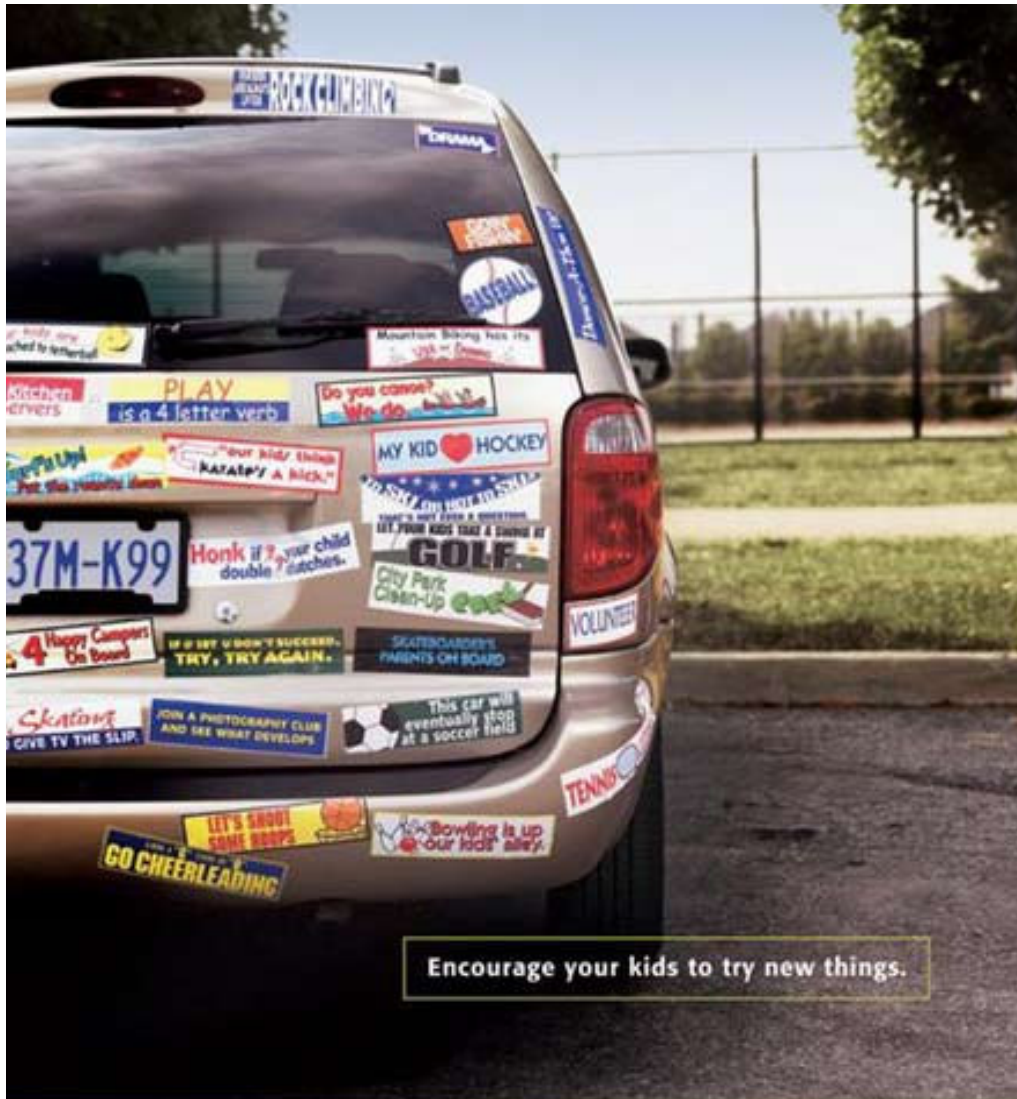
- ✓ Advocacy
 - ✓ Environmental modifications
 - ✓ Social Marketing - combine physical education & nutrition messages
 - ✓ Large-scale Interventions
-

Social Marketing & Mass Communication

What VERBTM does:

- Inspire & support; bring kids together
- Get kids to move around, be active, join in
- Make trying new & different activities fun
- Encourage & motivate exploration & involvement

VERB Poster



Encourage your kids to try new things.

Getting your kids out, active, and participating in new and different activities helps them build self esteem, gain confidence, and feel better. With your help and inspiration, you, too, could see a change in your child over time (as well as on your car). VERB. It's getting kids into action.



For more information, visit VERBparents.com

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VERB

VERB – Social Marketing: Themes from Hispanic/Latino Families

- **Use audio & visual cues with positive tone.**
- **Use action to promote Physical Activity (PA).**
- **Family unity supports PA messages.**
- **Messages should convey a single unified thought.**
- **Activities should be realistic yet imaginative.**
- **Choose your words carefully.**

Ref: Wong F, et. al. VERB™. Prev Chronic Dis [serial online] 2004 Jul.

Website: <http://www.cdc.gov/youthcampaign/research/PDF/Synthesis-Hispanic.pdf>

LOST



LOVE HANDLES

Last seen before taking stairs instead of escalator.

Take a small step to get healthy.
Get started at www.smallstep.gov

www.smallstep.gov

www.smallstep.gov

www.smallstep.gov

www.smallstep.gov

www.smallstep.gov

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www.smallstep.gov



www.smallstep.gov

Source:
<http://www.smallstep.gov/>

Social Marketing & Mass Communication

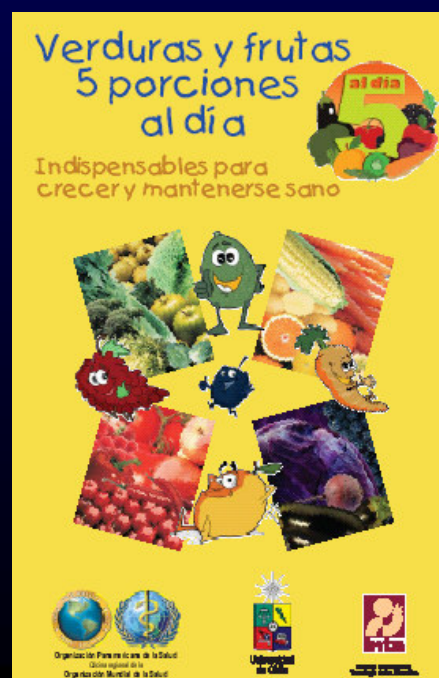
Impact Evaluation of a “5 a Day” Campaign to Increase the Consumption of Fruits and Vegetables

Healthy Lifestyles, Healthy People: A project of the Pan American Health Organization, International Life Sciences Institute Research Foundation, and the Center for Disease Control and Prevention

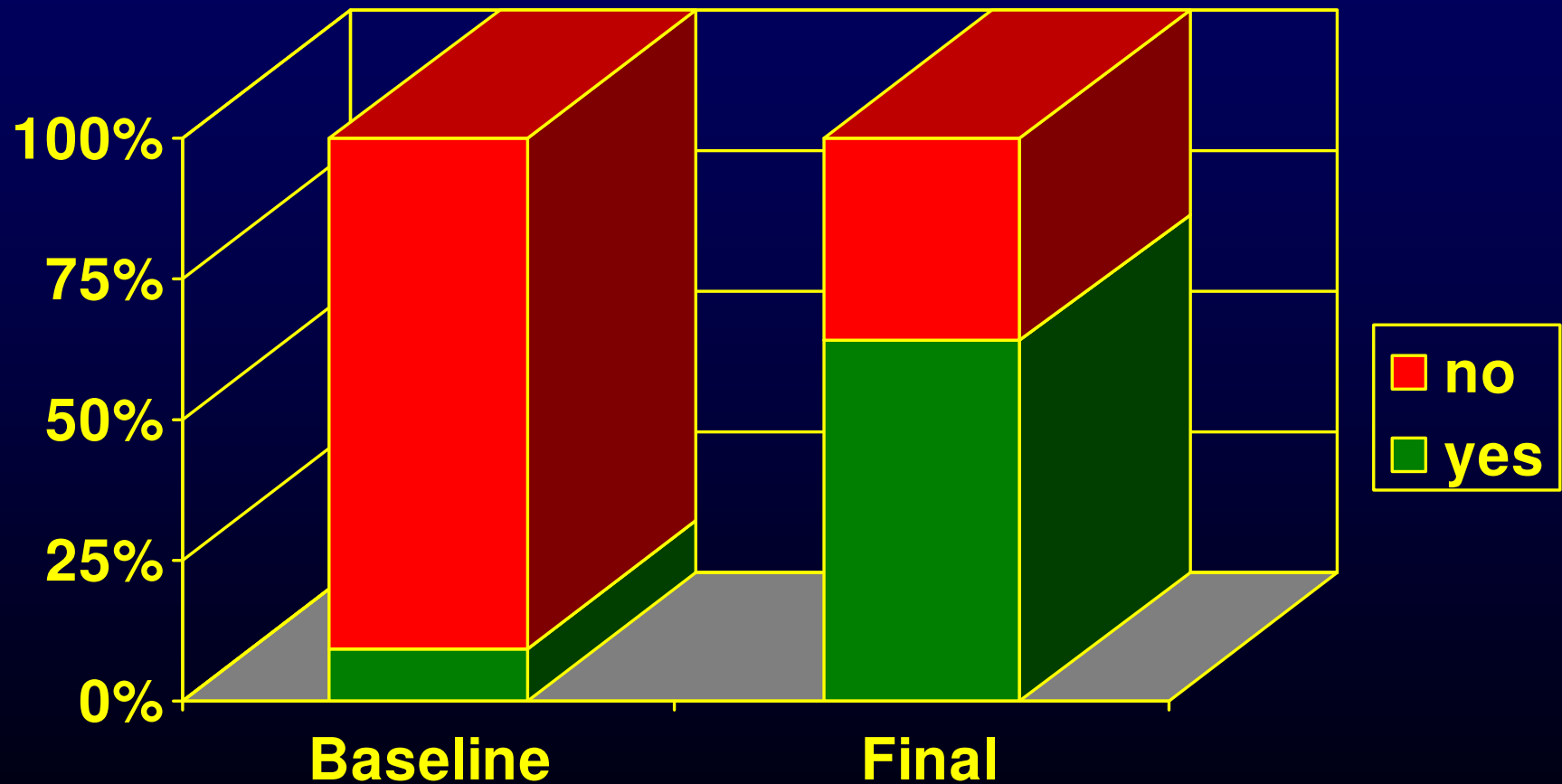
PI: Prof. Isabel Zacarías H., INTA, University of Chile

Objective

To evaluate the impact of a marketing campaign providing educational materials to users of public healthcare centers & supermarkets on consumption of F & V



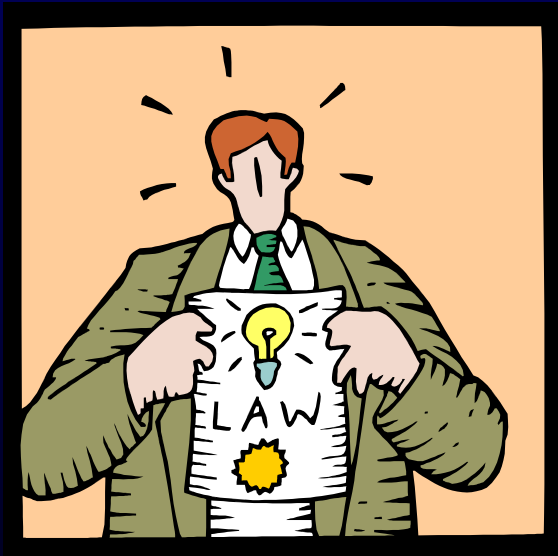
Subjects informed about the 5 a day message



Conclusions

- **Results:** an increased number of subjects were informed about the 5 a day message.
- **Trend:** increasing F & V consumption in all groups but mainly in group 1.
- **Social marketing along with education impacted self-reported F&V consumption**

Population Interventions



***Policy &
Legislative
Approaches***

EU Legislation:

European Commission -- EU platform for action on diet, physical activity and health - (March 2005)

- **Common Agricultural Policy (CAP):**
to boost Europeans' consumption of F&V
- **Currently re-examining regulations on:**
 - Nutrition and health claims made on foods
 - Nutrition labeling
 - Advertising & marketing (particularly aimed at children)

Ref - Websites: http://ec.europa.eu/health/ph_determinants/life_style/nutrition/
<http://www.euractiv.com/en/health/fight-obesity/article-164695>

Policy: BMI Assessment

- **Finland:** North Karelia project
- **U.S.:** BMI report card as part of academic report card
- **Singapore:** uses BMI testing as part of “Trim and Fit” component of “National Healthy Lifestyles Program”, yet has taken it one step further.....

Policy: BMI Assessment

SINGAPORE (cont.)

- Students with BMI higher than 120% ideal body weight required to engage in “compulsory” extra exercise
- **Challenge:** humiliation - embarrassment
- **Results:** Effective -- proportion of overweight school children dropped from 14% to 10% over twelve years

Legislative Activity (U.S.)

Bills	2001	2002	2003	2004	2005	2006	2007
Total Introduced	245	205	383	483	601	422	565
Enacted	54	48	78	95	131	76	97

39 Topics, e.g.: Bicycle/skating, Cafeteria/food service, Community, Dietary Supplements, Education (Nutrition or PA), Fruits & Veggies, Grocery, Health care/insurance, Labeling, Obesity, Prevention, Recreation, Restaurant, Safety, Taxation, Trails, Vending, Vitamins, Worksite

Source: CDC - <http://apps.nccd.cdc.gov/DNPALeg/>

Trends in U.S.A. Obesity Legislation

- School Nutrition
- Health and Physical Education
- Body Mass Index Monitoring and Reporting
- Menu-Labeling Requirements for Restaurants
- Industry Liability Lawsuits
- Snack & Soda Taxes
- Medicaid Benefits & Services for Obesity Treatment
- Insurance Coverage for Treatment/Prevention of Obesity

Population Interventions

- USA
- Australia
- France



Community

America On the Move

New Site: www.zyozy.com

- Use of advanced technology to maximize reach, individualize program, and collect data
- Conducting community-based projects to assess impact of small behavior change
 - 100 AOM Intervention Families, 92 control families
 - 6-month period, AOM group had a significantly higher % of target children who maintained or reduced their BMI for age
 - There was no significant weight gain during the 6-month intervention in parents of either group

Reference: Rodearmel SJ, Wyatt HR, et al.
Pediatrics. 2007 Oct;120(4): e869-79.



USA / Tufts University

Shape Up Somerville Intervention

- Designed to ↑ energy expenditure (EE) of up to 125 kcals per day -- beyond increases in EE and energy intake that accompany growth
- Variety of increased opportunities for PA
- Availability of foods of lower energy density, emphasizing fruits, vegetables, whole grains, and low-fat dairy; foods high in fat and sugar were discouraged
- Multi-level approach:
 - Before, during, after school, home, community

Environment



At Home
Safe Routes to School Maps
 ↑ Walking to School (-30 kcals)
Healthier Home Breakfast
 ↑ Fiber, ↓ Sugar, ↓ Fat
Appropriate Portion Sizes

Before School Program
Healthier School Breakfast
 ↑ Fiber, ↓ Sugar, ↓ Fat
 Appropriate Portion Sizes
Increased Fresh Fruits
Breakfast Coordinator (~25 kcals)

During School Environment



Physical Activity Equipment for Recess
 ↑ Physical Activity (- 25 kcals)
Healthier School Lunch
 ↑ Fiber, ↓ Sugar, ↓ Fat
 Increased Fresh Fruits & Vegetables
 Appropriate Portion Sizes
 Improved Presentation and Atmosphere
 Social Marketing in Cafeteria
 Alternative “Healthier” A La Carte Items
 New Food Service Equipment

Classroom Micro Units
 ↑ Physical Activity (- 25 kcals) 5 days/wk (10 min)
 Nutrition & Physical Activity Education 1 day/wk (30 min)
Healthier Fundraising Alternatives
Professional Development
 Teachers
 Administrators
 Food Service Staff
 PE Teachers

Afternoon Environment



At home
Safe Routes to School Maps
 ↑ Walking Home (-30 kcals)
Healthy Home Snack
 ↑ Fiber, ↓ Sugar, ↓ Fat

After School Program
Curriculum:
 Cooking Lessons
 Physical Activity (-30 kcals)
 Nutrition Education
Professional Development

Reinforcing Environments
Home Environment (~15 kcal)
 Parent Newsletter w/ coupons
 Growth Reports
 ↓ Screen Time
 Promotional Gifts

Community Environment
 Community “Champions”
 Restaurant Participation
 Pediatrician Training & Support
 Community TV Appearances
 Ethnic Group Outreach
 Community PA Resource Guide
 Community Events

Shape Up Somerville Model

USA / Tufts University

Shape Up Somerville Results

- Engaged **90** teachers in 100% of 1-3 grade classrooms (N=81)
- Participated in or conducted **100** community events and **4** parent forums
- Trained **50** health professionals & recruited **21** restaurants
- Reached **811** families through 9 parent newsletters, and **353** community partners through 6 community newsletters
- Reached over **20,000** people through a monthly media piece (11 months)
- Recruited **14** after-school programs
- Developed community-wide policies to promote and sustain change

**BMI z-score decreased by
-0.1005 (p = 0.001, 95% CI)**

Reference: Economos CD, et. al. Obesity (Silver Spring). 2007 May;15(5):1325-36.

Australia - The Colac Be Active Eat Well Project

Community-based obesity prevention projects

Sentinel Site for Obesity Prevention

Pacific OPIC Project

Site	Age	Status
Moreland, Melbourne	4-12y	2004-09
Colac, Victoria	4-12y	2003-6, F/U 07-10
Geelong, Victoria	0-5y	2005-08
E Geelong, Victoria	13-18y	2005-08
Suva, Fiji	13-18y	2005-08
Tongatapu, Tonga	13-18y	2005-08
Mangere, Auckland	13-18y	2005-08

Australia - The Colac Be Active Eat Well Project

Design Features for Demonstration Projects

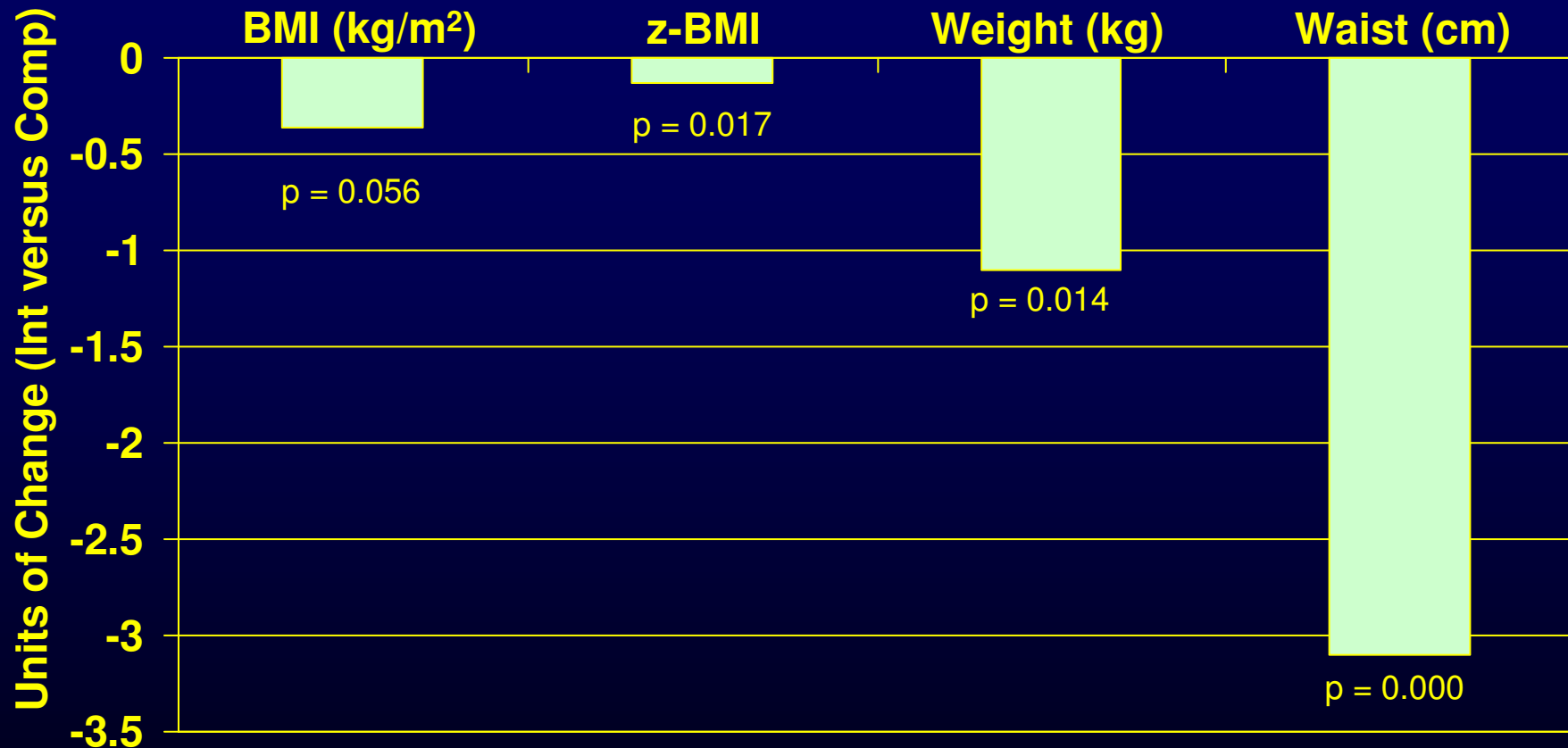
- **Separate funding for interventions and support & evaluation where possible**
- **\$12m, 26 grants, 11 agencies**
- **Sample size 1000+ per group**
- **Design for comparison population**
 - Cluster RCT, representative regional or state sample, matched schools, matched communities
- **At least 3y intervention**
- **Rigorous evaluation**
 - Formative, process, impact, outcome, economic (6/7)

Australia - The Colac Be Active Eat Well Project

- **Whole-of-community demonstration program in Colac, Victoria (pop 11,000)**
- **Funded for 4 years**
 - Dept Human Services, Victoria
 - Target group: 4-11 years
- **Capacity-building approach**
 - Create skills, structures, leadership, resources to promote healthy eating and physical activity



Less BMI, z-BMI, weight and waist gain in intervention group over 3y



Adjusted for confounders: age, gender, height, duration of follow up

Sanigorski et al (submitted, under review)



From research to action From FLVS to EPODE

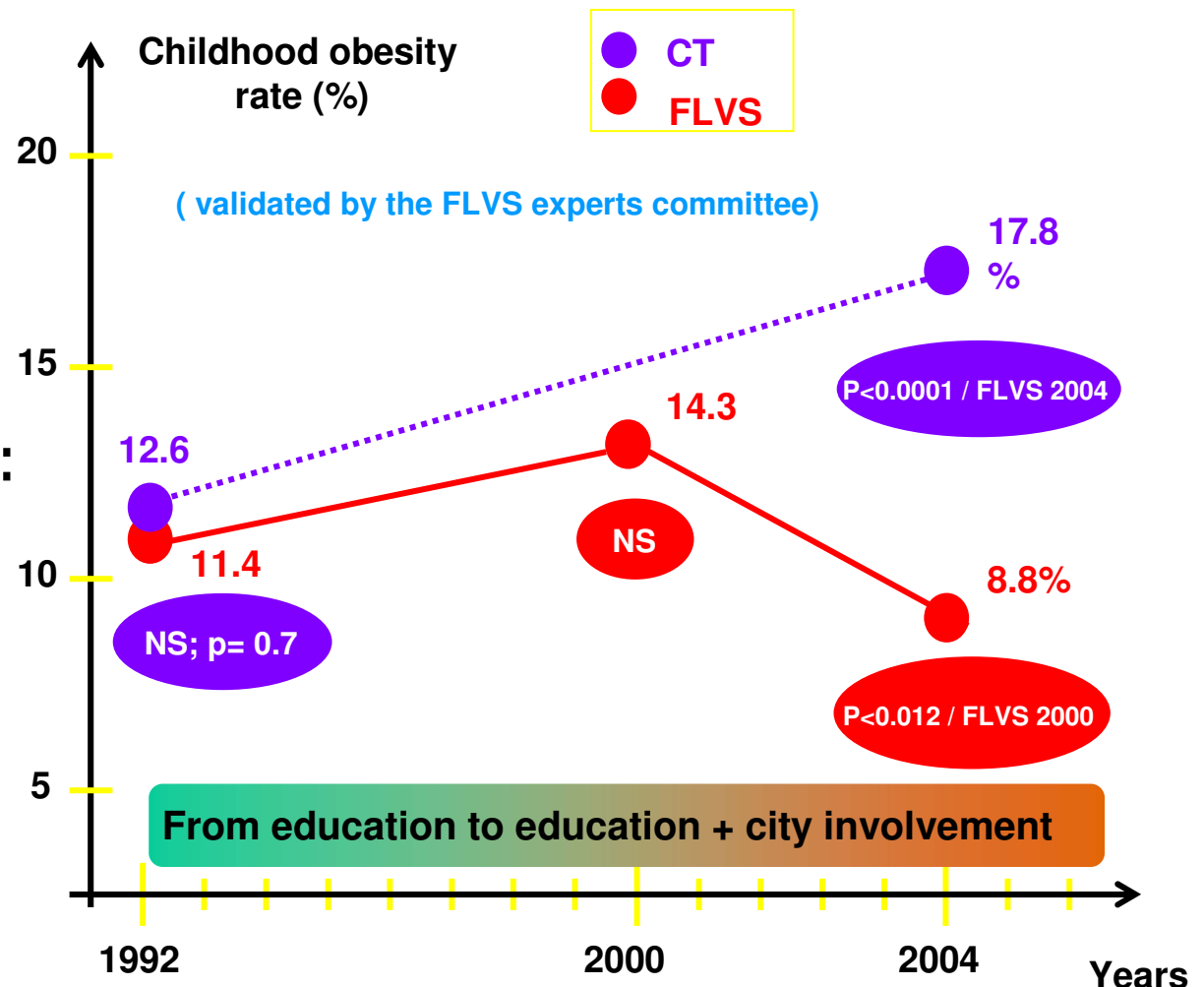
**PI's: Mrs Virginie Becquart, Mrs
Sandrine Raffin & Dr Jean-Michel
Borys, Co-directors EPODE
Pr. Romon, University, Hospital
Lille France**



Fleurbaix Laventie Ville Santé (FLVS) study

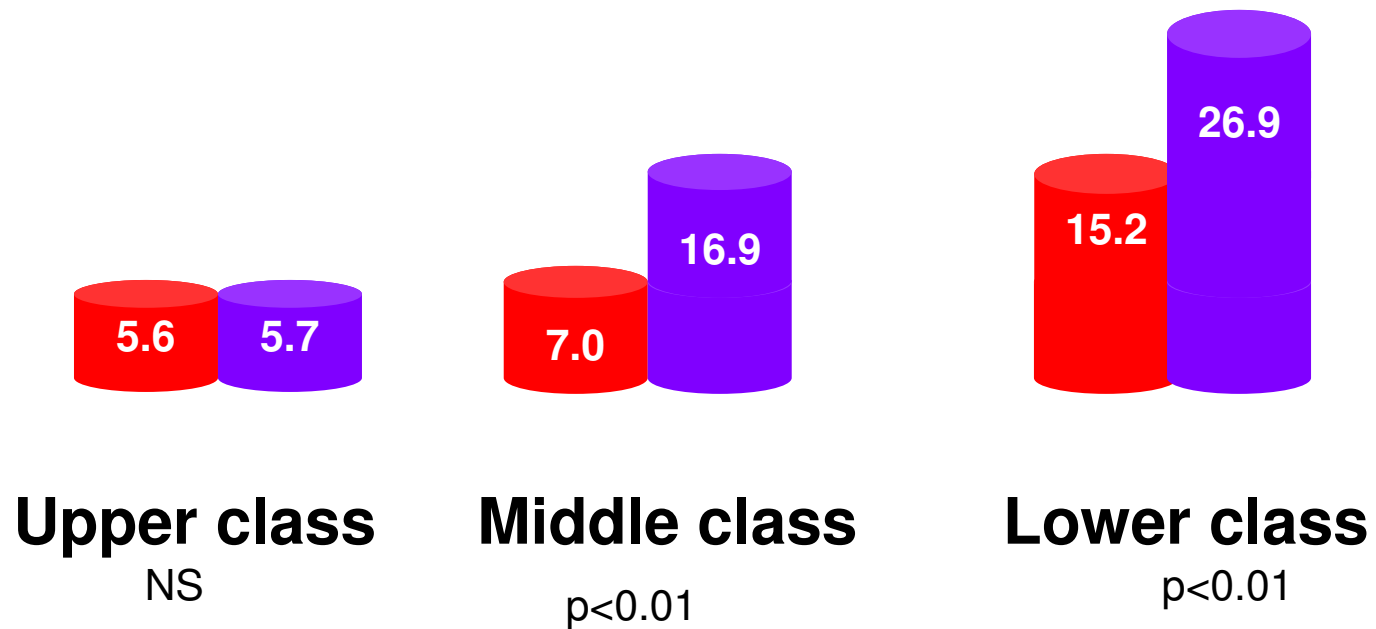
A community-based intervention approach prompting a lifestyle change at the local level:

- Inspired from key-to-success factors and experience of successful community-based interventions such as FLVS
- Regularly enriched by field experience and good practices sharing



NOTE: LONG-TERM INVESTMENT – over 12 yrs!

Obesity Prevalence by Socioeconomic criteria in 2004 in FLVS and Control



Learning from FLVS pilot study

- Feasibility
- **Target:** The family
- **Key:** The city leadership / The local "political will"
- A local project manager
- Actions in schools are a 1st step but a multi-stakeholders approach is necessary for better & sustainable efficiency
- Public/private partnerships are critical
- Regular communication
- Quantitative evaluation: children BMI measurement
- Long-term actions / commitment are necessary:

IT TAKES TIME TO GET RESULTS!

Elements of Successful Social Change

- ✓ A Crisis
- ✓ Science Base
- ✓ Economics
- ✓ A Plan
- ✓ Coalition Building
- ✓ Environmental & Policy Change
- ✓ Gov't Intervention
- ✓ Mass Communication
- ✓ Grass Roots Efforts
- ✓ Advocacy
- ✓ "SPARK PLUGS"

Final Quote...



“Children have never been very good at listening to their elders, but they have never failed to imitate them.”

-- James Baldwin