



# Addressing Physical Inactivity Among Youth In Alberta

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# Report Card on Physical Activity For Children and Youth

(Active Health Kids Canada [AHKC], 2008)

- National snapshot of the physical activity behaviours and opportunities for children and youth
- Nation-wide data sets:
  - National Longitudinal Survey of Children and Youth
  - Health Behaviour in School-Aged Children Survey
  - Canadian Community Health Survey
  - Physical Activity Monitor
  - “Tell Them From Me” national online evaluation system
  - PEI Sport Strategy Survey
  - Web-SPAN
- **Canada’s Overall Grade 2008: D**

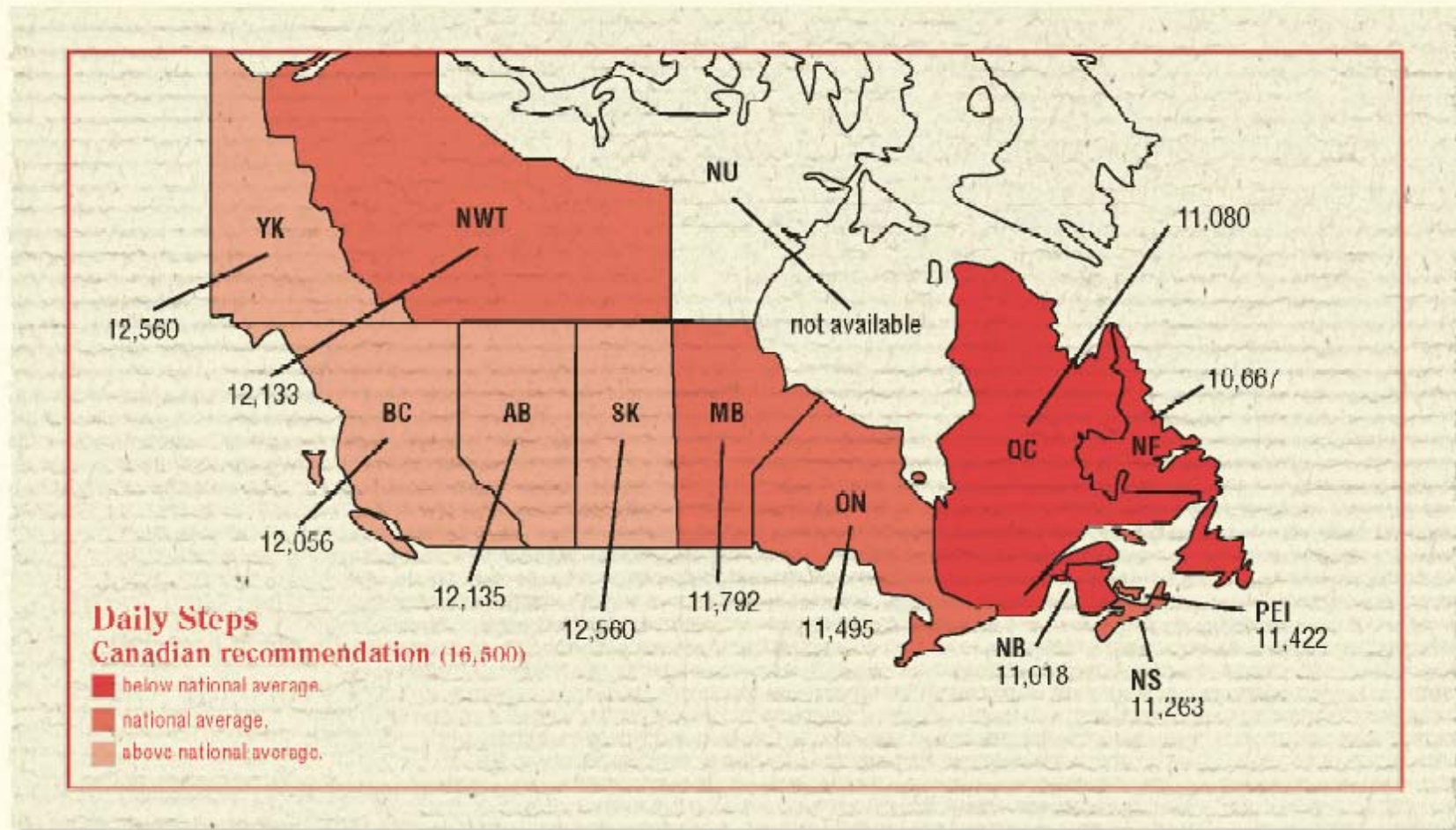


# AHKC (2008)

2008 INDICATORS			
THE 2008 REPORT CARD EXAMINES INDICATORS THAT INVOLVE ASSESSMENT OF PHYSICAL ACTIVITY LEVELS, AND THE HEALTH AND WELL-BEING VARIABLES ASSOCIATED WITH THOSE PHYSICAL ACTIVITY LEVELS, AMONG CANADIAN CHILDREN AND YOUTH. IT ALSO LOOKS AT THE ROLE OF SOCIETAL INFLUENCES THAT CAN FACILITATE OR INHIBIT PHYSICAL ACTIVITY, INCLUDING FAMILY, SCHOOL, COMMUNITY, AND GOVERNMENT.			
	GRADE	CATEGORY	INFORMATION
PHYSICAL ACTIVITY /INACTIVITY	<b>F</b>	PHYSICAL ACTIVITY LEVELS	<ul style="list-style-type: none"> <li>90% are not meeting physical activity guidelines</li> <li>Low socioeconomic status is associated with lower physical activity levels</li> </ul>
	<b>F</b>	SCREEN TIME	<ul style="list-style-type: none"> <li>Studies show many kids spend 4-6 hours in front of a screen each weekday</li> <li>High screen times are now being observed in preschool-aged children</li> </ul>
	<b>C</b>	ORGANIZED SPORT PARTICIPATION	<ul style="list-style-type: none"> <li>Sport participation in 15-18 year olds declined from 77% to 59% between 1992 and 2005</li> <li>Those from lower income households have lower sport participation rates</li> </ul>
HEALTH	<b>F</b>	HEALTHY BODY WEIGHT	<ul style="list-style-type: none"> <li>Screen time is predictive of overweight and obesity</li> <li>Unhealthy excessive body weight continues to be among the highest in the world with concerning new findings indicating this issue as early as 3 years of age</li> </ul>
FAMILY	<b>D</b>	FAMILY PERCEPTIONS AND ROLES REGARDING PHYSICAL ACTIVITY	<ul style="list-style-type: none"> <li>Physically active youth are 3 times more likely to have parents who are also physically active, but just over half of youth report that they have physically active parents</li> </ul>
	<b>B</b>	ENSURING KIDS ARE ACTIVE	<ul style="list-style-type: none"> <li>Studies demonstrate that parents support physical activity but that this is primarily for sports and declines as children get older</li> </ul>
SCHOOL	<b>C</b>	SCHOOL-COMMUNITY ASSETS & ENGAGEMENT	<ul style="list-style-type: none"> <li>84% of schools indicate partnerships with community but only 40% directly engage physical activity experts from the community and only 20% engage parents</li> </ul>
	<b>C-</b>	SCHOOL SPORT OPPORTUNITIES	<ul style="list-style-type: none"> <li>Studies note 20%-30% of students feel there are not enough school sport opportunities</li> <li>Only 25% of schools have policies for "no cuts"/full participation in school sports</li> </ul>
	<b>D</b>	ACTIVE TRANSPORTATION TO SCHOOL	<ul style="list-style-type: none"> <li>While there are some promising initiatives, select studies show that just 10% of students use active transportation to get to school</li> </ul>
COMMUNITY AND THE BUILT ENVIRONMENT	<b>B+</b>	ACCESS TO FACILITIES AND PROGRAMS	<ul style="list-style-type: none"> <li>Over 90% of parents report that they have good access to programs and facilities, and over 60% report they meet their needs</li> </ul>
	<b>D</b>	USE OF FACILITIES AND PROGRAMS	<ul style="list-style-type: none"> <li>Only 23% of parents report actually using facilities and programs</li> </ul>
	<b>B+</b>	ACCESS TO PARKS AND PLAYGROUNDS	<ul style="list-style-type: none"> <li>Over 90% of parents report having access to parks and playgrounds, and nearly 60% report they meet their needs</li> </ul>
	<b>D</b>	USE OF PARKS AND PLAYGROUNDS	<ul style="list-style-type: none"> <li>Only 34% of parents report actually using parks and outdoor spaces in their community</li> </ul>
	<b>D</b>	MUNICIPAL REGULATIONS	<ul style="list-style-type: none"> <li>A survey of municipalities indicated that 96% reported at least 1 by-law that would be considered prohibitive to physical activity in children in youth</li> </ul>
POLICY	<b>C+</b>	PROGRESS ON GOVERNMENT STRATEGIES AND INVESTMENTS	<ul style="list-style-type: none"> <li>Evaluative information on the various strategies and initiatives being implemented across the country are required</li> <li>Governments at all levels are being called upon to address significant issues with infrastructure to support physical activity</li> <li>There is progress in most jurisdictions but additional sustained investment and leadership is needed</li> </ul>
	<b>C+</b>	SECTOR INVESTMENTS IN RESEARCH, INDUSTRY AND FOUNDATIONS	<ul style="list-style-type: none"> <li>Investment in physical activity research is growing, and some leadership has been demonstrated by the philanthropic and corporate sector, but more is needed</li> </ul>

# Regional Variation in Daily Steps Taken by Canadian Children in CANPLAY Study

(see AHKC, 2008)



National average was 11,356 steps per day

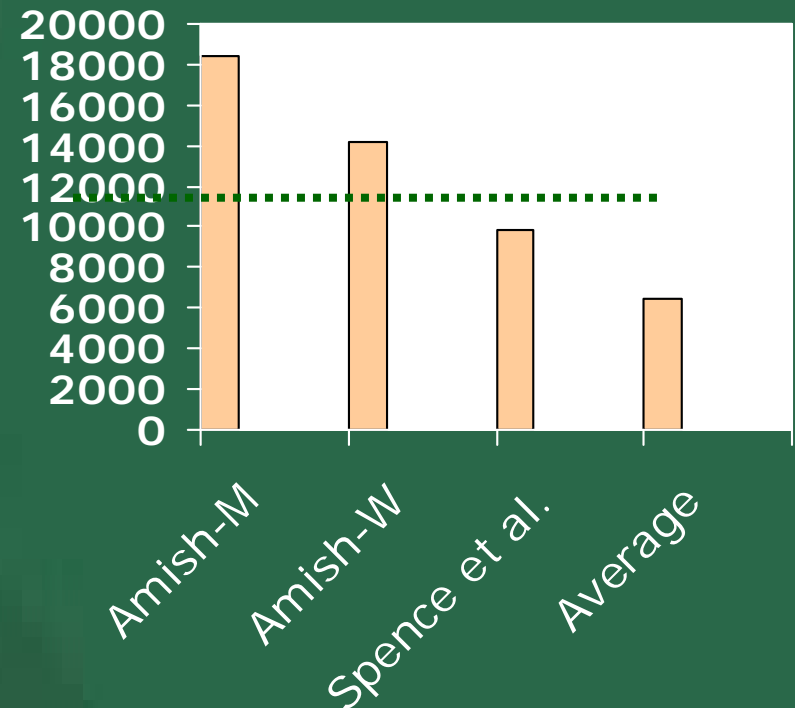
# Physical Activity in an Amish Community

(Bassett et al., 2004)

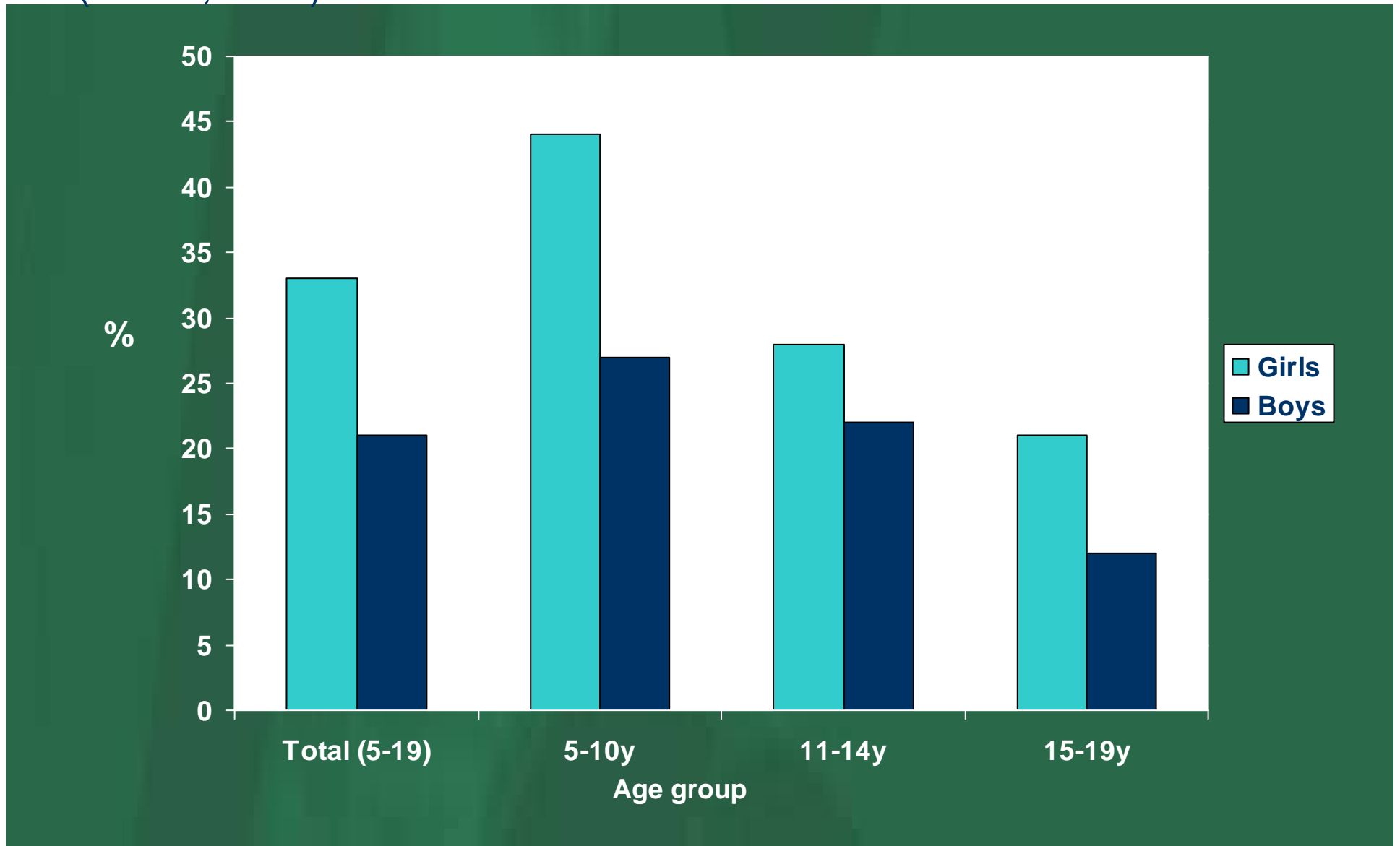


- 100% of Amish adults met the CDC/ACSM criteria (30 mins. moderate PA on most days of the week)
- Approximately **4 X** more active than samples of adults from the general population
- Most steps recorded for one day was **51,514** for a man and **41,176** for a woman

Steps Per Day



# Physical Activity of Canadian Children: Sex-specific BMI referenced (12,000-15,000 steps) (CFLRI, 2007)



# Societal Trends in Time Use Among Children

(Sturm, 2005)

“unstructured playtime has decreased to make room for organized activities”

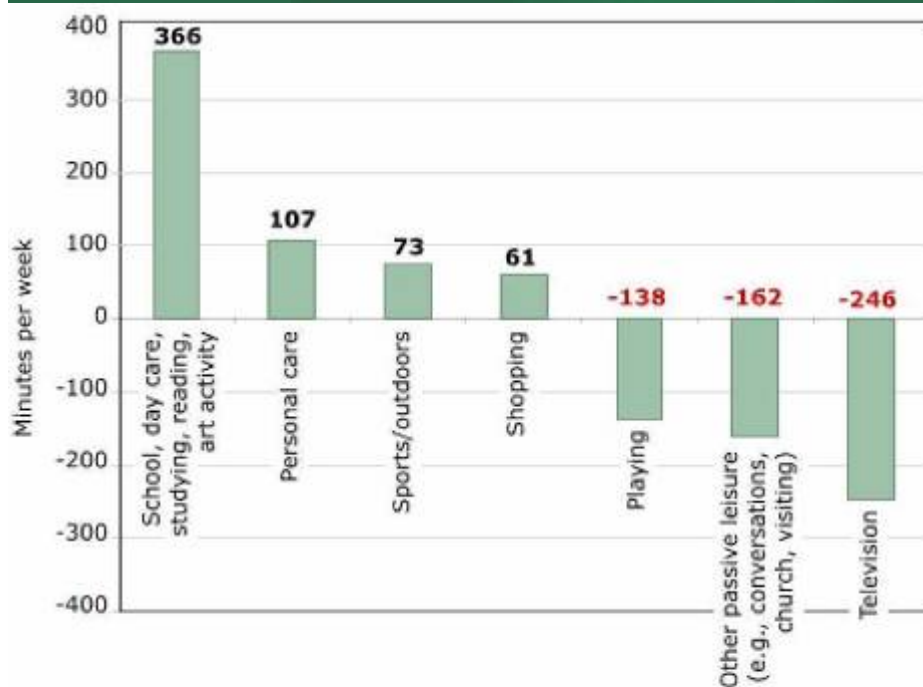


Figure 2. Changes in time (in minutes per week) spent on activities between 1981 to 1997 by U.S. children aged three to 12 years. Calculations based on data from Hofferth and Sandberg (5).

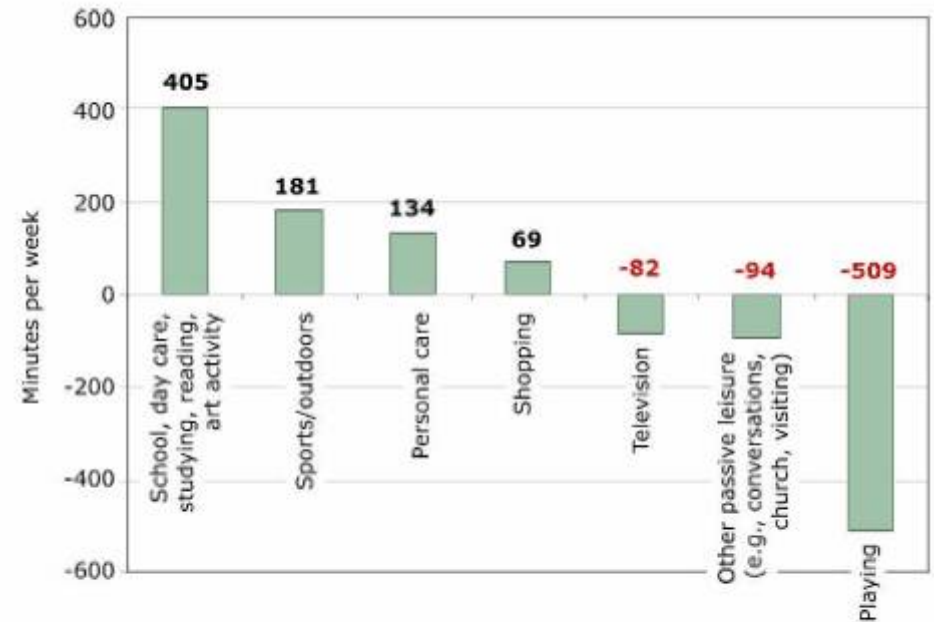


Figure 3. Changes in time (in minutes per week) spent on activities between 1981 and 1997 by U.S. children aged three to five years. Calculations based on data from Hofferth and Sandberg (5).

# Sport Participation in Alberta and PEI

(AHKC, 2008)

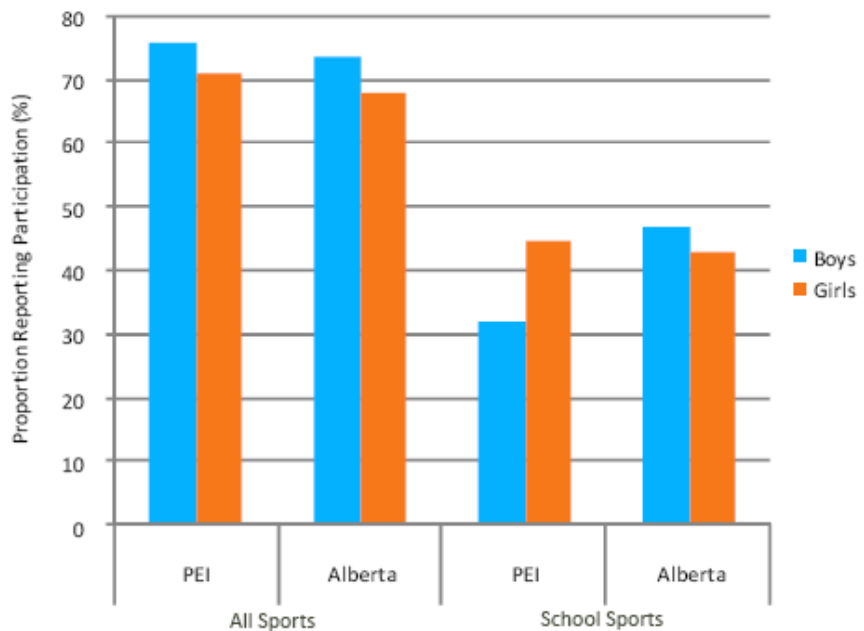


Figure 10: Overall and school sport participation in PEI and Alberta (PEI Sport Strategy Study, WEB-Span Study).

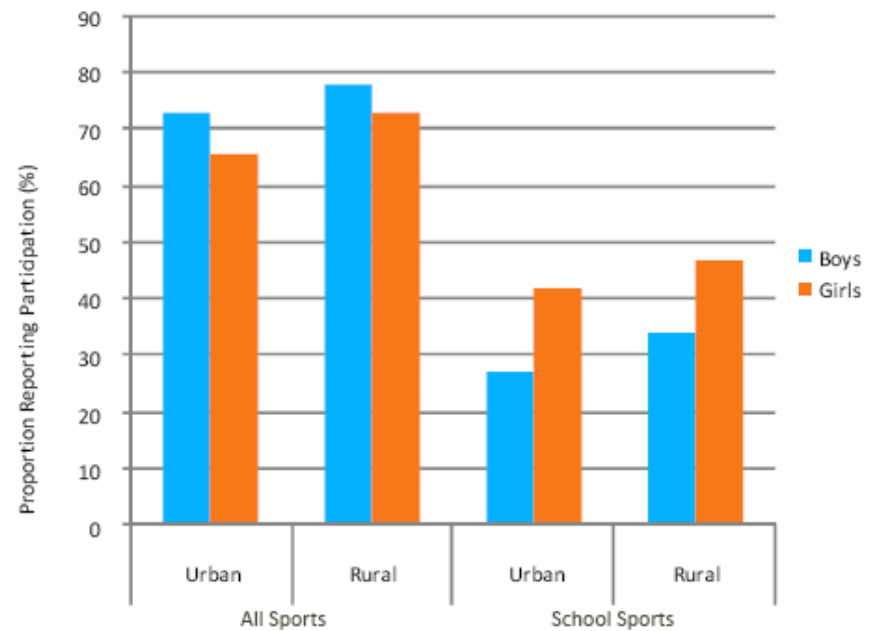
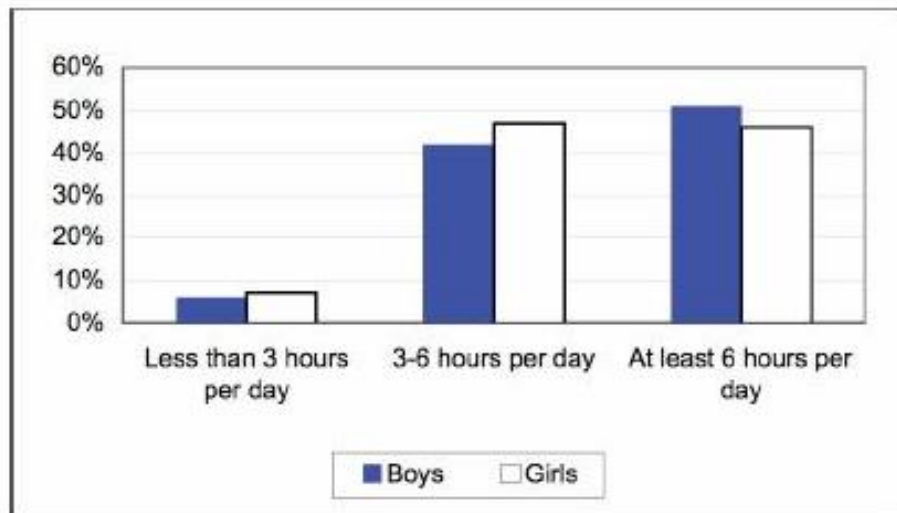


Figure 11: Differences in urban and rural sport participation (PEI Sport Strategy Survey).

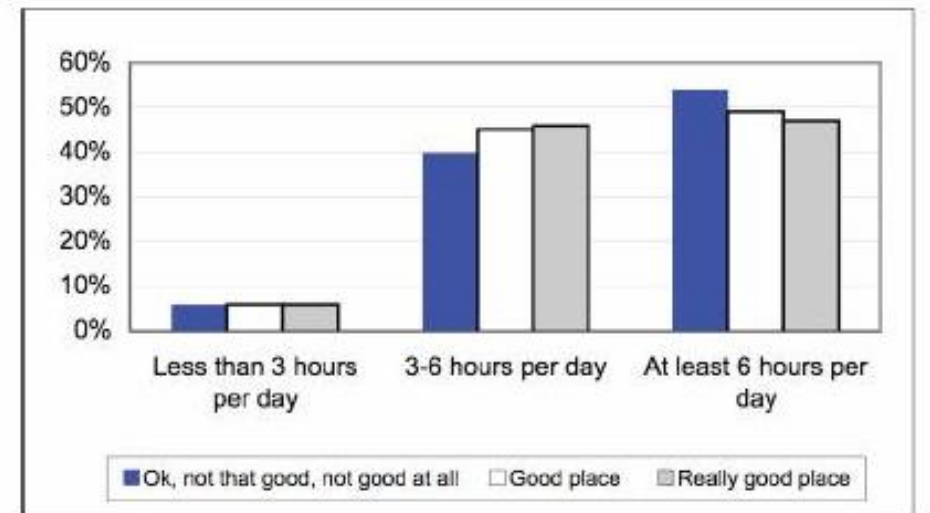
# Sedentary Behaviour

**SEDENTARY BEHAVIOUR  
by sex**



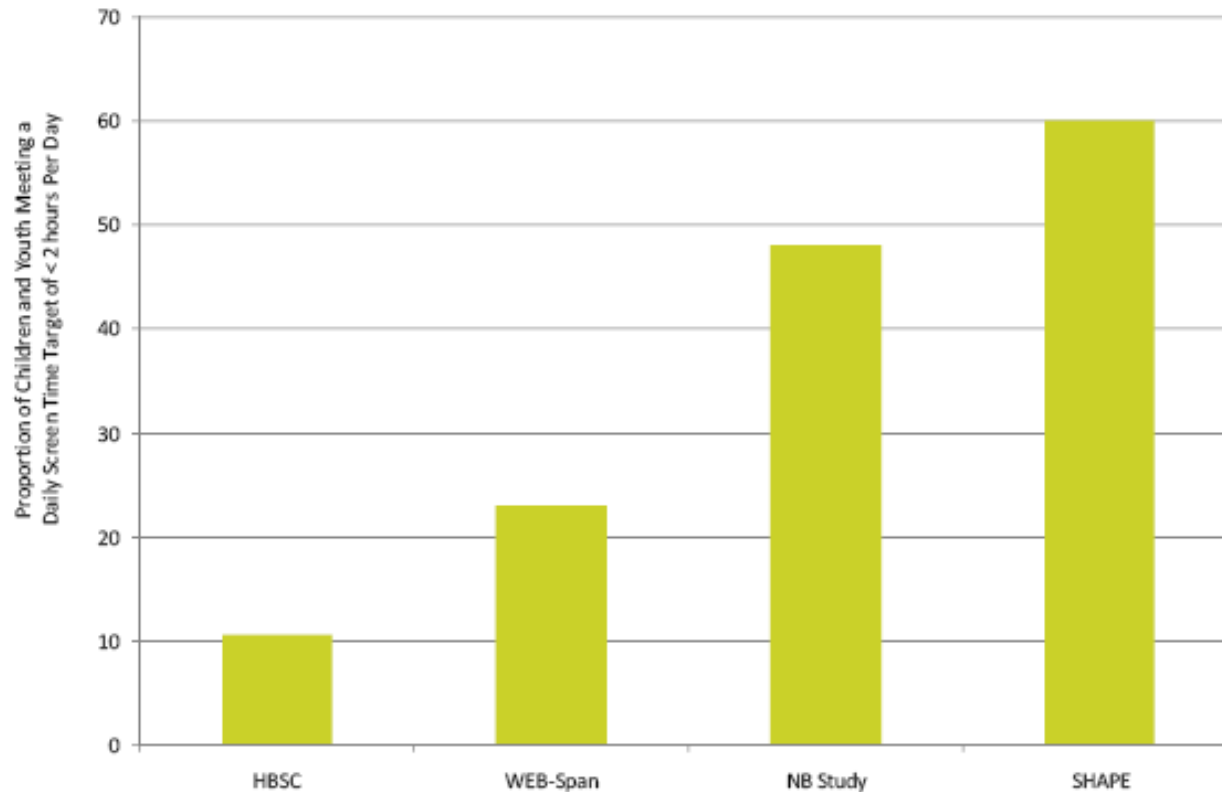
*2002 Health Behaviour in School-aged Children*

**SEDENTARY BEHAVIOUR  
by neighbourhood quality**



*2002 Health Behaviour in School-aged Children*

# Proportion of Children Meeting Screen Time Guidelines (AHKC, 2008)



**Screen Time and Inactivity**  
A substantial proportion of Canadian youth (50.3% of males and 67.8% of females) are inactive. Regardless of SES characteristics, health status, and body weight status, screen time is associated with inactivity.<sup>12</sup>

Figure 5: The proportion of children and youth meeting CPS screen time guidelines from a range of different research studies.

# Children's Perceptions of Play and Physical Activity in their Neighbourhoods

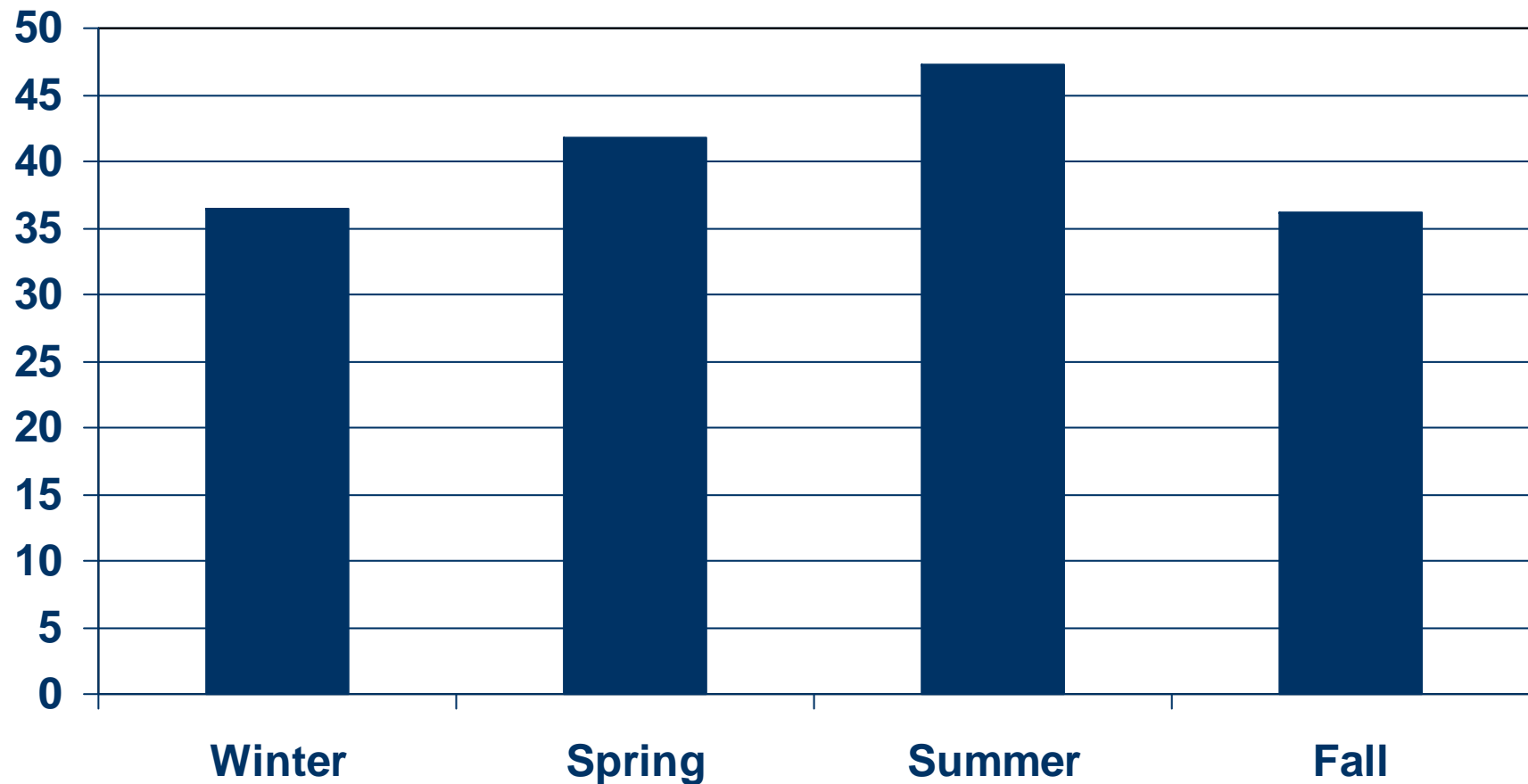
(Holt, Spence, Sehn, & Cutumisu, 2008)

- 168 children from 2 urban elementary schools in Edmonton (K-6)
- One school was located in a grid-style neighbourhood while the other was located in a lollipop-style neighbourhood
- Children asked to draw mental maps of where they could play and be physically active in their neighbourhood
  - Images coded into 8 themes (e.g., active transportation, sports, playing around home)

<b>Grid-Style</b>	<b>Lollipop-Style</b>
More active transportation events	More non-active transportation events
<b>Older children (Gr. 5-6):</b> more play in home environment	<b>Young children (K-2):</b> more play in home environment
<b>Older children (Gr. 5-6):</b> play outside the home environment	<b>Young children (K-2):</b> play outside the home environment
<b>Older children (Gr. 5-6):</b> effects of weather	<b>Young children (K-2):</b> effects of weather

# Seasonal Variation in Physical Activity among Preschool Children in Edmonton

(Carson, Spence, Cutumisu, Boule, & Edwards, under review)



The odds of a child being active were **2.4** times greater in the summer in comparison to the winter

# Population-Based Health-Promotion Model

(McKinlay, 1995)

Type of Intervention	Description	Specific Activities
Downstream	Individual-level interventions	Group and individual counseling
Midstream	Population-level interventions that target defined populations	Worksite disease prevention programs
Upstream	Macro-level state and national public policy and environmental interventions	Policies reducing access to unhealthy products

# The Trim & Fit Program: Singapore

(Toh, Cutter, & Chew, 2002)

- Aim: to reduce obesity among school children in Singapore and improve the physical fitness of pupils using a multidisciplinary approach targeting overweight students, parents, teachers, and the school environment
  - Nutrition education is integrated into the school curriculum
  - Food and drinks in the school canteen are subject to control measures
  - Water coolers are provided in all schools
  - Schools that achieve good health receive a Trim & Fit award
  - Overweight children receive extra attention
    - Participate in special PE programs
    - Messages on healthier food choices are reinforced
    - Obese students are referred to the school's health services for more intensive follow up with doctors and dieticians

# The Child and Adolescent Trial for Cardiovascular Health (CATCH) (Luepker et al., 1996)

- Field study with 3<sup>rd</sup> grade students (N = 5106) designed to assess the outcomes of health behaviour interventions for prevention of CVD over a period of 2.5 years
  - 96 public schools in California, Louisiana, Minnesota, Texas randomized to intervention or control status
- Intervention consisted of school-based and family-based components
  - Food service (e.g., cafeteria), PE, classroom curricula, home curricula (activity packets)

# Primary Endpoints for CATCH

## School:

1. Reduce the total fat (30% of energy) and sodium (600-100 mg/serving) content of food served at school;
2. Increase the amount of PA in PE program to 40% of class time

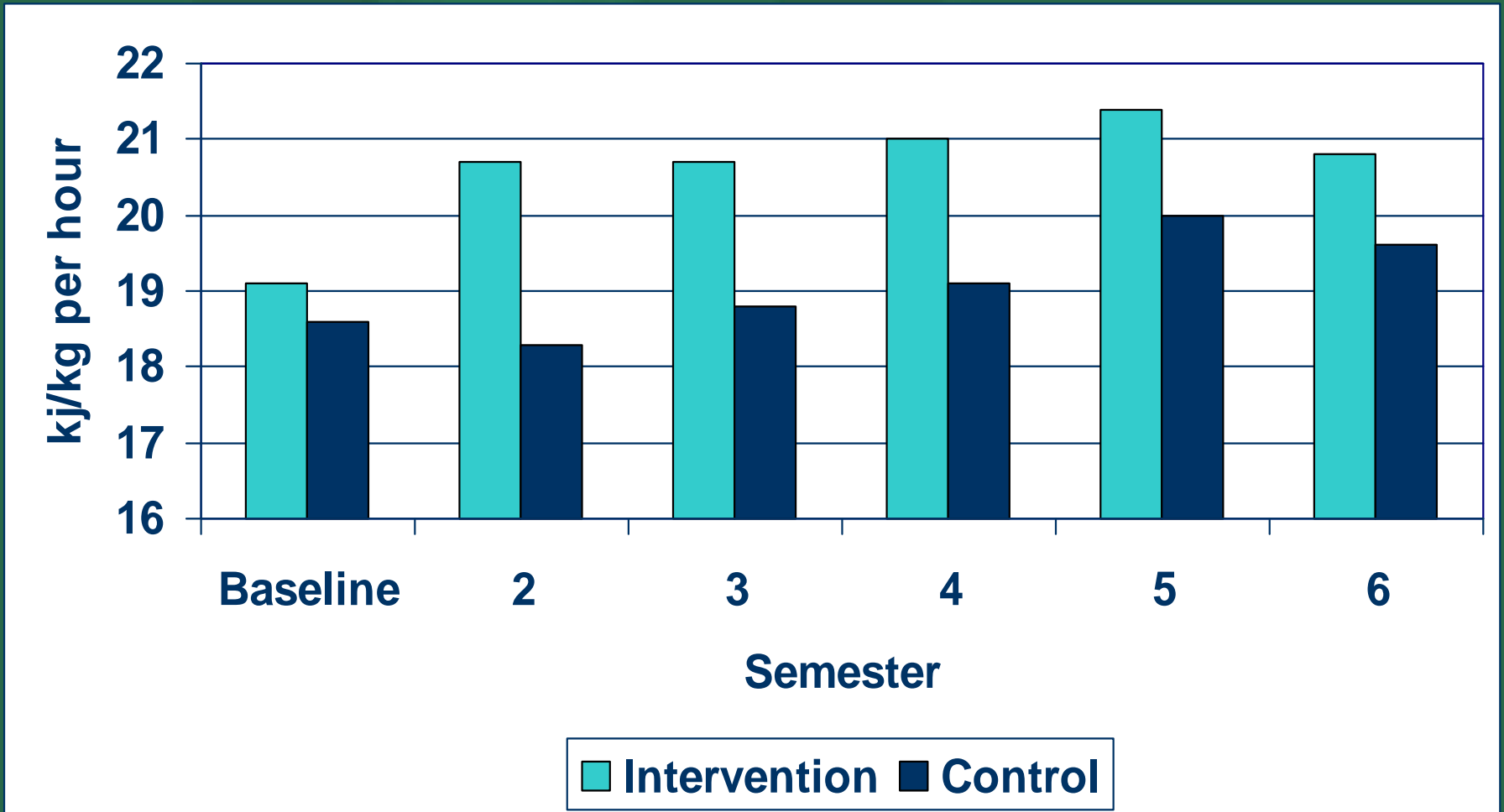
## Individual:

1. Serum cholesterol (5 mg/dl difference compared to control)

# Secondary Endpoints for CATCH

- Individual:
  - Systolic blood pressure
  - Psychosocial factors
  - Self-reported...
    - dietary fat
    - sodium intake
    - time engaged in moderate-to-vigorous physical activity

# CATCH Trial: Energy Expenditure Rate, 1991-1994 (Luepker et al., 1996)



# Findings in CATCH Trial

## Differences

- School lunches: fat intake ↓
- PE: intensity of PA ↑
- Students reported
  - ↑ PA
  - ↓ fat intake

## No Differences

- Blood pressure
- BMI
- Cholesterol measures

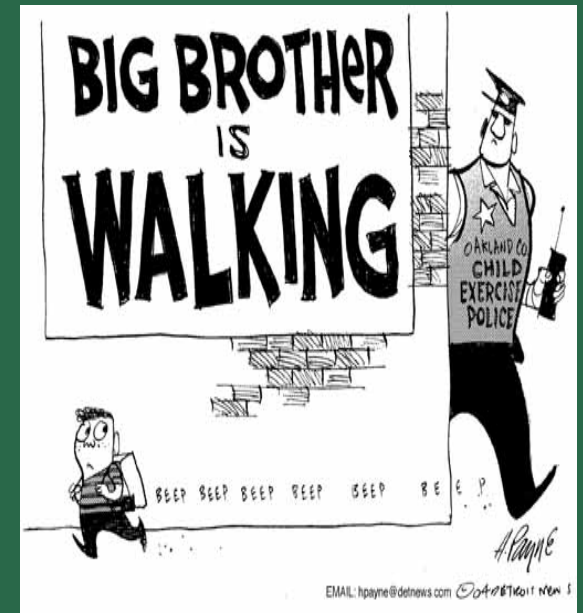
# EPDOE Project (Jean Michel Borys)

- **EPODE:** Ensemble Prévenons l'Obésité des enfants or “Together, let's prevent childhood obesity”
- The objective of the EPODE operation is to curb the progression of childhood obesity by way of a five-year plan of intervention.
  - Local players in the nutritional domain are mobilised and incentive programs for physical exercise are encouraged.
  - This preventive action is mainly aimed at families, teachers, associative and economic partners.
- The 3 fundamental steps are:
  - Informing and making all players aware of the problem
  - Training participants
  - Taking action in school and towns.

# EPODE: Results

- The official results from the 10 Epode pilot towns will be unveiled in 2009, five years after the programme's inception - and it would be wrong to claim anything definitively until they are published and peer-reviewed. However, early indications seem good. For example, **in 2004, 19 per cent of the children in Saint Jean, a town in the Midi Pyrénées region, were overweight. A year later, this figure was down to 13.5 per cent** (Telegraph.co.uk, July 17, 2008)
- Romon, M., Lommez, A., Tafflet, M., Basdevant, A., Oppert, J. M., Bresson, J. L., Ducimetiere, P., Charles, M. A., & Borys, J. M. (2008). Downward trends in childhood obesity after 12-year school- and community-based programmes. *Proc Nutr Soc*, 67(OCE), E166.

# Strategies: What's a Child to Do?



# The Prevention of Overweight and Obesity in Children and Adolescents (Doak et al., 2006)

- School-based studies using anthropometric outcomes.
- 68% (17 of 25 studies) were 'effective' in reducing BMI and/or skin-folds.
- PE in schools and reducing television viewing were two examples of interventions that have been successful

# Efficacy of Interventions to Increase Physical Activity among Children

*Building Solutions for Preventing Childhood Obesity (Chau & Farrell, 2008)*

## Physical activity in children aged five to twelve years

DO	Playground markings & equipment	E, L
	PDHPE implementation with family and community involvement	C, E
	Teacher professional development	E, H
	Teaching children skills to engage in self-directed physical activity	L, P, E
CONSIDER	Mass media campaign to promote physical activity	C, E, H, L, P, R
GAP	Using rewards to encourage activity	C, E
	Active transport & supporting infrastructure	E, L, RTA
	Potential compensatory effects between in and out of school physical activity	C, E, H
	Open space	L, P

Sectors	A - Agriculture	C - Community services	E - Education sector	H - Health	L - Local government
	P - Planning	R - Recreation	RTA - RTA	T - Transport	

# Efficacy of Interventions to Increase Physical Activity among Adolescents

*Building Solutions for Preventing Childhood Obesity (Farrell & Chau, 2008)*

Physical activity in adolescents		
DO	School policy and environments to promote activity for boys and girls (gender-specific arrangements)	E
	Combine curriculum, environment and policy interventions with parental/ community involvement	E, R, L
	Teacher professional development on lesson structure, planning and delivery to promote activity	E
CONSIDER	Life-skills education related to activity in PDHPE	E
	Pedometers as part of walking promotion programs	E, L, H
	Brief counselling with tailored advice and feedback	PC, C, H
	Active transport & supporting infrastructure, incl. public transport	E, L, RTA
	Access to places and facilities for physical activity	L, R
GAP	Strategies to increase physical activity by decreasing sedentary behaviours	L, R, H
	Community-based interventions to increase leisure-time activity	L, R, H, C

Sectors	C - Community services	E - Education	H - Health	L - Local government
	R - Recreation	PC - Primary Health Care	T - Transport	P - Planning

# Recommendations for Reducing Screen Time

(AHKC, 2008)

In order to make definitive progress on this issue we must engage children and youth in the solutions, work collectively and consider various strategies:

## **PARENTS**

- Remember to role model physical activity and moderation in screen time use
- Plan family time as active time, creating as many opportunities for free play and outdoor play as possible
- Remove TVs/computers from children's bedrooms and set specific limits on TV, computer and video game time
- Consider screen time allotments for children and youth that are balanced with physical activity time
- Do not rely on "active" video games to get children active; use as a supplement only

## **PRACTITIONERS – EDUCATORS AND COMMUNITY LEADERS**

- Consider implementing a time management segment into the curriculum which includes lessons on reducing screen time and increasing physical activity during the after-school period
- Engage children and youth in initiatives that combine increased physical activity and active play with specific efforts to reduce screen time

## **POLICY-MAKERS AND INDUSTRY LEADERS**

- Ensure physical activity in children and youth is a top priority on policy agendas, providing sustainable investment, and the development, enhancement, implementation and monitoring of policies and initiatives
- Encourage campaigns that promote reduced screen time and increased active play

## **RESEARCHERS**

- Evaluate population level strategies to increase level of physical activities and reduce screen time sedentary behaviours
- Conduct research among families to determine if parents limiting their own screen time and/or implementing specific strategies, limits screen time in their children

## **PHYSICIANS AND HEALTH CARE PROVIDERS**

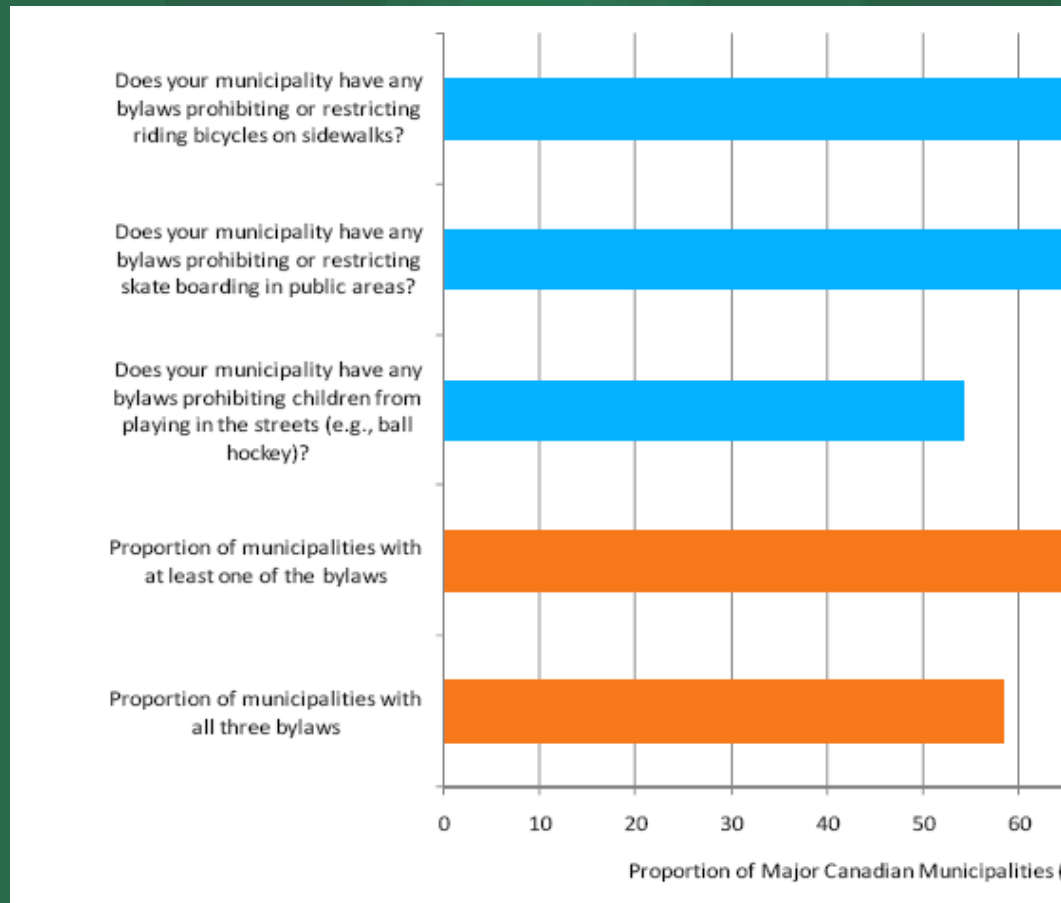
- Be proactive in talking to parents about healthy lifestyles as part of regular visits
- Clearly communicate guidelines for physical activity, and guidelines for screen time use to families

# How Canadian Legislators View Health Promotion (Ashley et al., 2001)

	NDP	Lib	PC	Reform	All
<b>With regard to promoting healthy lifestyles ...</b>	%	%	%	%	%
Government has a major role	71	59	34	25	53
Responsibility of individuals	5	11	19	48	14
Responsibility of both gov. & ind.	16	22	27	15	22
<b>Government has a major role in...</b>					
Discouraging youth from starting smoking	74	69	47	38	62
Preventing alcohol abuse	66	53	38	18	49
Encouraging people to quit smoking	57	53	31	15	46
Encouraging people to be physically active	36	35	24	10	31
Encouraging healthy eating habits	34	36	19	8	30
<b>Programs and policies to encourage people to adopt healthy behaviours...</b>					
Will save money in the long run	82	75	61	40	71
Will not change most people's behaviour	4	14	24	42	16



# Proportion of Major Canadian Municipalities that Have By-laws that Discourage Physical Activity and Free Play among Children (AHKC, 2008)



# Thanks for Your Attention

Funding provided by the Canadian Population Health Initiative (CPHI),  
Canadian Institute for Health Information (CIHI)

**Warning:** Sitting, watching, and listening to this presentation may be hazardous to your health. Please go for a walk to ward off the negative side effects of being sedentary.