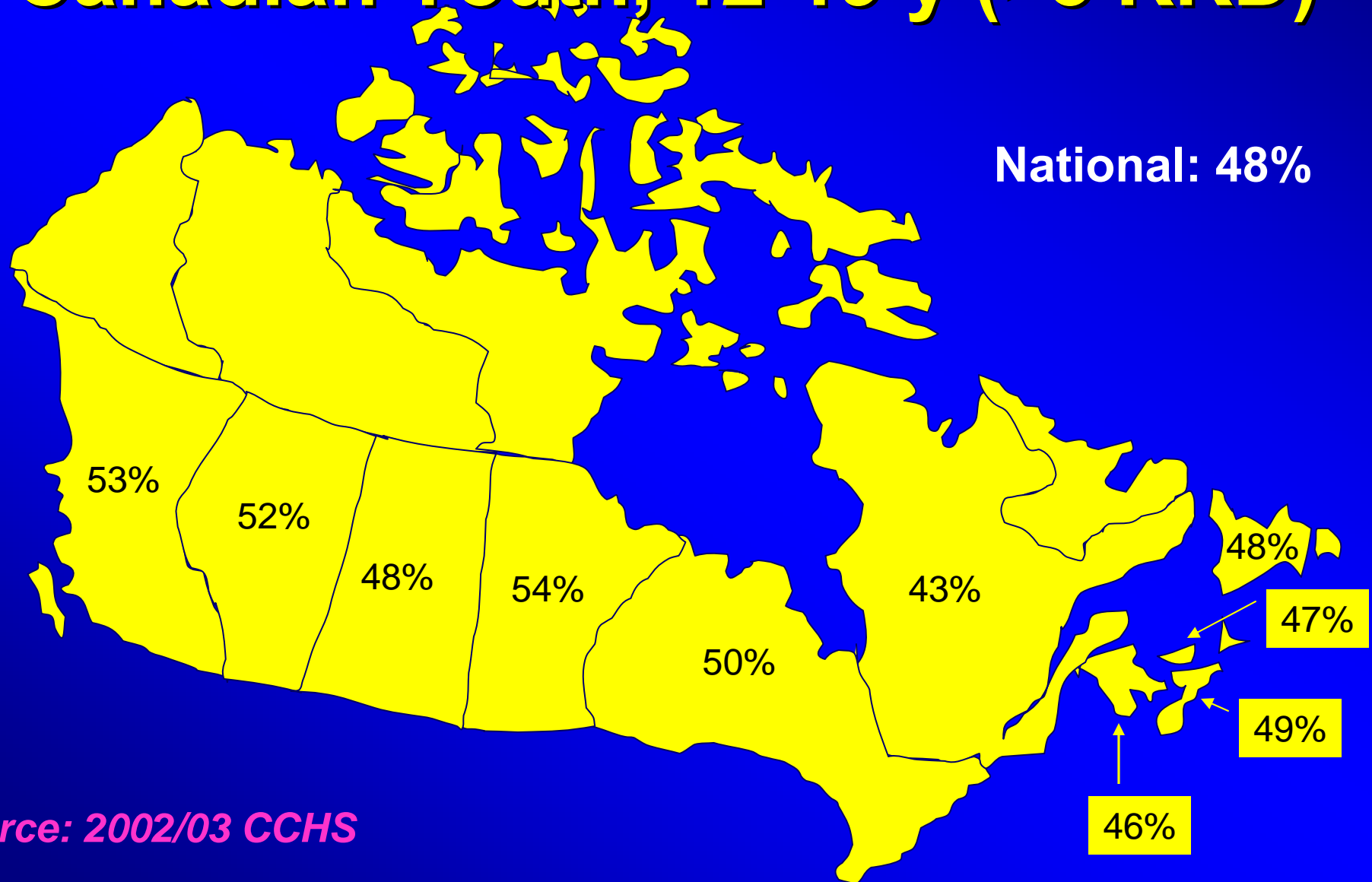


# **MOVING FORWARD BY LOOKING BACK:**

***lessons learned from long-lost lifestyles***

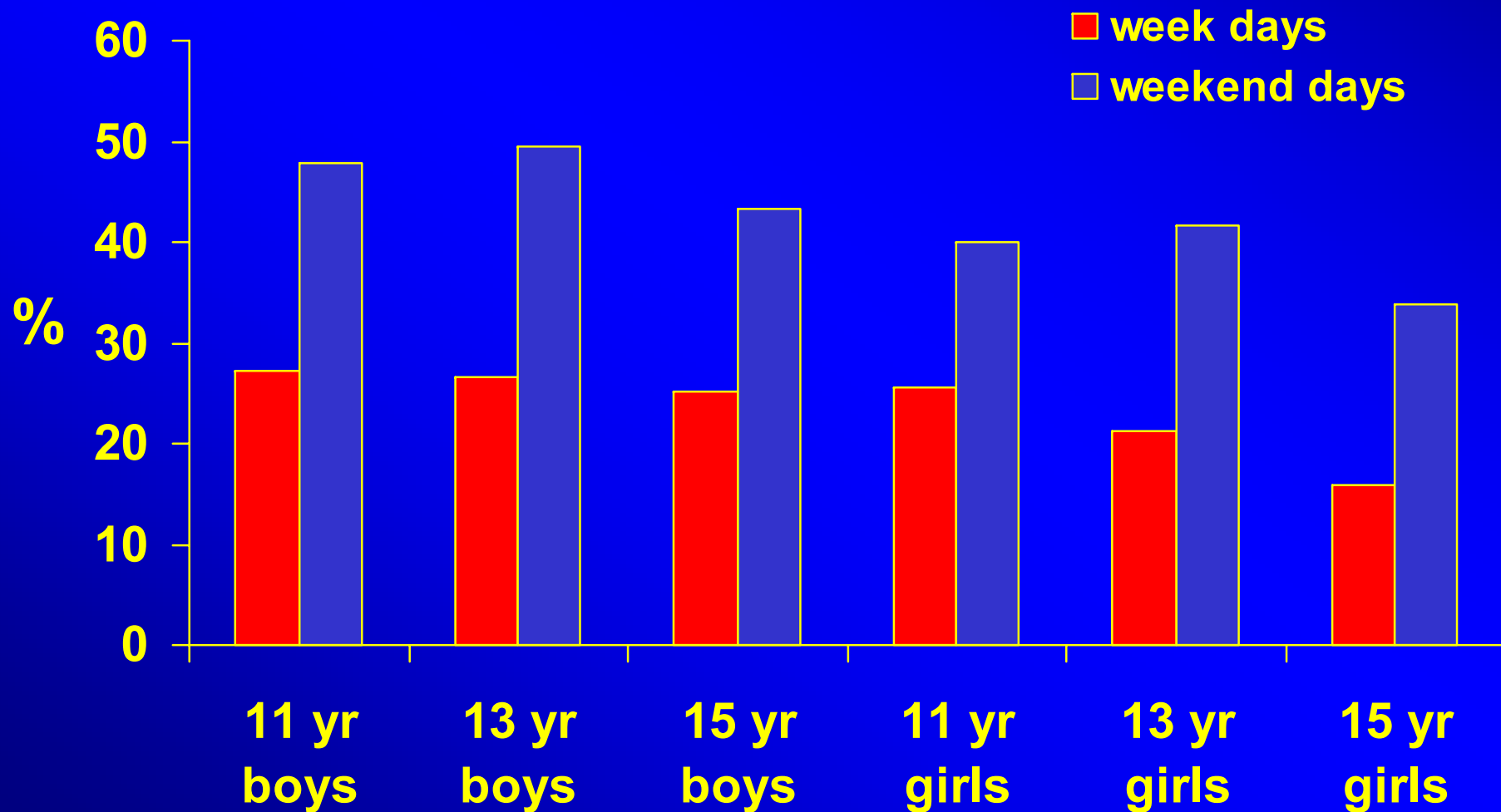
**Dr. Mark Tremblay, Ph.D., FACSM  
Chair, Active Healthy Kids Canada**

# Current Physical Activity Levels in Canadian Youth, 12-19 y (>3 KKD)



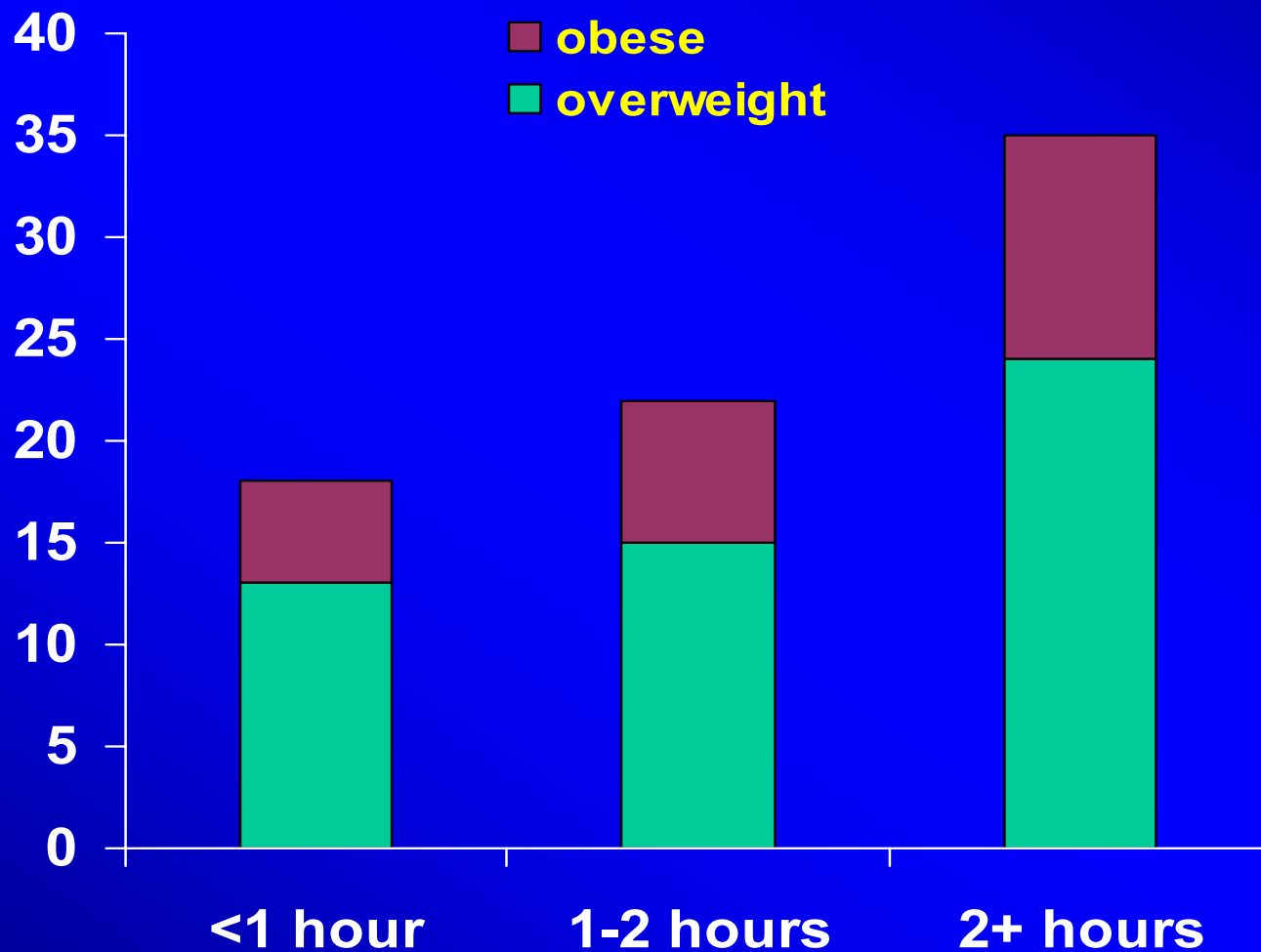
Source: 2002/03 CCHS

# YOUTH WATCHING T.V. ( $\geq 4$ hours per day)



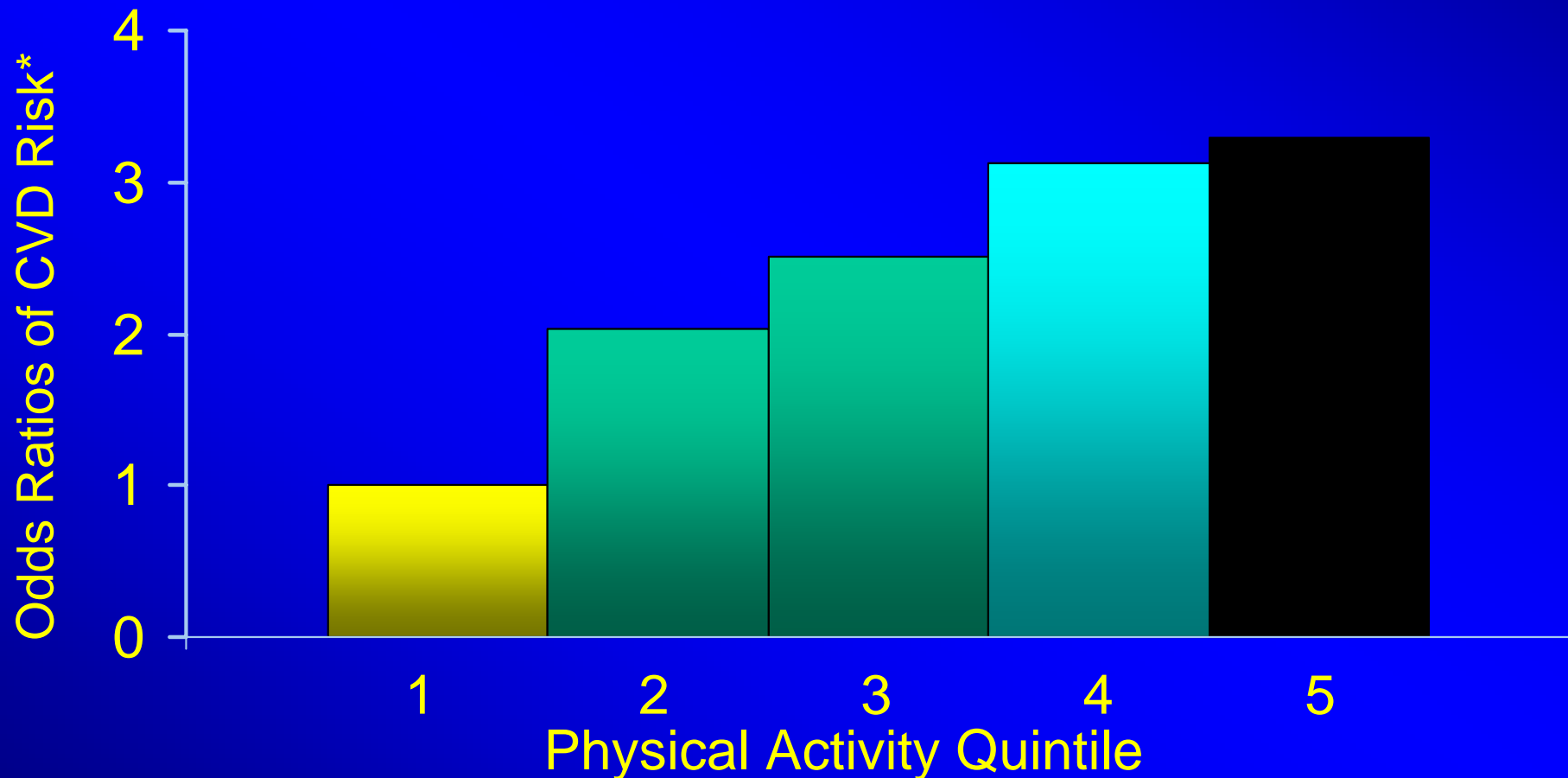
*Young People's Health in Context: HBSC. WHO, 2004*

# PREVALENCE OF OVERWEIGHT AND OBESITY: Effects of screen-time Canadian children (ages 2-17)



*Shields. Statistics Canada, 2005*

# Physical Activity and Clustered Cardiovascular Risk in Children



\*Composite risk factor score: SBP, triglyceride, TC/HDL, insulin resistance, SO4S, aerobic fitness

*Andersen et al. Lancet 368:299-304, 2006.*

# NATURE-DEFICIT DISORDER

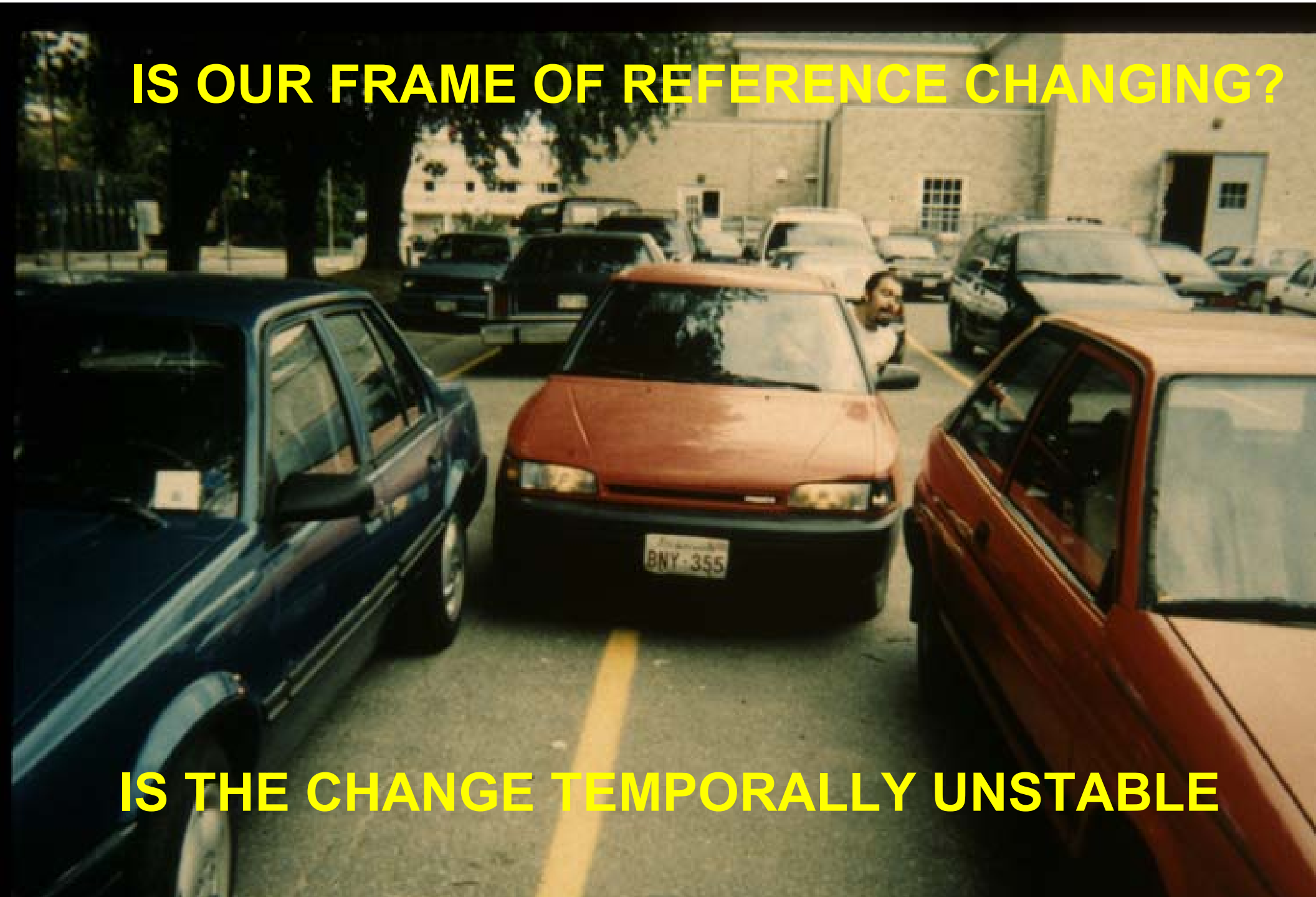
**“I like to play indoors better  
'cause that's where all the  
electrical outlets are.”**

**A Fourth-Grader in San Diego**

***From R. Louv. Last Child in the Woods. 2005***

**IS OUR FRAME OF REFERENCE CHANGING?**

**IS THE CHANGE TEMPORALLY UNSTABLE**



TO FRAME OUR S-



"I NEVER SEEM TO FIND TIME TO EXERCISE."

THINK YOUR LIFE IS TOO BUSY TO EXERCISE?

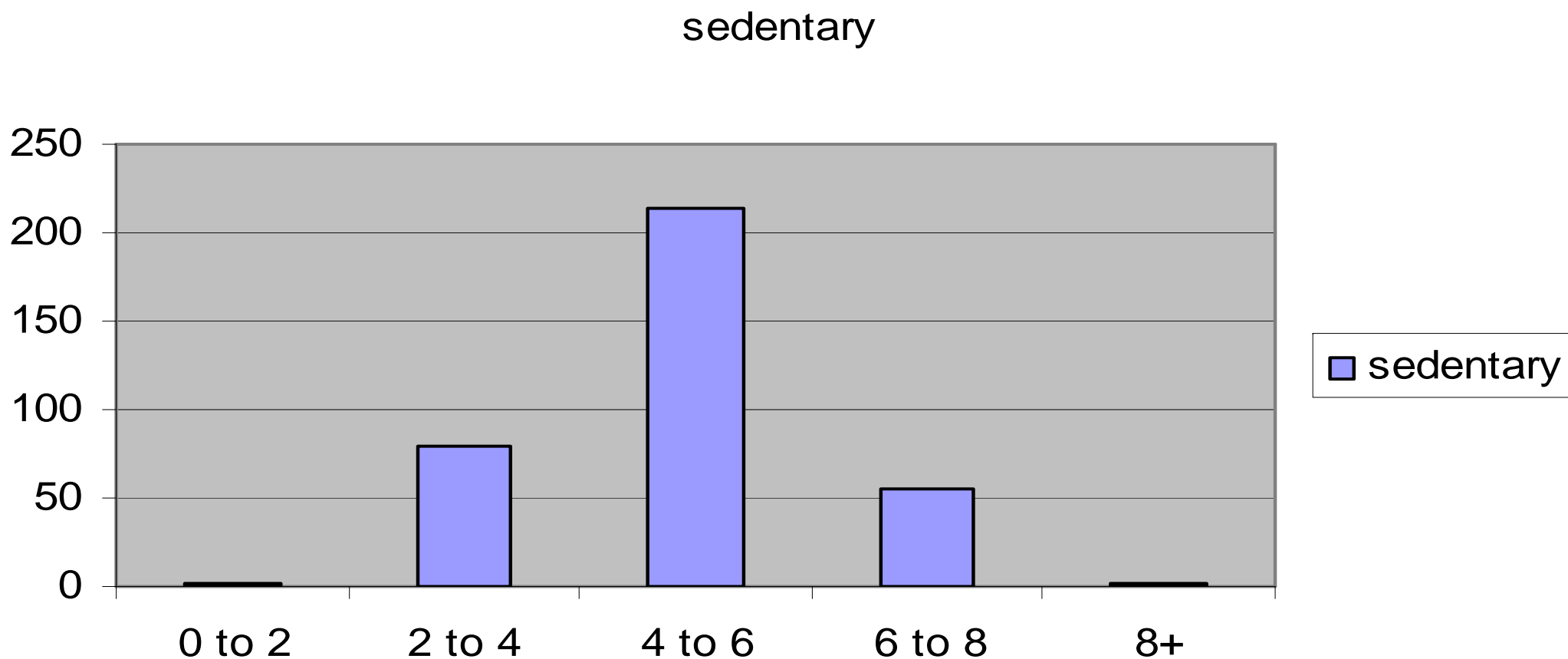
THE REGION OF PEEL HAS A SOLUTION FOR YOU. WE'VE CREATED A NEW PROGRAM THAT FITS INTO YOUR SCHEDULE. IT'S CALLED PEEL ACTIVE. IT'S THE ONLY PROGRAM OF ITS KIND IN THE WORLD.

Region of Peel  
Active for you  
Peel Active

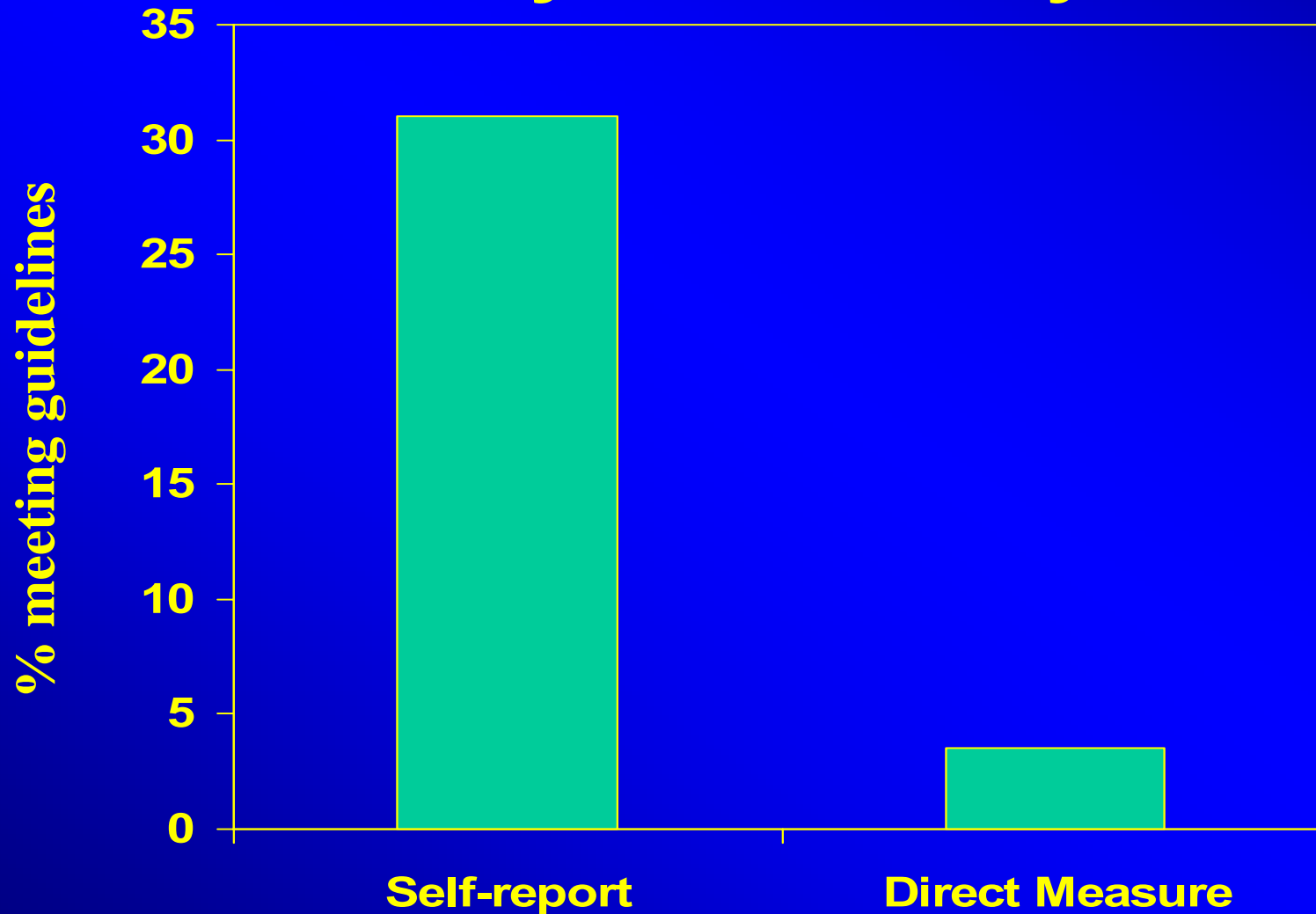
~GZ-GZIC CZAZCZ MZMZMZ



# DISTRIBUTION OF SEDENTARY BEHAVIOUR DURATION (hours) OF CHILDREN 8-13 yrs

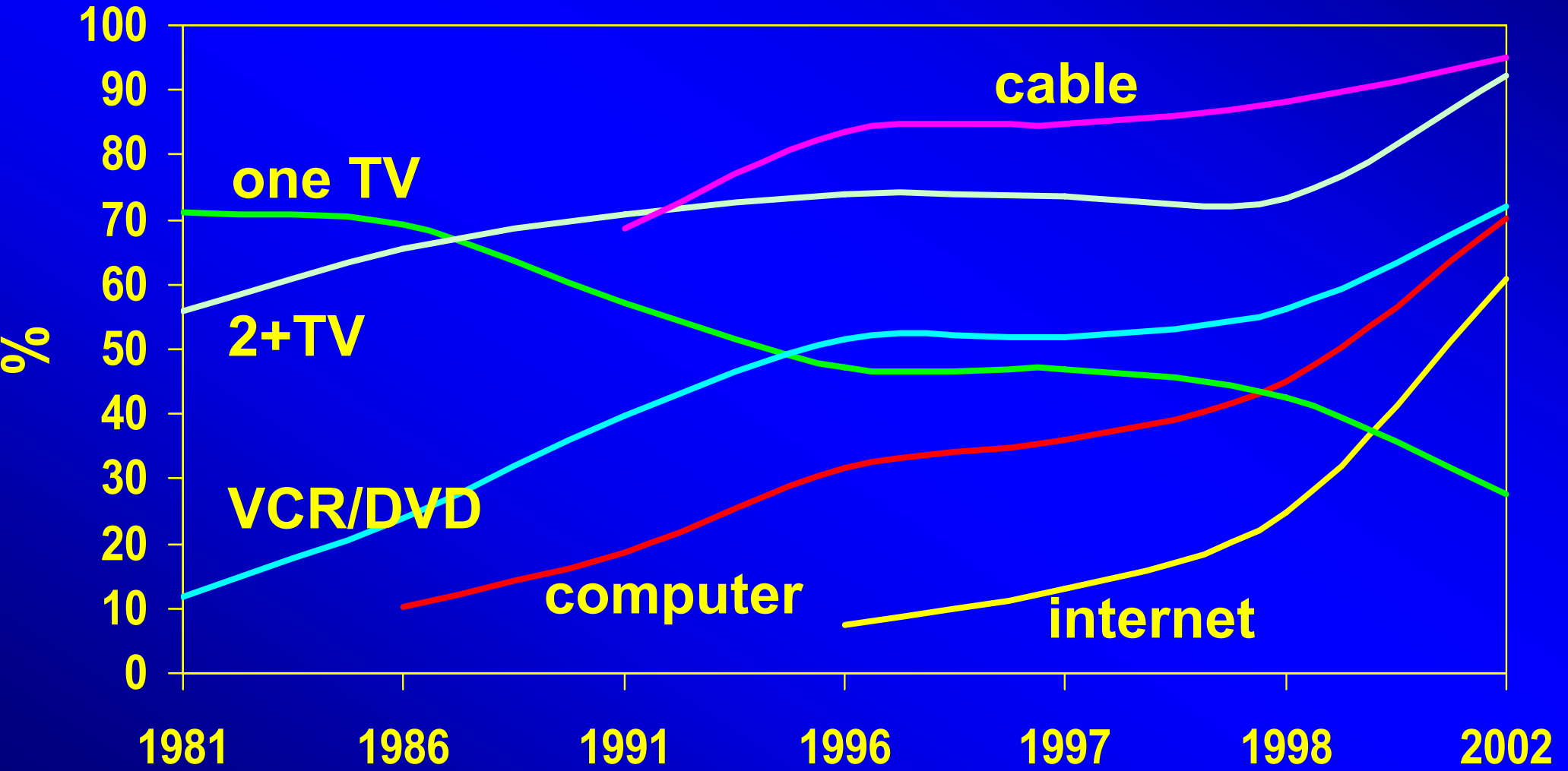


# Is Our Frame of Reference Changing? Direct Measure vs Self-report Physical Activity



*NHANES and BRFSS*

# Trends in Households with Entertainment Equipment that Promotes Sedentary Behaviour



Statistics Canada, 2001; 2004

# MACLEAN'S

CANADA'S WEEKLY NEWSMAGAZINE | www.macleans.ca

NOVEMBER 22 2004

## Stressed out!

Preschool tutoring.  
Music lessons. Sports.  
Tons of homework.  
Why some parents—  
and kids—have  
had enough.



“Hyper-parenting”

“Are we are falling  
prey to the fantasy  
that we can engineer  
the perfect child?”

**“Ironically the childhood obesity epidemic has coincided with a dramatic increase in children’s organized sport. This does not mean that organized sports contribute to obesity, but that an over-scheduled, over-organized childhood may”**

*R. Louv. Last Child in the Woods. (p.16) 2005*

**“Recreation has gone from spontaneous to organized and regimented activity: parents exercise at the gym while the young play soccer and hockey in leagues with schedules rather than in the backyard or the street in front. More time is often spent preparing for and getting there rather than on the activity itself.”**

*Friedman. Room For Thought. 2005*

VARIABLE	ODDS OF OBESITY	ODDS OF OVERWEIGHT
Organized Sport	NS	NS
Unorganized Sport	0.58**	0.77**
Art/Music/Dance Clubs	NS	0.88*
Video Games	NS	NS
TV 2-3 hrs/day	NS	1.19**
TV 3-5 hrs/day	NS	1.15*
Low SES	1.51**	1.36**
High SES	NS	1.18*
Single Parent	0.60**	0.76**
	1.36**	NS

# **A LITTLE MEANS A LOT!**

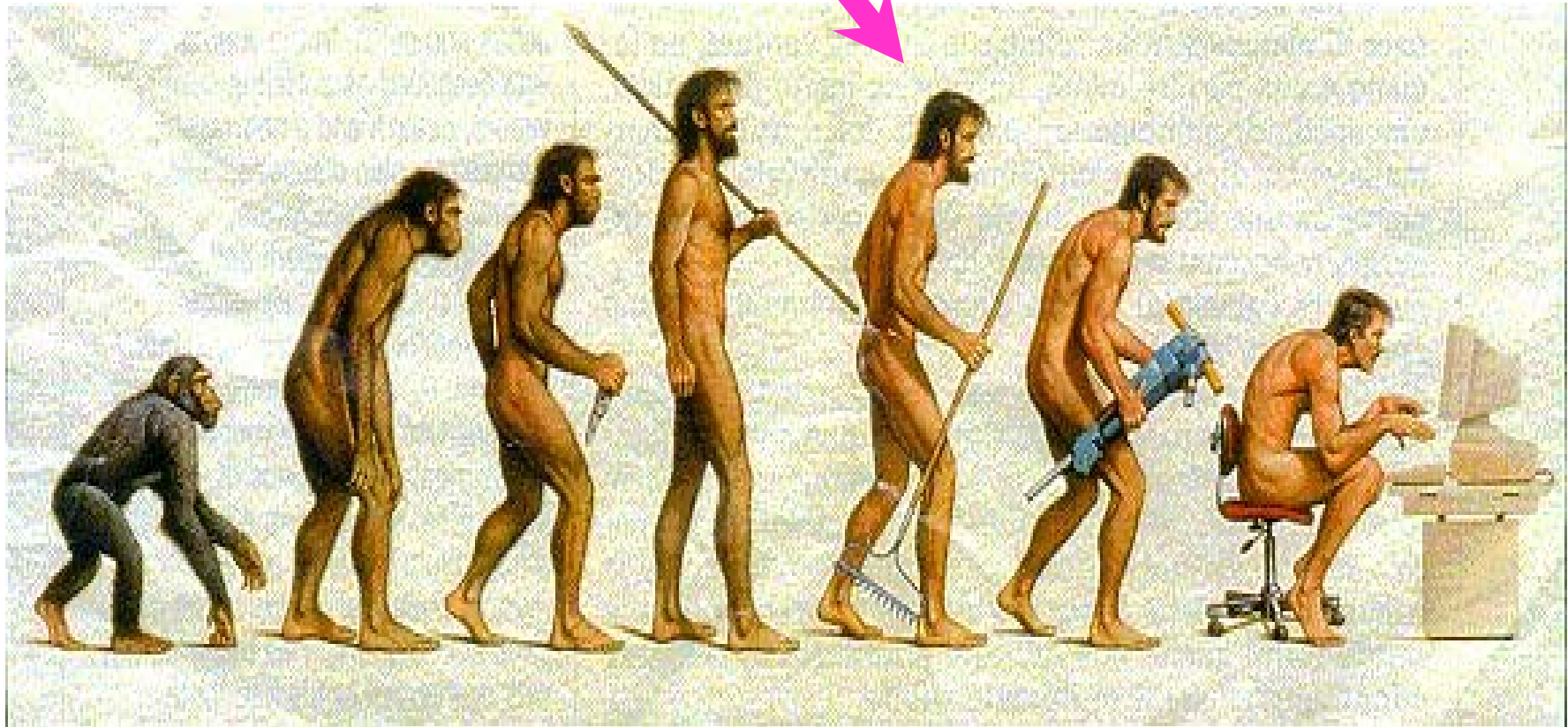
## ***THE CASE OF THE TV REMOTE***

- **Average age 78 years**
- **20 years x 52 wks x 25 hrs/wk = 26,000 hrs of TV**
- **58 years x 52 wks x 12.5 hrs/wk = 37,700 hrs of TV**
- **$(26,000 + 37,700) \times 5 \text{ CC/hr} = 318,500 \text{ CC in lifetime}$**
- **$318,500 \times 0.5 \text{ kcal / CC} = 159,250 \text{ kcals}$**
- **$159,250 / 3,500 \text{ kcal / lb of fat}$**
- **45.5 pounds of fat!!!**



**What about  
“incidental movement”  
or  
“lifestyle embedded activity”  
or  
NEAT?**

# A LOOK AT THE PAST



# LIFESTYLE

Traditional

Contemporary

Commuting



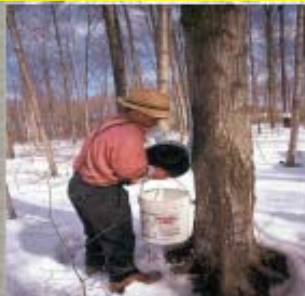
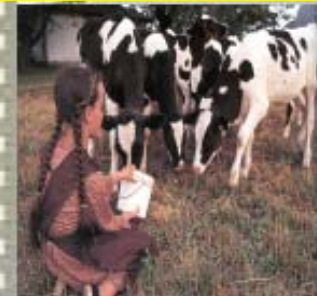
Chores



Sports



Free Time



# RESULTS

## Directly Measured Physical Activity

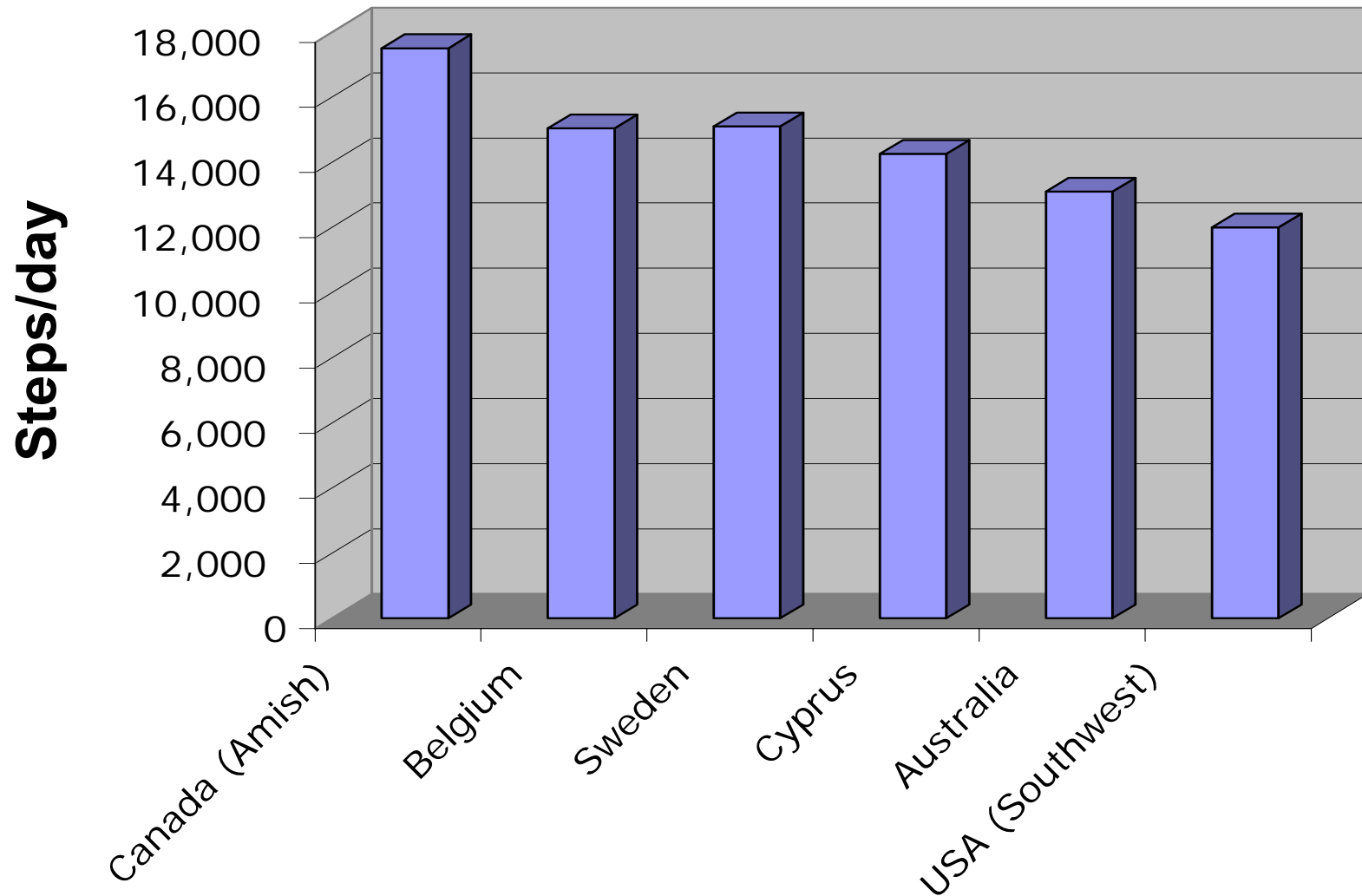
- Old Order Mennonites
  - ↑ average movement counts per day
  - ↑ minutes of moderate physical activity (3-6 METS)
  - ↑ minutes of MVPA (3+ METS)
  - ↑ total daily energy expenditure

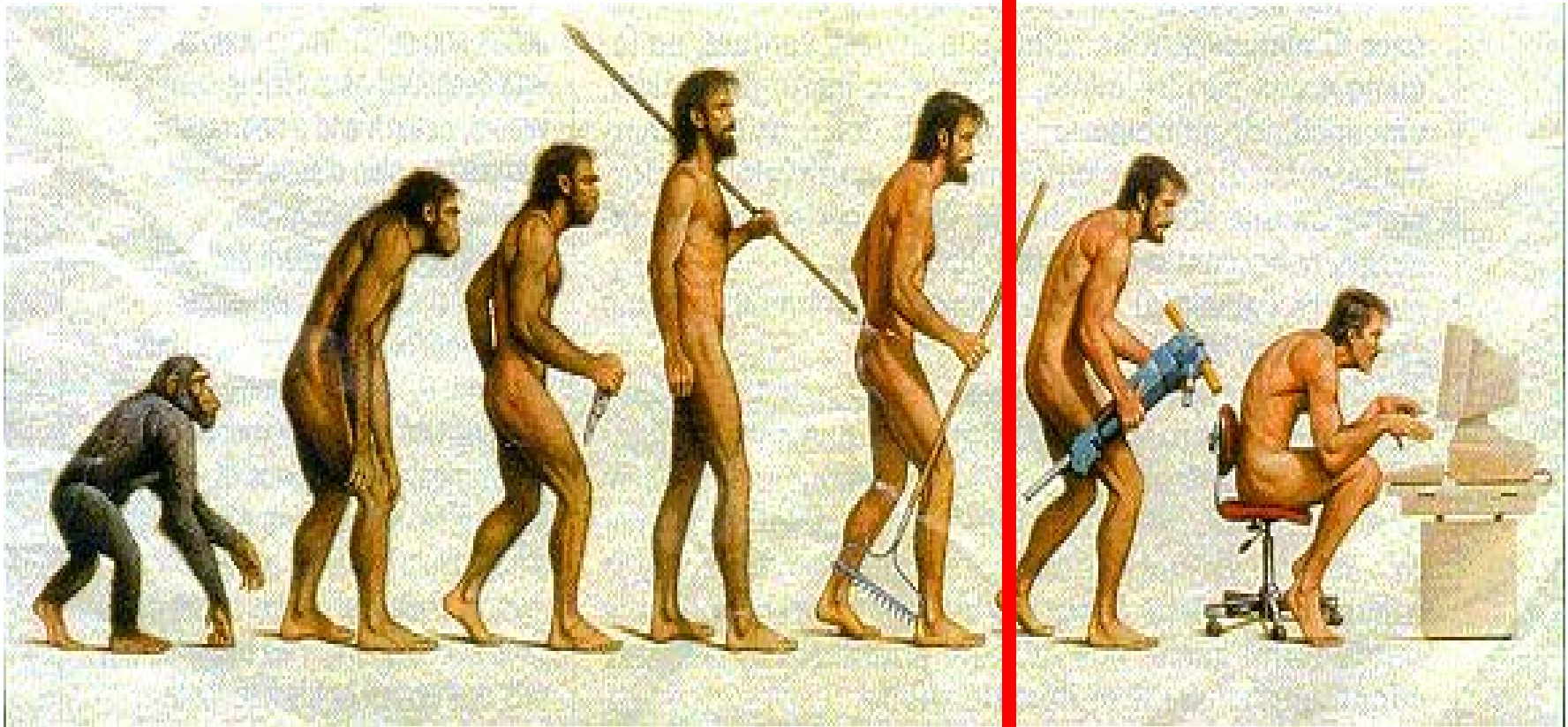
*Tremblay et al., MSSE, 2005*

**Despite having no physical education, no institutionalized sport, and low socioeconomic status, Old Order Mennonite children are more active than children living a contemporary Canadian lifestyle.**

*Tremblay et al., MSSE, 2005*

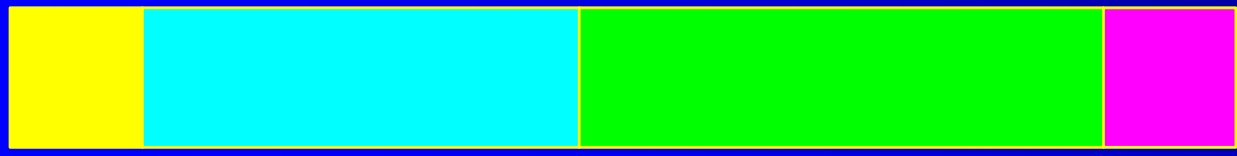
# Steps/day in children (ages 6-12); average of 4 weekdays



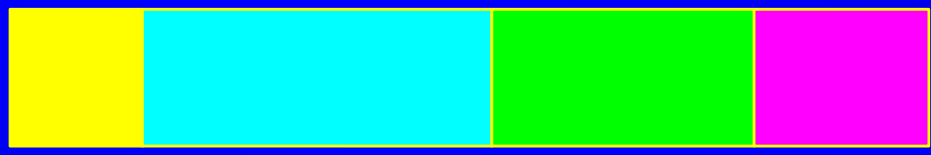


■ school / OPA   ■ domestic   ■ transport   ■ leisure

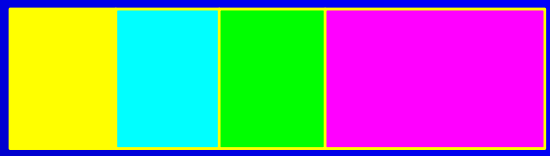
Kenya 2000



Canada 1900



Canada 2000



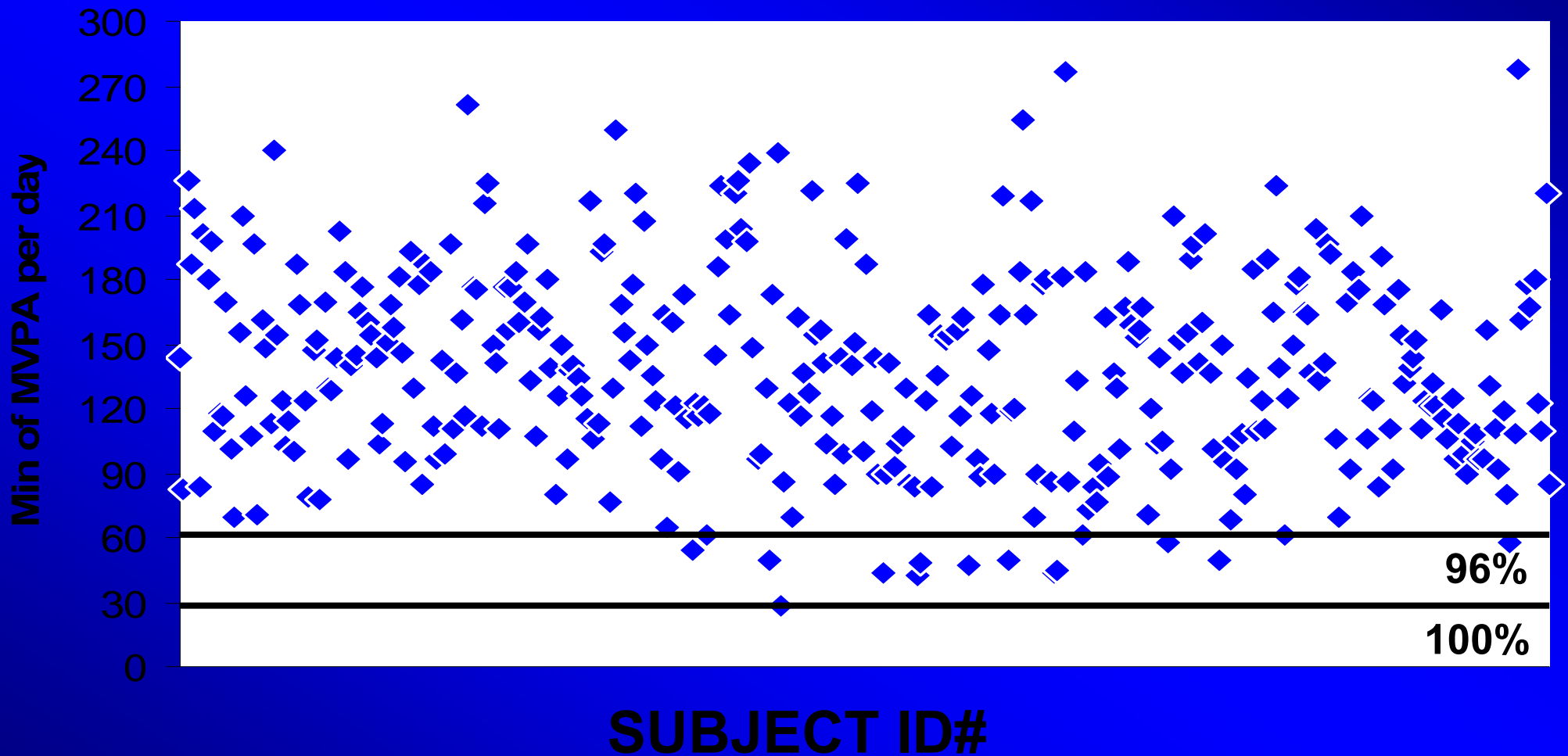
**Energy Expenditure (kcal)**



# PHYSICAL ACTIVITY GUIDELINES

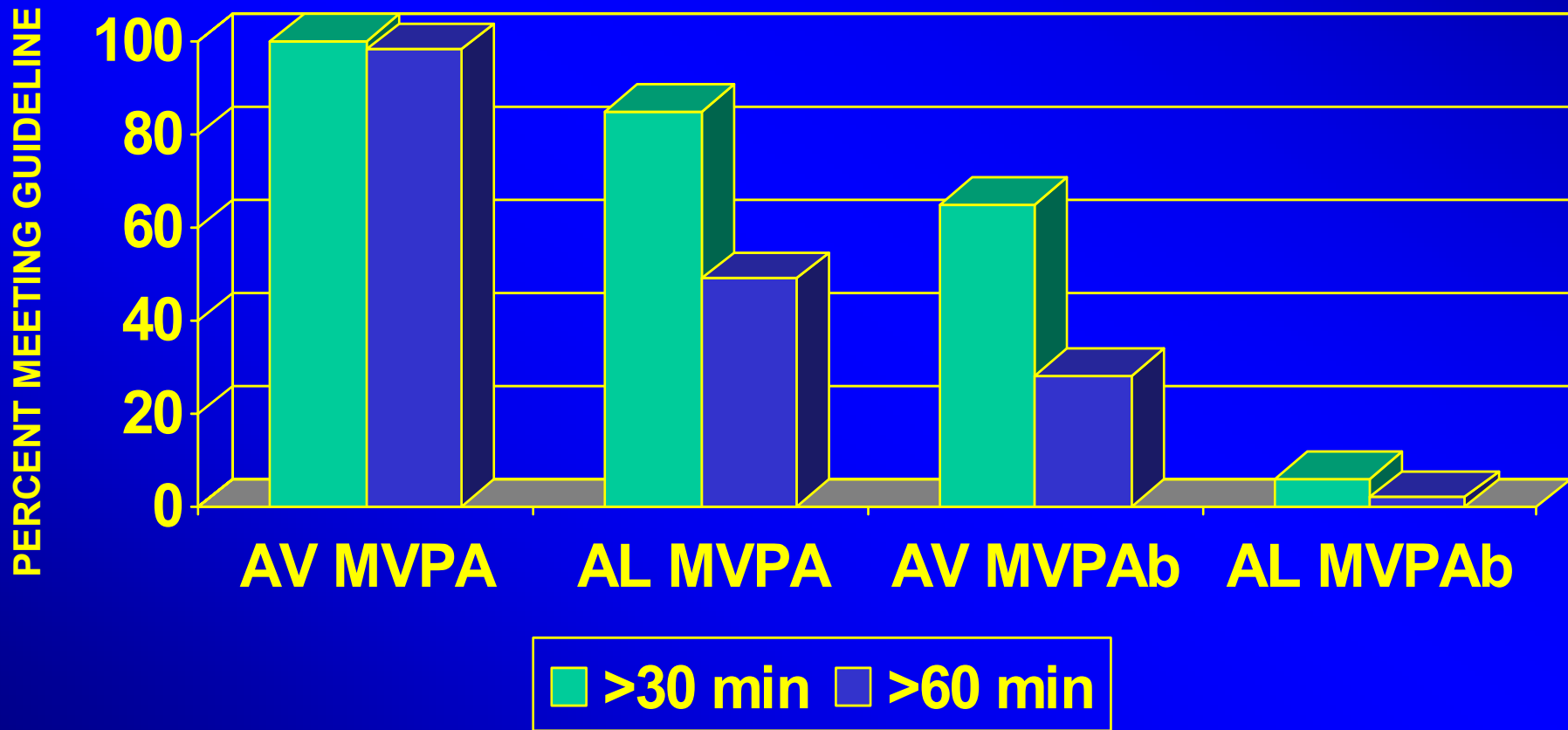
GROUP	GUIDELINE
ACSM, 1988	20-30 min vigorous each day (C+Y)
Int. Consensus, 1994	active daily, 3x20 min MVPA/wk (Y)
NASPE, 1994	60 min from 3 or more bouts daily
HEA, 1998	1 hr/day mod activity (1/2 if inactive) 2x/wk strength, flexibility, bone
Health Canada, 2002	↑ activity 90 min beyond current ↓ inactivity 90 min beyond current

# PROPORTION OF CHILDREN MEETING GUIDELINES



*Tremblay. CPHI Report, 2003*

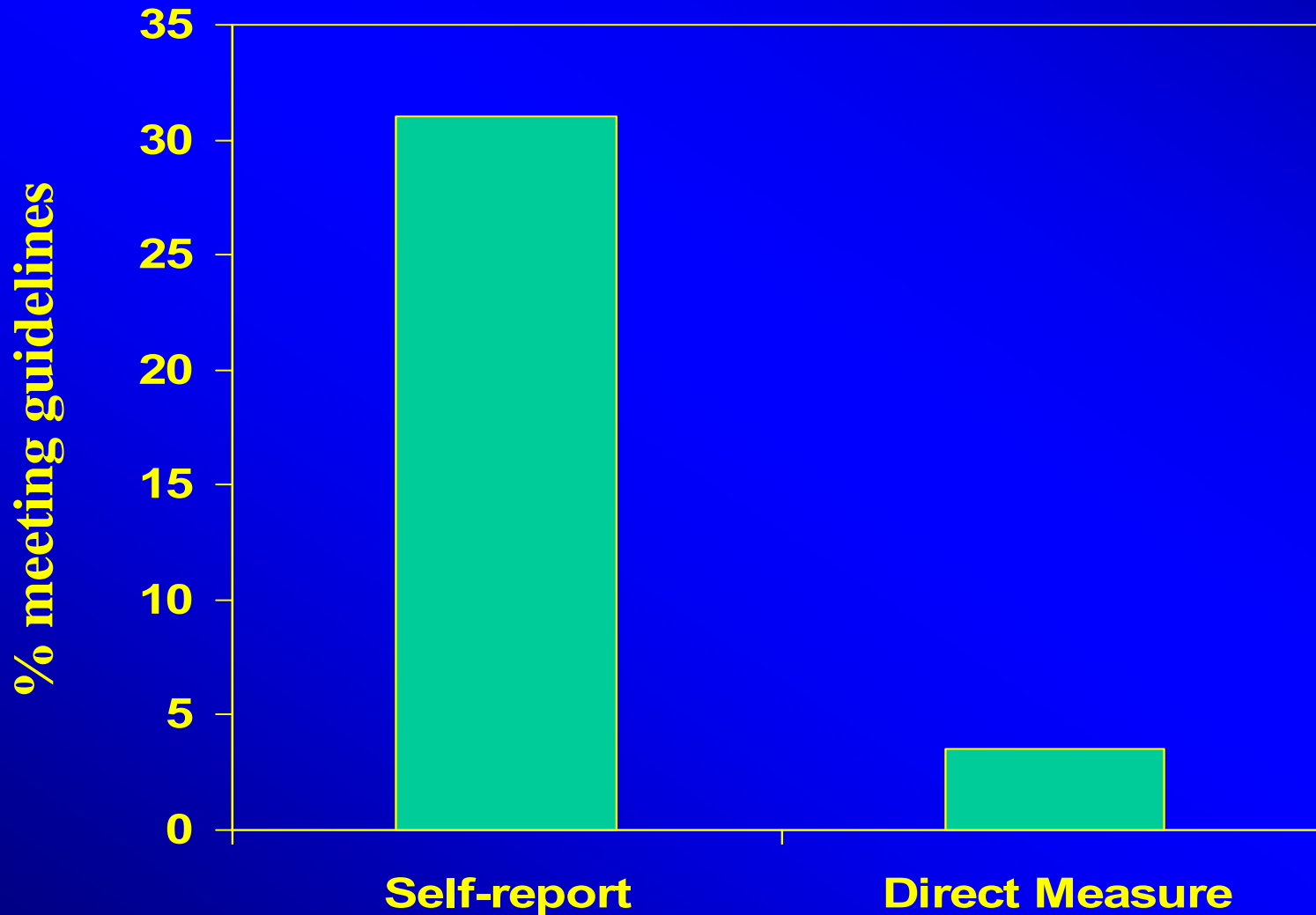
# USK CHILDREN MEETING GUIDELINES



# CHMS 2007-08



# Direct Measure vs Self-report Physical Activity



*NHANES and BRFSS*

# **OUR CHALLENGE!**

- **Reduce time reference from an hour to a minute**
- **Reduce activity reference from 200 kcal to 2 kcal**
- **Reduce exercise ref to a few muscle contractions**
- **Reduce autodependency**
- **Reduce financial dependency**
- **Reduce reward (food, awards, prizes) dependency**
- **Reduce institutional approaches and dependencies**
- **Reduce nature-deficit disorder**
- **Reduce screen time**
- **Reduce chair time**
- **Get back to the basics**