

# Can You Keep Your Health Out of Jeopardy?

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Creating Active  
Communities

Jefferson County,  
Watertown NY  
Sep. 2006



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# Pedometer Guess?



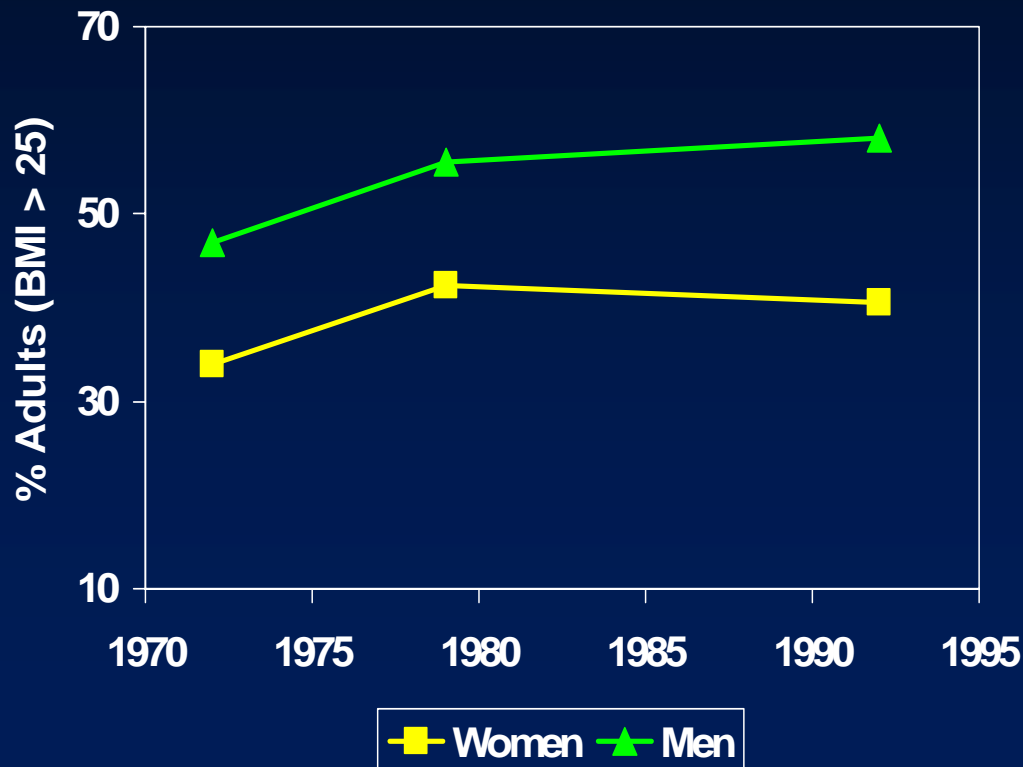
# My Mother the Epidemiologist . . .

**100**

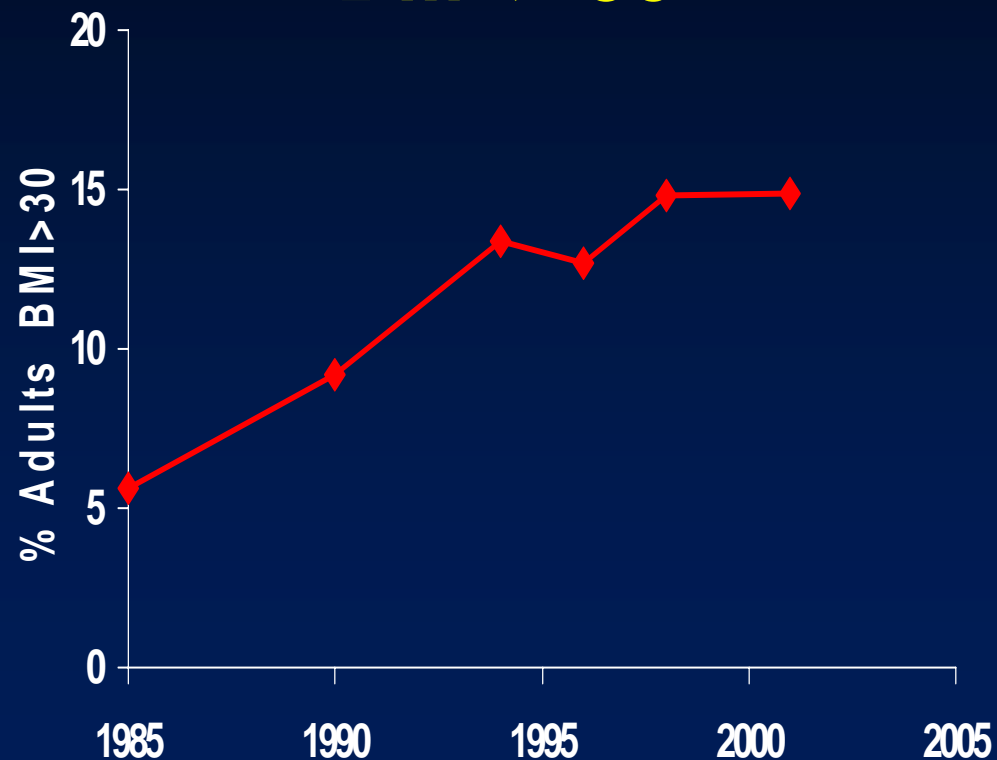
# Canada's Looming "Obesity Epidemic"

Can. Inst. for Health Information, Aug. 2004; [www.cihi.ca](http://www.cihi.ca)

## BMI > 25



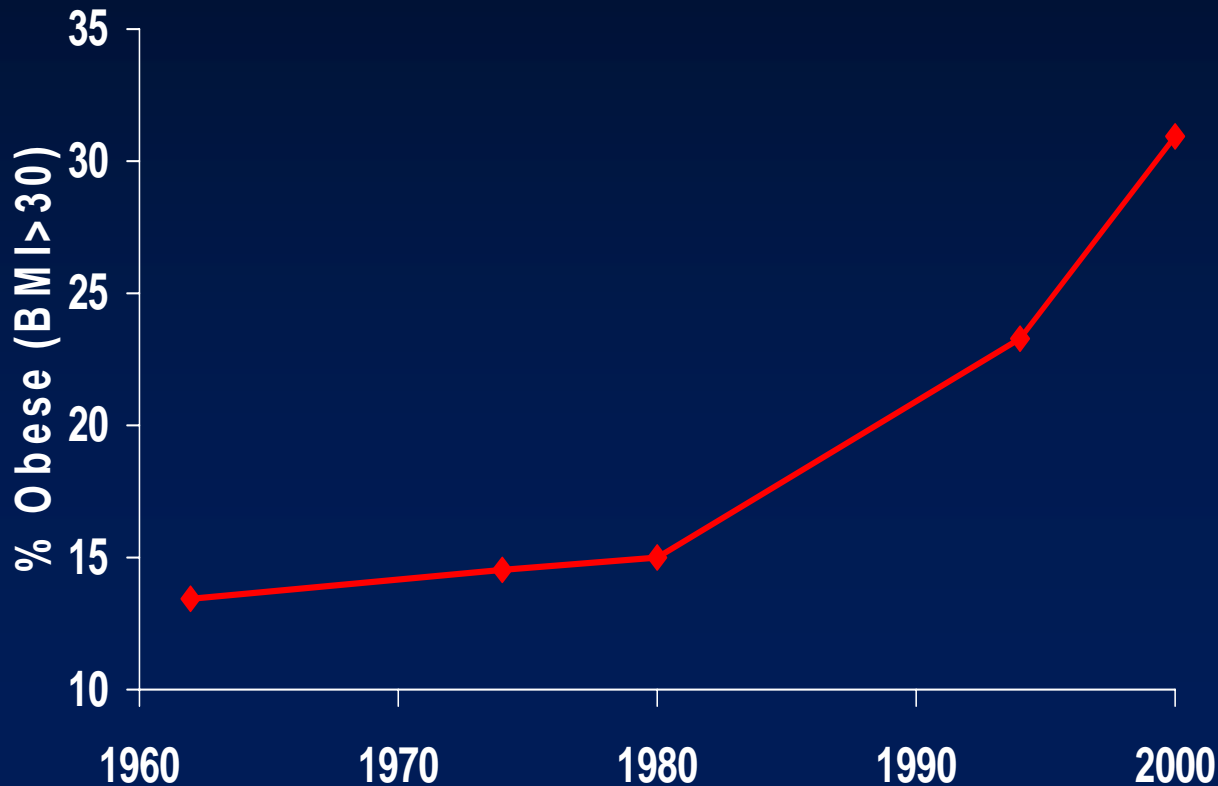
## BMI > 30



# First sign of the chronic disease apocalypse?

## US “Obesity Epidemic”

Ogden et. al. (JAMA 288, 14; Oct. 2002)





# Obesity Epidemic?



It's an epidemic of **physical inactivity** and poor nutrition!



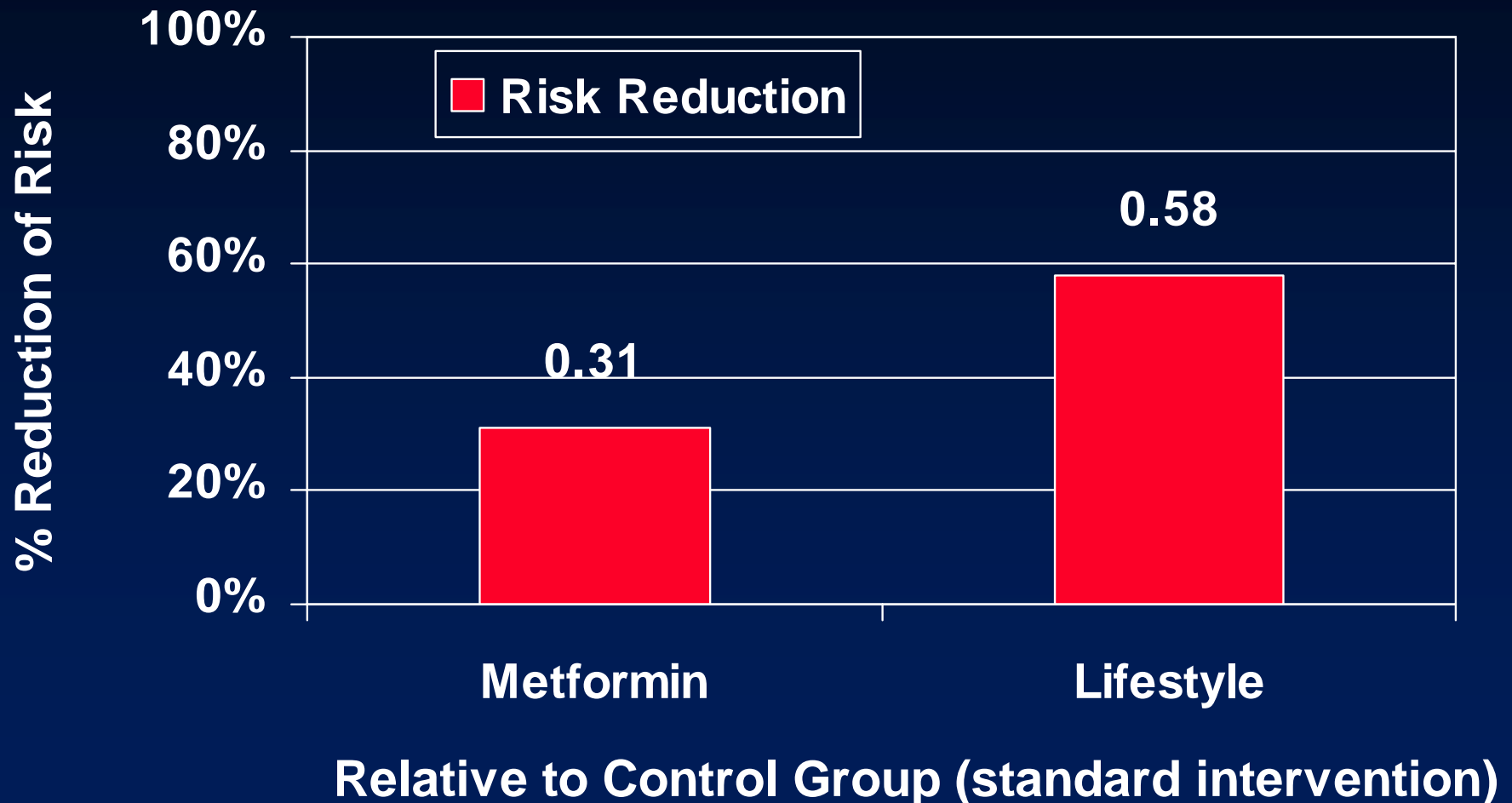
# Diabetes Prevention Program (DPP)

Compared three treatments for nationwide cohort (3,000+) at risk for developing diabetes (elevated fasting glucose).

1. Control: Standard exercise and nutrition counseling; placebo.
2. Standard plus drug treatment: Metformin
3. Intensive lifestyle change: Nutritional training, **150 min./week physical activity.**

# Diabetes Risk Reduction

(Diabetes Prevention Program; NEJM, April 2002)







**“I get all the  
physical  
activity I  
need right  
here!  
Yee-haa!”**

**200**

# ACSM Fitness Guidelines

American College of Sports Medicine, 2000



- Aerobic activity 3 to 5 days/week.
- **20 to 60 minutes**, at 60% to 90% of maximum heart rate.
- Resistance training.
- Routine flexibility maintenance.

# Health Canada & US Surgeon General's Health Recommendations (also World Health Organization)

- **30 minutes** of moderate physical activity.
- Most or all days of the week.
- Can be broken up.
- Reduced risk for CVD, diabetes, osteoporosis, obesity, clinical depression, some forms of cancer.



# Surgeon General's 1996 Health Recommendation

- **30 minutes** of moderate intensity physical activity.
- Most or all days of the week.
- Can be broken up.
- Reduced risk for CVD, diabetes, osteoporosis, obesity, clinical depression, some forms of cancer.





# **Institute of Medicine 2002/04 & US Dietary Guidelines 2005 Weight Loss Recommendation**

- **Nutritionally balanced diet  
low in saturated fats, high in  
whole foods and fiber.**
- **60-90 minutes of activity  
most days of the week.**

# The Activity Diamond



ACSM fitness recommendation, 1978-2000.

USDA Dietary Guidelines, 2005.

Surgeon General's Report on Physical Activity & Health, 1996.

# The Activity Diamond

**Fitness:**  
**20+ min.**  
**hard, 3+ days.**

**Weight loss:**  
**45-90 min., 5+ days.**

**Health:**  
**30 min. a day.**

**But which  
physical  
activities  
should we  
promote?**



# Does your exercise . . .

- Cost more than \$100 to get started?
- Cost more than \$10 each time?
- Need special equipment or instruction?
- Require you to go somewhere special?
- Need other people to take part?
- Not provide much enjoyment?
- Make it hard to do it at work?
- Have a high risk of injury?

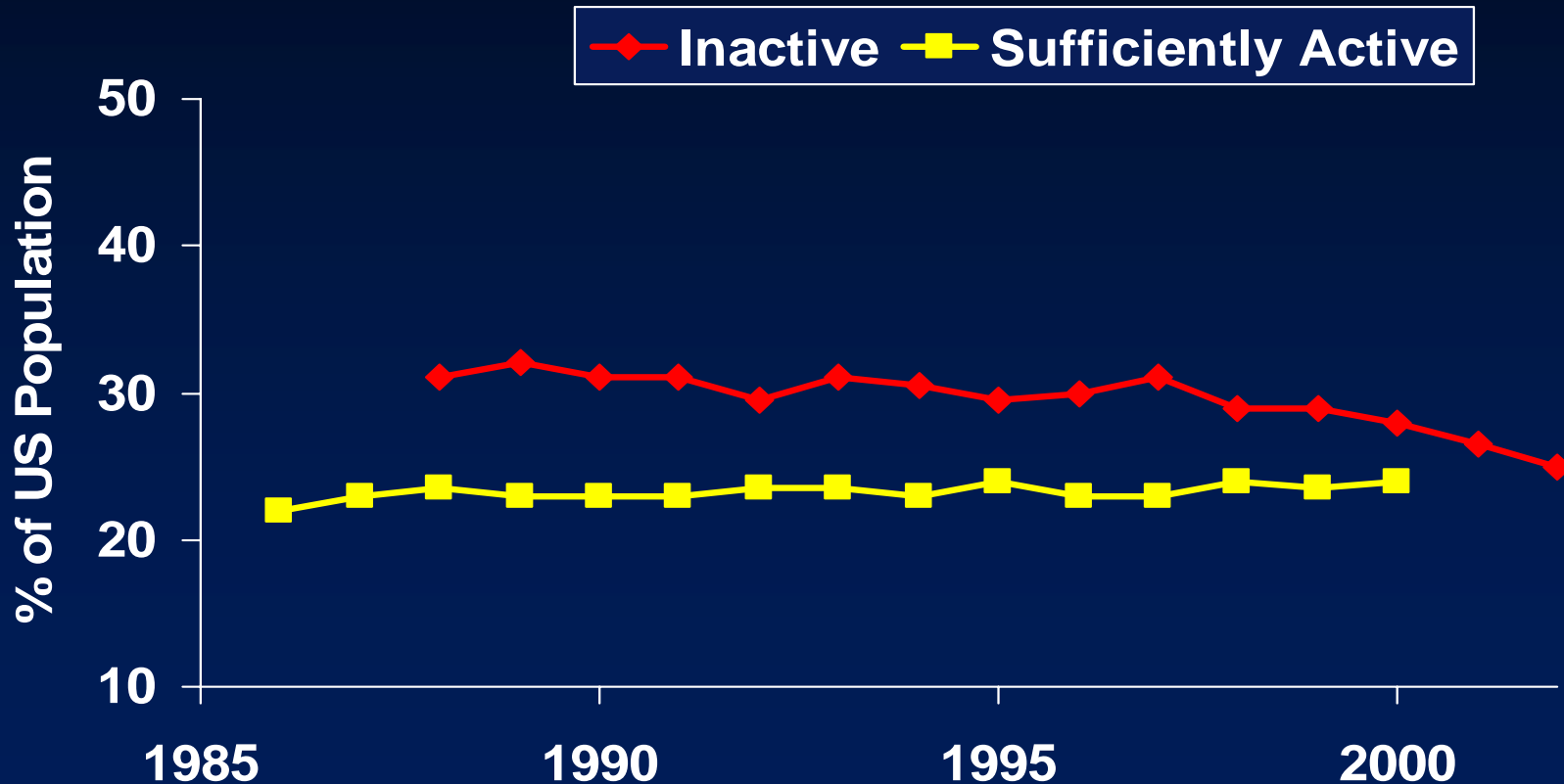
# The Activity Diamond



**300**

# Physical Activity in the US

(MMWR 50 (09); 166-9; Mar. 9, 2001)





**My somewhat  
unique  
perspective . . .**





# The Bad News:

## Canadian Physical

## Activity Rates

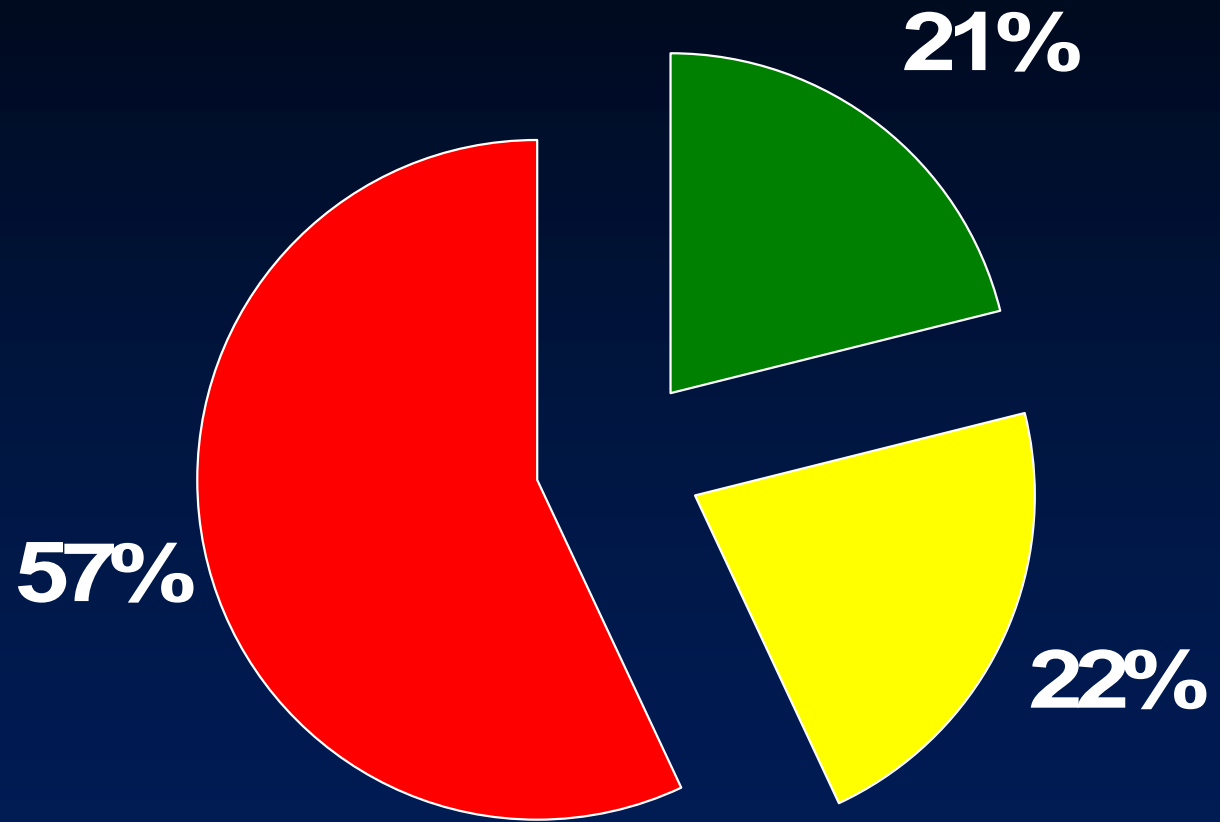
(Nat'l Population Health Survey; Health Canada)

**Sufficient:** 30 min.,  
5 days/wk.

**Sporadic:** Some  
weekly activity.

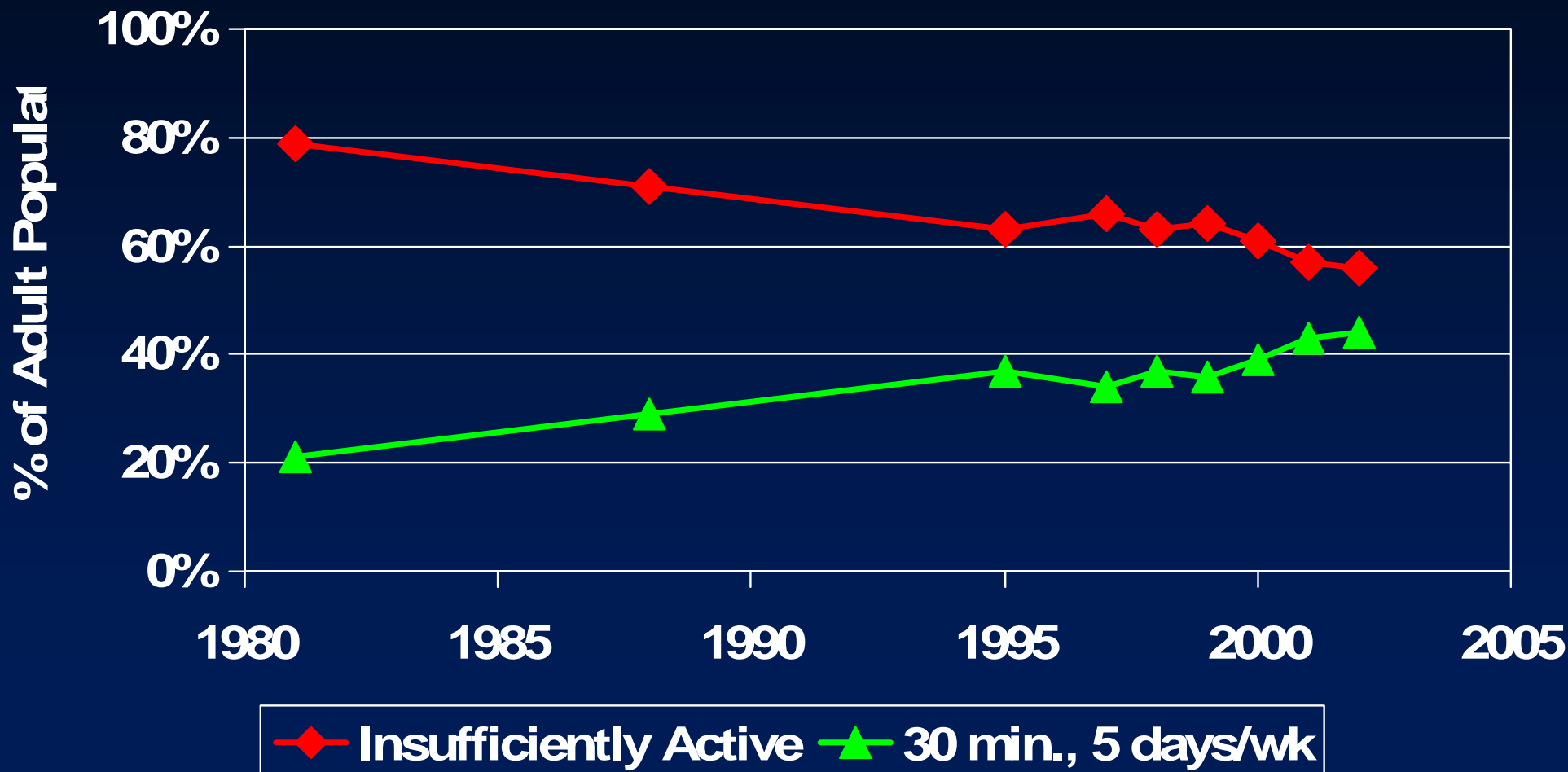
**Inactive:** Sedentary!

■ Sufficient ■ Sporadic ■ Inactive



# Physical Activity Rates in Canada

Canadian Fitness and Lifestyle Institute; [www.cflri.ca](http://www.cflri.ca)



# Traditional Activity Promotion Limitations:

Sports leagues meet  
limited days, reach more  
motivated employees.



Gym serves the active  
10%-20% of employee  
population.





# Calculate the cost of inactivity at:

[www.activelivingleadership.org](http://www.activelivingleadership.org)

**E.g.:** Typical 200 employee company in Washington DC. Annual costs of physical inactivity:

• <b>Medical care:</b>	\$42,459
• <b>Worker's comp.:</b>	\$1,586
• <b>Lost productivity:</b>	<u>\$1,134,360</u>
• <b>Total:</b>	\$1,178,405

**400**



**But it's not just about  
WEIGHT LOSS!**

# The benefits of physical activity.

## Within days:

- Reduced stress levels.
- Reduced blood pressure.
- Better sleep.
- Feeling of taking control, doing something for yourself.



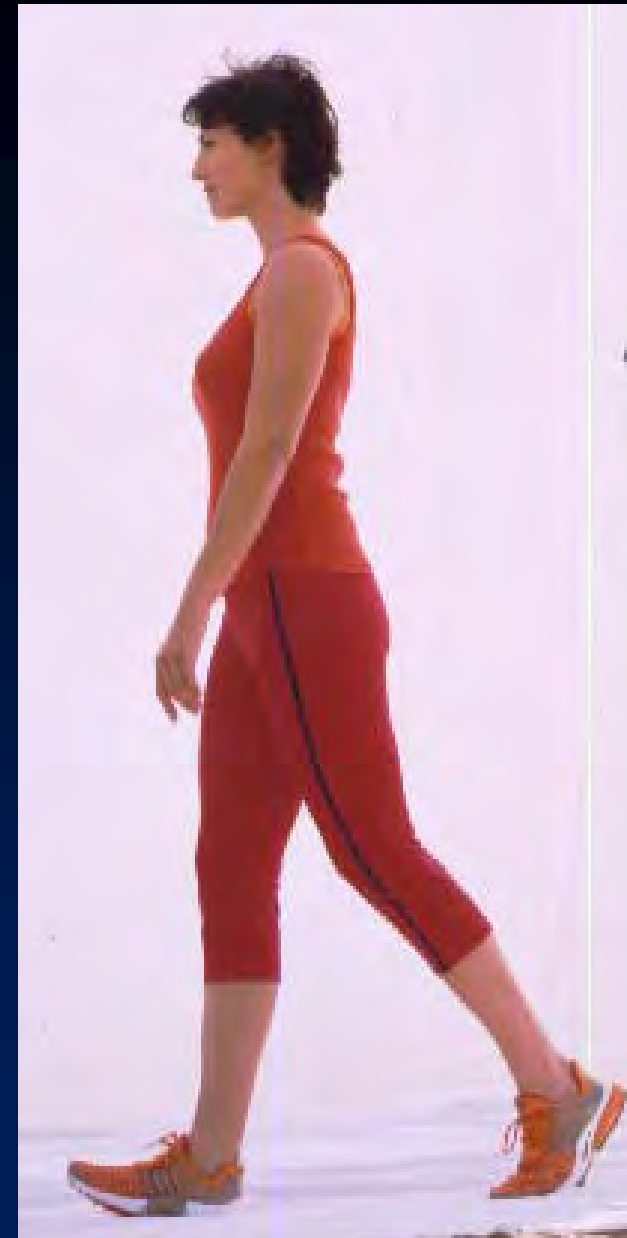
# Within weeks:



- Generally improved mood.
- Fewer aches and pains, less stiffness.
- First measured fitness improvements.
- Growing confidence, interest in better nutrition.

# Within months:

- Noticeable weight loss.
- Firming of muscles, toning.
- Improved fitness, metabolic measures.
- Improved “self-efficacy.”
- Adoption of other healthy habits (better diet, quit smoking).

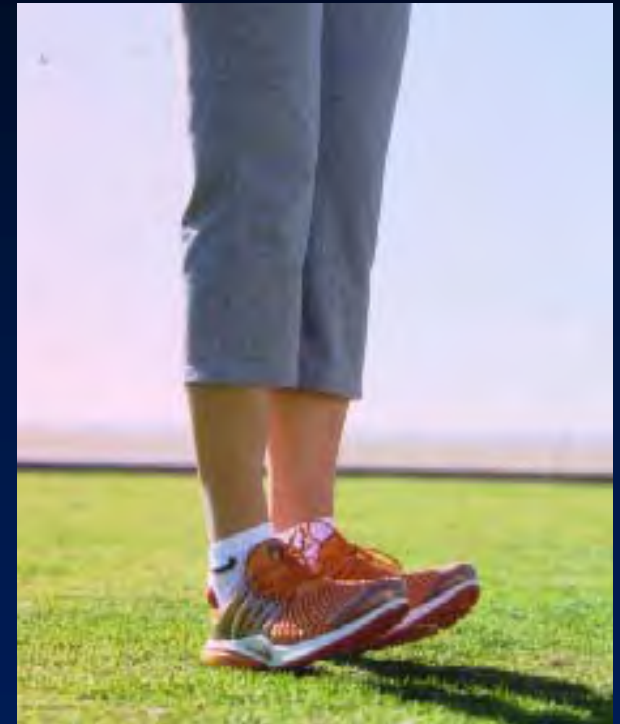


**500**

# Simple activity rules of thumb:

- Warm up *before* exercise.
- Stretch *afterward*, when muscles are warm and most compliant.
- Don't exercise without fuel and hydration.
- Use sun protection.





**Warm-up:** Up, side, back, downs.

# Abdominal Crunches



# Straight Knee Leg Lifts

# Preventive Exercises



**600**

# The Activity Diamond

**Push  
off of  
your toes.**

**Bend your arms.**

**Tall posture.  
Quick steps.**



# How fast are you walking?

**145 – 155 steps/min. = >4.5mph  
(~50 steps in 20 seconds)**

**125 – 135 steps/min. = ~4.0 mph  
(~45 steps in 20 seconds)**

**110 – 120 steps/min. = ~3.0 mph  
(~40 steps in 20 seconds)**

**700**

# The Activity Diamond

**4.5 mph =  
450+ cal.**

**4 mph = ~360 cal.**

**3 mph = ~240 cal.**

# Why not intensify with . . .

## Hand weights?

- Risk of shoulder, elbow discomfort.
- Elevated blood pressure (pressor response).

## Ankle, leg weights?

- Alters walking gait, risk of knee injury.

## Retractable waist-worn cords?

- Hard to use, ungainly, unnatural gait.

## Weighted vests?

- Need to add lots of weight to boost intensity.



Source: *The Complete Guide to Walking for Health, Weight Loss, and Fitness*, M.Fenton

# Intensify with . . .

## Speed.

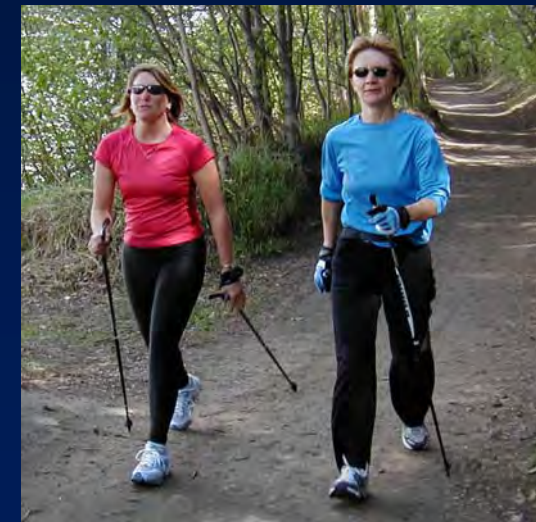
- Boosts calorie burn and fitness benefits.

## Hiking, hills.

- 5% to 50% boost in calorie burn (depends on terrain and incline); works thighs & glutes.

## Nordic (pole) walking.

- Average 20% calorie burn boost; up to 45%.
- Engages arms, shoulders, back, chest, abs.
- Adds stability, reduces knee strain on descents.



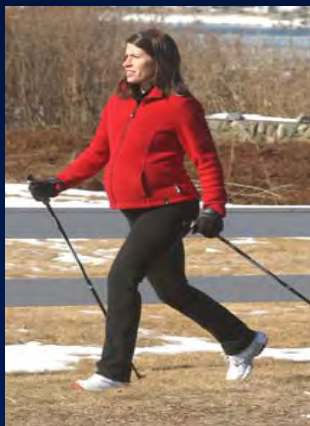
# Calorie burn in an hour of walking:

4.5 mph =  
450+ cal.

w/ NW = 540~630 cal.

4 mph = 360 calories  
w/ NW = 430~500 cal.

3 mph = 250 calories  
w/ NW = 300~350 cal.





# **Do incidental walking trips matter? Imagine:**

**Eliminate 20 minutes of walking, 5 days  
a week (2 kcal/min vs. 4 kcal/min).**

**Net loss of 2 kcal/min; 40 kcal/day.**

**200 kcal/week = 10,400 kcal/year  
~ 3 lbs./year (30 lbs./decade!)**

800

# Selecting walking shoes:

**Flexible at the ball of the foot.  
(Do hand flex test.)**



**Rounded or beveled heel,  
not squared off. (Can ease  
sore shins.)**

**NO flexibility through the arch.  
(Leads to plantar fasciitis.)**

# What to pick?

- More rounded, beveled heels than most running shoes.
- More flexible forefoot than most running & cross-training shoes.
- “Rugged walking,” light hiking shoes for trails, weak ankles, pregnancy.

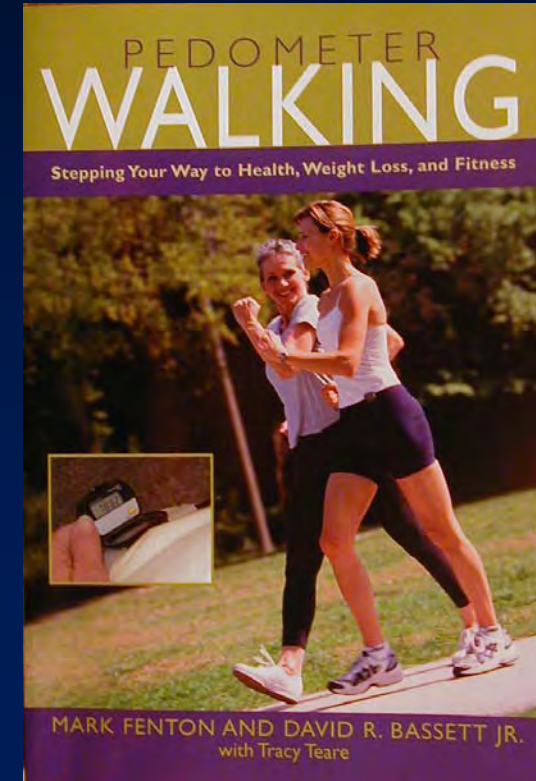


# For summary information (& a moment of shameless self-promotion):

- Web site for “America’s Walking:”  
[www.pbs.org/americaswalking](http://www.pbs.org/americaswalking)

Books: “*Pedometer Walking*”  
(Lyons press, 2006)

“*The Complete Guide to Walking  
for Health, Weight Loss, and  
Fitness*” (Lyons, 2001)



# For summary information (& a bit more shameless self-promotion):

Another Book:  
*“Walking Through  
Pregnancy and  
Beyond”* (Mark and  
Lisa Fenton; Lyons  
Press, 2004)



900

# Wear a pedometer:

- Measure steps all day.
  - Determine your average daily steps.
  - Increase by only 10%-20% a week.
  - Keep gradually increasing . . .



**Key to Success: Keep a record!**

**[www.cornerstonefitness.com](http://www.cornerstonefitness.com)**