

**As you're settling in please do
the following:**

**Introduce yourself to a neighbor,
and each of you share a sentence
or two describing one of your
earliest, fond memories of being
physically active in your youth.**

Healthy Community by Design: How to Get Sticky

-

Healthy Eating
Active Living
Summit

Nashville, TN
Jan. 2010



**“We few, we happy few, we band
of brothers” and sisters . . .**

mark.fenton@verizon.net

Topics for consideration:

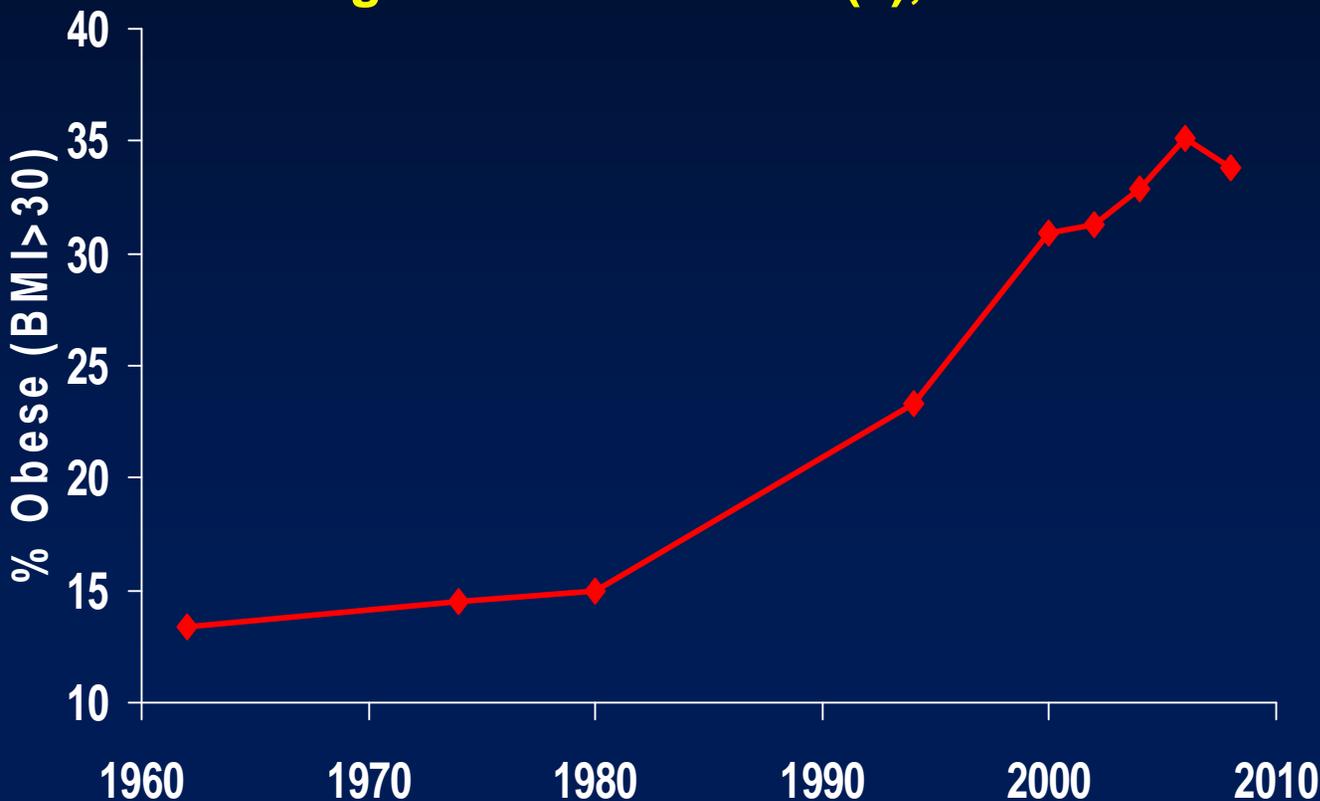
- A musical reference.
- Some **perspective** . . .
- The “**epidemics**” too few are talking about (and a brief rant).
- A question of **priorities**, and five recommendations.
- The **stickiness** problem & **3 Ps** (**programs, projects, policies**).
- Why it **really** matters!



The rant: America's looming chronic disease apocalypse . . .

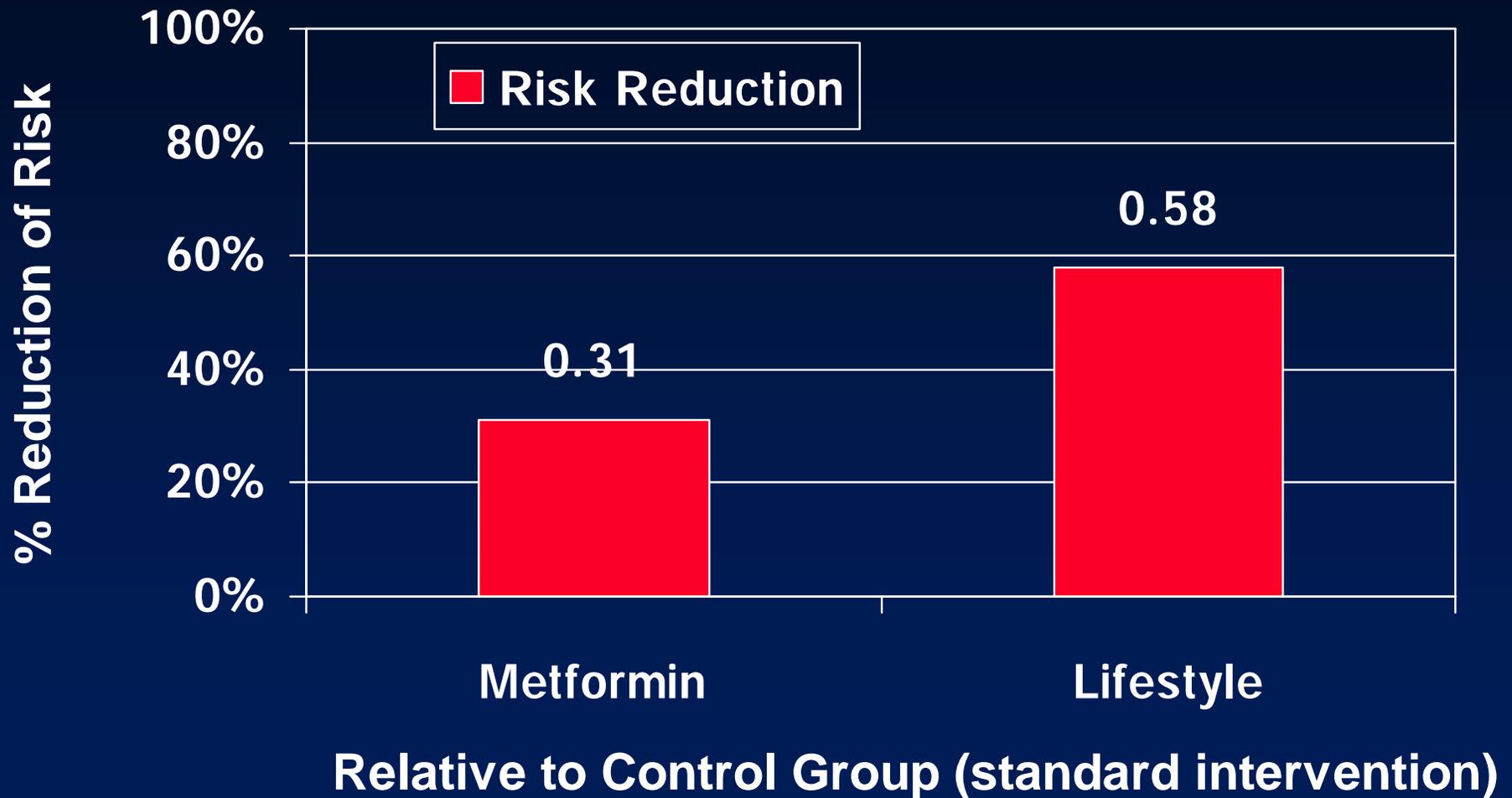
US "Obesity Epidemic"

Ogden et.al. *JAMA* 288 (14), Oct. 2002;
Flegal et.al. *JAMA* 303 (3), Jan. 2010.



Diabetes Risk Reduction

(Diabetes Prevention Program; *NEJM*, April 2002)



My rant:

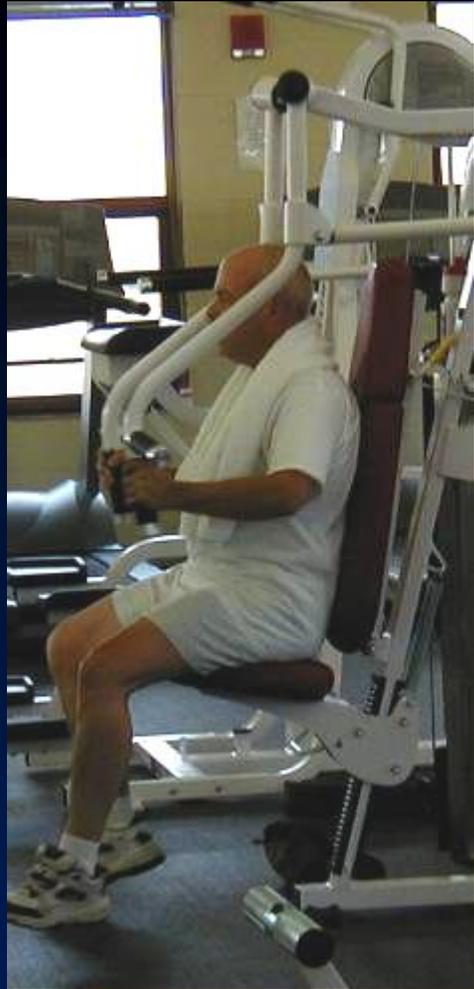
Change the conversation. It's *not* just an obesity epidemic.

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

Rank the priority of these five activities:

- 1. America on the Move – national meeting.**
- 2. Local planning board meeting; re: trail.**
- 3. Belmont Health Fair – lead walks, etc.**
- 4. Address Governor's task force on the MA Highway Design Manual.**
- 5. Nordic Walking (w/poles) fitness DVD.**

Health Fair:



But how much, and what activity to recommend to average people?

Surgeon General's Report 1996 Physical Activity Guidelines 2008

www.health.gov/paguidelines

- **150 minutes/week** of moderate **physical activity**; more is better.
- Any activity is better than none.
- Can be **broken up**.
- **300 min/week** for children.
- Reduced risk for CVD, diabetes, osteoporosis, obesity, dementia in old age, clinical depression, a growing list of cancers.



Getting some
exercise, or just
getting somewhere?

But, Health Fair is #5 because:

- Only reaches those who *choose* to show up!
- And only a fraction of those may actually use the information.



TN Public Health Assoc. meeting

Recommendation 1:

Think about scale & effectiveness. Ask the simple question: in **how many people is this likely to actually change behavior?**

Nordic Walking benefits:

- 20% - 40% boost in energy expenditure.
- Increased upper body workout (arms, chest shoulders, back, abs).
- Improved balance; reduced loads on feet, legs.

www.keenfit.com

www.nordicwalker.com

mark.fenton@verizon.net



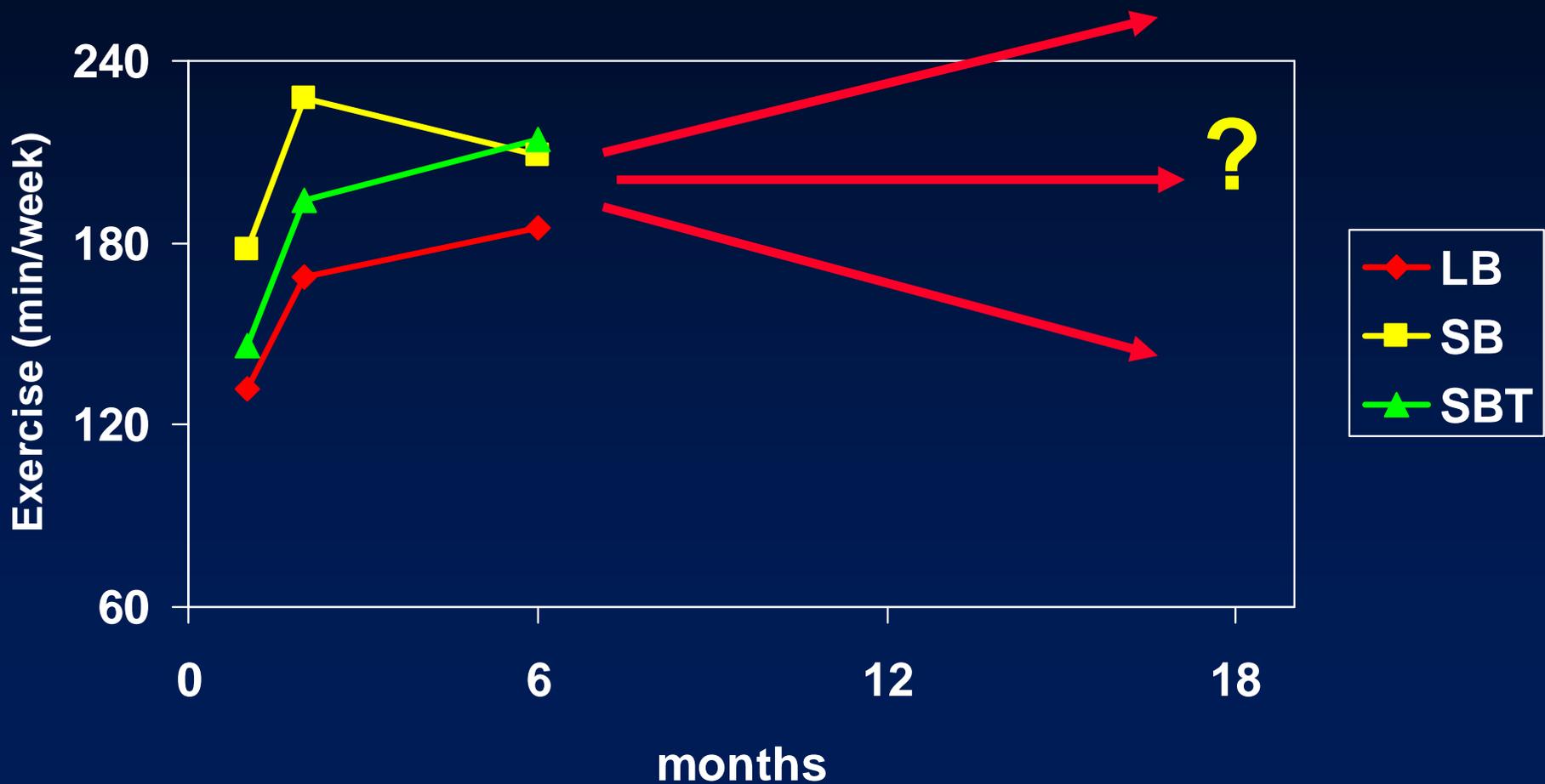
BUT: Nordic Walking?
Another **fitness fad?** What
about the “**dork factor?**” Or
the **stickiness problem?**



Exercise Participation

Effect of Short Bouts, Home Treadmills

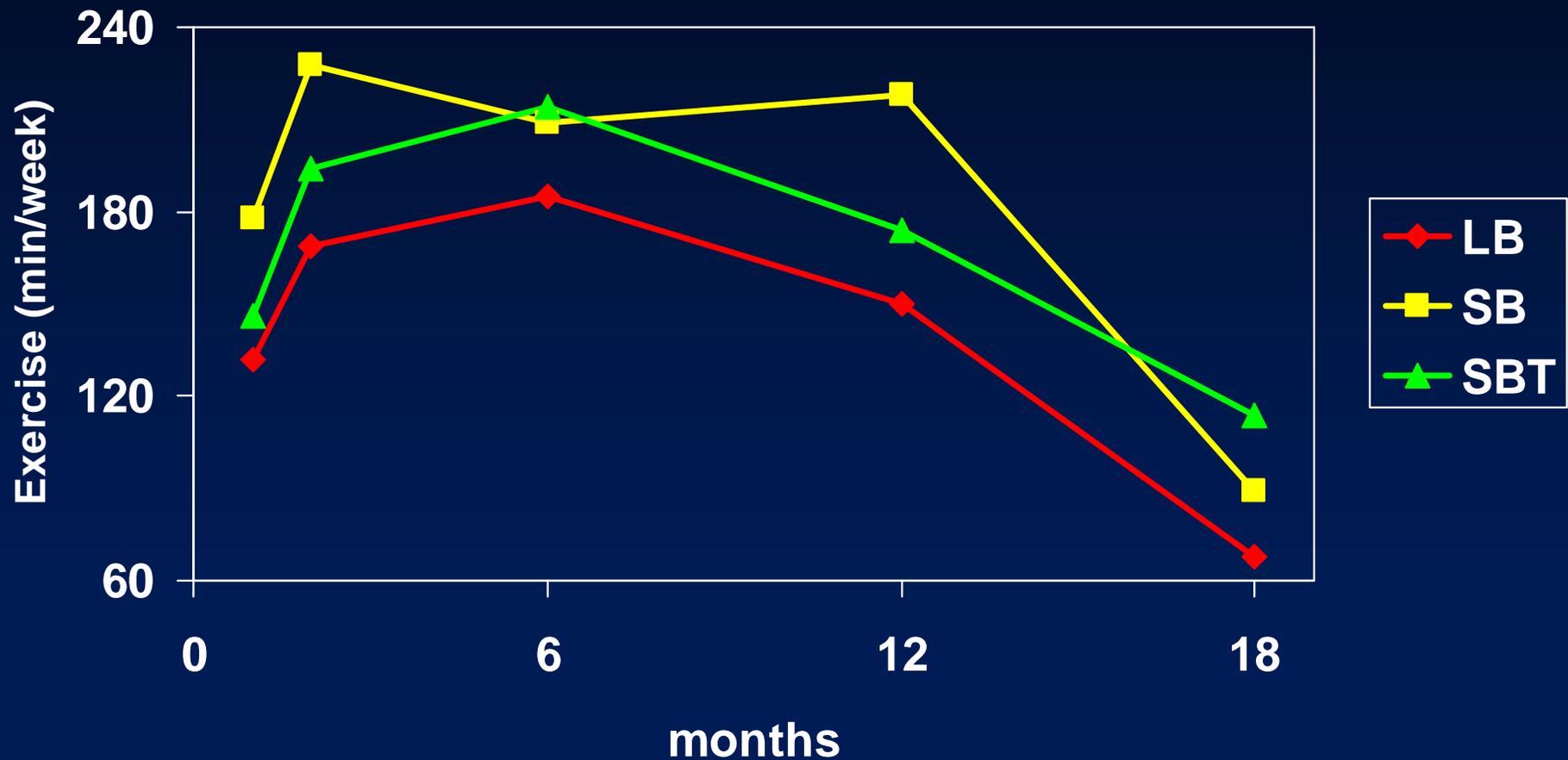
(Jakicic et.al., *JAMA* 282, 16)



Exercise Participation

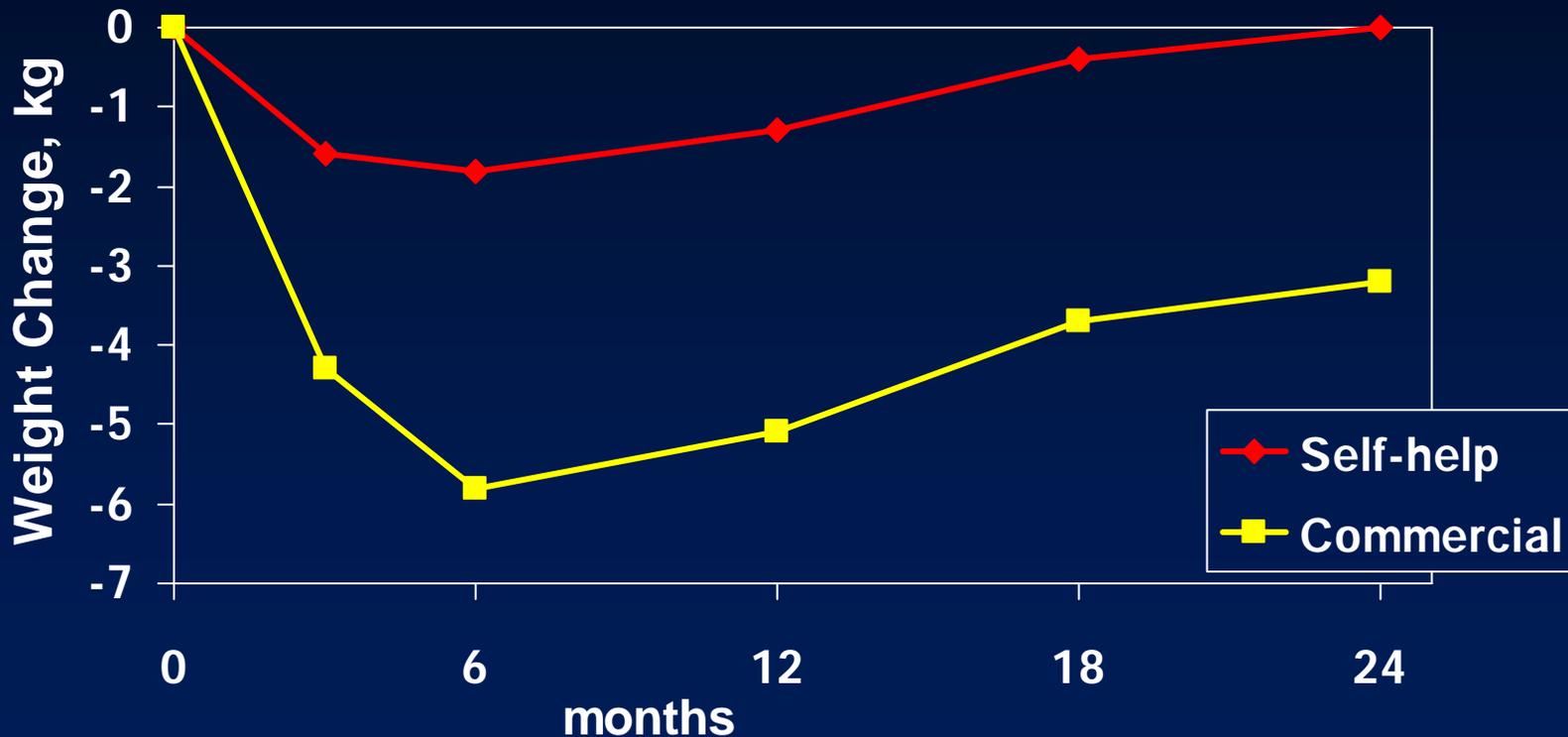
Effect of Short Bouts, Home Treadmills

(Jakicic et.al., *JAMA* 282, 16)



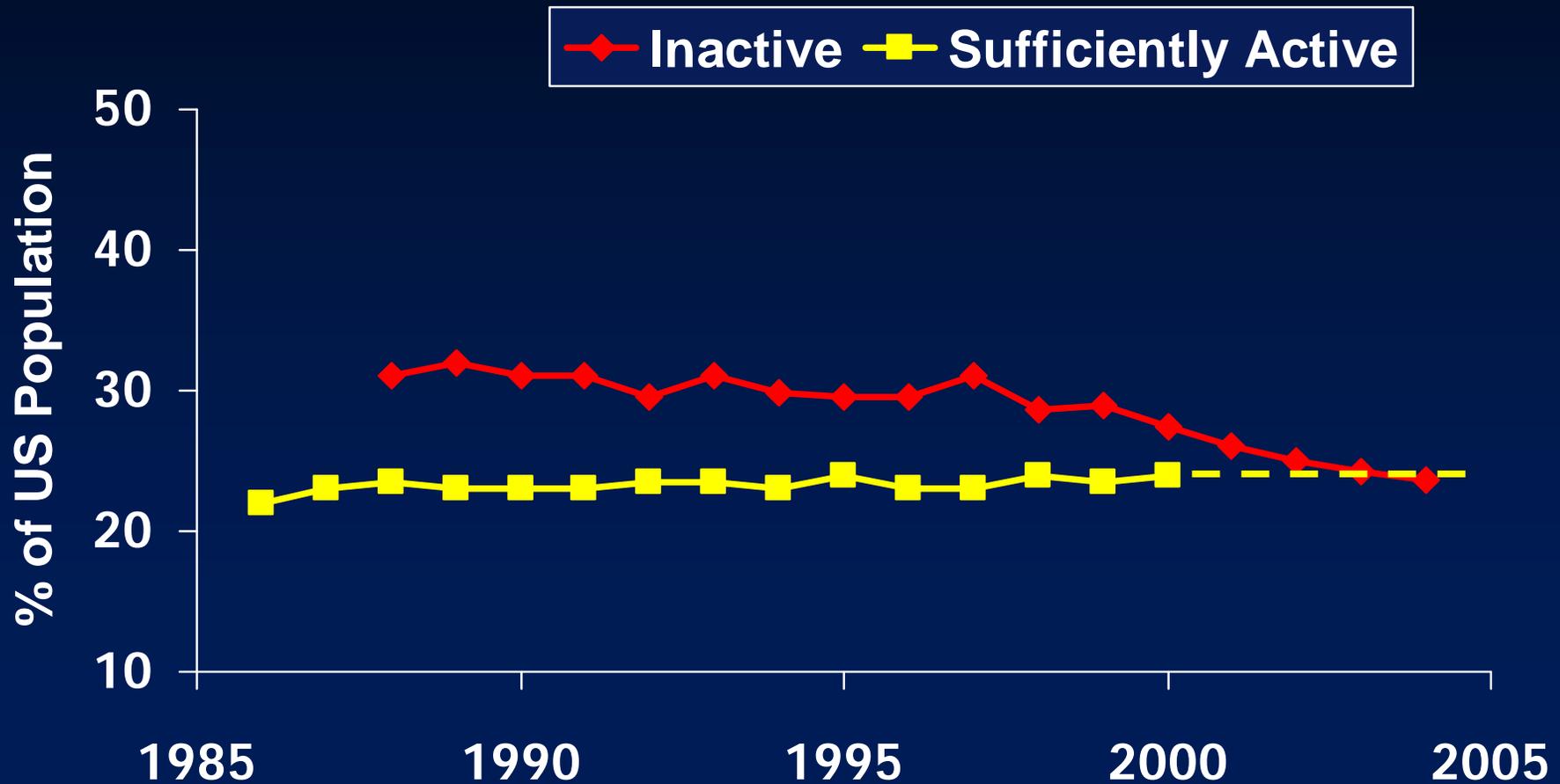
Self-help vs. Commercial Weight Loss Programs

(Heshka et.al., *JAMA* 289, 14; April 9, 2003)



Leisure Time Physical Activity in the US

(MMWR: 50(09), 166-9; 54(39), 991-4)

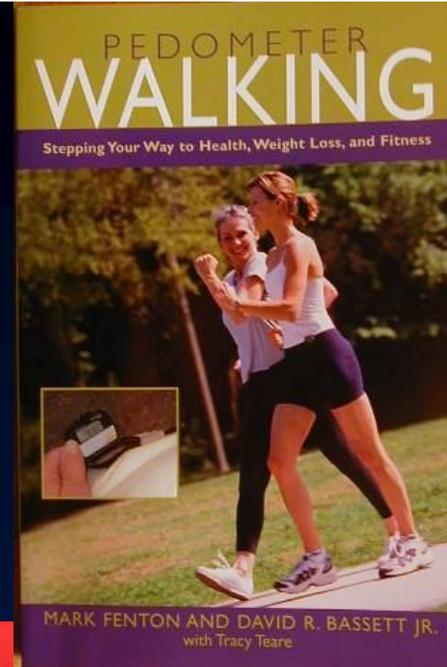


Recommendation 2:

Go for breadth—not just “exercise” for the actively inclined. We need increases in routine, daily physical activity for everyone.

Pedometer-based “lifestyle” activity promotion:

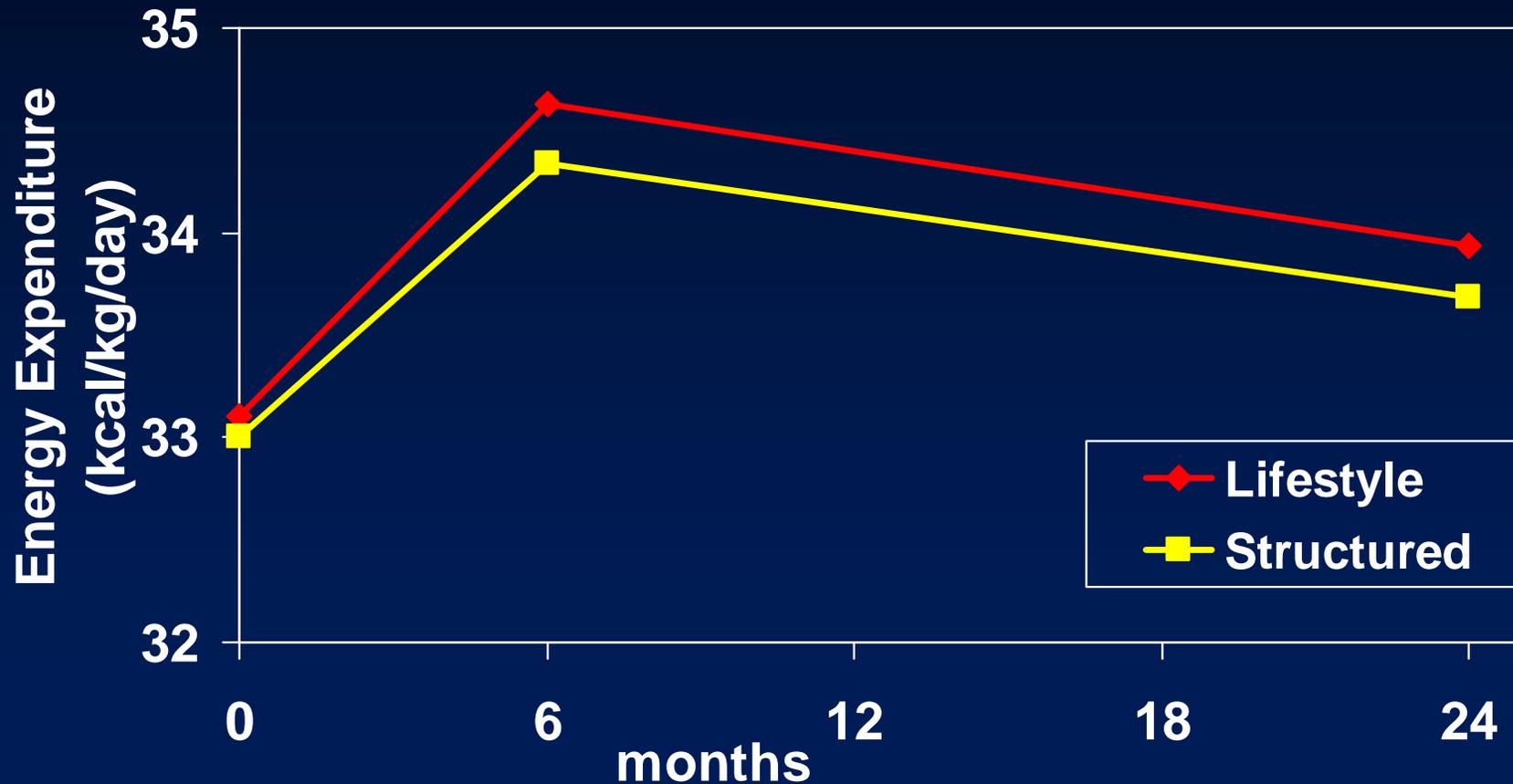
- Measure steps all day.
 - Determine your average daily steps.
 - Increase by only 10%-20% a week.
 - Keep gradually increasing . . .



Key to Success: Keep a record!

Energy Expenditure Lifestyle vs. Structured Activity

(Dunn et.al., JAMA 281, 4)



Social Ecology Model

Determinants of behavior change

Sallis & Owen, *Physical Activity and Behavioral Medicine*.

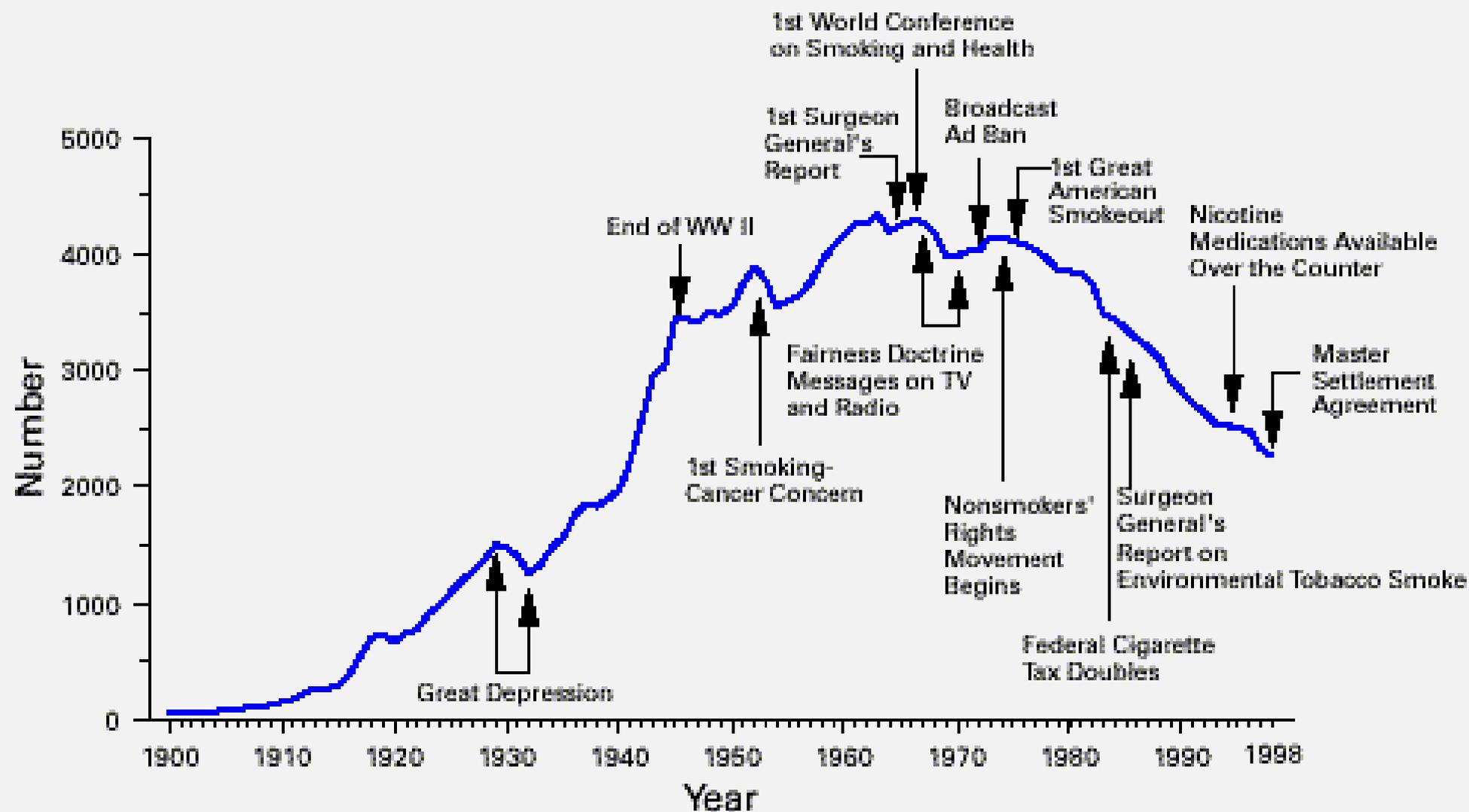
- Individual (readiness, efficacy)
- Interpersonal (family, friends)
- Institutional (school, work, HMO)
- Community (networks, local gov't)
- Public Policy (transport, land use)



Socio-ecological success: tobacco

- **Individual – education, medication**
- **Interpersonal – 2nd hand smoke, kids**
- **Institutional – work place bans**
- **Community – smoke free policies**
- **Public Policy – taxes, enforcement, advertising bans, SG's warning label.**

FIGURE 1. Annual adult per capita cigarette consumption and major smoking and health events — United States, 1900–1998



Sources: United States Department of Agriculture; 1986 Surgeon General's Report.



VS.



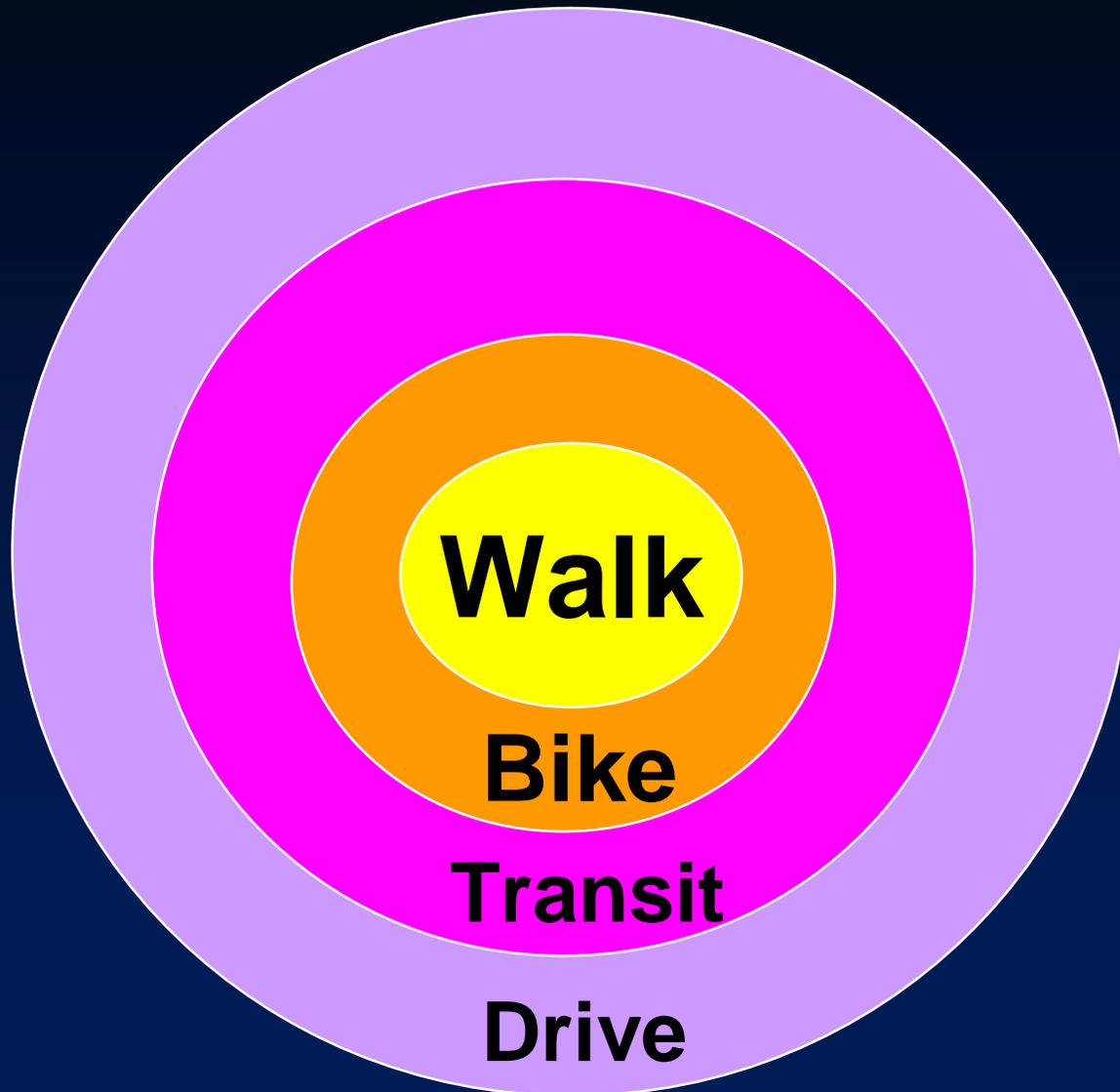
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**Fine for some,
but clearly
not enough . . .**



**. . . we need
communities
where people are
intrinsically
active.**

The “healthy” trip decision hierarchy*:



***Is it even plausible?**
In the US nearly 25% of all trips are 1 mile or less; roughly 40% are under 2 miles!
(Nat'l Household Transportation Survey, USDOT)

Recommendation 3:

We have to make active living & healthy eating the easier choices - actually safer, more convenient, less costly, and more fun than the alternative.

Planning Board: Directly impacts local environmental factors.



The “Toxic” Environment?

(Kelly Brownell, Yale)

Middletown, RI



So, what seems to matter?

1. Destinations within walk, bike, & transit distance?
2. Sidewalks, trails, bike lanes, safe crossings?
3. Inviting settings & sites for bikes, peds, transit?
4. Safe & accessible for all ages, incomes, abilities?



www.thecommunityguide.org

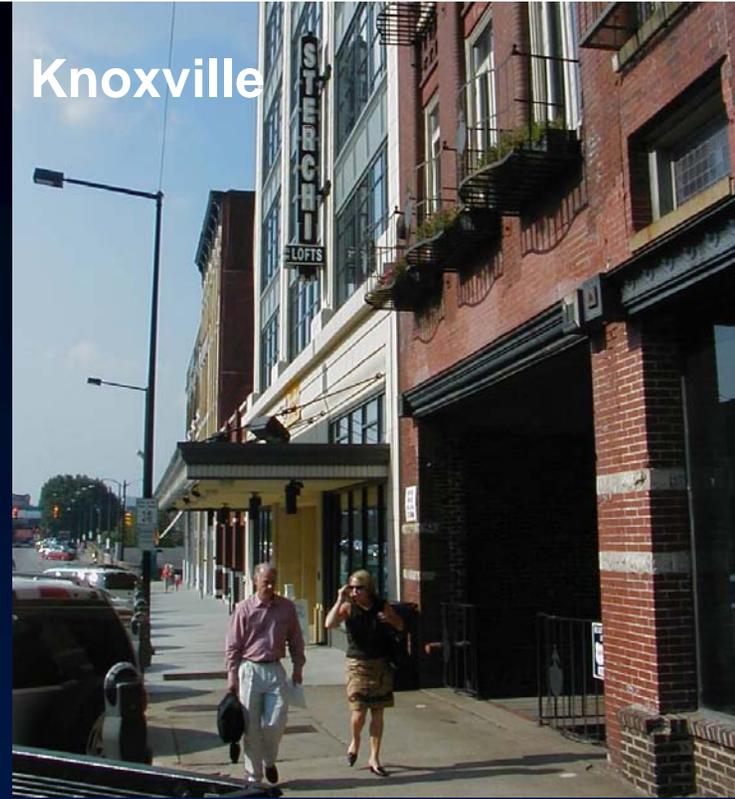
CDC Guide to Community Preventive Services

mark.fenton@verizon.net

Or in Planner-Speak:

- Land use mix.
- Network of bike, pedestrian, transit facilities.
- Functional site design & details.
- Safety & universal access.

Knoxville



Peelar Park Greenway

1. Land use.

Varied destinations in proximity.



E.g. post office,
grocery, schools

Compact neighborhoods
& shared open space.



Dees Park

Mixed
use,
multi-
family.

Housing
above,
retail
below.



mark.fenton@verizon.net

2. Network encourages active travel with:



- Presence of sidewalks, pathways, bike lanes.
- Shorter blocks, cul-de-sac cut-throughs, more intersections.
- Access to trail, park, greenway; quality, reliable *transit*.



Transit riders are physically active.

Besser, Dannenberg, *Amer. J. Prev. Med.*, 29 (4), Nov. 2005.

Just during the daily walk to transit:

- Half of transit riders walk at least 19 mins.
- 29% get at least 30 mins. of activity.
- Minorities, poor (income <\$15k/yr.), denser urban dwellers more likely to get 30+ mins./day.



Bicycle network options:

Sacramento, CA



mark.fenton@verizon.net

3. Site design:



Anywhere USA



Which setting is more inviting for travel on foot and by bike?

mark.fenton@verizon.net

Site design? Research & practice suggest:

- Pedestrian friendly access; buildings are near the sidewalk, not set back.
- Trees, benches, water, aesthetics, lighting, scale.
- Details: bike parking, open space, plantings, materials.



4. Safety.

- Engineering can dramatically improve safety.
- Increasing pedestrian and bike trips *decreases* overall accident & fatality rates.



Median islands



Roundabout (Neenah, WI)



Curb extensions

(Jacobsen P, *Injury Prevention*, 2003; 9:205-209.)

mark.fenton@verizon.net

Community design & nutrition?

Community gardens (near schools, parks, senior housing); conserving farmlands; Community Supported Agriculture.



Regulate fast food, drive-through locations.



Farmers markets.



mark.fenton@verizon.net

Community design & nutrition?

Virtual farmers markets at
YMCA's (Pittsburgh,
Bolivar MO, Maui).

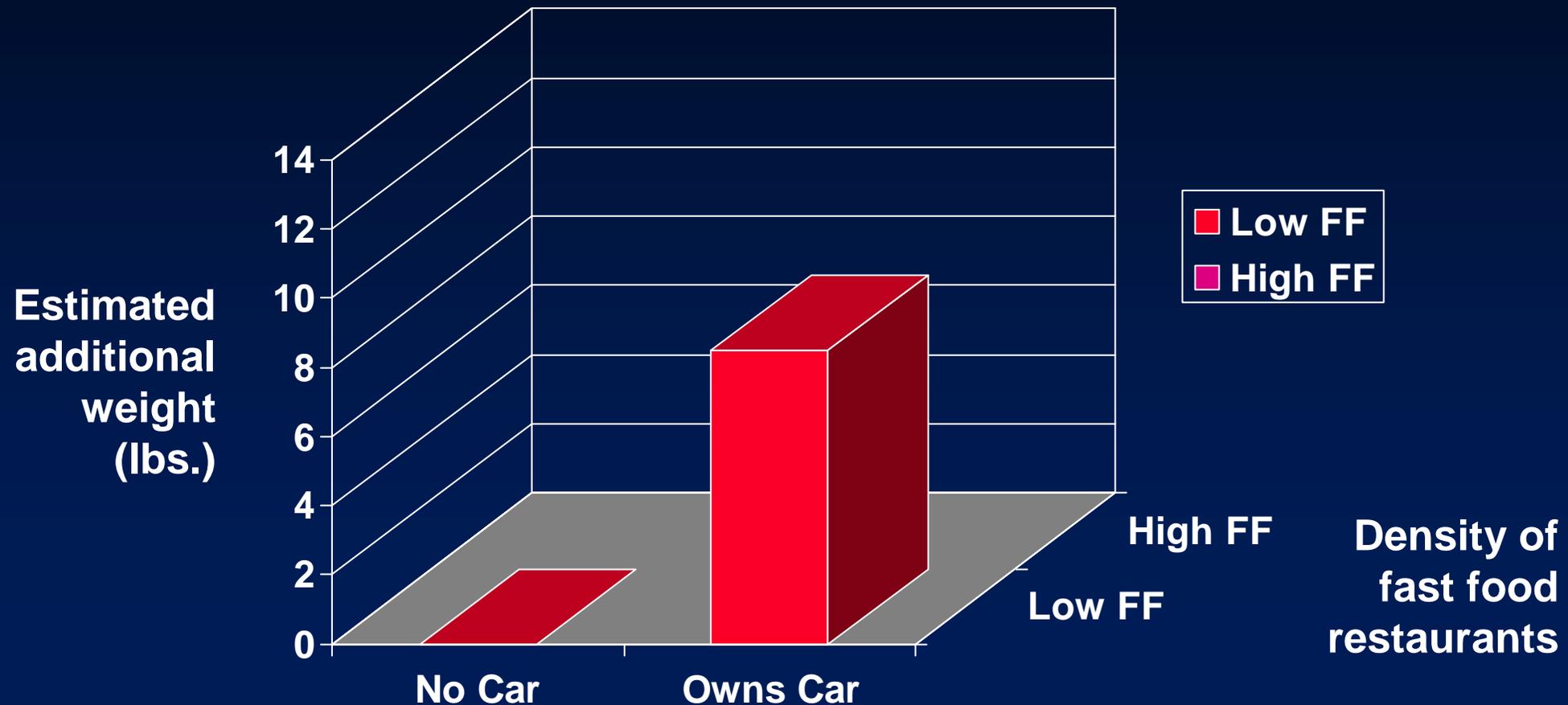


Overcoming food deserts through
zoning & tax incentives to encourage
neighborhood groceries.

Community design & nutrition?

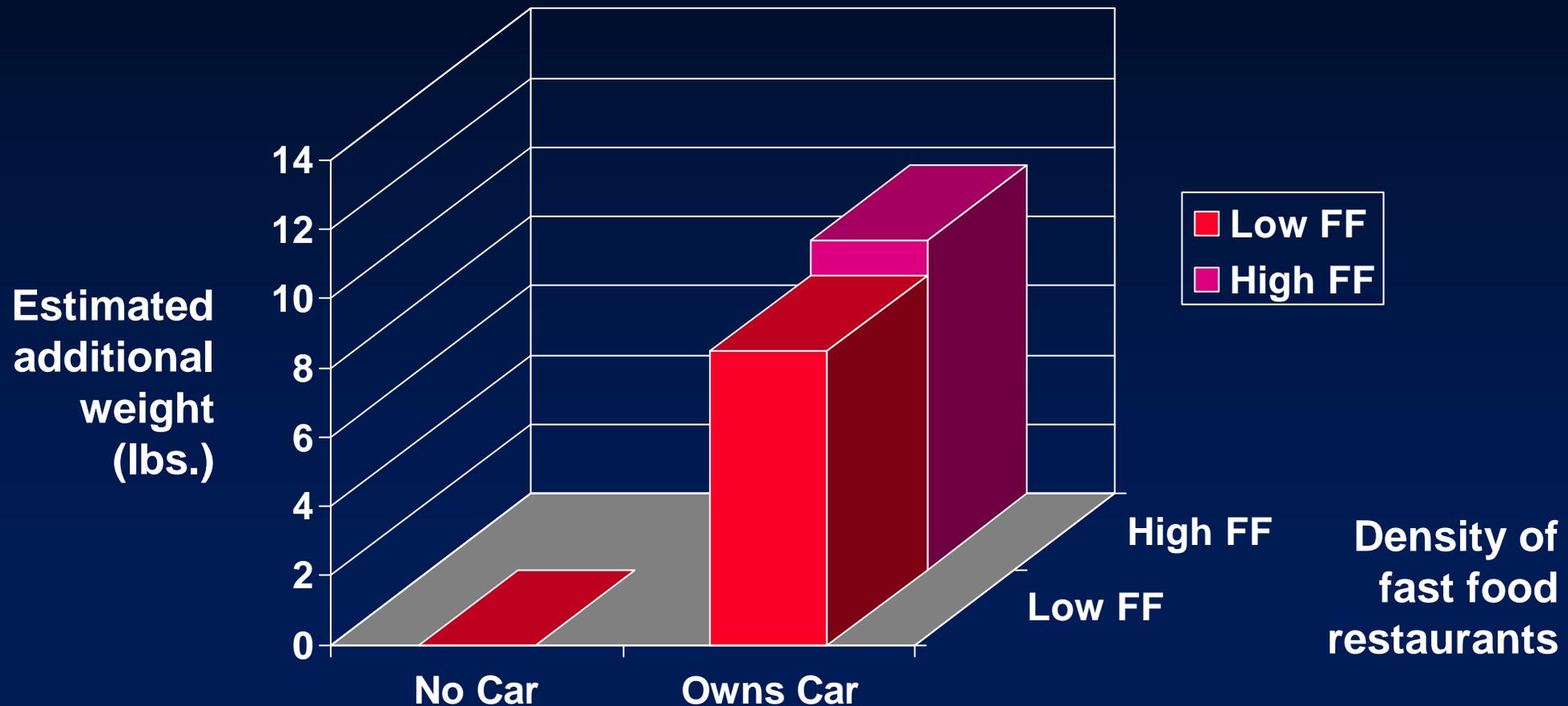
BMI, Fast Food Outlets & Car Ownership

Inagami S, et.al., *BMI, Neighborhood Fast Food and Restaurant Concentration and Car Ownership*, Journal of Urban Health, Vol 86 (5).



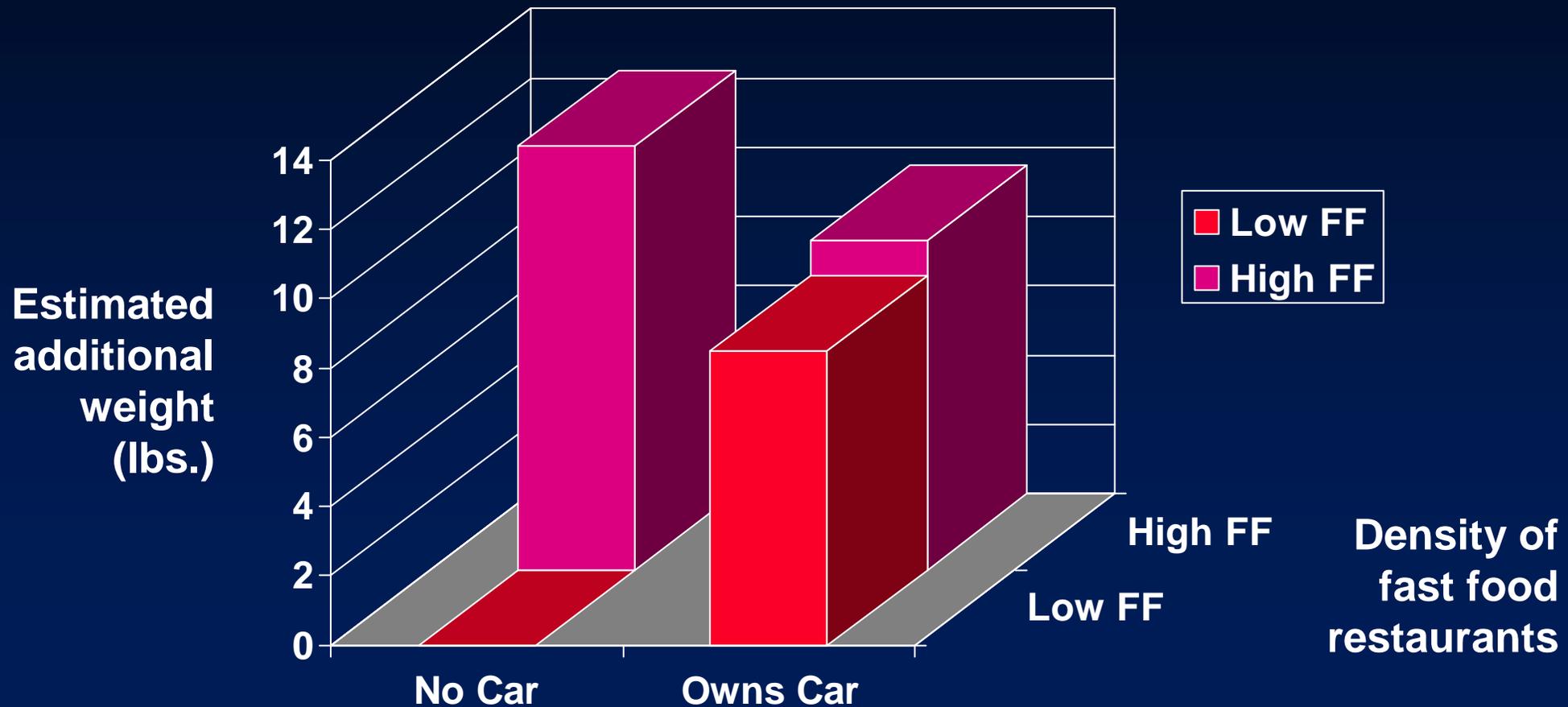
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Recommendation 4:
Both the **built and social environments of the community matter**, so work on improving them. Start by helping people realize what “sticks” and what doesn’t.

All of the “health” benefits. Economic:

Environmental:

- Reduced traffic; air, water, & noise pollution.



Safety:

- Kids, elderly mobility.
- Crime deterrent.

- Residents shop locally; more stable tax base.
- Healthy employees, low turnover, happy employers.
- Healthy housing values (NAHB & NAR surveys).



Social:

- Equitable transportation.
- More personal connections.

Walking the Walk: How Walkability Raises Housing Values in U.S. Cities

CEOs for Cities report

- Based on 94,000 transactions in 15 markets.
- Compared sale prices and WalkScores (1-100 based on number of nearby destinations . . .)
- In 13 of 15 markets, higher WalkScore correlated to higher home values.
- Denser cities (San Fran., Chicago) saw greater affect than less dense (Tucson, Fresno).

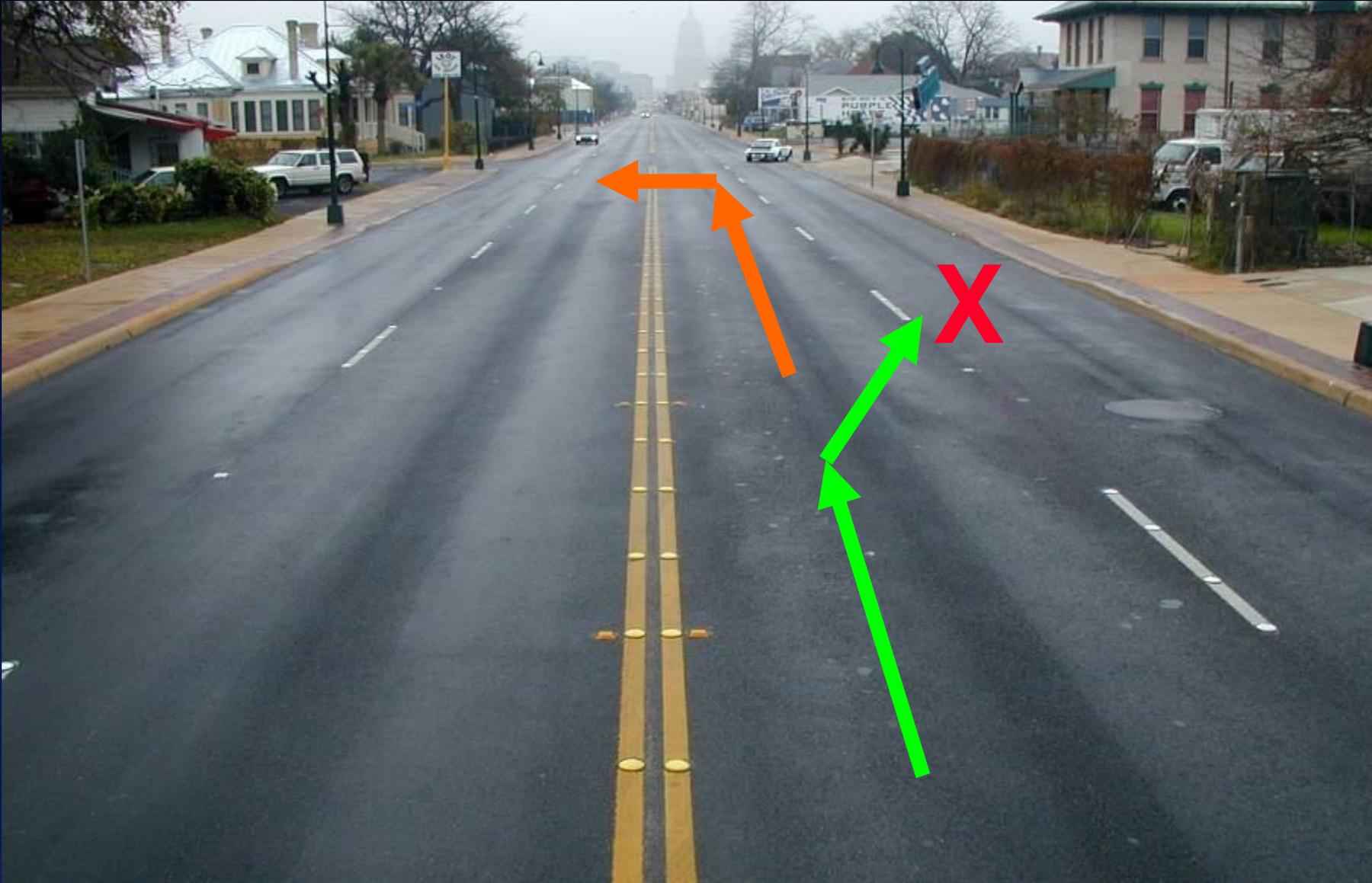
**Average to above average walkscore =
\$4,000 to \$34,000 increase in home value**

**www.ceosforcities.org/work/walkingthewalk
www.walkscore.com**

mark.fenton@verizon.net

1. Highway Design Manual:

Affects the **built environment** for years to come.







The Story of “4”:

4,000

Approximate number of
annual pedestrian deaths in
America.

40,000

**Approximate total annual
deaths in motor vehicle
crashes.**

400,000*

**Approximate annual deaths due to
sedentary living and poor nutrition.**

***Rounded up from corrected 365,000.**

Mokdad, A.H., et al. 2004. Actual causes of death in the US. JAMA 291: 1238-45.

40,000,000,000

\$40,000,000,000

Approximate direct annual medical expenditures due to inactivity & poor nutrition, borne by taxpayers.

www.cdc.gov/nccdphp/dnpa/

(Obesity Research, Finkelstein et.al., Jan, '04)

Estimated Cost of Inactivity and Poor Nutrition in 2002: ~\$78.5 billion/year

Tennessee total = ~\$1.84 billion/yr.

- **Public (taxes) Medicaid, Medicare: ~\$921 mill.**
 - **Private (insurers, hospitals): ~\$919 mill.**

State Level Estimates of Annual Medical Expenditures Attributable to Obesity, Finkelstein et.al., Obesity Research 2004;12(1):18–24;

www.cdc.gov/nccdphp/dnpa

mark.fenton@verizon.net

So my choices:

1. Highway Design Manual, Governor's Task Force.
2. Local planning board meeting.
3. America on the Move – national meeting.
4. Nordic Walking (w/poles) DVD.

Don't bother: Community Health Fair.

So, how do we get there?



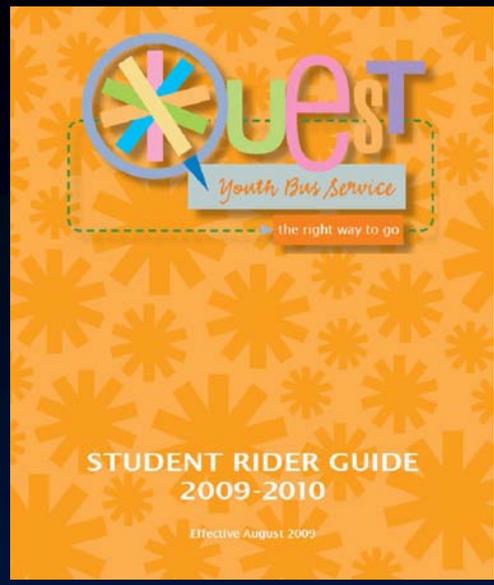
Recommendation #5: Successful communities use all three P's!

- **Programs:** Build awareness, support, skills, & encourage behavior change.
- **Projects:** Alter & improve the built environment for walking, cycling, and active living in general.
- **Policies:** Rewrite the rules so *stickier* environments & practices are the norm!

Programs:

Media; walk & bike to work, shop, & school programs.

www.livehealthyamerica.org



Safe Routes to School
www.saferoutesinfo.org



Bike sharing programs; Louisville, Washington, Denver . . .
(Planning, May 2008)



Active-commute incentives; E.g., tax free transit pass, health benefit discount.

mark.fenton@verizon.net

Safe Routes to School uses 5-Es.

- **Education.** For students (bike/ped skills) & parents.
- **Enforce** proper & safe behavior, procedures.
- **Encourage** walking & cycling (students, staff, faculty, & parents).
- **Engineer** sidewalks, crossings, traffic calming.
- ***Evaluate:** Show of hands surveys, observation.



Columbia, MO



***Begin evaluating today; figure out where kids come from, how, & why!**

Projects

Parks & rec:
Open space,
rec. facilities,
greenways &
trails.



Schools: Space
for PE, bike
racks, access.



... To neighborhood mini-circle.

Municipalities: Traffic calming, mixed
use, sidewalks, improved crossings.

Work sites:
Bike parking,
lockers, showers;
walking paths,
open stairs.

mark.fenton@verizon.net

Not all "projects" are costly . . .





**School siting,
district lines,
bus policies.**



**Zoning: Mixed use,
open space, impact
mitigation/fees.**

**Cleaning, painting,
maintenance
complete streets.**

Policies:

www.completestreets.org



**Site
standards:
Setbacks,
parking,
access.**



mark.fenton@verizon.net

E.g. Complete Streets Policy:



1. Accommodate all users--peds, bicyclists, transit, motor vehicles--of all ages & abilities whenever we touch a road.
2. Roadway design = posted speed.
3. Go beyond local, collector, arterial hierarchy; include trails & alleys to boulevards & parkways.

www.completestreets.org

mark.fenton@verizon.net