Evidence-Based Approaches for Promoting Youth Physical Activity

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Overview

- Physical activity promotion for youth should be evidence-based.
- 60 minutes of moderate-to-vigorous PA per day is recommended
- Intervention strategies
  - School-based approaches
  - Active commuting to school
  - Family-based programs
  - Health care-based programs
  - Community-based programs
  - Availability of recreational facilities
  - Community design

Ecological Models

- Interventions that change psychological, social, **AND** environmental factors should be most effective
- An ecological model of physical activity would lead one to:
  - identify settings where PA or sedentary behaviors take place,
  - provide opportunities and incentives for PA in those settings,
  - reduce opportunities and incentives for sedentary behavior,
  - educate and motivate young people and their families to choose PA options and use opportunities

School-based Approaches to PA Promotion

- Strong evidence that improve high-activity PE can be effective
- CDC strongly recommends
- Mixed evidence of effectiveness of health education curricula
- Promising recent programs to reduce sedentary time


What PE should be

What PE is—too often


SPORTS, PLAY & ACTIVE
SPARK
RECREATION FOR KIDS!
www.sparkpe.org

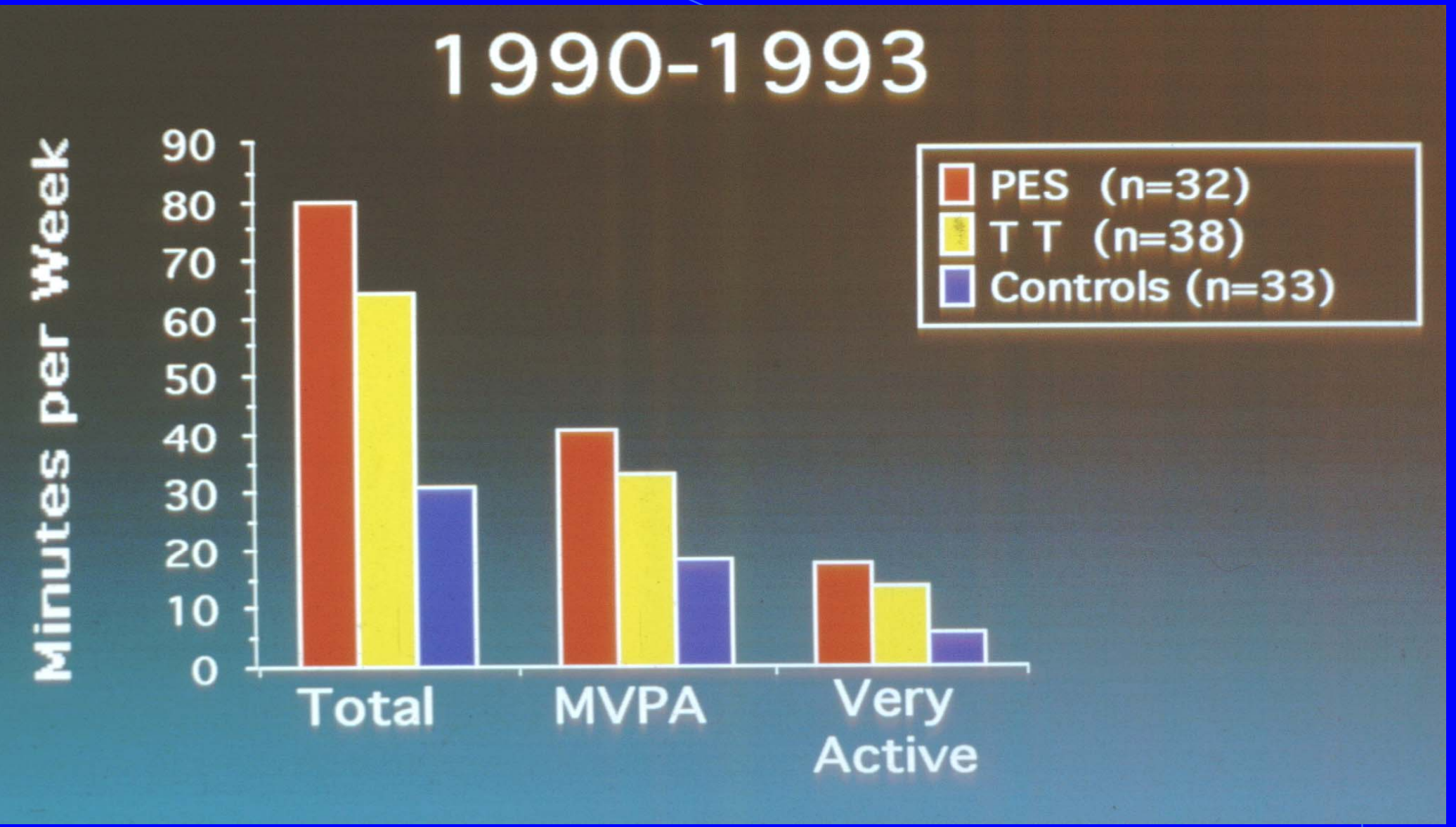
SPARK PE Part 1:
Health-Related Fitness Activities

SPARK PE Part 2: Skill-Related Activities

SPARK Self-Management Now “Lifelong Wellness”

- To promote physical activity out of school and after the program
- Teach effective behavior change skills
- Parent involvement & reward system
- Content on nutrition, TV, safety
- Weekly 30-min classes
- Detailed teacher guide

Effects of SPARK PE on Total PE Time & Observed Activity



SPARK Outcomes

- Improved quality of PE instruction
- Increased physical activity in PE
- Improved cardiorespiratory & muscle fitness
- Improved sports skills
- Participation in self-management program associated with improvements in BMI & PA-related perceptions
- Positive impact on academic achievement
- Students enjoy SPARK lessons

Middle School Physical Activity and Nutrition
1996 - 2000

www.sparkpe.org

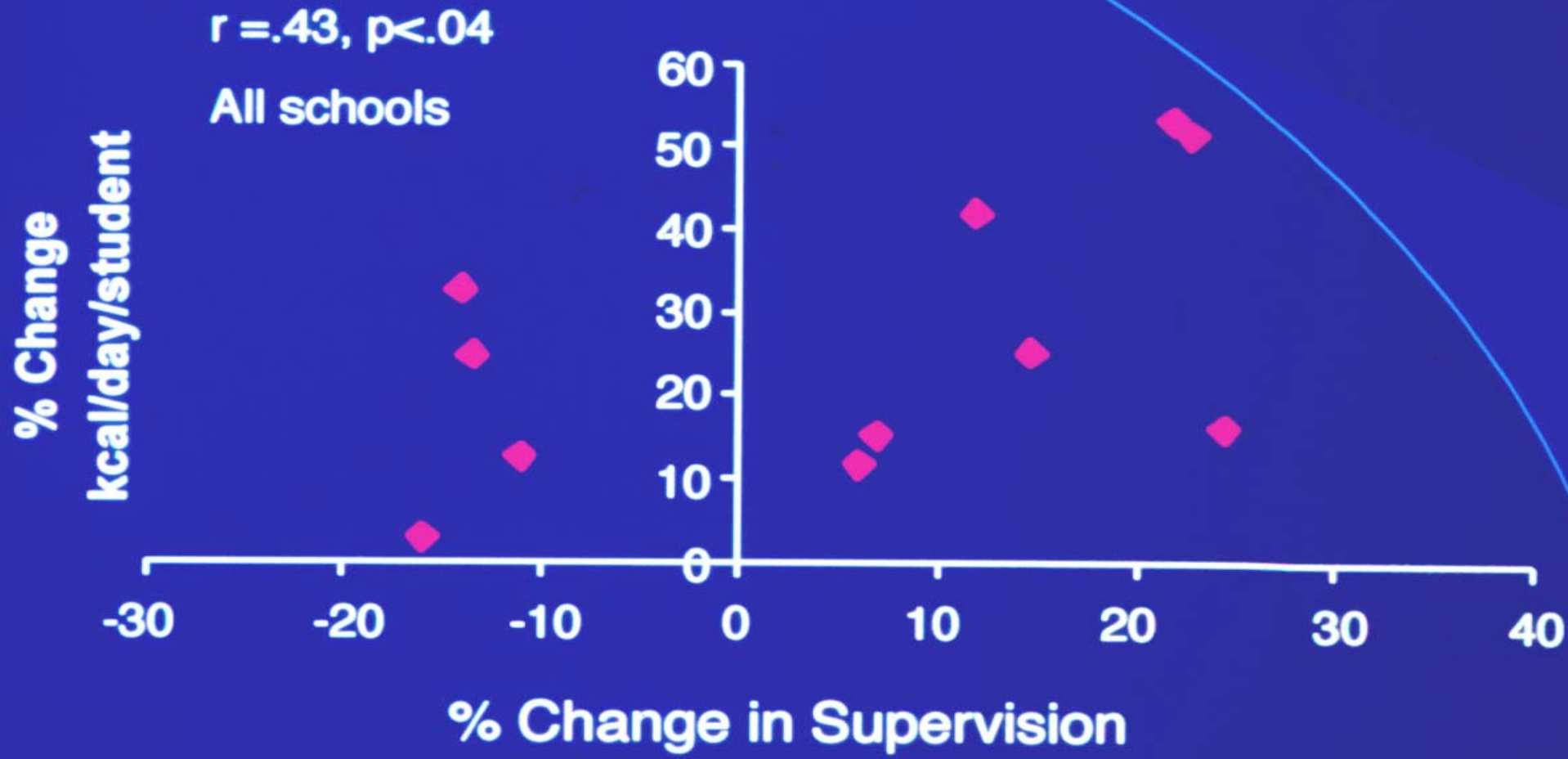
Policy Changes to Promote PA

- School committees met 3 times to plan policy changes
- Guided by brochure with policy suggestions
- Examples: improve fields, open play areas to students, assign faculty to supervise student PA, expand lunch period
- Policy goals shared with other schools via newsletter

M-SPAN Physical Activity Provider Duties

- Supervise popular activities
- Encourage participation
- Distribute equipment
- Organize intramurals
- Create marketing materials
- Provide activity demonstrations

M-SPAN Intervention Schools: Changes in Kcal/day/student by Supervision



Walking/Cycling to School

- Decreased 37% from 1977 to 1995

- Unpublished data from our group
- National sample of 847 4th-9th graders & parents
  - 17% reported mainly walking/cycling to school
  - 4th—6th grade girls who actively commuted were less likely to be overweight ($p<.05$)
- About 900 SPARK 4th & 5th graders
  - Boys who actively commuted had lower BMI and skinfolds ($p<.01$)
- Supportive policy: Build smaller schools in middle of neighborhoods; not on outskirts

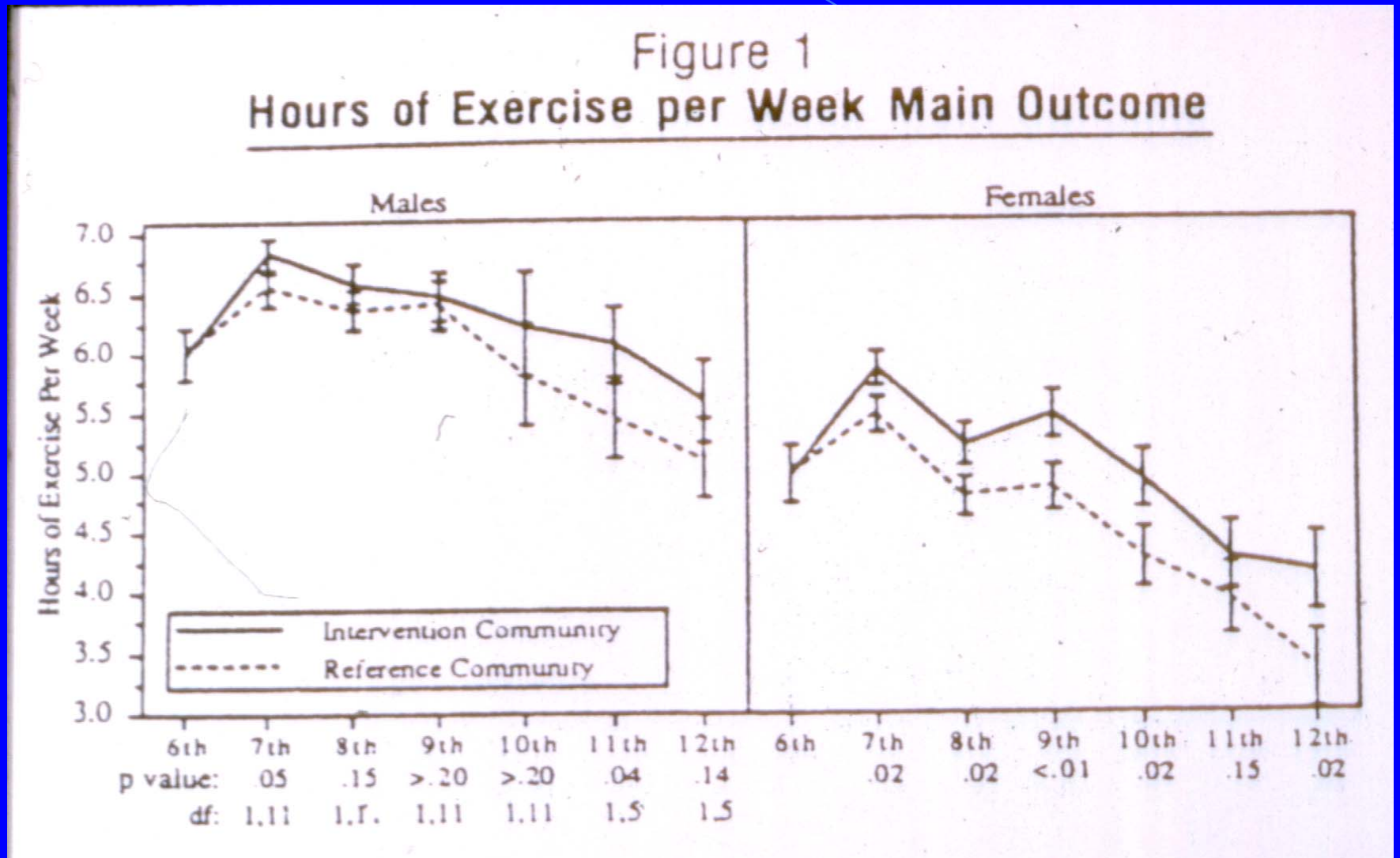
Walking/Cycling to School

- Interventions require environmental change to improve safety AND promotional activities
- In Marin County Safe Routes to School evaluation, walking increased 64%, biking increased 114% (AJPH, 2003)
- This topic needs an experimental evaluation
- Supportive policies
  - Continue/expand Caltrans funding to improve sidewalks & safe road designs near schools
  - Develop & evaluate promotional activities for schools

Community-based Approaches

- Up to 70% of daily PA in after-school hours
- Pate's Active Winner's study only published attempt at community-based PA promotion
- Current TAAG study links school & community
- Of major CVD community prevention trials, only Minnesota included youth component
  - Class of 1989 study embedded school curriculum in community-wide MHHP program

Minnesota Class of 1989 Study
Kelder et al., 1993



Community-based Approaches

- Supportive policies
  - Co-locate schools, parks, & rec centers
  - Co-sponsor after school programs
  - Open schools for community recreation
  - Provide “health club” type equipment for PE classes & community
  - Require PA in after school academic programs
  - Make disadvantaged communities highest priority

Family-Based Interventions

- 3 major health promotion trials of family interventions to promote PA
  - CATCH, Baranowski et al., Nader et al.
  - None significantly changed PA
- Getting families to participate has been difficult
- Epstein's obesity treatment studies are consistently effective
- Other approaches that need further study
  - Reducing sedentary behaviors (e.g., Robinson)
  - Transporting and paying for activity programs (based on correlational results

PACE

Patient-centered Assessment and

Counseling for Exercise plus Nutrition

www.paceproject.org

PACE+ Adolescent Study

- 818 Adolescents between ages 11-15
- Recruited thru primary care
- Intervention
  - Computer assessment & action plan
  - Physician counseling
  - Monthly phone counseling & behavior change manual
- 6-month results for PA, TV, & diet promising

Availability of Rec Facilities

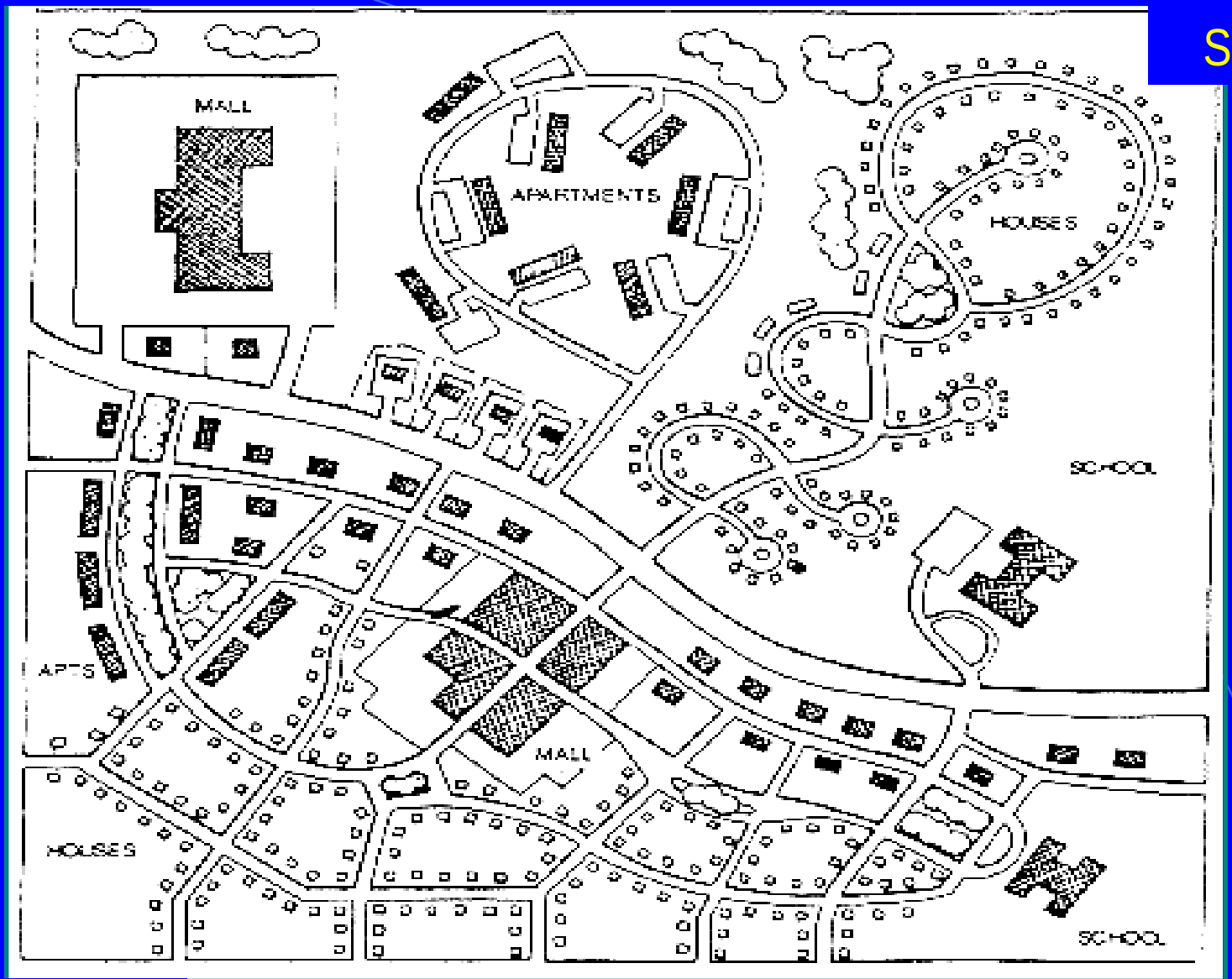
- 3 studies show being outdoors is best correlate of young children's PA (r=.74)
- For children & adolescents, access to programs & facilities are consistent correlates

Sallis, Prochaska, Taylor (Review) MedSciSportsExerc, 2000

- CDC Community Guide recommends increased access to PA opportunities, plus informational outreach

Suburban vs Traditional Land Use Patterns

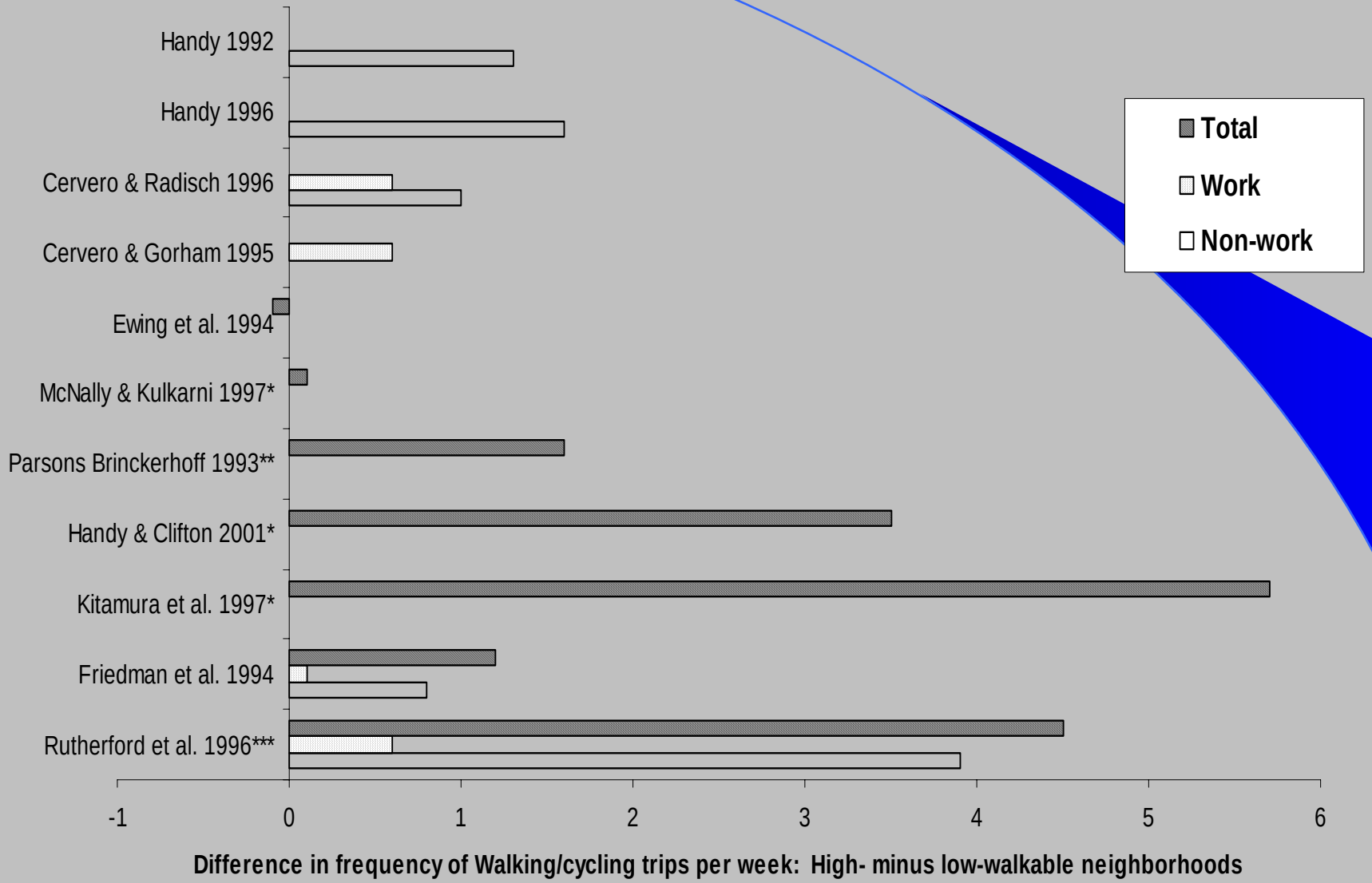
SUBURBAN



TRADITIONAL

Drawing by Frank Speilberg.

Non-motorized Trip Frequency:
High versus Low Walkable Neighborhood Differences



Saelens, Sallis, & Frank. Review paper. Annals of Behavioral Medicine, March 2003.

Relation of neighborhood walkability to objectively measured PA in 98 adolescents in San Diego: SCAN

Mort Kligerman, SDSU, unpublished

Final model of linear regression explaining moderate to vigorous physical activity for buffer of 0.5 mile around the subjects' homes, by street network distance.

Variable	ß	t	p-value	Variance expl.
Gender	-.193	-2.004	.048	.04
Ethnicity	-.284	-2.750	.007	.07
Walkability	**.278**	**2.701**	**.008**	**.07**

Summary

- School-based approaches
  - Active PE programs need to be disseminated
  - Some health ed curricula are effective
  - Providing equip & supervision can be effective
- Active commuting to school
  - Interventions need to be evaluated
- Family-based programs
  - Weak evidence base; innovation needed
- Health care-based programs
  - Promising initial results
- Community-based programs
  - Many opportunities; little evidence
- Make rec facilities available
- Community design
  - Schools can support zoning changes to stimulate active transport