



A Coordinated Approach to Child Health: CATCH

2001 California Childhood Obesity
Conference; School Interventions
to improve nutrition and physical
activity

Today's presentation

- ❖ History of CATCH
- ❖ Overview of CATCH intervention components
- ❖ Main trial study design and results
- ❖ Dissemination of CATCH
- ❖ Question and answer

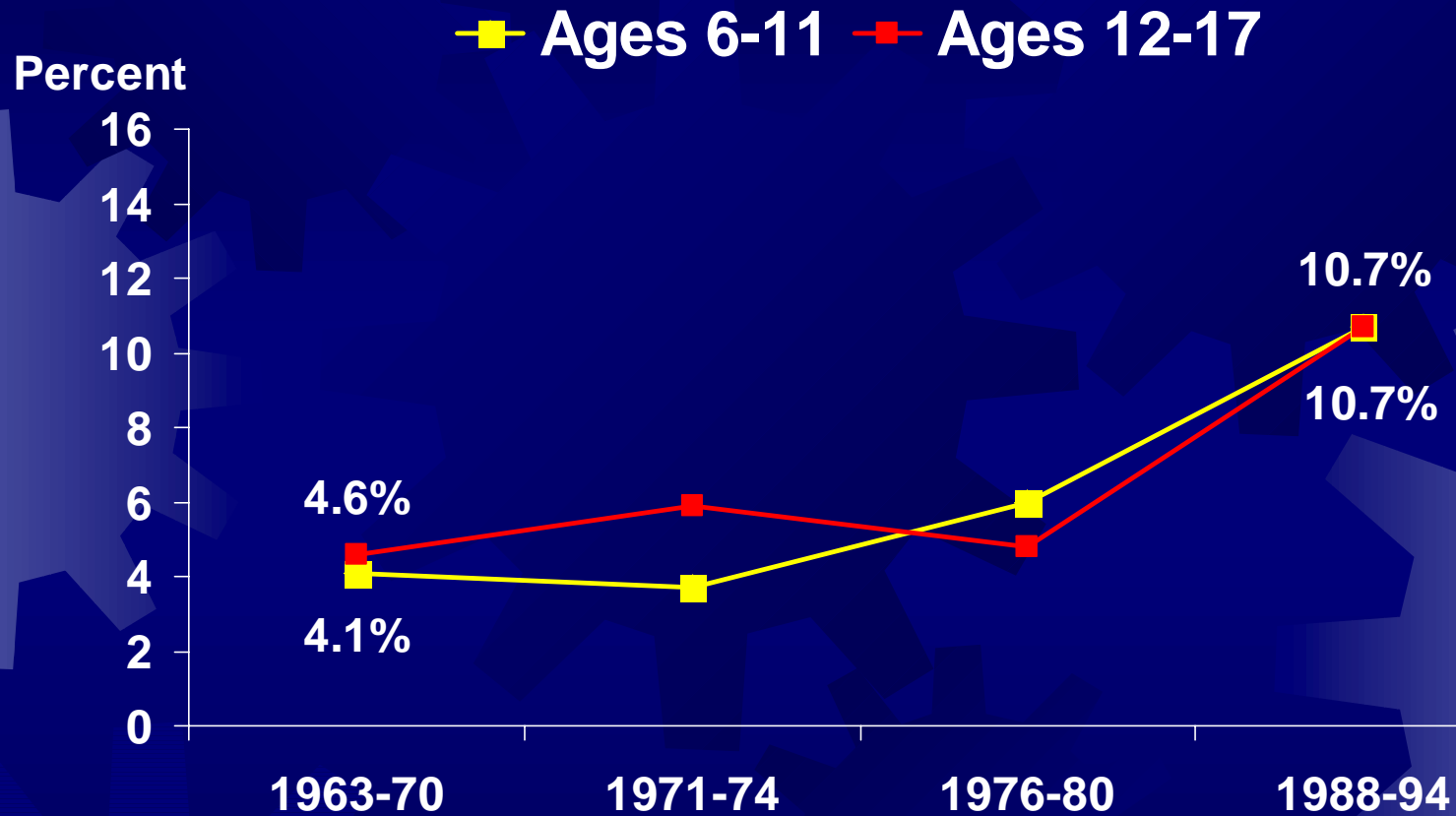


Rationale for Youth Health Promotion

- ❖ Chronic diseases are leading causes of premature death
- ❖ Risk factors for chronic disease begin early
- ❖ Kids less active, more fat today
- ❖ Risk factors track into adulthood
- ❖ Effective interventions exist



Percentage of U.S. Youth Who Were Overweight*, by Age



≥ 95 th percentile for BMI by age and sex based on NHANES I reference data
Source: Troiano RP, Flegal KM. Pediatrics 1998;101(3):497-504.

Where did CATCH come from?

- ★ Guy Parcel- University of Texas
- ★ Cheryl Perry- University of Minnesota
- ★ Phil Nader- University of S. California
- ★ Theresa Nicklas- Tulane University
- ★ Thom McKenzie- San Diego State Univ.
- ★ Gerald Berenson- Tulane University
- ★ Russell Leupker- University of Minnesota
- ★ Leslie Lytle- University of Minnesota



Seven Phases of CATCH

❖ Pilot	1987-91	8 schools
❖ Trial	1991-94	96 schools
❖ Tracking	1994-97	500 schools
❖ Maintenance	1998-99	88 schools
❖ Dissemination	1998-2001	728 + schools
❖ CATCH Kids Club	1999-2001	16 sites
❖ Homocysteine	2000-2001	@100 schools

Research Questions

- ❖ **FEASIBILITY:** Can schools implement a theory driven multiple component CVD prevention program?
- ❖ **MAIN TRIAL:** Does this program change CVD risk factor profiles in children?
- ❖ **MAINTENANCE TRACKING:** Do intervention effects persist without intervention from 5th to 8th grade?
- ❖ **INSTITUTIONALIZATION:** What factors facilitate maintenance of a school health education program?



Research Questions

- ❖ **DIFFUSION:** How can the diffusion of a health promotion program for schools be accelerated?
- ❖ **CATCH Kids Club:** Is CATCH effective in an after-school setting?
- ❖ **Homocysteine:** Do intervention effects persist to 12th grade and what is the relationship between serum homocysteine and dietary and physical activity risk factors?



Unique Features of CATCH

- ❖ **First trial to integrate school, child & family**
- ❖ **Ethnically diverse population**
- ❖ **Four geographic areas of the U.S.**
 - **California**
 - **Louisiana**
 - **Minnesota**
 - **Texas**
- ❖ **Large number of schools (N=96)**
- ❖ **School the unit of randomization & analysis**

Baseline Characteristics

All Sites

Overall 5,106 (100%)

Gender

Male 2,645 (51.8%)

Female 2,461 (48.2%)

Race

Caucasian 3,530 (69.1%)

African American 674 (13.2%)

Hispanic 708 (13.9%)

Other 194 (03.8%)

Site

California 1,379 (27.0%)

Louisiana 1,299 (25.4%)

Minnesota 1,237 (24.2%)

Texas 1,191 (23.3%)

Baseline Characteristics Texas Only

Overall 1,191 (100%)

Gender

Male 575 (52%)

Female 616 (48%)

Race

Caucasian 547 (46%)

African American 177 (15%)

Hispanic 449 (38%)

Other 18 (02%)

CATCH Study Design

96 Schools

Stratified

24 Schools per Study Center

Randomized

14 Intervention Schools

10 Control Schools

Randomized

7 School-based
Programs

7 School and Family-
based Programs



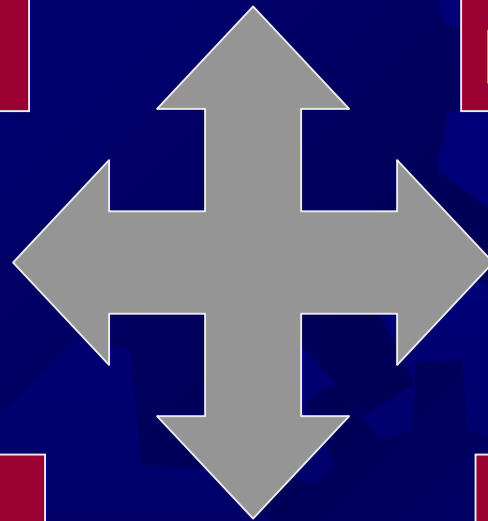
CATCH Intervention Components

Classroom Curriculum

Physical Education

School Food Service

Family



School Food Service

- ❖ Daily throughout school year
- ❖ Focused on:
 - ❖ Menu planning
 - ❖ Food purchasing
 - ❖ Food preparation
 - ❖ Program promotion



Eat Smart Menu Planning

- ❖ Modified existing school menus
- ❖ Decreased frequency of higher fat and higher sodium foods
- ❖ Served entrees lower in fat and sodium
- ❖ Monitored salad bars
- ❖ Asked for input from students, staff, and parents
- ❖ Introduced changes either gradually or at the beginning of the school year



CATCH Eat Smart Guidelines (examples)

- ❖ Drain fat from cooked meat
- ❖ Rinse drained, cooked ground meat
- ❖ Remove skin and fat from chicken
- ❖ Use non-stick cooking spray
- ❖ Reduce or eliminate fat added to vegetables
- ❖ Reduce or eliminate salt added to vegetables
- ❖ Use lower fat or part-skim cheeses



Physical Education

- ❖ Sessions weekly throughout school year
- ❖ Skills for moderate to vigorous physical activity
- ❖ Knowledge of warm up/cool down



CATCH PE objectives

- ❖ Students are involved in MVPA 50% of class time.
- ❖ All students are provided with many opportunities to participate and practice skills.
- ❖ Students enjoy physical activity.
- ❖ Students are encouraged to participate in physical activity outside of school.



CATCH PE Guidebook

- ❖ Instruction & Management Techniques
- ❖ Safety
- ❖ Lesson Plans
- ❖ Appropriate Competition
- ❖ Relay Race Modification
- ❖ Promoting Equity
- ❖ Activity Box Summaries



CATCH PE Activity Box

- ❖ Warm Up & Cool Down
- ❖ Fast Games, Fitness Trek, Walk-Jog-Run
- ❖ Basketball, Football, Frisbee, Soccer, Softball, Volleyball
- ❖ Aerobics, Aerobic Games, Bench Aerobics, Hula Hoop, Jump Rope, Parachute
- ❖ Limited Space
- ❖ Formations



Classroom Curricula

- ❖ 3-5th grades (15-24 sessions/year)
- ❖ Focus on:
 - ❖ Skills training
 - ❖ Modeling by cartoon and peers
 - ❖ Self-monitoring
 - ❖ Social skills (tobacco refusal)
 - ❖ Knowledge
 - ❖ Social norm setting



Family Program

- ❖ Homework done by child with parent/grown-up assistance
 - ❖ 4-6 activity packets per program
 - ❖ Focus on skills development & changing family norms
 - ❖ Activities complement curricula
- ❖ Family fun nights
 - ❖ Health fairs with parent/child participation



Main Trial

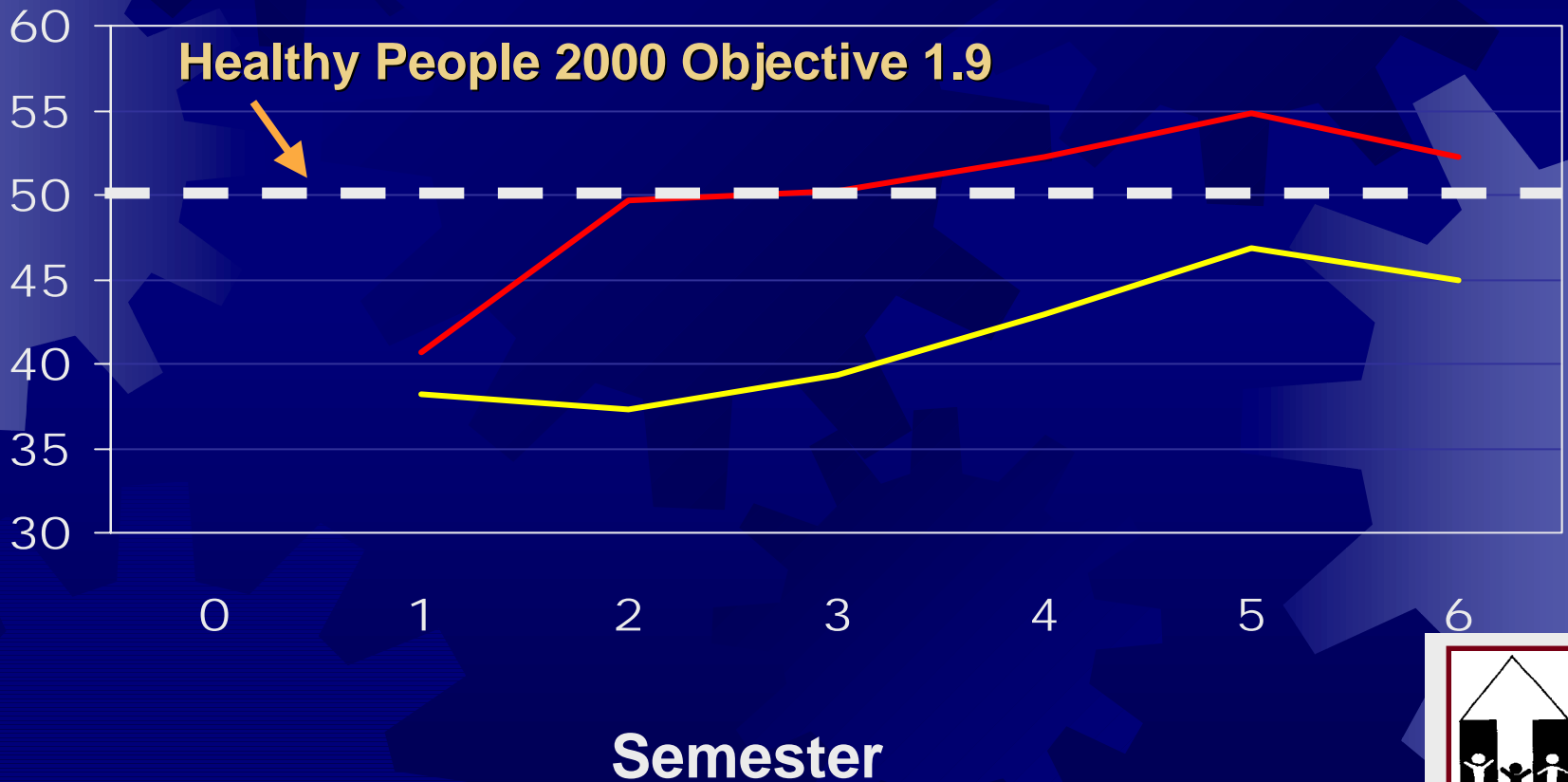
Summary of Significant Effects

	<u>Control</u>	<u>Intervention</u>
P.E. class moderate to vigorous physical activity	43.2%	50.2%
School lunch menus total fat	36.2%	31.9%
School lunch menus saturated fat	13.7%	12.0%
24-hour recall total fat	32.2%	30.3%
24-hour recall saturated fat	12.1%	11.4%
Self-reported vigorous physical activity minutes	46.5 min	58.6 min



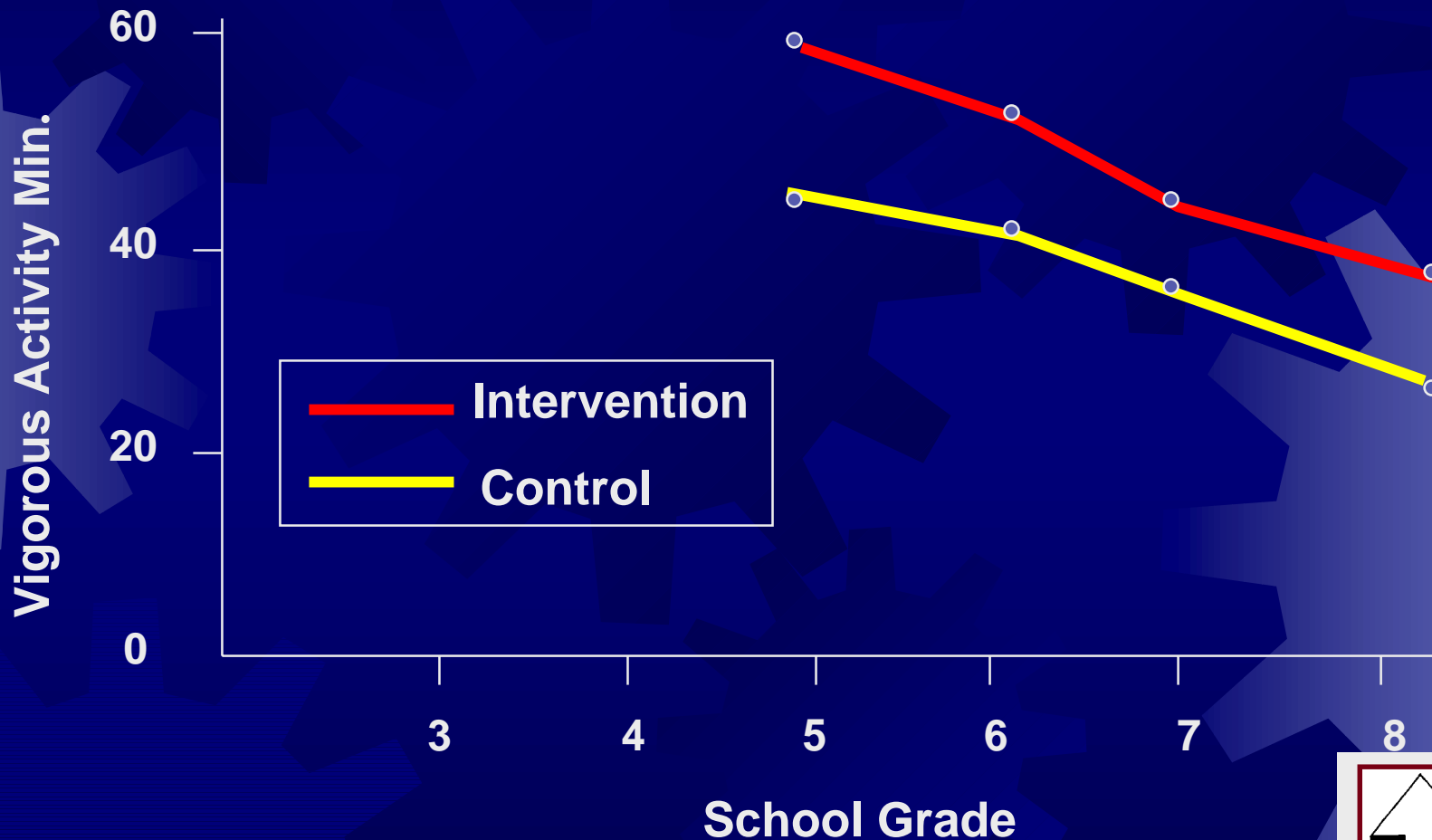
Moderate to Vigorous PA (Percent of Lesson Time)

— Intervention — Control



8th Grade Follow-up

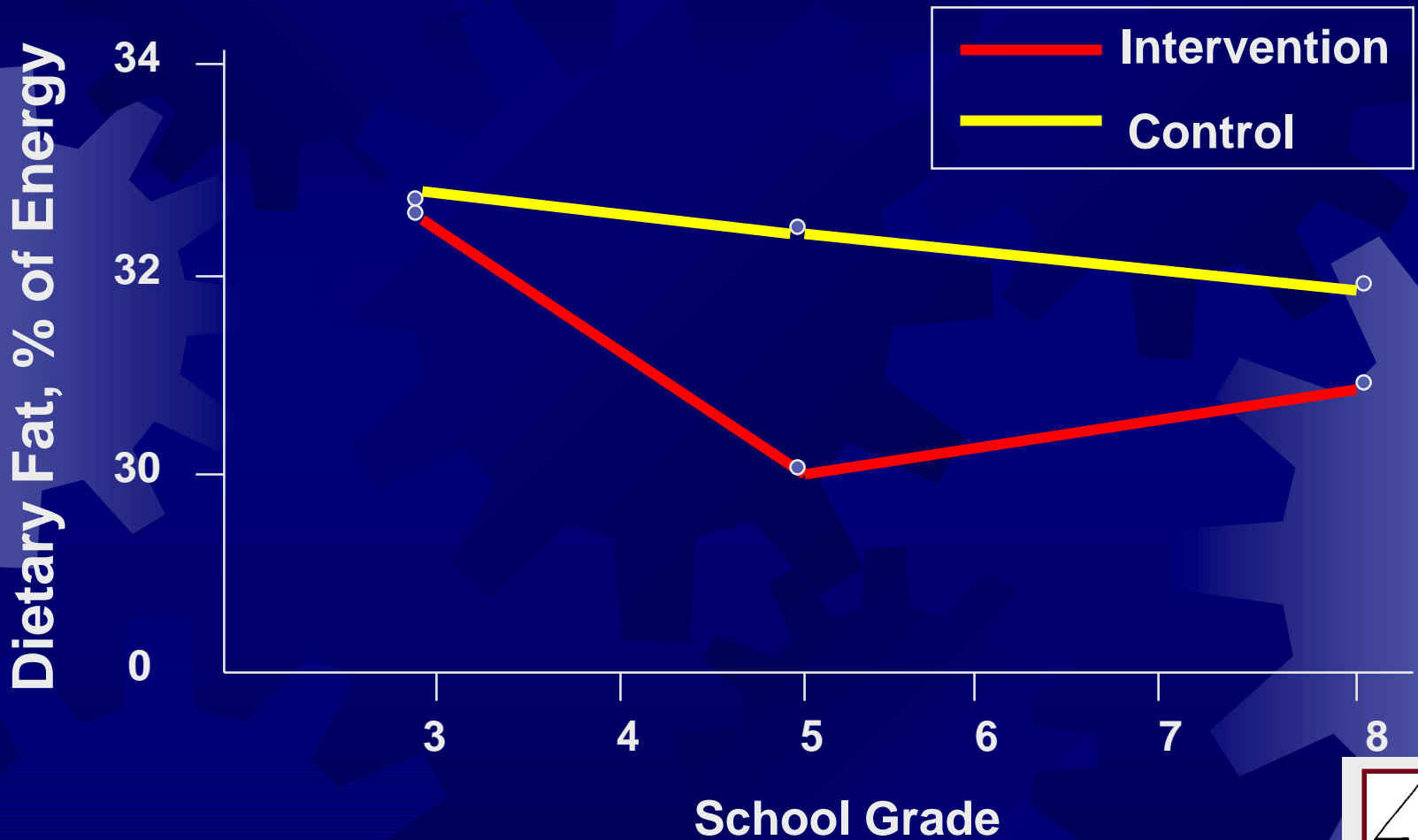
Min/day of Vigorous Physical Activity*



* Not measured at baseline



8th Grade Follow-up Total Fat



CATCH Phase II Results Summary

- ❖ The CATCH program modified school lunches to approach national recommendations for total and saturated fat.
- ❖ The CATCH program increased the time in PE classes devoted to MVPA to meet the year 2010 goal.
- ❖ CATCH intervention students decreased their total fat, saturated fat, calorie, and cholesterol intake.
- ❖ Behavioral changes persisted over three years without additional intervention.



CATCH Phase II Process Outcomes

- ❖ All 96 schools maintained their participation over the 3-year study period.
- ❖ Training sessions were attended by 86% of school food service cooks, 94% of PE specialists, and 86% of teachers.
- ❖ Direct observations revealed 90% of food service guidelines met, 80% of CATCH PE activities implemented, and 88% of classroom sessions completed.
- ❖ All 28 schools held Family Fun Nights in the 3rd and 4th grades.
- ❖ Over 70% of families participated each year in home team program activities and 63% attended a Family Fun Night.

CATCH Publications: 60 published + 21 in-press

- ❖ **JAMA (2)**
- ❖ **Archives of Pediatrics and Adolescent Medicine (1)**
- ❖ **Pediatrics (1)**
- ❖ **Pediatric Exercise Science (1)**
- ❖ **American Journal of Public Health (1)**
- ❖ **American Journal of Health Promotion (3)**
- ❖ **Journal of School Health (3)**
- ❖ **Preventive Medicine (11)**
- ❖ **Health Education Quarterly (7)**
- ❖ **School Food Service Review (5)**
- ❖ **Journal of American Dietetic Association (3)**
- ❖ **American Journal of Epidemiology (1)**

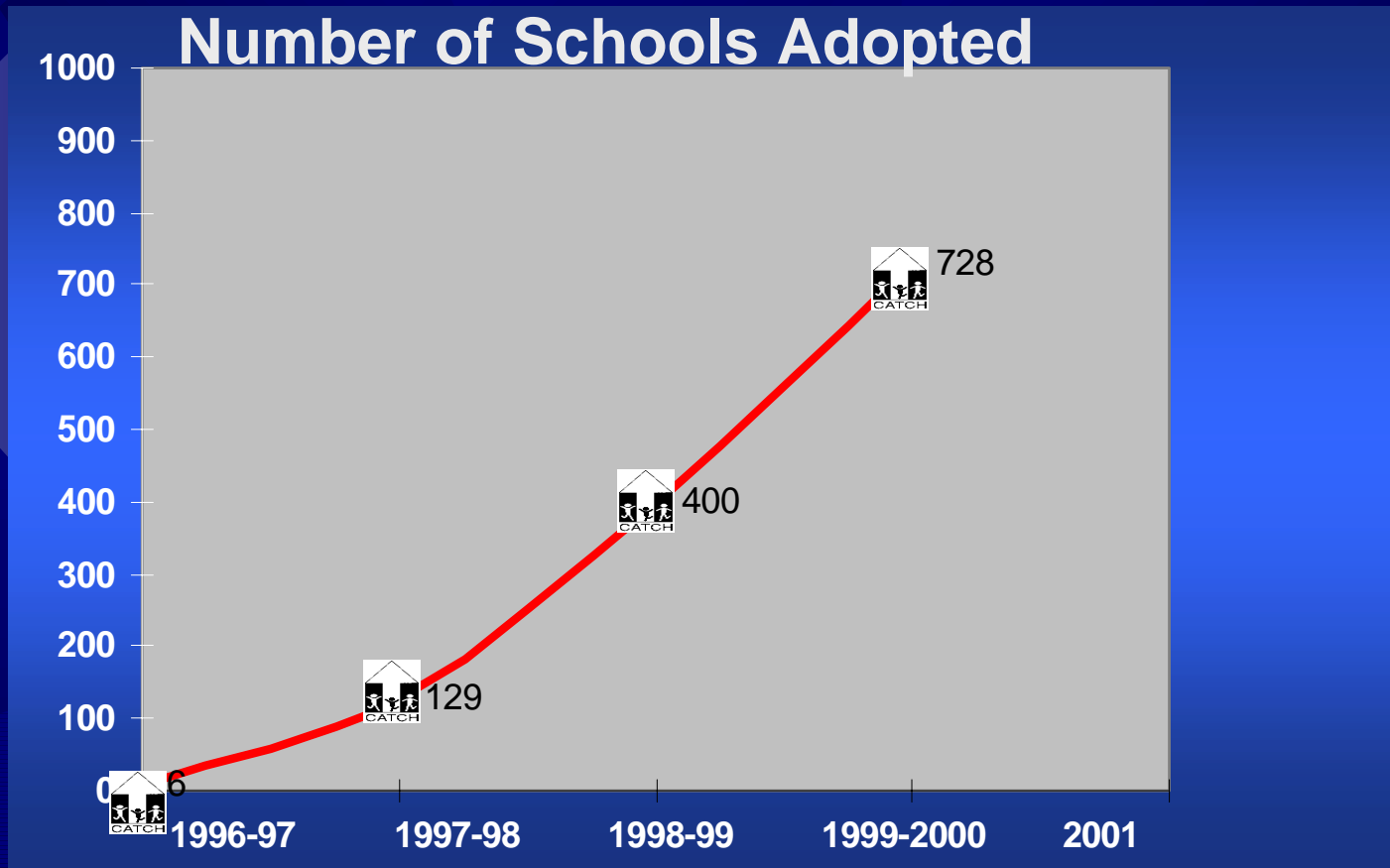


Dissemination Study Goals (1997-2000)

- ❖ What strategies are effective in disseminating CATCH?
- ❖ What are the characteristics of schools that adopt CATCH?
- ❖ What proportion of schools who purchase CATCH curricula attend training?
- ❖ Are schools implementing CATCH?
- ❖ Of schools implementing CATCH, does this result in positive behavior change?



CATCH Adoption Curve



CATCH

Dissemination Successes

CATCH has reached 728 Texas schools and over 364,000 children

We have conducted over 50 training sessions during the past 3 years:

- ❖ **Houston, San Antonio, El Paso, Austin, Sweetwater, Wichita Falls, Edinburg, Mission, Brownsville, Weatherford, Aldine, Fort Bend, Corpus Christi**
- ❖ **>599 schools trained**



CALIFORNIA CATCH

- ★ San Diego Region
- ★ Other California Schools
- ★ Possible Elementary Schools n=
- ★ California School Children n=

Summary and Conclusions

- ❖ A coordinated school health program (CSHP) can be implemented in elementary schools.
- ❖ CATCH reduced total fat and saturated fat content of school lunches.
- ❖ CATCH increased moderate to vigorous physical activity (MVPA) during PE classes.
- ❖ Behavioral changes persisted over three years without additional intervention.
- ❖ It is possible to broadly disseminate a coordinated school health program.



Handy Web Resources

- ❖ **CATCH website:**

<http://www.sph.uth.tmc.edu/chppr/catch>

- ❖ **School Health Index:**

<http://www.cdc.gov/nccdphp/dash/SHI/index.htm>

- ❖ **School Health Advisory Councils:**

<http://www.acs-tx.org/cshe/toolbox.htm>

- ❖ **CDC Programs That Work:**

<http://www.cdc.gov/nccdphp/dash/rtc/index.htm>

- ❖ **Publisher: Flaghouse.com**

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