

Implementing Nutrition Guidelines: Moving from Ideal to Real

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Learning Objectives

- Describe and understand the Current Nutrition Guidelines
- Identify various influences on eating behaviors and understand strategic implementation methods for the nutrition guidelines
- Identify potential barriers to implementing healthful food choices and eating patterns to individuals, health care professionals and the community
- Identify ways to implement change to improve outcomes by incorporating the nutrition guidelines

To Implement You Need to Know

- Current guidelines
- What People are Currently Eating
- Why People Eat What They Eat
- Individual Interventions
- Population Based Interventions

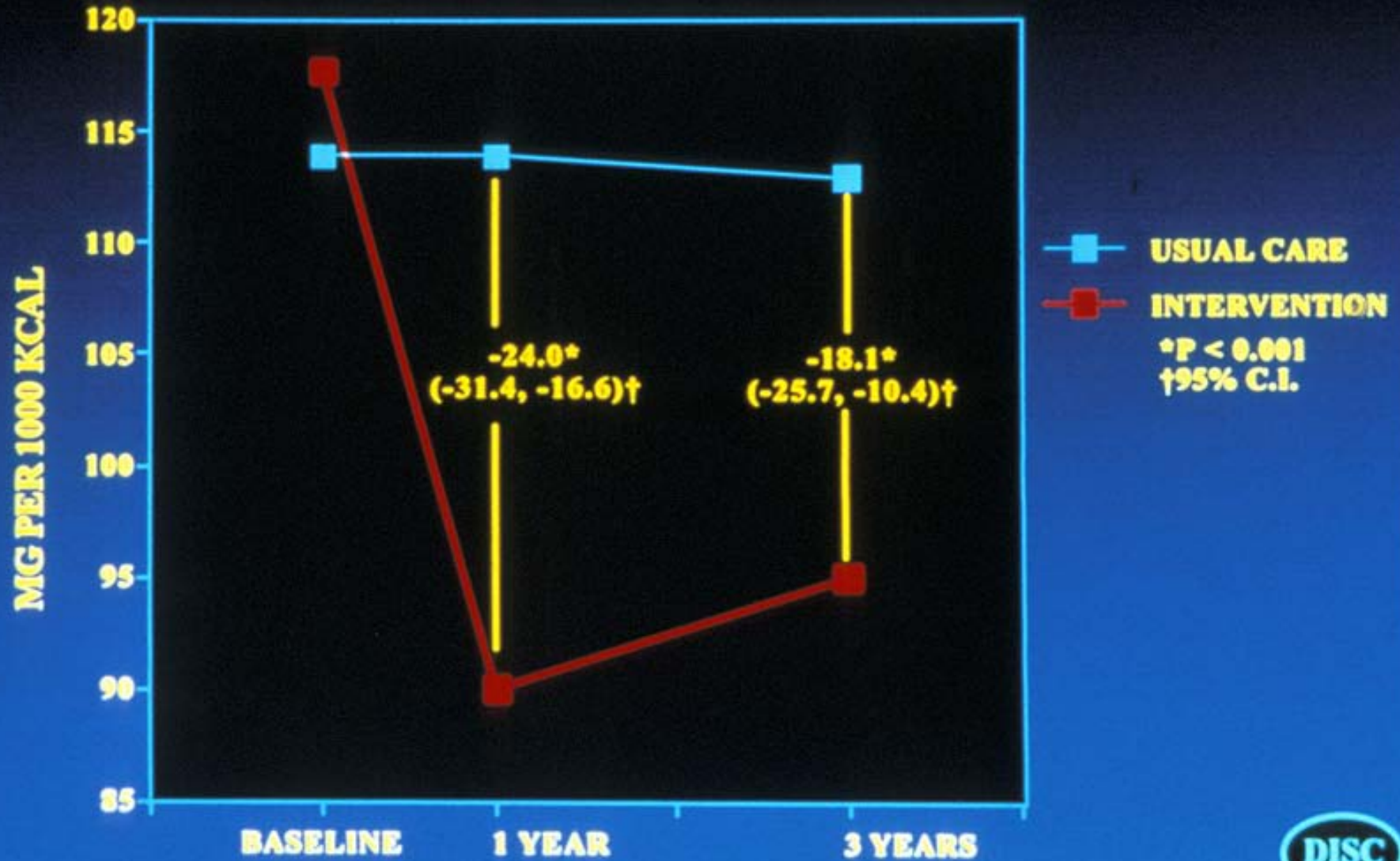
The New Cardiovascular Disease Epidemiology

- CVD rates rising in young adults
- Overall decline in CVD mortality attributable to prevention (vs. acute care) decreasing (US lower than the rest of the industrialized world)
- While gains made with regard to tobacco, cholesterol, and blood pressure control, obesity and diabetes mellitus contributing to rise in CVD

Nutrition & Heart Disease Risk Factors

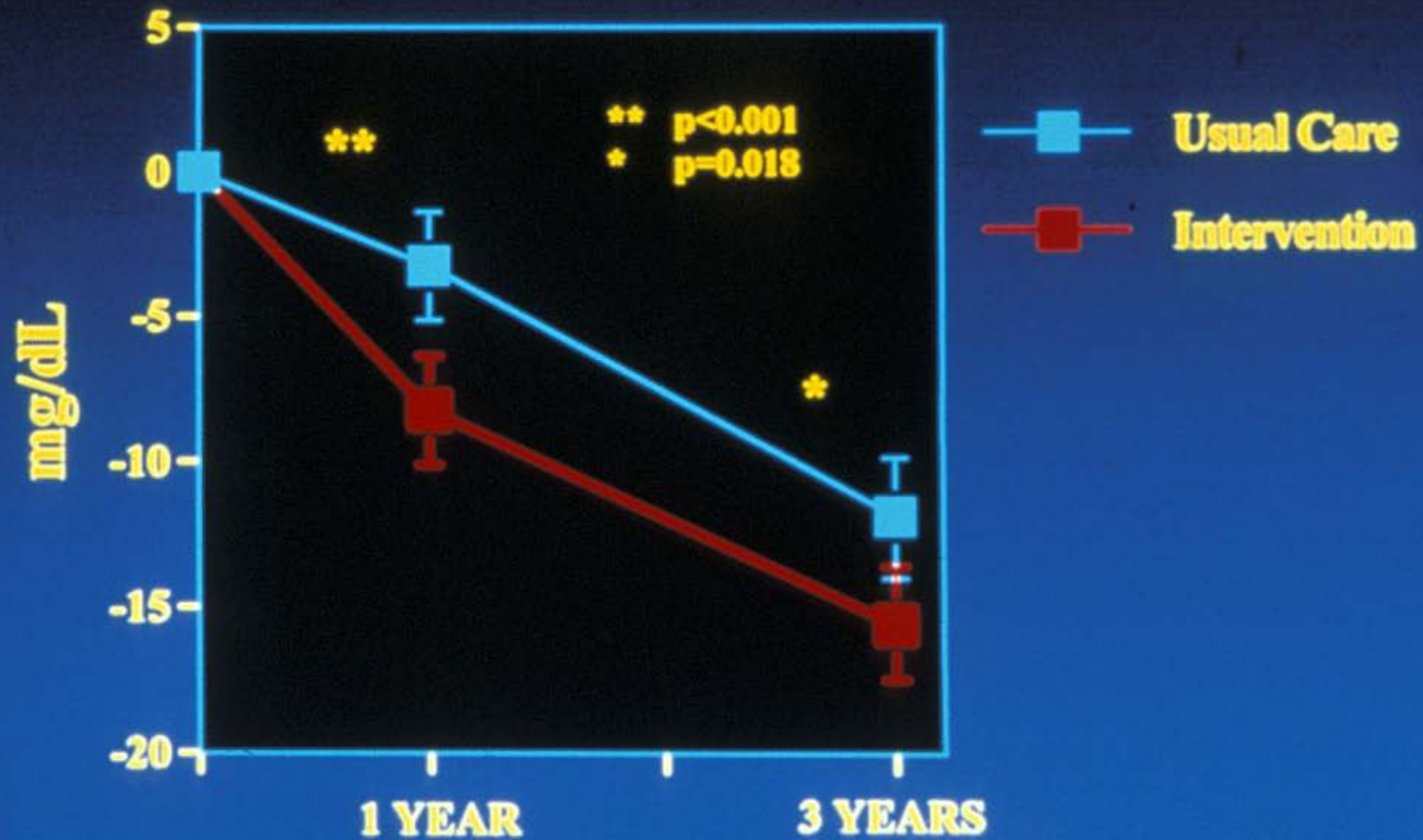
- Cholesterol
- Blood Pressure
- Diabetes
- Obesity

CHOLESTEROL INTAKE



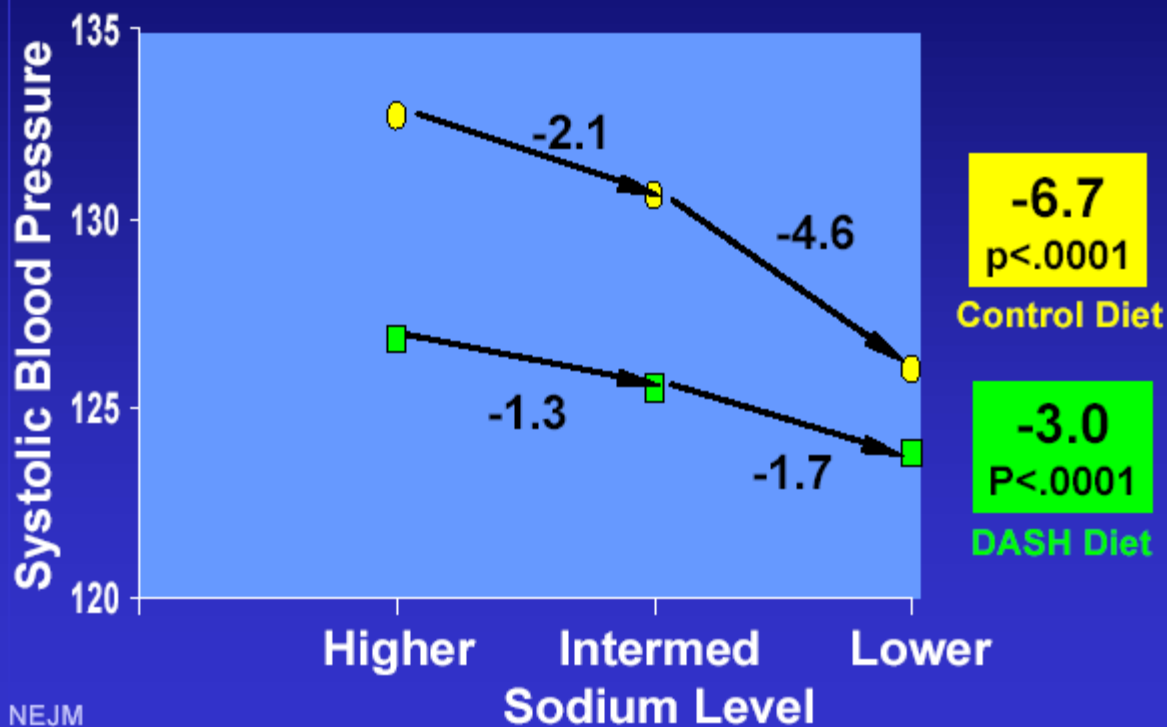
LDL-CHOLESTEROL CHANGE

(Mean & 95% C.I.)





Effect of *Sodium Level* on Systolic Blood Pressure



Source:
Sacks et al, NEJM
2001; 344:3-10

Historic Approach to Dietary Guideline Development

- Relied upon metabolic ward studies
- Macronutrient strategies
 - % intake of carbohydrates, fats (saturated and unsaturated), and protein
- Micronutrient strategies
 - Dietary safety
 - Helpful micronutrients (e.g. fiber)

Limitations of Past Strategies

- People eat food, not (%s)
- Multiple guidelines exist, some more oriented towards specific diseases rather than overall health
- Differences among guidelines and the latest “hot result”, not consistency emphasized in the media

American Heart Association Dietary Recommendations

- A diet that primarily relies on fruits and vegetables, whole grain foods, low-fat and fat-free dairy products, beans, fish, and lean meat
- Low intakes of saturated and *trans* fat, cholesterol, and added sugar and salt
- Energy intake and physical activity appropriate for the maintenance of a normal weight for height
- Adequate intake of micronutrients
- Moderate alcohol consumption (adults)

Strategies for Healthy Cardiovascular Nutrition

- Balance dietary calories with physical activity to maintain normal growth
- 60 minutes of moderate to vigorous play or physical activity daily
- Eat vegetables and fruits daily, limit juice intake
- Use vegetable oils and soft margarines low in saturated and *trans* fatty acids instead of butter or most other animal fats in the diet

Strategies for Healthy Cardiovascular Nutrition cont'd

- Eat whole grain breads and cereals
- Reduce the intake of sugar-sweetened beverages and foods
- Use fat-free and low-fat milk and dairy products daily
- Eat more fish, especially oily fish, broiled or baked
- Reduce salt intake, including salt from processed foods

Nutrition Counseling by Health Care Professionals

- Information Based
- Little success
 - don't assess patient's interest
 - insufficient counseling time
 - low provider sense of efficacy, knowledge
 - patient's literacy not assessed
 - recommendations, handouts may not be congruent with the patient's social situation

Health Professionals Lack Skills for Treating Pediatric Obesity

- 39% of Pediatricians report low proficiency in behavioral management strategies.
- 31% of RDs and 25% of Pediatricians report low proficiency in managing parenting techniques.
- 13% of Registered Dietitians and 18% of pediatricians report low proficiency in modifying sedentary behaviors.
- 46% of Registered Dietitians and 30% of pediatricians report low proficiency in assessing family conflict.

Dietary Patterns in the United States

- The number of eating occasions is increasing
- Portion sizes of actual meals consumed is increasing
- Away from home eating continues to increase
- Adult consumption patterns differ on weekends
- The trends toward greater consumption of calorically-sweetened beverages continues

Why Care about Snacking Behaviors?

- Snacks have increased in number significantly over time
- Snacks are consistently more energy dense and less nutrient dense (calcium, fiber, folate) than meals
- Snack portion size: some studies suggest the average size of a snack remains unchanged, others suggest that it has increased
- Contribution of daily calories by snacks increased by 30% to approximately 25% of total kcal in 1996

Why Care about Portion Size?

- Food portion sizes appear to be positively related to energy intake in children and adults
- Marketplace food portions are consistently larger than in the past
- Soft drinks are a leader in increased portion sizes
 - Energy intake positively associated with non-diet soft drinks in children and adolescents
 - Trade-offs seen between soft drink intake and milk intake

Were Important Trends found in Portion Sizes between 1977-1998?

Portions increasing for all foods in all locations (except pizza):

Salty Snacks by 93 kcals (0.6 ounces)

Soft Drinks by 49 kcals (6.8 ounces)

Hamburgers by 97 kcals (1.3 ounces)

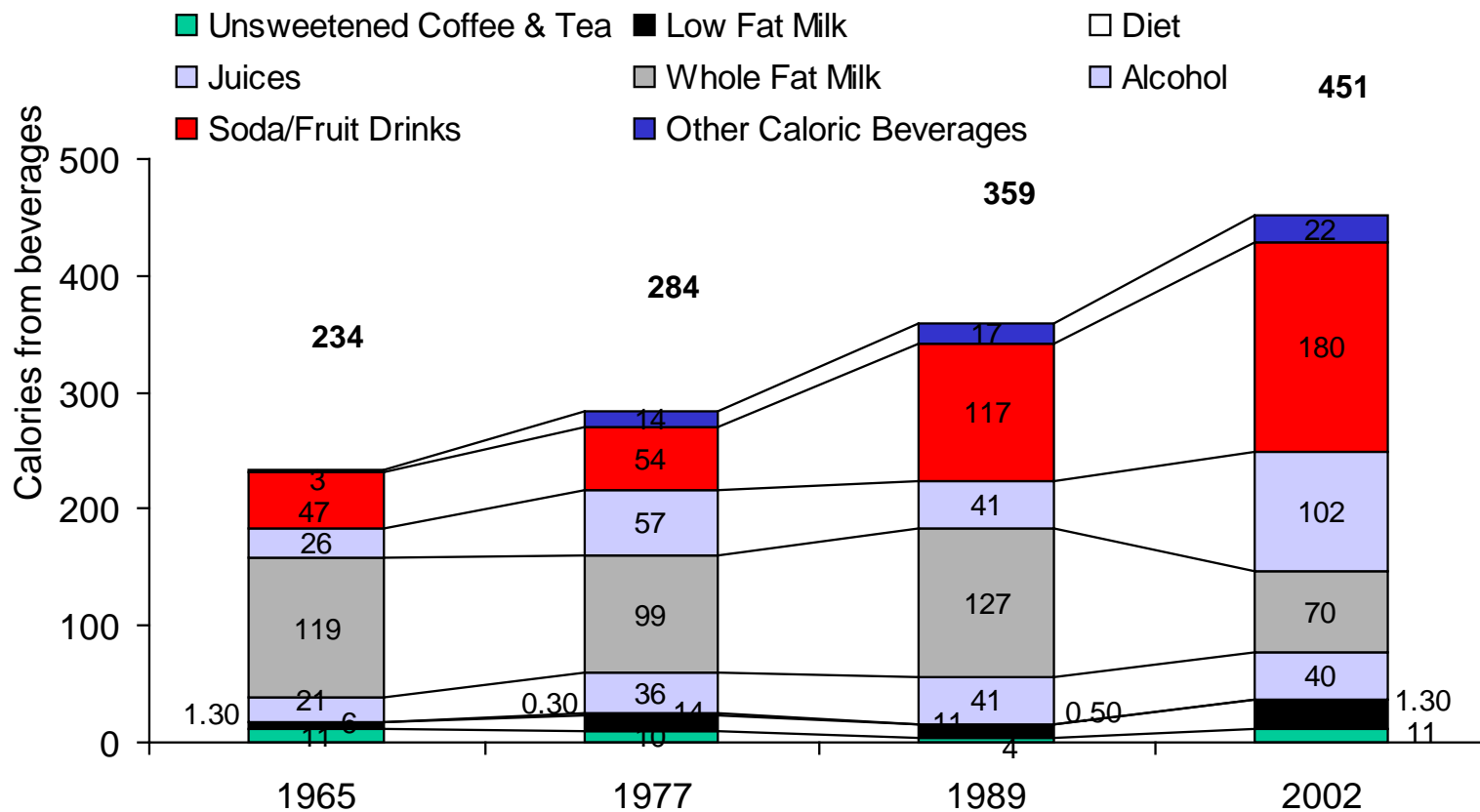
French Fries by 68 kcals (0.5 ounces)

Mexican Food by 133 kcals (1.7 ounces)

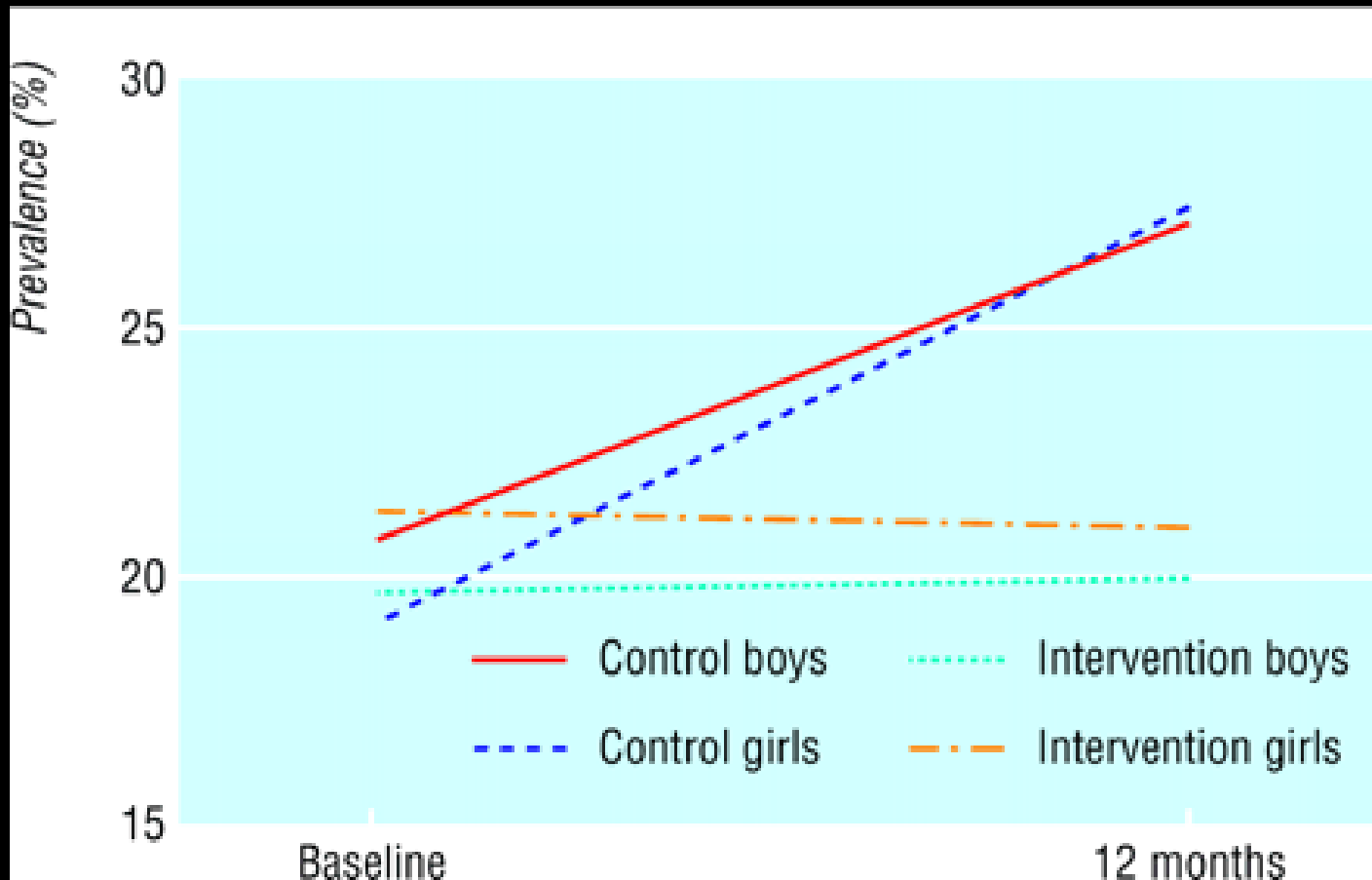
Sugar Sweetened Beverages are particularly important for Obesity

- Studies of appetitive sensations (e.g. hunger, fullness, prospective consumption) support the view that fluids are less satiating than solid foods; beverages are not satiating during a specific meal, there is no energy adjustment
- Further dietary compensation (energy intake adjustments made during the day to compensate for earlier intake) have been studied with solid, semisolid and fluid foods. For fluids, compensation is very high; minimal calorie reduction in other foods occurs

Per Capita Change in Calories from Beverages Between 1965 and 2002 for US adults aged 18 and older

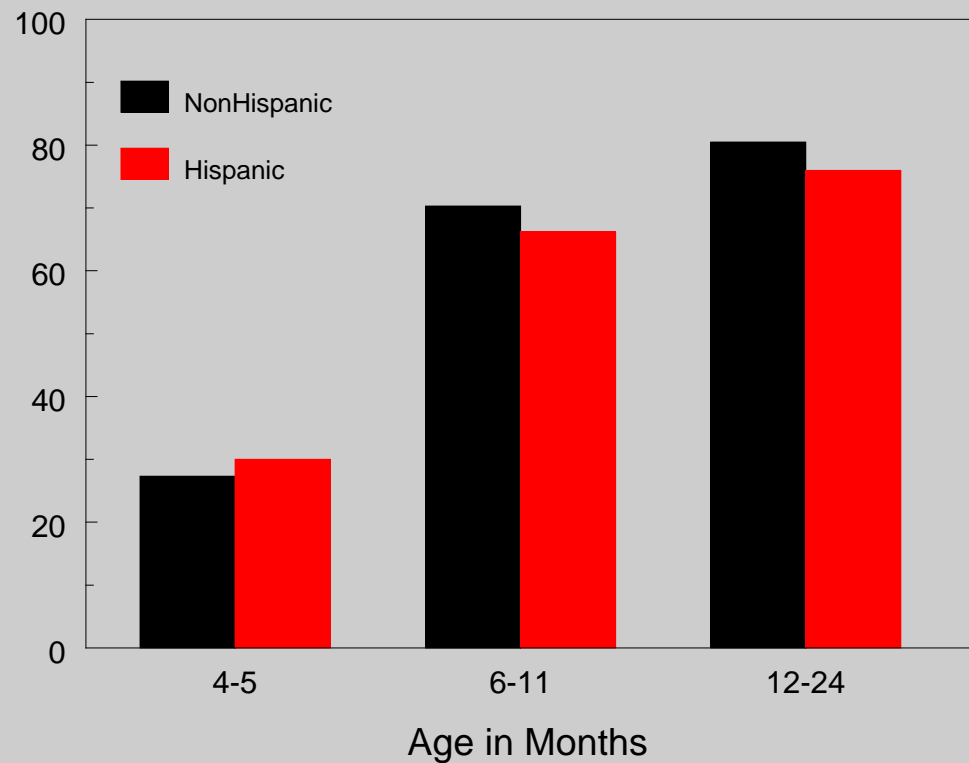


School-based Treatment for Childhood Obesity via “ditching the fizz”



Substantial Proportions did not eat any Vegetables in a day.

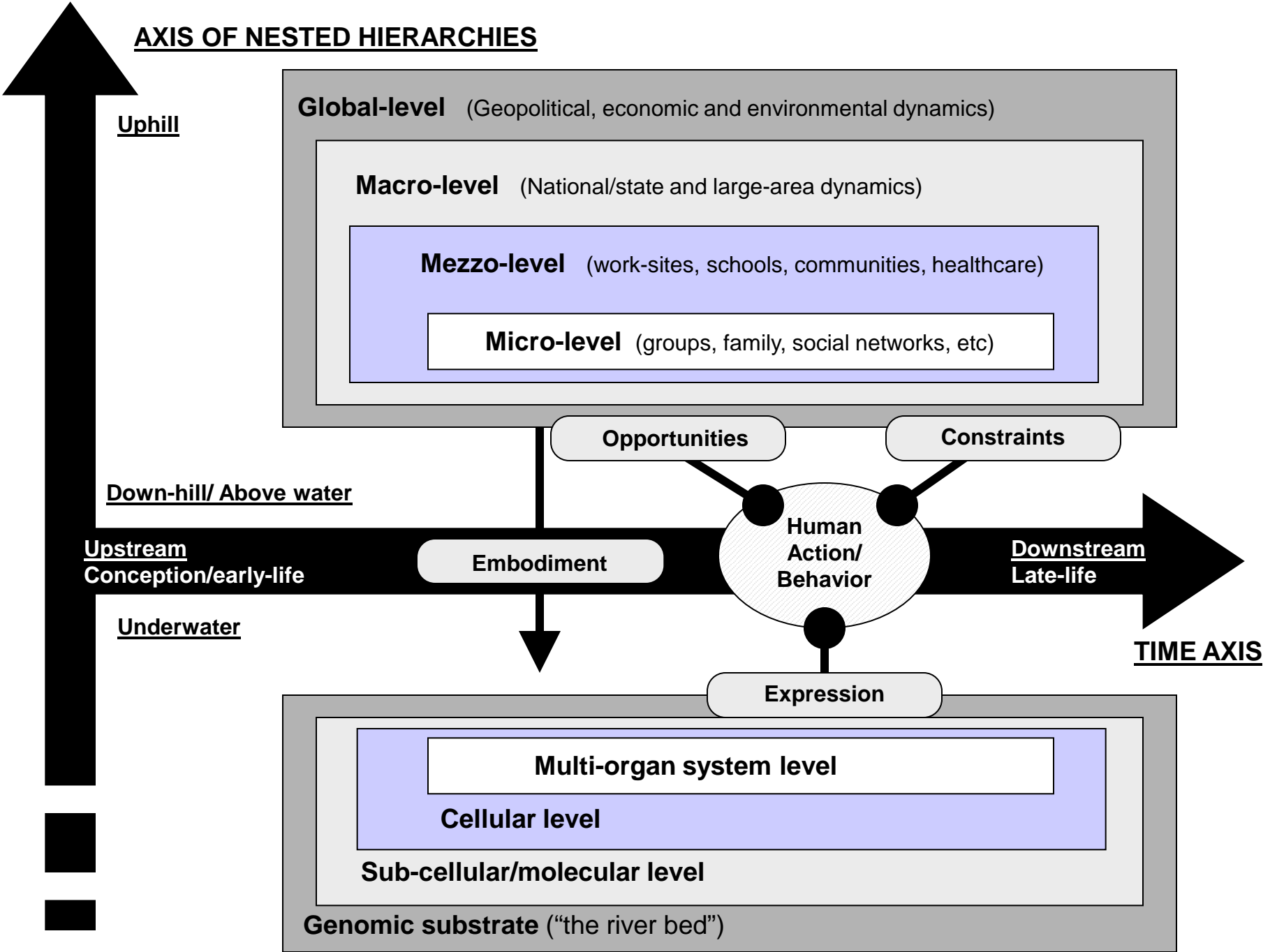
Percent of infants/toddlers consuming at least once per day



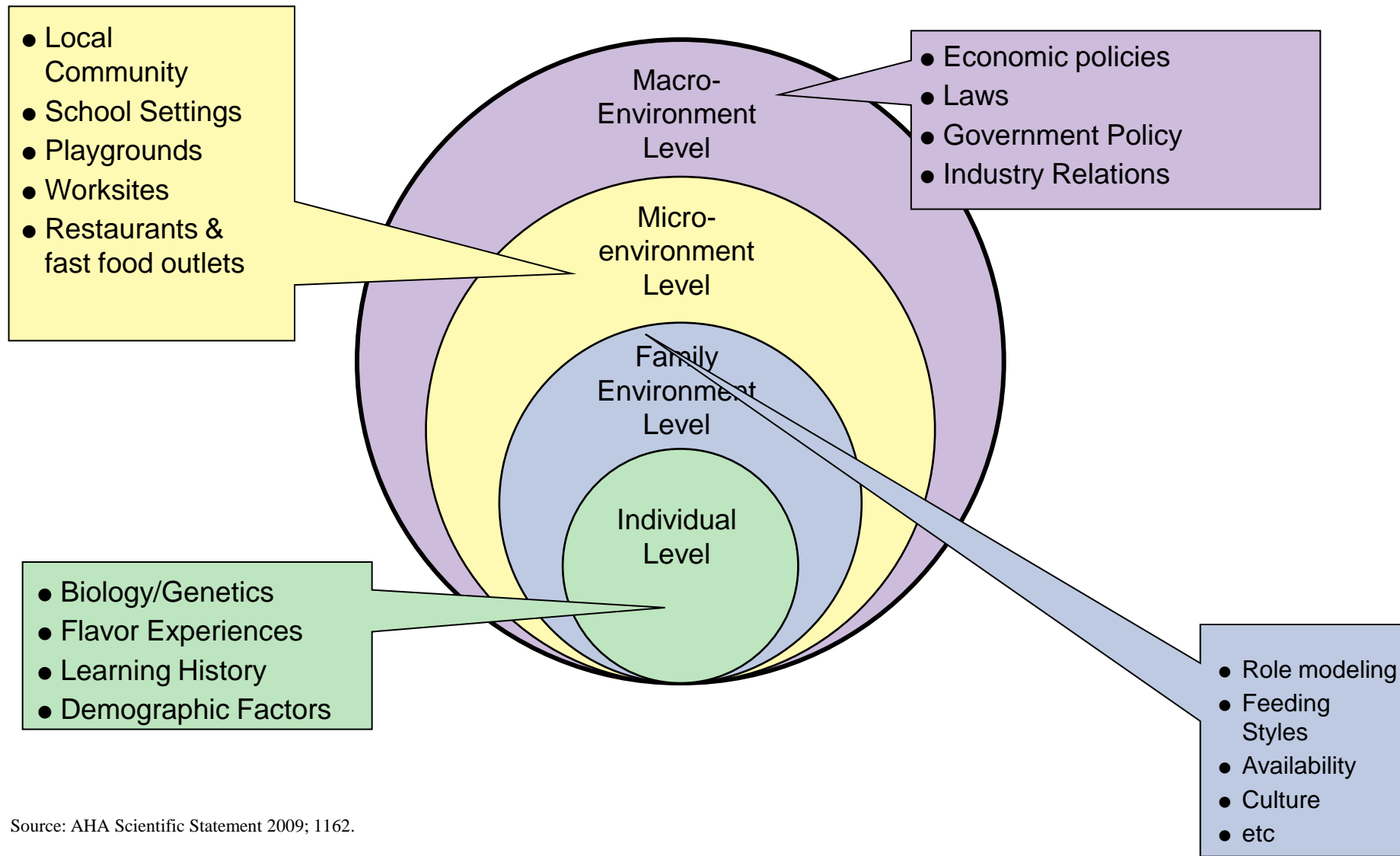
Summary

- There is a mismatch between physiology and the environment.
- We evolved in an environment of cycles of feast-famine and activity-rest.
- We live in an environment that provides food everywhere- it's inexpensive, good tasting and served in large portions.
- We have a physiology and sensory system that says “Eat whenever food is available; eat sweets, fatty and salty foods.”

AXIS OF NESTED HIERARCHIES



Multi-level Framework for Identifying Facilitators or Barriers to Attaining AHA Dietary Recommendations



The Current Situation

- Not enough literature to draw evidence-based conclusions on effective prevention/treatment strategies.
- Limited quality data.
- Few interventions have significant effects that have been replicated and are generalizable.

The My Lifestyle Study - Challenges

- Chaotic Lifestyle
 - Multiple caregivers/no standards for self discipline
 - No routines for meals, snacks, physical activity, bedtime
 - High intake of sugary beverages
 - Extreme sedentary lifestyle including TV watching (3 plus hours daily)
- Low or No Parenting Skill
 - Mothers (usually obese) feel hopeless about their own unhealthy eating behaviors, but want to prevent their children from succumbing to the same
 - Little or no appropriate role modeling, setting of limits, and structuring of child's meals and sleep schedule

A Major Obstacle

- Parents today are often not equipped to be parents
 - Modern society (due to distance, divorce, etc.) finds many parents without the benefit of guidance or support from grandparents or other role models who traditionally provided these lessons in life skills
 - Parenting today occurs in a health-hostile environment that offers:
 - Convenience and affordability of fast food
 - Adverse messages from TV and computer usage
 - “Normalization” of being overweight

Principles of Behavioral Counseling

- Assess motivation to change
- Self evaluation
- Set a goal
- Attempt change
- Evaluate Success
- Praise efforts that are good; ignore bad behaviors

Behavior Change Techniques for Families

- Self-Monitoring
 - ↓ Food Intake, Physical Activity, Weight
- Social Reinforcement Procedures
 - ↓ Praise
 - ↓ Behavioral Contracting
 - ↓ Reinforcement = social, *not* food, money, or gifts.
- Stimulus Control of Home
- Parental Modeling of Appropriate Behaviors

Simple Messages

- Eat Breakfast
- Don't Snack
- One Plate (No seconds)
- Weigh Yourself
- Schedule exercise
- Make Your Own Food
- Eat with Your Family

Good Foods

- Whole Grains
- Low Fat Dairy Products
- Fruits and Vegetables
- Fish
- Beans (legumes)

Lessons Learned

- Choose Whole-Grain, High-Fiber Foods



Lessons Learned

- Consume a diet rich in vegetables and fruits



Lessons Learned

- Consume a diet rich in vegetables and fruits



What we Know Works

- Food Acquisition Strategies -- Community
 - Shopping strategies
 - Bringing food into the home / access and availability
 - Dining out (fast food restaurants)
- Specific Food Selection
 - Limit Sugar Sweetened Beverages
- Food Presentation and “Positive Parenting” Strategies
 - Eating family meals together
 - Reduce portion size / meal replacements
 - Repeated exposure/familiarity
 - Role modeling and “behavior change basics”

Implementing AHA Guidelines in the Community

Recommendations

- Create a Healthy Food Environment
 - Farmer's markets, vending machines out of schools
- Subsidize Good Food Choices
 - Make good food cheaper, Farm Bill, ?taxation
- Market Nutrition
 - Counter advertising
- Empower Consumers
 - Nutrition knowledge at point of purchase

Training Trainers in Body Works Program

- Personal interest and knowing the community trumps education level
- Behavior change strategies trump information based presentations
- Easier to recruit trainers than to recruit participants

Challenges to Research on Workplace Interventions

- **Employee Diversity**
 - Culture, personality, need for privacy
 - Range of skills/knowledge
 - Irregular timing of meals, stress
- **Workplace Logistics**
 - Access, Eating Out, Social aspect of meals
- **Methodologic Constraints**
 - Funding, sample size, selection bias, interruption of work activities, how to make measurements

Limitations

- Community based work is for the most part unpublished
- Health outcomes may not be measurable
- Resources marginal (limited funds, need for volunteers, absence of chronic support)

Strategies

- Attack the harmful eating patterns (snacks, sugar beverages, portion size, etc)
- Assess strategies to overcome barriers (e.g. train trainers)
- Teach behavioral intervention techniques and study efficacy
- Evaluate population based interventions (subsidizing healthy foods, marketing health, creation of healthier eating environments, link education with healthy behaviors)

Features of the social, built, and natural environments
(see Figure 1 for details):

RISK REGULATORS

Material conditions
(e.g., food availability)

Discriminatory practices, policies and attitudes
(e.g., residential segregation)

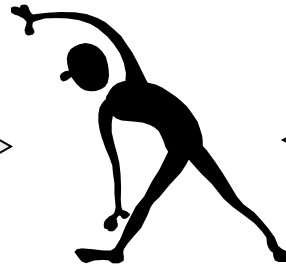
Neighborhood/Community conditions
(e.g., fear of crime)

Behavioral norms, rules, and expectations
(e.g., dietary practices)

Conditions of work
(e.g., migrant labor)

Laws, policies & regulations
(e.g., cigarette taxes)

OPPORTUNITIES



CONSTRAINTS

EXPRESSION

Material exposures and inputs

Cardio-respiratory system

Endocrine system

Immune system

Nervous system

Metabolic systems

Regulatory Systems

Non-material (symbolic) exposures & inputs

Genetic and biological substrates
(see Figure 1 for details)



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