

# DEVELOPING AN ACTION PLAN



# Developing an Action Plan

- The IOM committee was charged with developing an action plan focused on preventing obesity in children and youth in the United States.
- The aim was to identify the most promising approaches for prevention, including policies and interventions for immediate action and in the longer term.
- The critical elements of the action plan's development, were as follows:
  - ▣ Clarifying definitions related to key concepts
  - ▣ Developing a framework to guide the type and scope of data gathered
  - ▣ Articulating obesity prevention goals for children and youth
  - ▣ Identifying criteria for conducting an in-depth review of the available evidence
  - ▣ Translating the findings from the best available evidence into specific recommendations that comprise an integrated action plan.

# Definitions and Terminology (BMI)

- BMI is the recommended indicator of obesity-related risks in both children and adults.
- BMI in children correlates reasonably well to direct measures of body fatness and high BMIs in children have been associated with many co-morbidities such as elevated blood pressure, insulin resistance, and increased lipids.
- Because children's development varies with age, and because boys and girls develop at different rates, BMI values for children and youth are specific to both age and gender.

# Definitions and Terminology (BMI)

- It has been customary to use the term “overweight” instead of “obese” to refer to children with BMIs above the age- and gender-specific 95th percentiles; however the term “obese” more effectively conveys the seriousness, urgency, and medical nature of this concern than does the term “overweight,” thereby reinforcing the importance of taking immediate action.
- The committee recognizes, however, that the term obese is probably not well suited for children younger than 2 years of age because the relationships among BMI, body fat, and morbidity are less clear at these ages.

# Definitions and Terminology

- **In this report, the term “obese” refers to children and youth between the ages of 2 and 18 years who have BMIs equal to or greater than the 95th percentile of the age- and gender-specific BMI charts developed by CDC.**

# Definition and Terminology (approach)

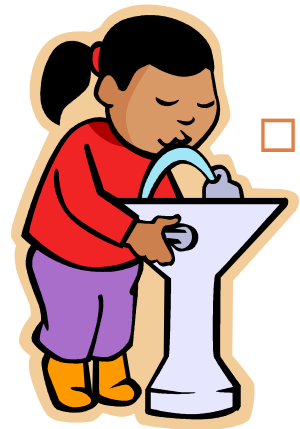
- A **primary prevention** approach emphasizes efforts that can help the majority of children who are at a healthy weight to maintain that status and not become obese.
- Within this approach, the committee developed the majority of its recommendations as “**population-based**” actions—directed to the entire population instead of high-risk individuals.
  - ▣ \*However, the IOM committee acknowledges that obesity prevention will need to combine population-based efforts with targeted approaches for high-risk individuals and subgroups.
  - ▣ \*Such as children and adolescents in particular ethnic groups with higher than average obesity-prevalence rates and communities in which there are recognizable social and economic disparities.

\*The focus of the rest of this course will be on these high-risk subgroups.

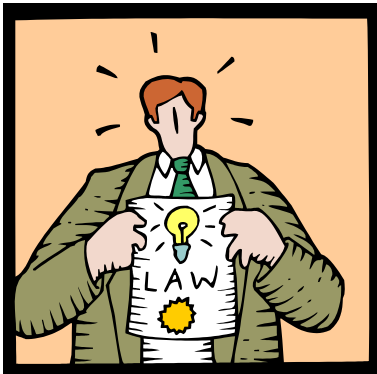
- This approach to obesity prevention is similar to the range of prevention efforts that have been used to address many other public health problems.

- Some efforts directly change the physical environment but require no purposeful action on the part of the target population (e.g., fluoridation of community drinking water and food fortification);

- Others directly require behavior change in targeted high-risk populations (e.g., immunization of children); and...



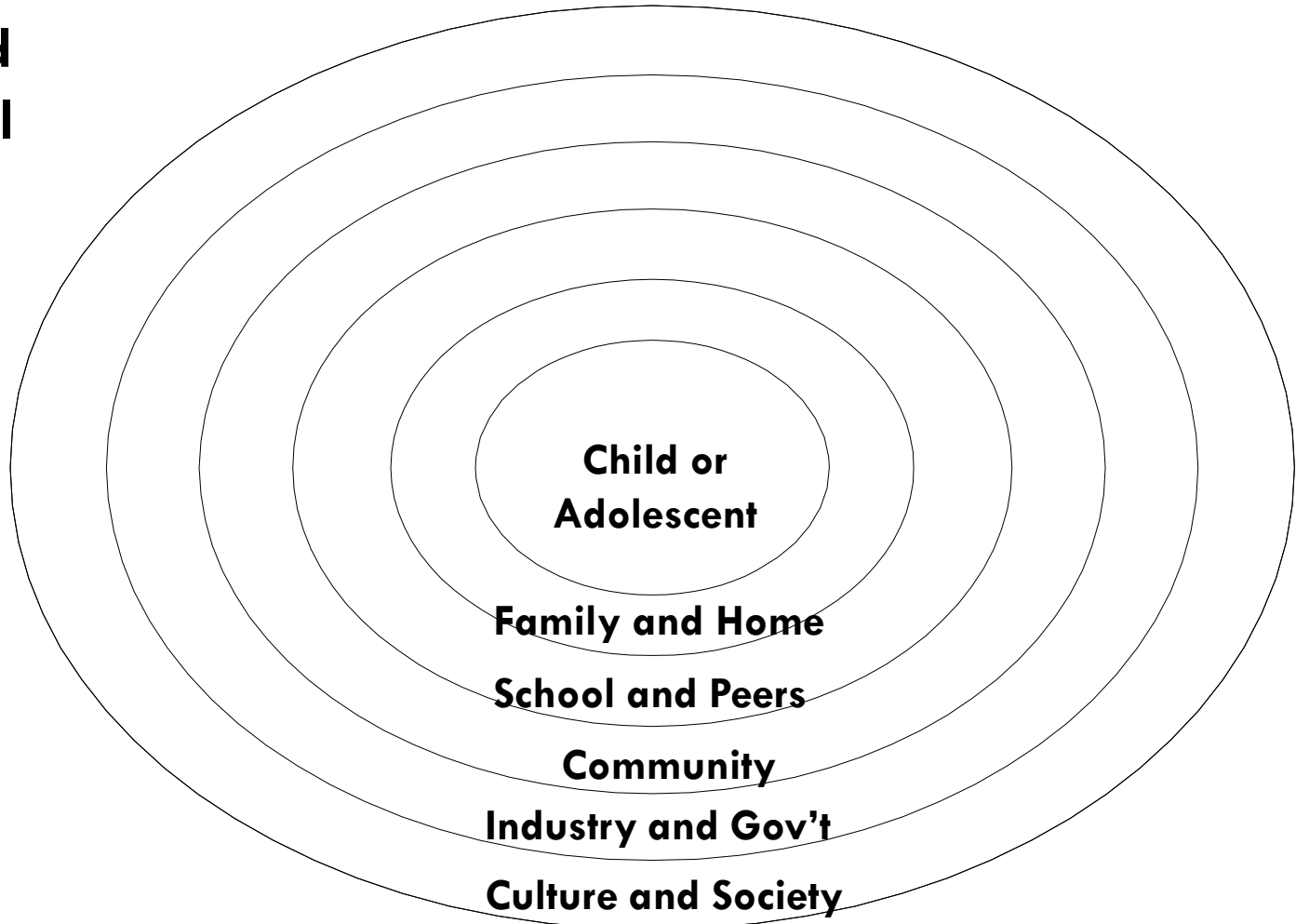
- Some require environmental change to facilitate behavioral change (e.g., zoning and land-use regulations to encourage physical activity).
- The majority of efforts require multiple approaches; for example, efforts to reduce underage drinking and tobacco control have involved legislation, media campaigns, counseling, and many other mechanisms.

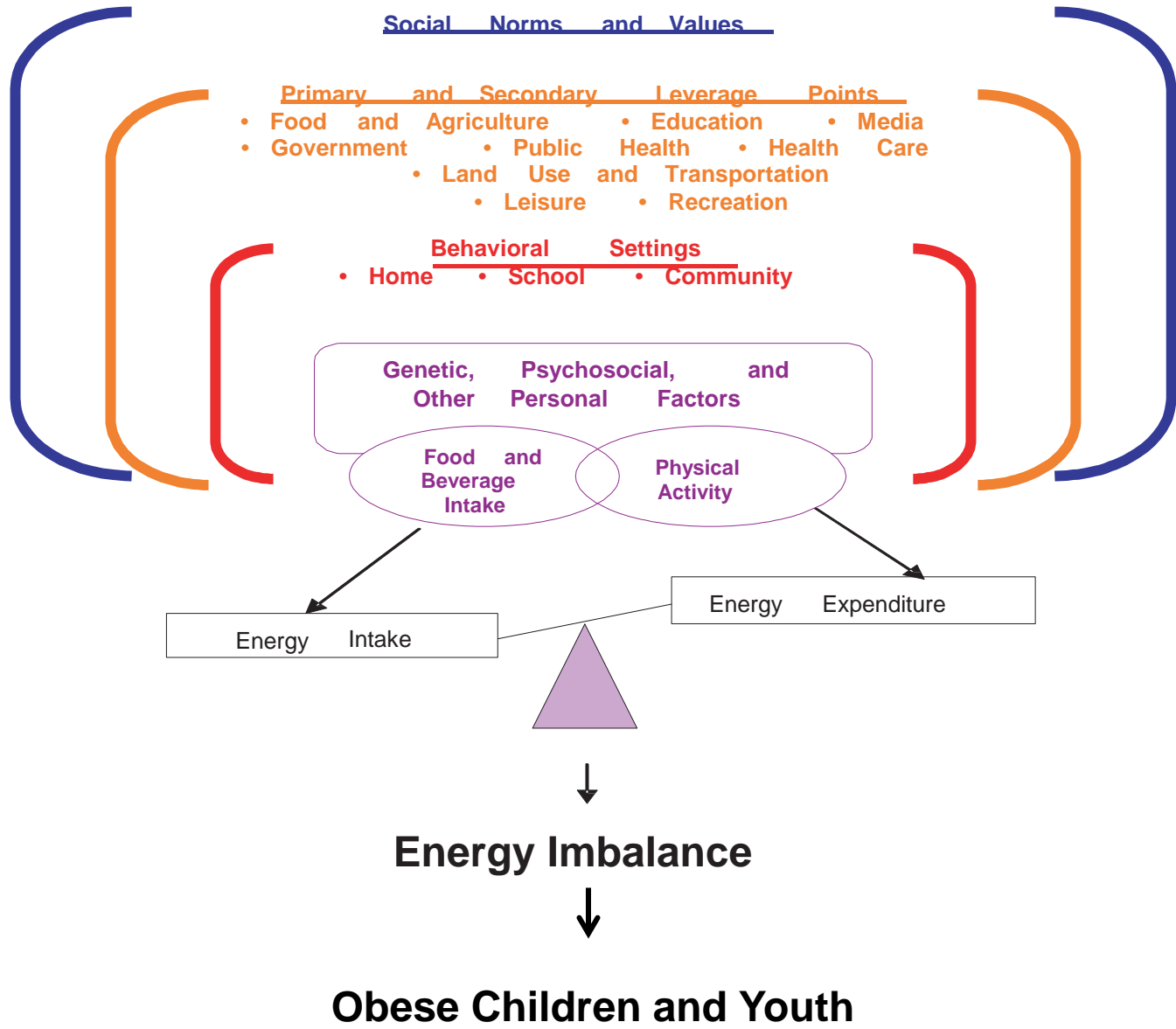




# Social Ecological Theory

**Simplified  
ecological  
systems  
theory  
model**





# Obesity Prevention Goals

- Clear specification of obesity prevention goals is essential in shaping an action plan and evaluating its success.
- For children and youth, obesity prevention goals focus on maintaining energy balance.
- This involves engaging in healthful dietary behaviors and regular physical activity. Healthful dietary behaviors include:
  - choosing a balanced diet,
  - eating moderate portion sizes,
  - heeding the body's own satiety cues that indicate physiological fullness.
  - current recommendation is that children and adolescents accumulate a minimum of 60 minutes of moderate to vigorous physical activity each day.
- For children and youth, these considerations must be framed within the context of healthy physical, psychological, and cognitive development.

# Obesity Prevention Goals

- Children's food and beverage intake and their physical activity and sedentary behavior patterns can be influenced by a variety of environmental factors, such as\_\_\_\_\_.
- Although individuals and families are embedded within broader social, economic, and political environments that influence their behaviors and may either promote or hinder the maintenance of health, such environments may also serve as contexts for change.
- Changing the social, physical, and economic environments that contribute to the incidence and prevalence of childhood obesity may take many years to achieve.
- Therefore, we must acknowledge that numerous intermediate goals, involving step-by-step improvements in diet patterns and physical activity levels of children and youth, are necessary for assessing progress.

# Obesity Prevention Goals

- The ultimate aim of obesity prevention in children and youth is to create, through directed social change, an environmental-behavioral synergy that promotes positive outcomes both at the population and individual levels.
- See Box 3-1 in text

## **BOX 3-1**

### **Goals of Obesity Prevention in Children and Youth**

**The goal of obesity prevention in children and youth is to create—through directed social change—an environmental-behavioral synergy that promotes:**

#### **For the population of children and youth**

- ◆ Reduction in the incidence of childhood and adolescent obesity
- ◆ Reduction in the prevalence of childhood and adolescent obesity
- ◆ Reduction of mean population BMI levels
- ◆ Improvement in the proportion of children meeting the Dietary Guidelines for Americans
- ◆ Improvement in the proportion of children meeting physical activity guidelines
- ◆ Achieving physical, psychological, and cognitive growth and developmental goals

#### **For individual children and youth**

- ◆ A healthy weight trajectory, as defined by the CDC BMI charts
- ◆ A healthful diet (quality and quantity)
- ◆ Appropriate amounts and types of physical activity
- ◆ Achieving physical, psychosocial, and cognitive growth and developmental goals

## **BOX 3-1 Continued**

**Because it may take a number of years to achieve and sustain these goals, intermediate goals are needed to assess progress toward reduction of obesity through policy and system changes. Examples include:**

- Increased number of children who safely walk and bike to school
- Improved access to and affordability of fruits and vegetables for low-income populations
- Increased availability and use of community recreational facilities
- Increased play and physical activity opportunities
- Increased number of new industry products and advertising messages that promote energy balance at a healthy weight
- Increased availability and affordability of healthful foods and beverages at supermarkets, grocery stores, and farmers markets located within walking distance of the communities they serve
- Changes in institutional and environmental policies that promote energy balance

# Measuring Progress

- Population weight goals for childhood obesity prevention should be stated in terms of changes in the mean BMI and in the shape of the entire BMI distribution.
- Or goals can be stated in terms of decreasing the proportion of children or youth who exceed particular thresholds—e.g., 75th, 85th, 90th, 95th, or 97th percentiles of BMI for age and gender on the CDC BMI charts.
- The current CDC guidelines for healthy weight in children and youth are in the range of the 5th to 85th percentiles of the age- and gender-specific BMI charts.





# Energy Balance

# Energy Balance

- Energy balance refers to the state in which energy intake is equivalent to energy expenditure, resulting in no net weight gain or weight
- Different for children vs. adults. Growing children, even those at a healthy body weight, must be in a slightly positive energy balance to satisfy the additional energy needs of tissue deposition for normal growth.
- For the purpose of simplicity, the IOM committee uses the term “energy balance” in children to indicate an equality between energy intake and energy expenditure that supports normal growth without promoting excess weight gain.

# Energy Balance

- Although “energy intake = energy expenditure” looks like a fairly basic equation, in reality it is extraordinarily complex when considering the multitude of genetic, biological, psychological, sociocultural, and environmental factors that affect both sides of the energy balance equation and the interrelationships among these factors.

# Energy Balance

- **Genetics** is a factor in excess weight but it is not the explanation for the recent epidemic of obesity. Although inherited tendencies toward weight gain may be a partial explanation for excess weight in children, there have been no measurable changes in the genetic composition of the population during the recent decades that could explain the significant increases in obesity.
- **Growth spurts** do occur at several points throughout childhood and adolescence, but it cannot be assumed that a child will lose his or her excess weight at those times. Typically, after the age of about 4 years, normally growing children who are in the 20th or 50th or 65th percentile for weight would be expected to remain around these same percentiles for weight, during the remainder of their childhood.

# Energy Balance

- **Physiological reasons** for a child's excess weight should be carefully explored by health-care professionals. However, the identifiable medical conditions that cause childhood obesity are rare and are not the principal underlying causes of the current obesity epidemic in the population.
- **Perceptions** of what healthy children should “look like” differ among generations, cultures, and individuals.



# Psychosocial & Behavioral Considerations

# Dietary Intake

- Everyone needs to eat and drink to survive. But beyond the physical necessities are the complex **social, cultural, and emotional** nuances that involve food.
- Children and adults alike consume food and beverages in part because they are hungry but also because eating and drinking are pleasurable and are an integral part of family life, celebrations, recreational events, and other social occasions. Food is also important in the psychosocial well-being, emotional expression, and coping responses of many people.

# Dietary Intake

- Are there “good foods” and “bad foods”?
- Energy intake and dietary quality are determined by the total amounts and combination of foods consumed.
- However, the frequency of consuming certain types of foods is an indicator of the likelihood that the overall quantity and quality of foods will be appropriate to the health of children.
- Dietary Guidelines for Americans provide nutritional advice to the American public on how to attain a balanced diet.



# Dietary Intake Challenges

- The overall effectiveness of the Dietary Guidelines for Americans in disease prevention requires further research.
- Research is difficult due to:
  - ▣ children accurately recalling and quantifying foods consumed,
  - ▣ accuracy of third-party reports (usually parents or caregivers),
  - ▣ varying estimations of portion size
- Furthermore, the energy requirements for children vary, depending on the timing of growth and developmental spurts, and may be highly individualized.

# Physical Activity

- Physical activity can be defined as any bodily movement produced by skeletal muscles that results in energy expenditure.
- Current recommendations are for children to accumulate a minimum of 60 minutes of moderate to vigorous physical activity each day.
- One of the strongest correlates of physical activity in children is time spent outside.

# Physical Activity Challenges

- Major research challenges in this area is how to accurately measure physical activity, particularly in young children.
- Surveys of parents and children are often confounded by recall problems and varying assessments of the type, intensity, and duration of the activity.
- Measures of motion (e.g., pedometers and accelerometers) are popular research tools, but additional work is needed to ensure the validity of these methods in diverse groups of children and youth and in diverse settings. There is also the cost and time needed to collect and monitor the results to consider.

# Sociocultural & Environmental Considerations

- What is available with respect to food intake and physical activity opportunities (physical environment) is influenced by policies and financial inputs (political and economic environments) and is also targeted to the sociocultural surroundings.
- Availability affects the range of possible individual choices, but personal choice is also mediated through a range of sociocultural variables that differ by age, gender, ethnicity, region, neighborhood characteristics, and socioeconomic status.
- Other influences to consider include:
  - ▣ the availability of education and counseling and broader health promotion about weight gain prevention (physical environment),
  - ▣ cost of preventive services (economic), and coverage of preventive services by third-party payers (policy environment).
- Attitudes about body size and obesity are also critical contextual considerations when designing obesity prevention interventions.

# Environmental Influences on Food Intake by Type of Environment (Table 3-1)

Size or Level of the Environment	Physical	Economic	Policy/Political	Sociocultural
Microenvironments (e.g., behavioral settings such as homes, schools, and communities)	<ul style="list-style-type: none"> <li>• Location and type of food stores</li> <li>• Vending machine placement and products</li> <li>• Point-of-purchase information</li> <li>• Local food production</li> </ul>	<ul style="list-style-type: none"> <li>• Locally imposed taxes</li> <li>• Vendor pricing policies</li> <li>• Financial support for health promotion programs</li> <li>• Sponsorship of healthful food policies and practices</li> </ul>	<ul style="list-style-type: none"> <li>• Family rules related to food purchasing and consumption</li> <li>• Food policies of local schools or school districts</li> </ul>	<ul style="list-style-type: none"> <li>• “Ethos” or climate related to food and eating in the home, school, and neighborhood</li> <li>• Role models for eating behaviors at home, in school, and in community settings (e.g., churches)</li> </ul>
Macroenvironments (e.g., societal sectors such as food and agriculture, education, medical, government, public health, or health care)	<ul style="list-style-type: none"> <li>• Food production/importing</li> <li>• Food manufacturing</li> <li>• Food marketing</li> <li>• Federal nutrition labeling guidelines</li> </ul>	<ul style="list-style-type: none"> <li>• Costs of food production, manufacturing, and distribution</li> <li>• Taxes, pricing policies, subsidies</li> <li>• Wage structure and other factors that influence personal and household income</li> </ul>	<ul style="list-style-type: none"> <li>• National food and nutrition policies, regulations, and laws, including food labeling</li> <li>• Food industry standards and practices</li> <li>• Regulations and guidelines on advertising in children</li> </ul>	<ul style="list-style-type: none"> <li>• Mass media influences on food selections and eating behaviors</li> <li>• General consumer trends in food and eating</li> </ul>

# Environmental Influences on Physical Activity by Type of Environment (Table 3-2)

**TABLE 3-2** Examples of Environmental Influences on Physical Activity, by Type of Environment

Size or Level of the Environment	Physical	Economic	Policy/Political	Sociocultural
Microenvironments (e.g., behavioral settings such as homes, schools, and communities)	<ul style="list-style-type: none"> <li>• Sidewalks and footpaths</li> <li>• Cycle paths</li> <li>• Public transportation</li> <li>• Street lights</li> <li>• Recreational facilities and clubs</li> </ul>	<ul style="list-style-type: none"> <li>• Cost of gym memberships</li> <li>• Budget allocations for recreation centers or walking and cycling paths</li> <li>• Funding for improved public transport</li> <li>• Sponsorship of physical activity-related health promotion</li> <li>• Influences on household income and time expenditures</li> </ul>	<ul style="list-style-type: none"> <li>• Family rules about television watching</li> <li>• Family rules about household chores</li> <li>• Restrictions on automobile traffic</li> <li>• Restrictions on bicycle or pedestrian traffic</li> <li>• Zoning for protection of open spaces</li> <li>• Building codes</li> </ul>	<ul style="list-style-type: none"> <li>• “Ethos” or climate related to physical activity and inactivity in the home, school, and neighborhood</li> <li>• Role models for physical activity and inactivity in the home, at school, and in the neighborhood</li> </ul>
Macroenvironments (e.g. societal sectors such as food and medical, government, public health or health care)	<ul style="list-style-type: none"> <li>• Automobile industry</li> </ul>	<ul style="list-style-type: none"> <li>• Public transport funding and subsidies</li> </ul>	<ul style="list-style-type: none"> <li>• State-level policies on physical education in schools</li> </ul>	<ul style="list-style-type: none"> <li>• Mass media influences on physical activity and inactivity patterns of physical activity and inactivity</li> </ul>

# Stigmatization

- One of the concerns regarding the prevention of childhood obesity is how to effectively focus on the behaviors that contribute to obesity without stigmatizing obese children and youth.
- This focus needs to be a consideration in the design of the range of interventions.
- There is also the need to consider the adverse effects of normalization when discussing stigmatization.
- In some ways, our society has become more accepting of larger sizes in the products and portions we consume. Our society often accommodates obesity as the social norm, for example, by resizing clothing, expanding the width of seating in public areas, and retrofitting ambulances to accommodate larger girth.

# Stigmatization

- **The best strategy to address the tension between stigmatization and normalization is by focusing on the behaviors that can be changed to promote health rather than on the individual and his or her appearance.**
- Public health methods used for tobacco prevention not quite applicable for obesity prevention....why?



# Body Image

- There is also concern that obesity prevention efforts will lead to inappropriate weight concern, dieting preoccupation, or unhealthy weight control practices among children and youth.
- Studies of children as young as the first grade have reported that a substantial proportion of children (about 50% of girls and 30% to 40% of boys), when given a choice of silhouettes will choose a thinner body size than their own as the “ideal” body size.
- See text pgs 103-104 for additional research findings.

# Socioeconomic Status

- Many of the variables in Tables 3-1 and 3-2 may be potential mediators of the relationship between socioeconomic inequities and childhood obesity.
- Both food and physical activity options are more likely to be periodically inadequate, unpredictable, or of lower quality for those with low personal incomes or those living in low-income neighborhoods.
- Poverty and living in low-income neighborhoods limit access to healthful foods.
- Some types of physical activity are available at low or no cost, but these options may be less available due to neighborhood safety concerns, lack of adult supervision, and/or limited community recreational or other resources.
- Addressing childhood obesity in these contexts will require attention to root causes, and require attempts to mitigate the underlying social and environmental adversity.

# Racial & Ethnic Disparities

- The substantially higher prevalence of obesity in adults, children, and youth in some African-American, Hispanic, American-Indian, and Pacific Islander populations (as we discussed in Chapter 2) generates considerations across the entire ecologic framework.
- Sociocultural variables that need to be considered when approaching obesity prevention to reduce racial and ethnic disparities include traditional cuisines and any aspect of the attitudes, beliefs, and values that may facilitate or inhibit the promotion of healthful eating, physical activity, and weight control patterns in children and youth in these communities.

# Evidence-Based Public Health Approach

- *Evidence-based public health* has become the goal with a knowledge base that includes disease frequency and distribution; correlates, determinants and consequences of disease; and the safety, efficacy, effectiveness, and cost-effectiveness of a range of interventions.
- However, given the complex environment in which multiple social, economic, cultural, and political elements interact to produce change in population-wide problems such as obesity, causality may not always be established for the relationships among the various interventions.
- Why?

# Evidence-Based Public Health Approach

- Therefore, since childhood obesity is a serious public health problem calling for immediate reductions in obesity prevalence and in its health and social consequences, the IOM committee strongly believed that actions should be based on the *best available* evidence—as opposed to waiting for the *best possible* evidence.
- The different types of evidence that the committee used in developing the report's recommendations are illustrated in Table 3-5.