

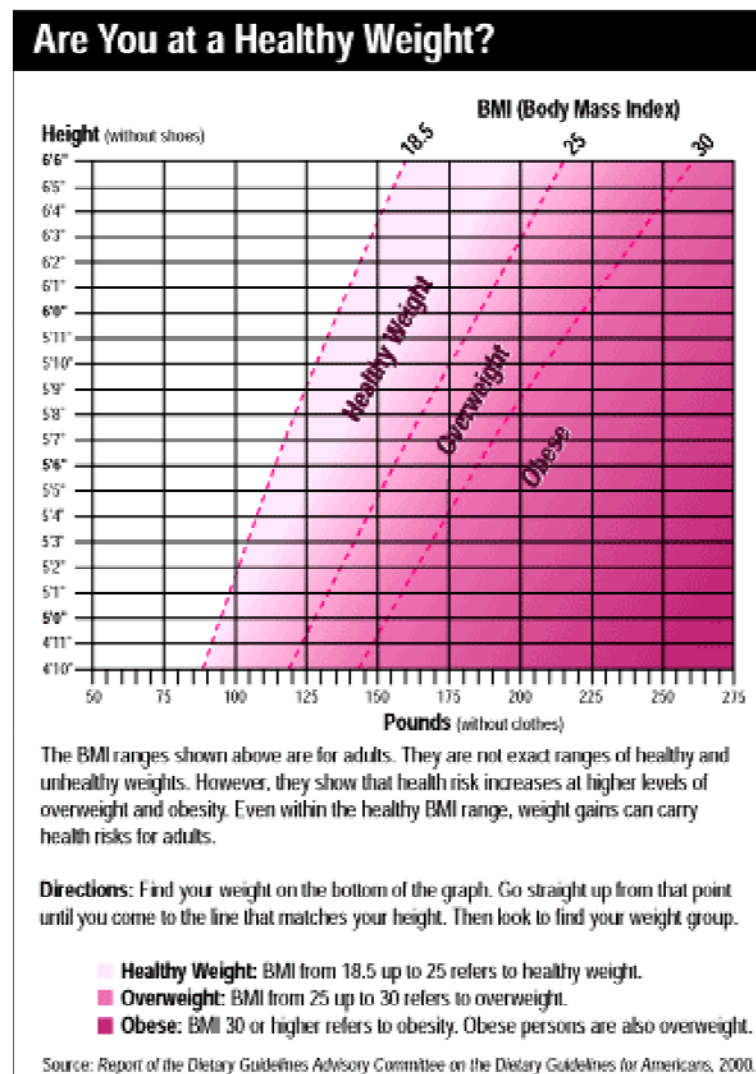
# **Pediatric Obesity**

**What can WE do to help?**

Interdisciplinary Case Conference  
Pacific University  
College of Health Professions  
April 2007

# How are overweight and obesity defined?

- Obesity: chronic metabolic disease resulting from an imbalance between energy intake and energy output.
  - Defining feature is excess body fat
- Body mass Index (BMI): mass in kg/height in m<sup>2</sup>
- **BMI**: published tables to determine weight status
  - Underweight: BMI < 18.5 kg/m<sup>2</sup>
  - Normal: BMI 18.5-24.9 kg/m<sup>2</sup>
  - Overweight: BMI 25-29.9 kg/m<sup>2</sup>
  - Obese: BMI ≥ 30 kg/m<sup>2</sup>



## Why become *involved* in curbing the obesity epidemic?

- > 60% of American adults are now overweight or obese, predisposing them to a host of chronic diseases.
- Age-adjusted prevalence of combined overweight and obesity in ethnic minorities - especially in minority women - is generally higher than in whites.
  - Non-Hispanic White women: 57.2%
  - Mexican-American women: 71.7%
  - Non-Hispanic Black women: 77.2%
- Total economic cost: \$122.9 billion



(Data from Weight-control information network, NIH)

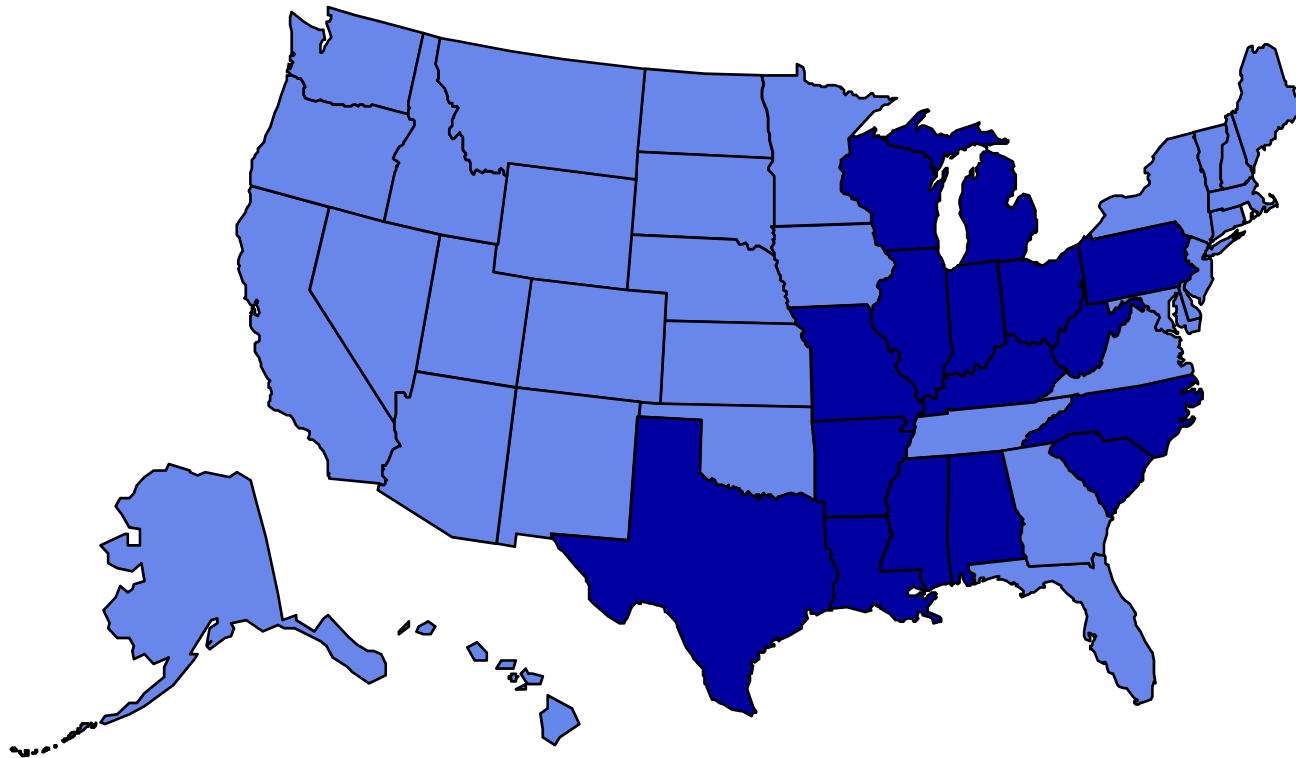
### *NOTE:*

Data shown in the following maps were collected through CDC's Behavioral Risk Factor Surveillance System (BRFSS). Each year, state health departments use standard procedures to collect data through series of monthly telephone interviews with U.S. adults. During past 20 years there has been dramatic increase in obesity in US. In 1985, only few states were participating in the CDC's Behavioral Risk Factor Surveillance System (BRFSS) and providing obesity data. In 1990, 4 states had obesity prevalence rates of 15–19 percent and no states had rates at or > 20%. In 1995, obesity prevalence in each of 50 states was < 20%. In 2000, 28 states had obesity prevalence rates < 20%. In 2005, only 4 states had obesity prevalence rates < 20%, while 17 states had prevalence rates equal to or > 25%, with 3 of those having prevalences equal to or > 30 % (Louisiana, Mississippi, West Virginia).

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1994

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" person)

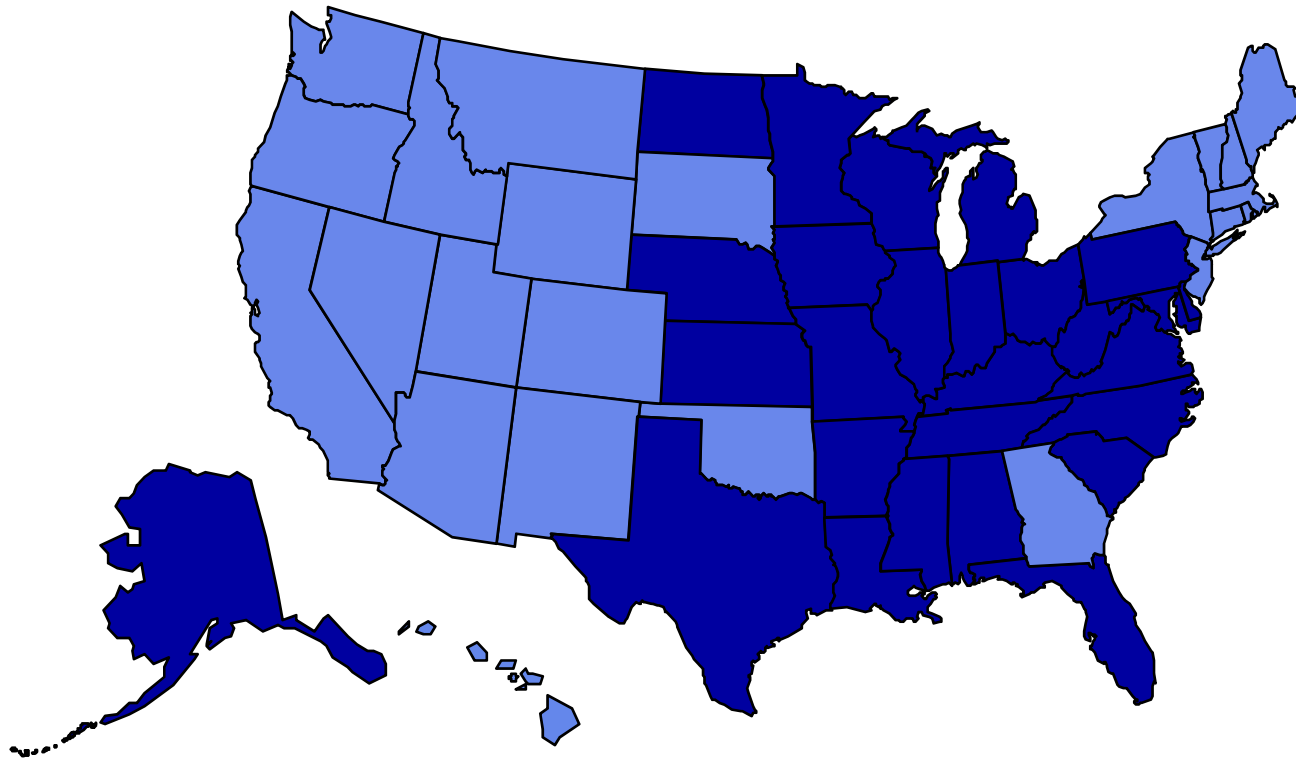


□ No Data   □ <10%   □ 10%–14%   □ 15%–19%

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1995

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" person)

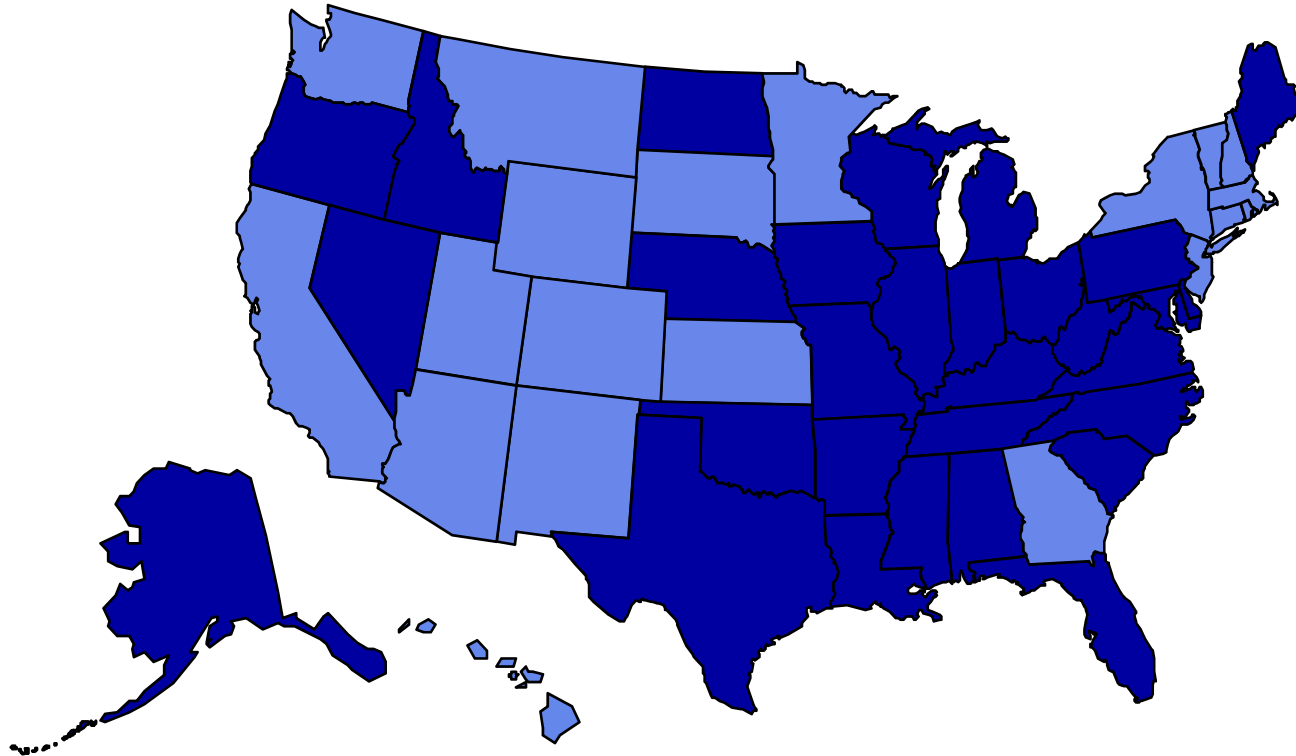


□ No Data   □ <10%   □ 10%–14%   □ 15%–19%

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1996

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" person)

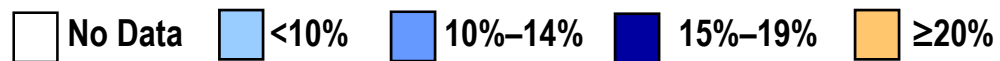
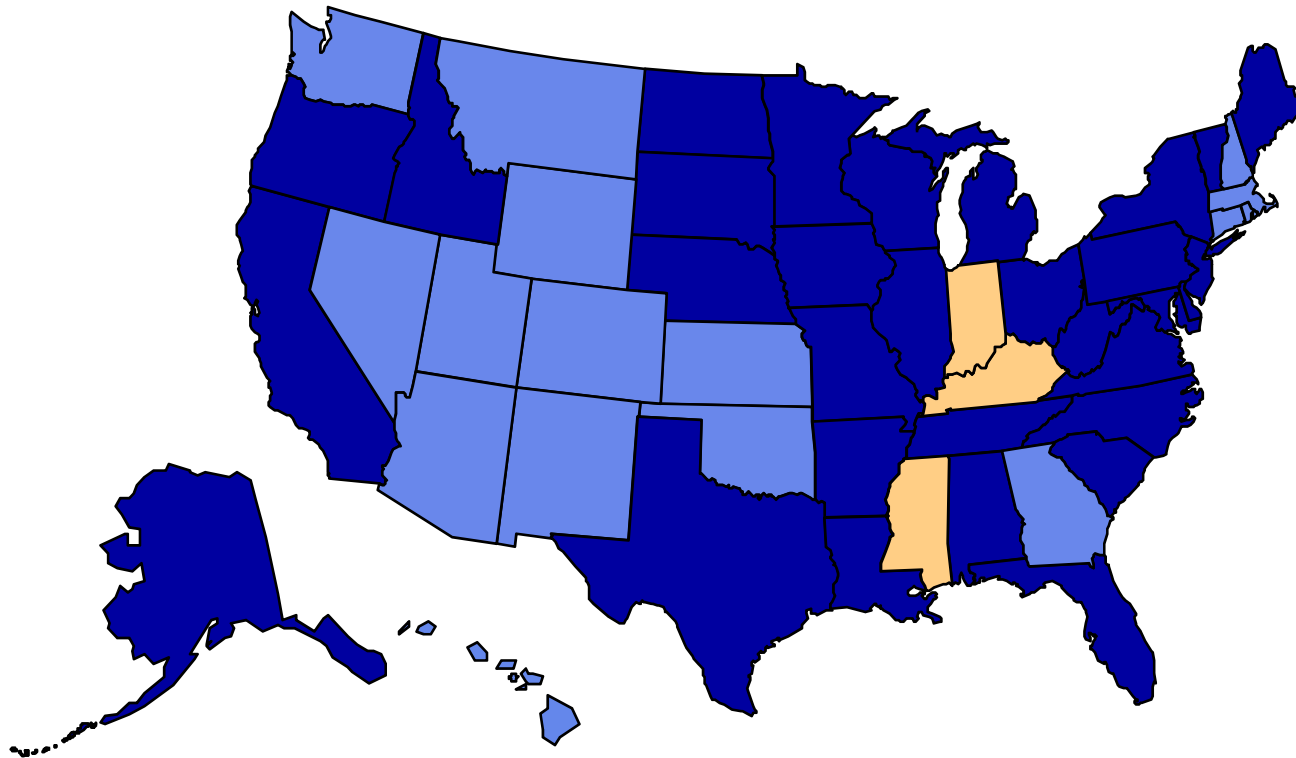


□ No Data   □ <10%   □ 10%–14%   □ 15%–19%

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1997

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" person)

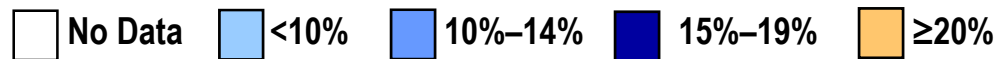
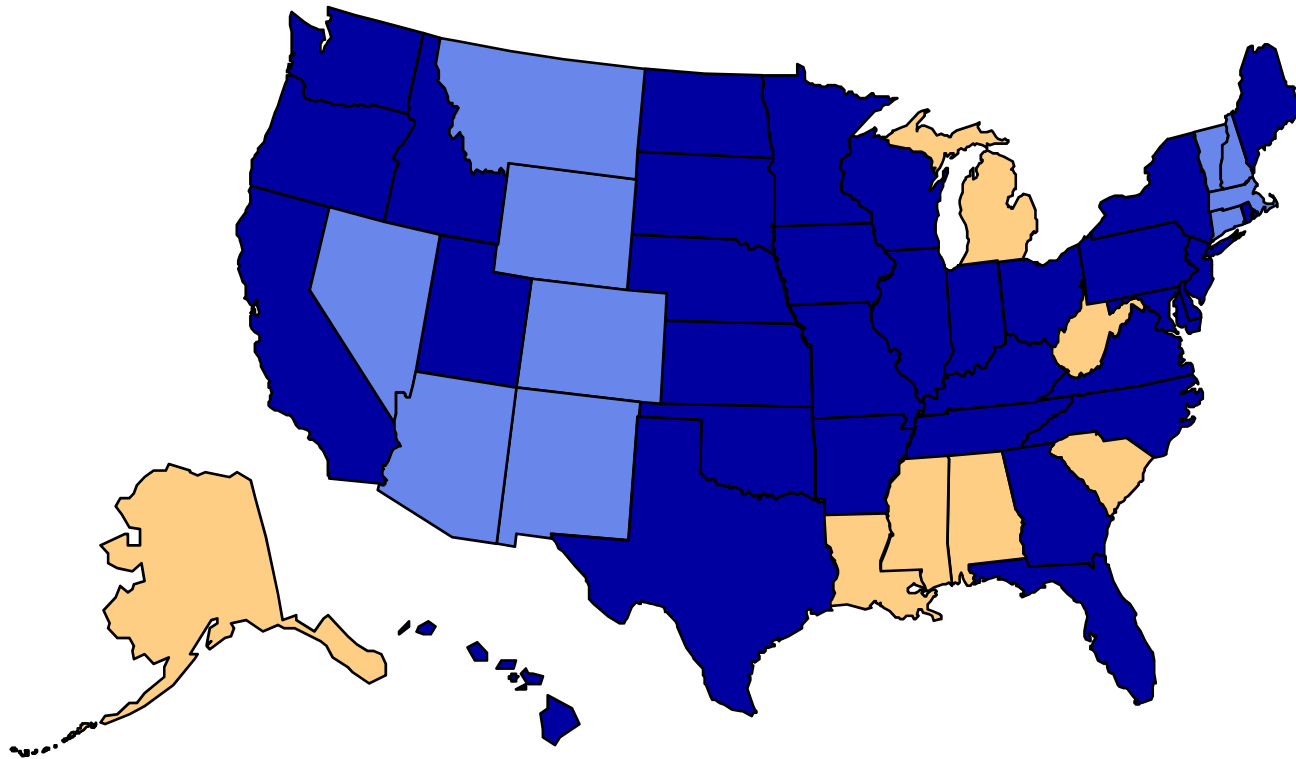




# Obesity Trends\* Among U.S. Adults

## BRFSS, 1998

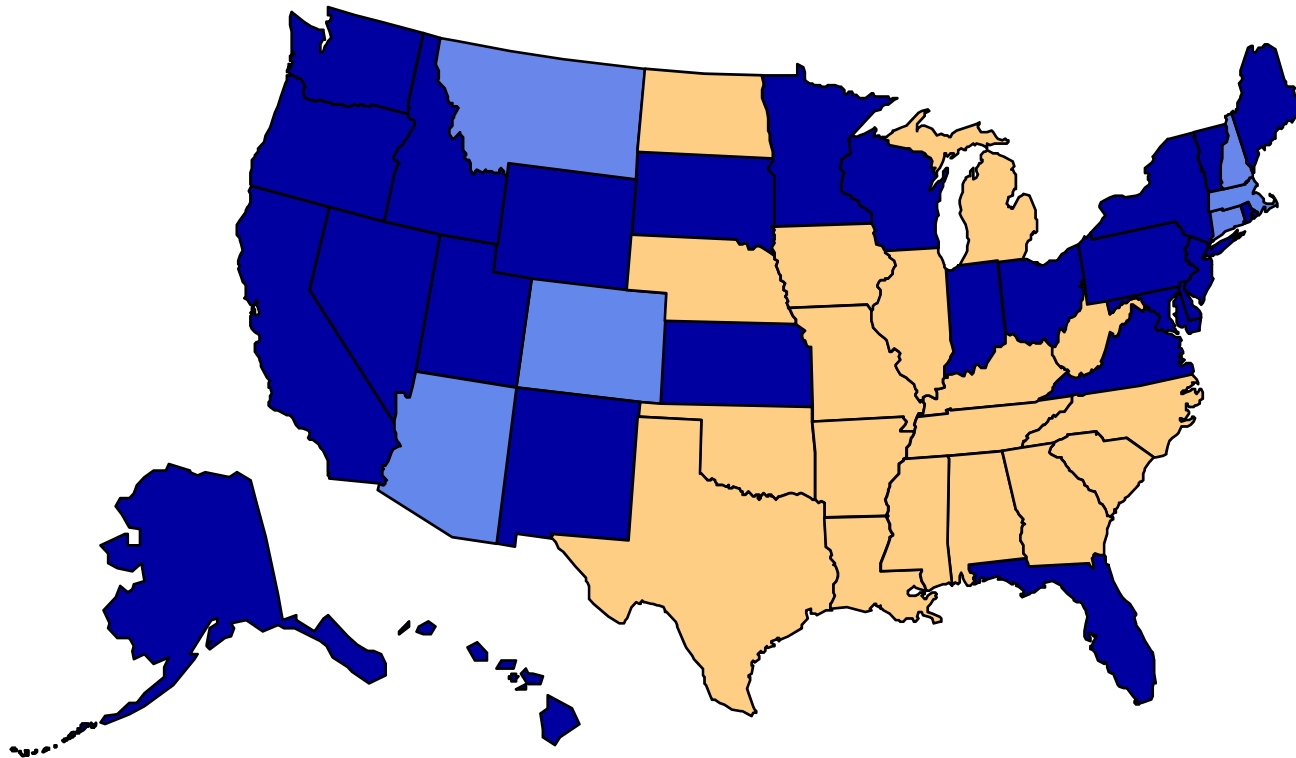
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1999

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" person)

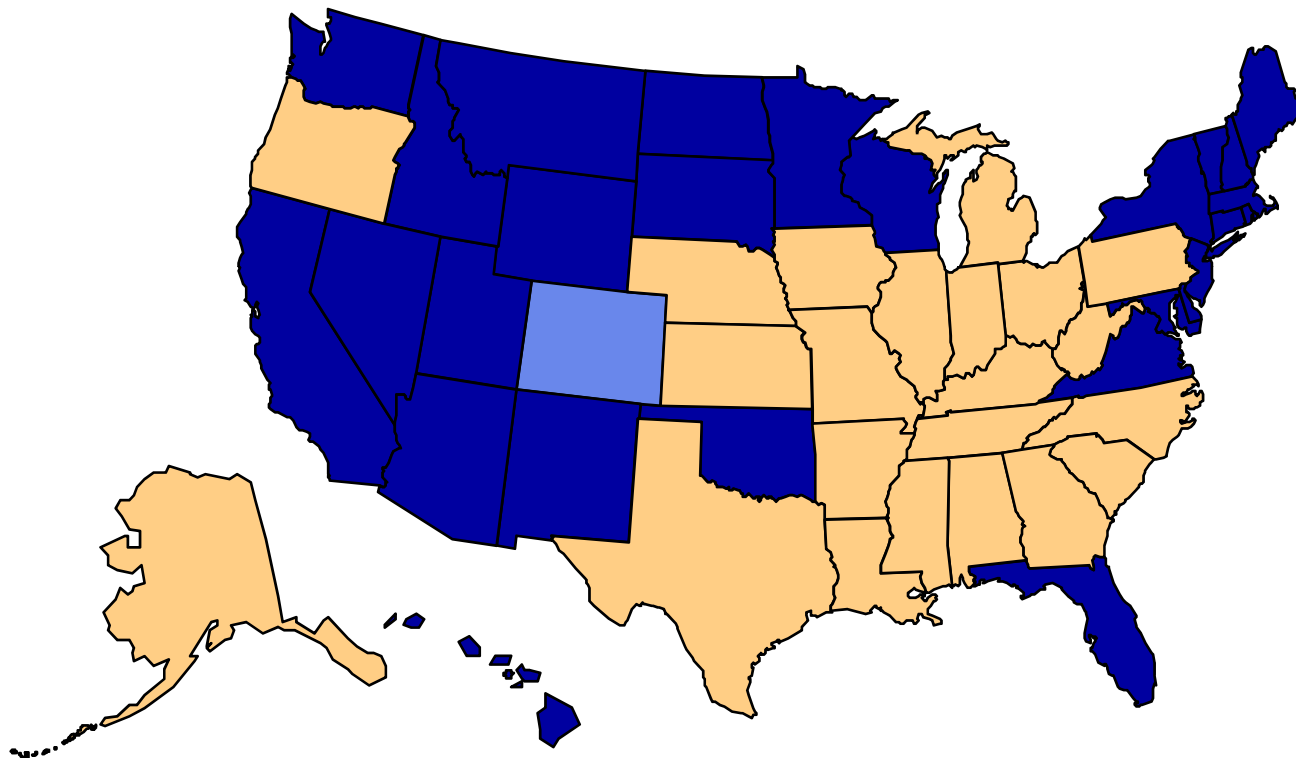


□ No Data   □ <10%   □ 10%–14%   □ 15%–19%   □  $\geq 20\%$

# Obesity Trends\* Among U.S. Adults

## BRFSS, 2000

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" person)

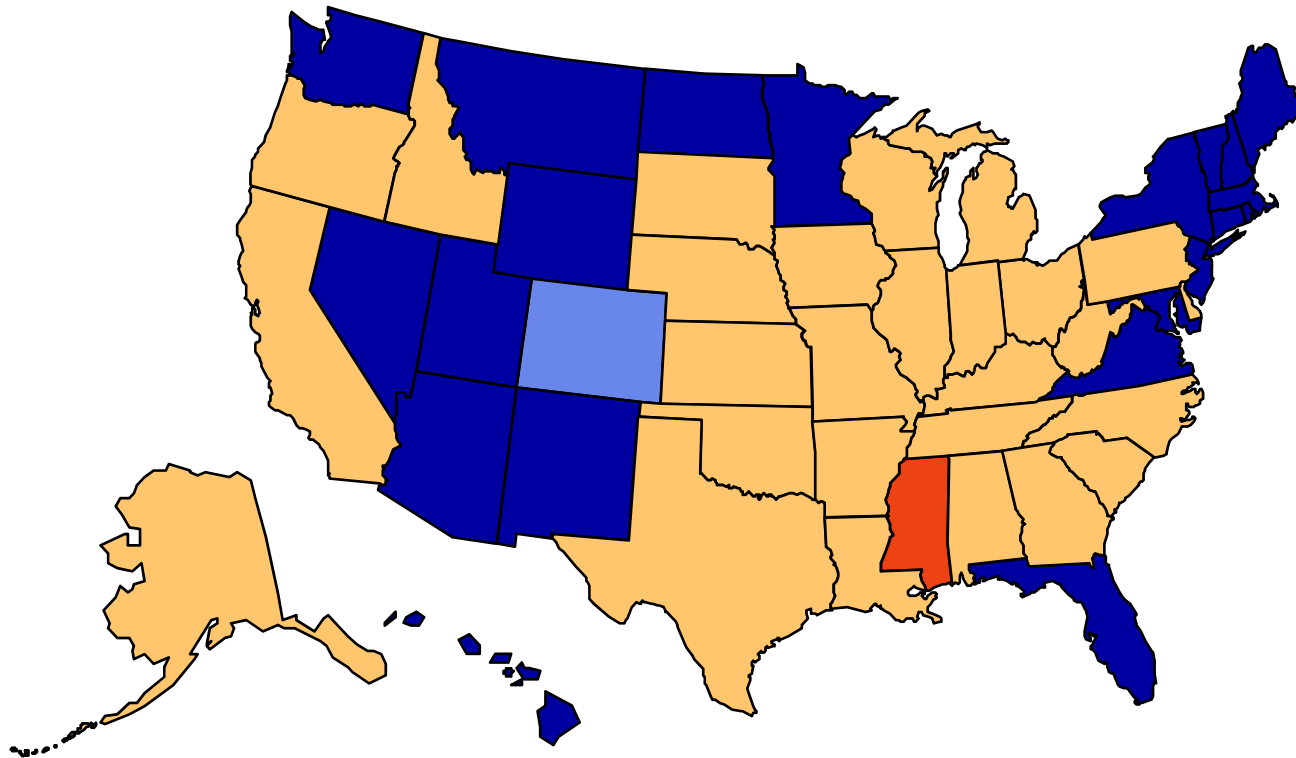


No Data   <10%   10%–14%   15%–19%    $\geq 20\%$

# Obesity Trends\* Among U.S. Adults

## BRFSS, 2001

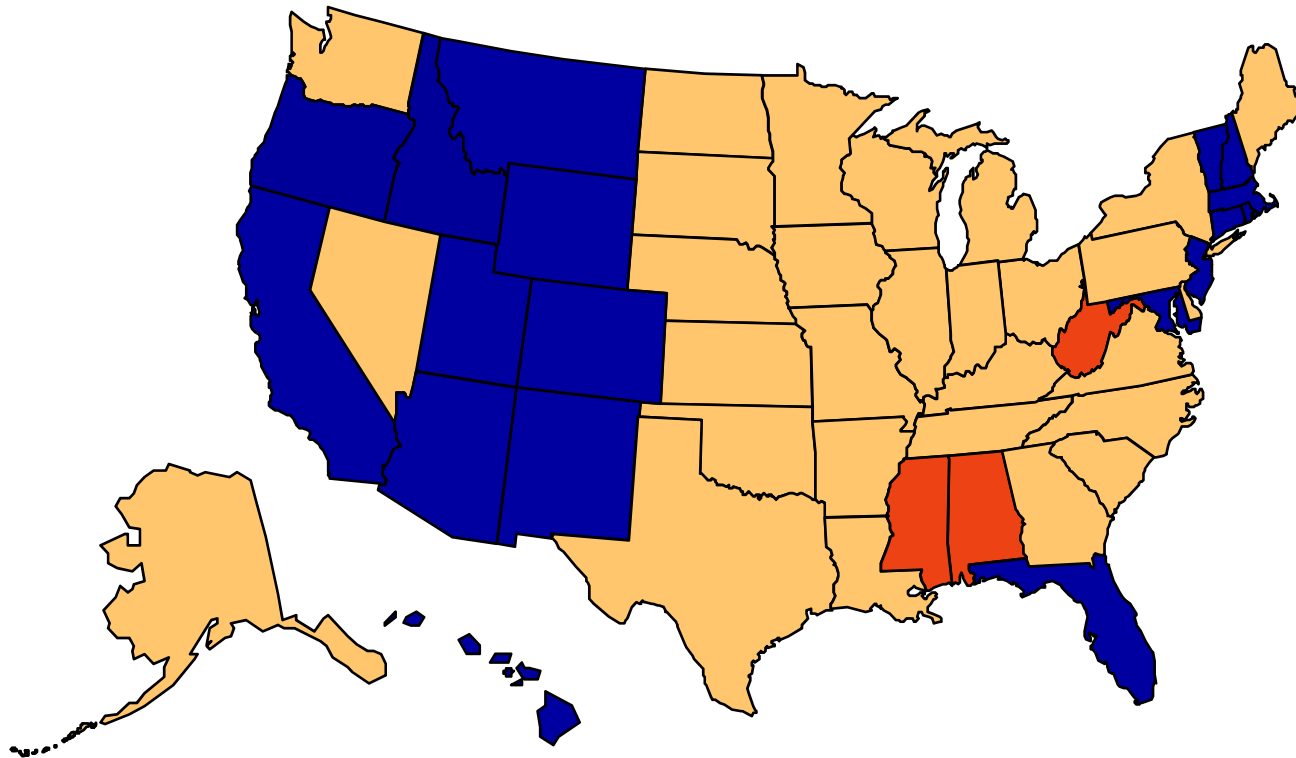
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 2002

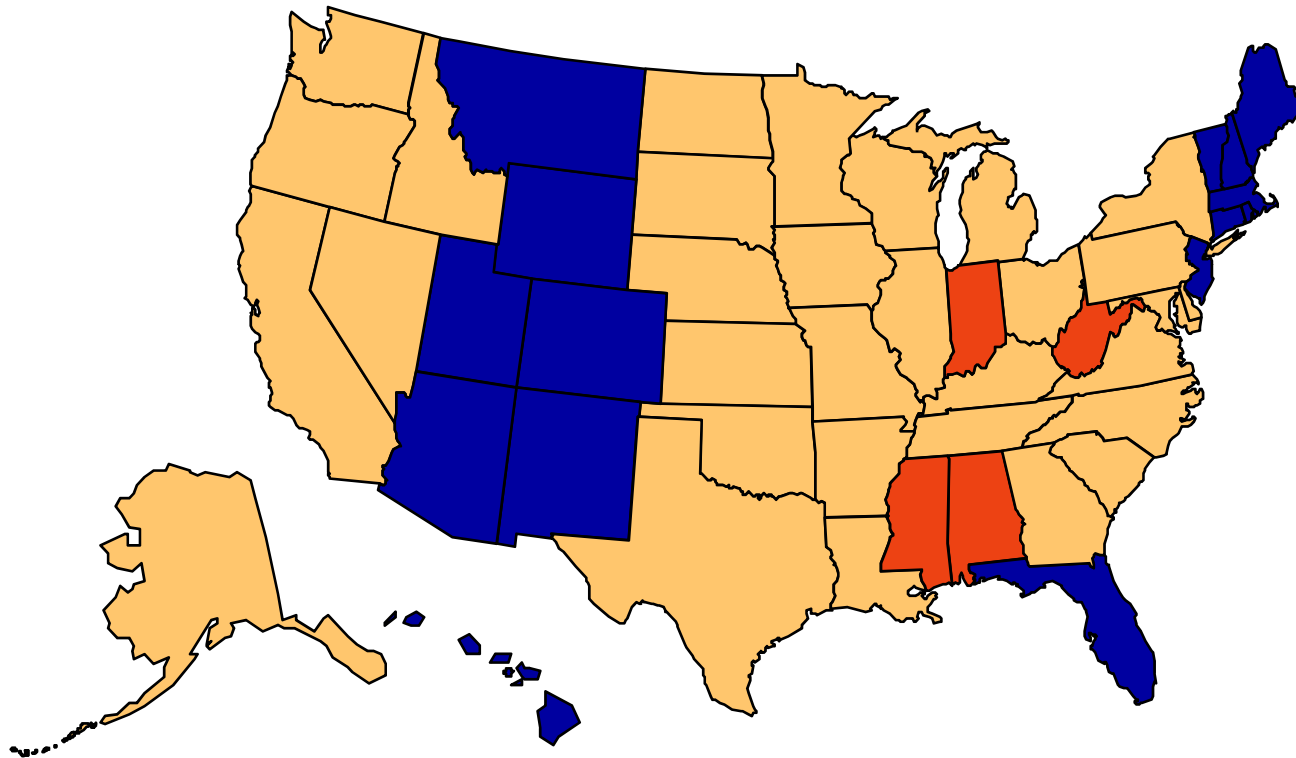
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 2003

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" person)

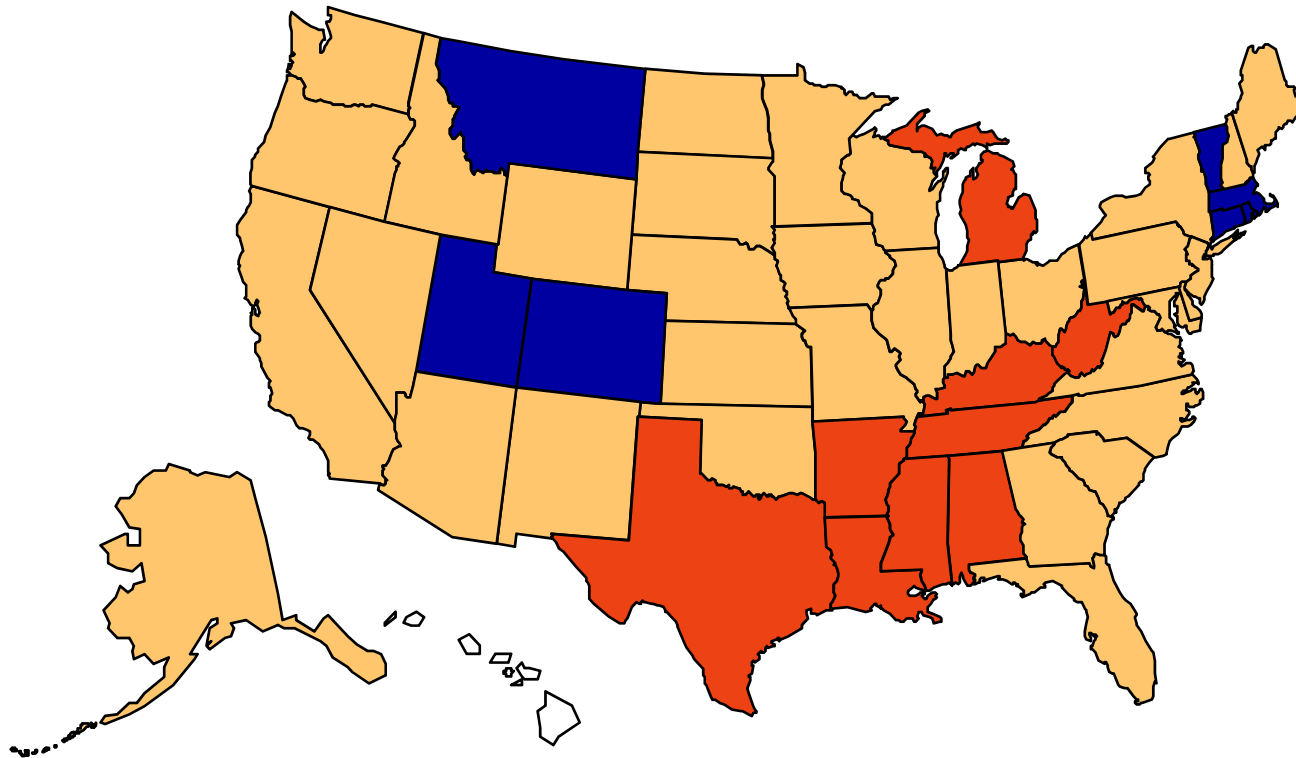


Legend: No Data, <10%, 10%–14%, 15%–19%, 20%–24%,  $\geq 25\%$

# Obesity Trends\* Among U.S. Adults

## BRFSS, 2004

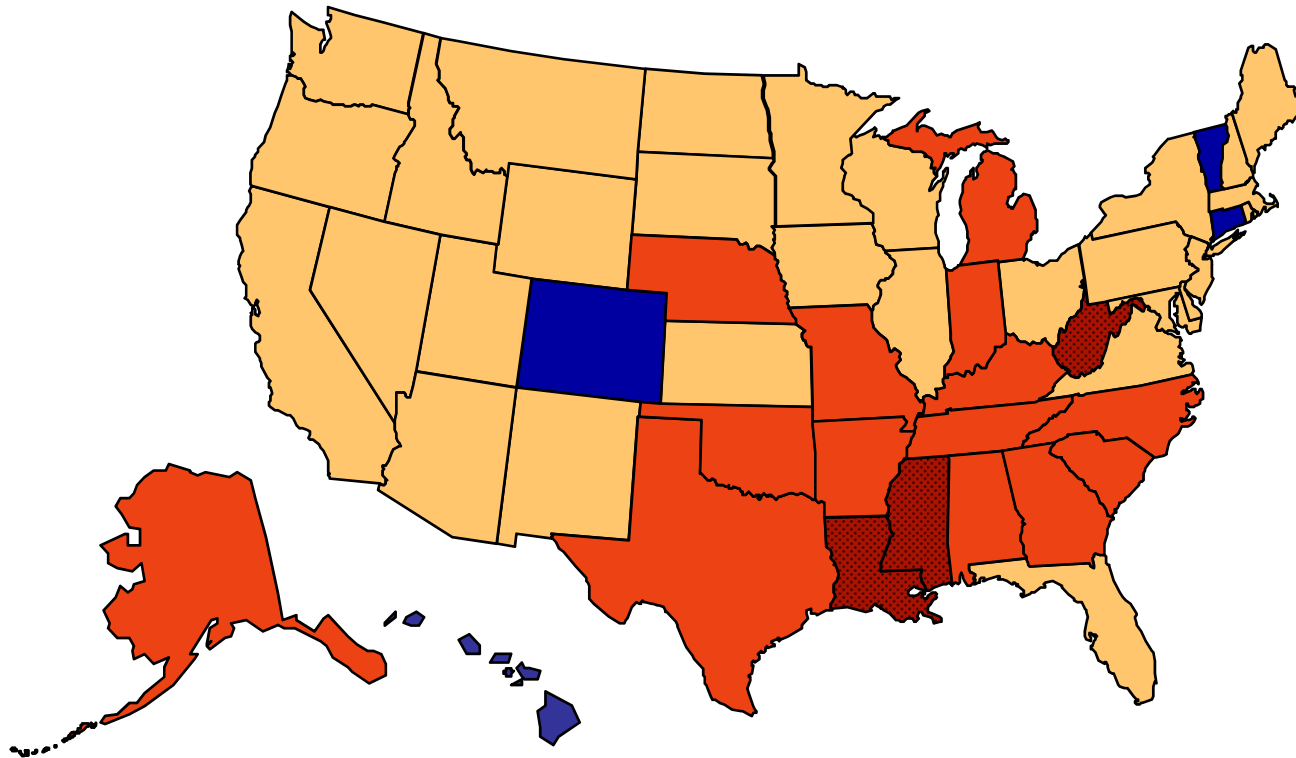
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 2005

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" person)



□ No Data   □ <10%   □ 10%–14%   □ 15%–19%   □ 20%–24%   □ 25%–29%   □  $\geq 30\%$



# How is “obesity” measured in children?

## BMI-for-age: gender and age specific

<b>Underweight</b>	BMI-for-age <5th percentile
<b>Healthy</b>	BMI-for-age 5th to 85th percentile
<b>At risk for overweight</b>	BMI-for-age 85 percentile to <95th percentile
<b>Overweight</b>	BMI-for-age $\geq$ 95th percentile

Based on growth charts developed by CDC & contain series of curved lines representing different percentiles.

Term “childhood obesity” is commonly used; however, the CDC refrains from using the term- instead, refers to the condition as “overweight”.

## The *extent* of childhood obesity

- Percentage of teens overweight has more than tripled since 1980.
- 1/5 children (ages 6 – 11) are obese, an increase of 147% from 1971 to 1994.
- ~60% of overweight children become overweight or obese adults...



# The *impact* of childhood obesity

- Prevalence of type 2 diabetes mellitus in children is expected to exceed that of type 1 diabetes mellitus within the next 10 years.
- People who develop type 2 diabetes before the age of 20, as opposed to later, are at greater risk of end-stage renal disease and death before the age of 55 (Pavkov *et al.*, July 2006).
- In a study of >100,000 women, those who were overweight at age 18 were more likely to die prematurely in middle age (van Dam *et al.*, 2006).

(van Dam *et al.*, Annals of Internal Medicine, 2006)

(Pavkov *et al.*, JAMA, July 2006)

# **Health complications of overweight/obesity** **in children**

- Insulin resistance
- Type 2 diabetes
- Hypertension
- Cardiovascular disease
- Dental caries
- Early onset of puberty
- Polycystic ovary syndrome
- Cholecystitis
- Depression
- Eating disorders
- Sleep apnea
- Stroke
- Possible increased risk of cancer
- Decreased quality of life, self-esteem, social competence
- Premature death in women

## **Awareness about *childhood* obesity**

- Research!America poll: Americans ARE aware of the scope of the problem
  - > 1/3 of Americans say most American children are overweight
  - Only about 17% of children (aged 2-19 years) are overweight
- IOM 2006 report- call to action in childhood obesity prevention
- Numerous local, regional, and national programs addressing the problem
  - MoveOn, ShapeUp, Go for Health!, Y B FIT!, GoGirlGo!...

## **Racial disparities in childhood obesity**

- African American and Hispanic children and adolescents have higher prevalence rates of overweight/obesity than do white children/adolescents, but they receive less care (Ogden and Flegal, *JAMA*, 2002).
  - These children are also at greater risk for obesity-associated complications (type 2 diabetes) than are white children (Rosenbloom *et al.*, 1999).

# Causes of childhood obesity

- Increase in TV/computer use
- Proliferation of fast-food restaurants
- Marketing of junk food to children by media
- Increase in consumption of fatty, high fructose corn syrup-laden foods (displayed at “kid’s-eye view”)
- Schools offering junk food and soda
- Decreased physical education classes in schools
- Reduced affordable access to fresh foods
- Working parents unable to cook healthy meals or supervise outdoor activities
- Less walking to school and more driving
- Suburban sprawl and urban crime preventing children from outdoor games and exercise
- **And the list goes on...**

## **Parameters included in successful intervention programs for childhood obesity**

- Interdisciplinary multi-component approach
  - Dietary component
  - Behavioral modification
    - Contracting
    - Self-monitoring
    - Social reinforcement with participants and family to decrease fatty food consumption and increase activity level
  - Parental involvement



# **Obesity and Oral Health**

Monika Alcorn, SDH

Brandy Peer, SDH

Pacific University  
Dental Health Science

# Obesity and Oral Health

- Nutrition is a key component of both oral and systemic health.
- Diet and nutrition have direct effects on 2 oral diseases.
  - Dental caries (tooth decay)
  - Periodontal disease


# Nutrition

- Obesity has been shown to have a link to food and lifestyle choices (*IJAHSP*, 2007).
- Excessive intake of sugars and fermentable carbohydrates increases susceptibility to tooth decay.
- Increasing body fat may heighten the inflammatory response associated with periodontitis as well as diabetes.

# The Acid Attack



- The formula:

Bacteria + Carbohydrate + Tooth  Decay  
(fermentable)

- After each meal or snack containing a carbohydrate, bacteria release an acidic byproduct which bathes the teeth in acid for up to 20 minutes after the meal.
- The more frequent the snacks, the more acid attacks on the teeth.

# Dental Caries



- Dental decay is one of the most chronic conditions affecting children today.
- It is now considered an epidemic by many health experts.
- 52% of American children by 8 years of age have caries (*School Nurse News*, 2007).

# Why are dental caries important?

- *Untreated* caries lead to:
  - Pain
  - Difficulty eating and poor food choices
  - Low self-esteem due to appearance
  - Missed school days
  - Inability to concentrate
  - Decreased academic performance

# This is a Preventable Disease

- Oral health education is vital.
- Regular oral self-care and dental visits can maintain health and function.
- The mouth and body are interconnected.
  - Oral disease negatively impacts the body.
  - Infection can spread to previously unaffected areas within the body.

# **Obesity and Periodontitis**

“Obesity is a significant predictor for periodontal disease, no matter what your age, sex, race, or ethnic background.”

American Dental Association (ADA, 2006)



# Obesity - Risk Factor for Periodontitis

- Obese patients have a higher rate of periodontitis.
  - Increased percent of body fat is associated with a higher level of inflammatory response
  - Decreased vascularity to the periodontal structures

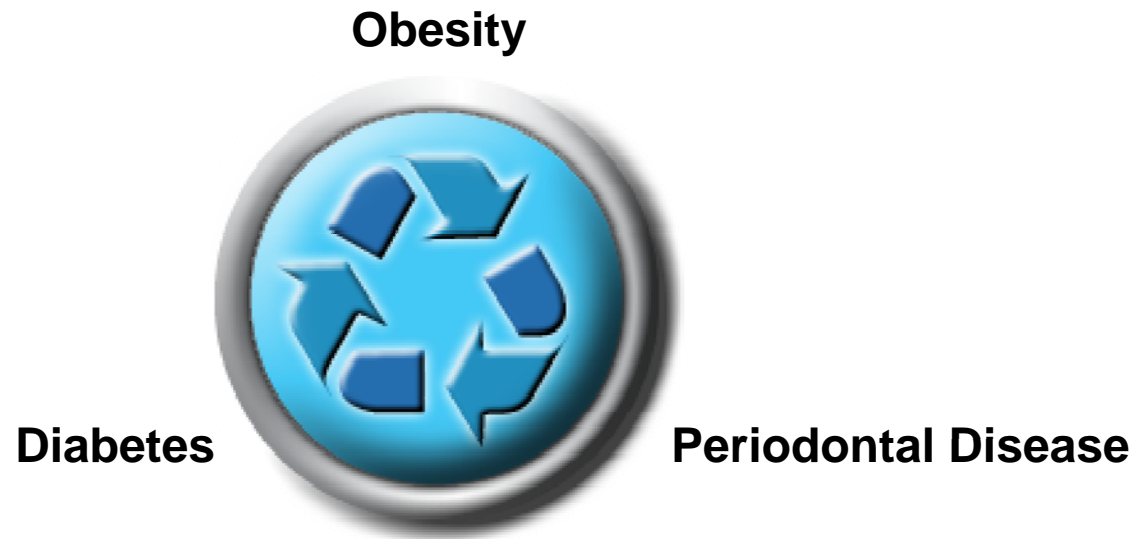
# Periodontal Disease

- Inflammation of the gingiva
- Resulting in loss of supporting tooth structure (bone and tooth attachment to bone)
- Ultimately teeth are lost



# Periodontal Disease

- Exacerbated by burdened immune system and systemic diseases
  - Obesity
  - Diabetes
- Part of a complex cycle with interrelated cause and effect



Nutrition ↔ Obesity ↔ Diabetes

“The CDC predicts American children born in 2000 face an alarming 1 in 3 chance of developing diabetes”.

*The Dental Hygienist's Guide to Nutritional Care, 2005*

# Diabetes

- Obesity - major risk factor for Type 2 diabetes
- Delayed healing response + increased inflammatory response = periodontal infections
- Affects all aspects of cardiovascular health, including blood vessels that supply the periodontium

# The Role of Nutrition

- Dietary choices have a profound effect on oral health and overall health.
- Dietary habits that are detrimental to oral health can be identified by a dietary analysis.
- Making practical dietary changes can dramatically improve both oral and overall health.

# Assessing Nutrition



## 5 Day Food Diary

	<b>Example</b>	Day 1	Day 2	Day 3	Day 4	Day 5
Breakfast	<b>Bowl cheerios Milk</b>					
Morning Snacks	<b>6 soda crackers Peanut butter</b>					
Lunch	<b>Hamburger French fries Coke</b>					
Afternoon Snacks	<b>Apple Hershey bar</b>					
Dinner	<b>Fried chicken salad/ranch dressing white roll applesauce</b>					
Evening Snacks	<b>1 scoop vanilla ice cream</b>					

# Assessing Nutrition



## 24 Hour Food Diary

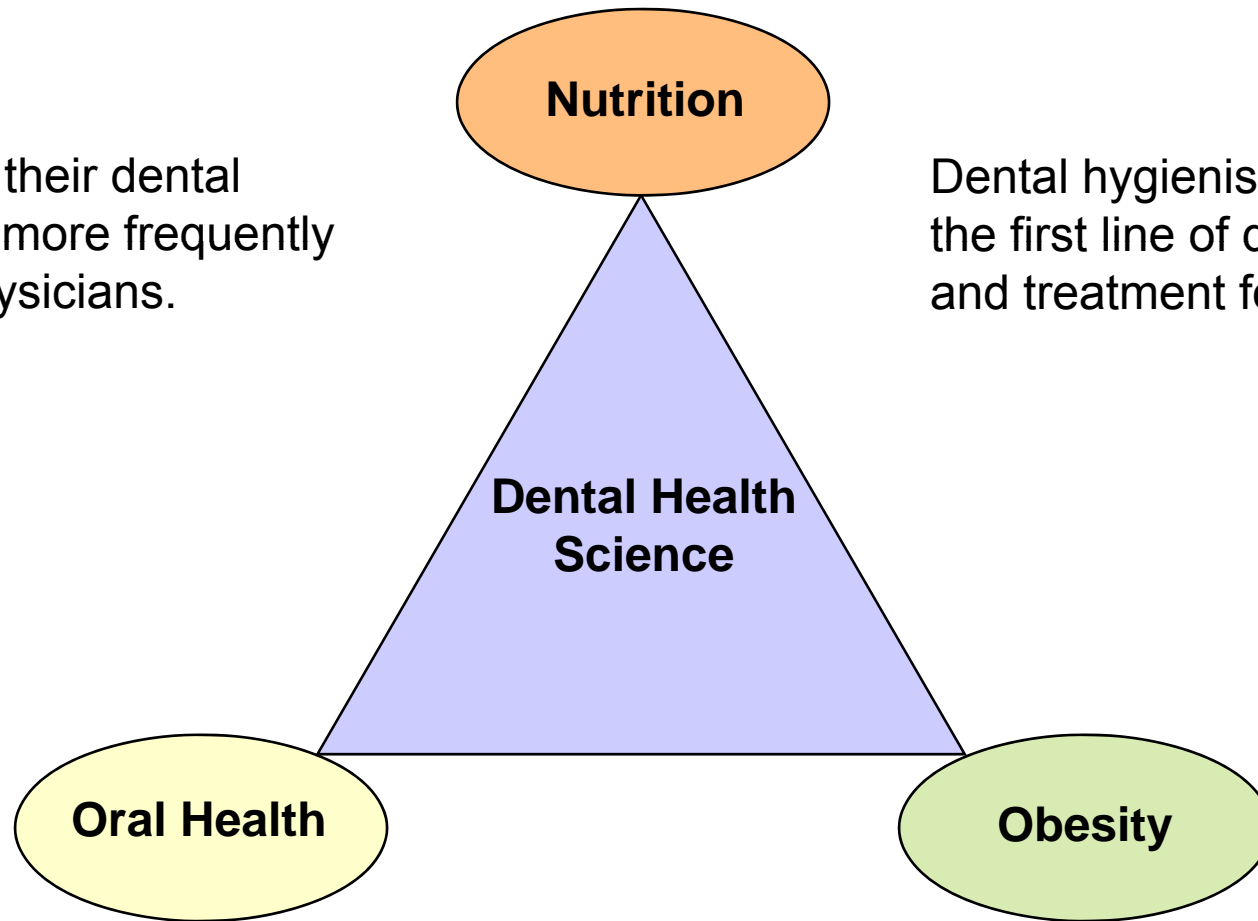
	Food/Beverage	Serving Size (estimated)
<b>Example</b>	<b>Coke Banana Snickers Vegetable Soup</b>	<b>12 oz can Whole 1 King size 1 Cup</b>
Breakfast		
Morning Snacks		
Lunch		
Afternoon Snacks		
Dinner		
Evening Snacks		



# Summary

Patients see their dental practitioners more frequently than their physicians.

Dental hygienists are often the first line of diagnosis and treatment for patients.



# Behavior Modification

Catherine Miller, Ph.D.  
School of Professional  
Psychology (SPP)

# The Problem of Pediatric Obesity

- Weight gain and poor health are generally considered negative consequences that most people would like to avoid.
- Why, then, do children continue to exhibit behaviors, such as overeating fatty foods and engaging in sedentary activities, that lead to these negative consequences?

# The Problem of Pediatric Obesity

- Common answers:
  - The child is lazy or has no will power
  - Something happened in the child's past which is affecting current behavior
- Main problems with these answers:
  - Blames the child rather than focusing on solutions
  - Discourages action
- Instead, learning principles may help to determine what may be maintaining the behaviors that lead to obesity

# Learning Principles

- **Principle 1:** Behavior that is reinforced is more likely to be repeated, while behavior that is punished is less likely to be repeated
- **Principle 2:** Reinforcement can be either positive or negative
- Application to pediatric obesity:
  - Eating fatty foods and engaging in sedentary activities are reinforcing
  - Positive reinforcement: Fatty food tastes good
  - Negative reinforcement: Physical activity hurts and/or requires effort

# Learning Principles

- **Principle 3:** Immediate consequences have a MUCH larger effect on behavior than delayed consequences
- Application to pediatric obesity: Good-tasting food and avoidance of physical exertion are immediate consequences, which are much more powerful than delayed weight gain or threat of long-term health problems

# Interventions Based on Learning Principles

- Reduce opportunity for reinforcement of sedentary behaviors and overeating
  - Intervention: Stimulus (or environmental) control
  - Remove fatty foods in the house, eat only at the dinner table, remove videogames from the home
- Increase reinforcement of healthy behaviors, such as increased consumption of healthy foods and increased physical activity
  - Intervention: Behavioral contracting

# Considerations when Contracting

- Short-range goals; small approximations
- Negotiation, not imposition
- Constructive language: focus on behavioral deficits rather than behavioral excesses
- Written format



# Elements of Contracting

- Behavior
- Length of contract
- Consequences
  - Positive reinforcements
  - Aversive consequences
- Method of data collection
- Review of progress
- Signatures

# Difficulties when Contracting

- Setting the target: weight or behavior?
- Specification of target
- Achievability of goals
- Availability and administration of reinforcers
- Accuracy of data collection
- Phases: baseline, treatment, revisions

# Example of Contracting

- I, \_\_\_\_\_, agree to do the following:
  - Walk the dog 2 times per week for 10 minutes each time
  - Ride my bike to school 1 day per week
  - Eat one serving of vegetables 1 day per week
  - Eat one serving of fruit 1 day per week
- Mom will keep track of all of these; I will also keep track of my walking and bike riding.

## Example of Contracting

- Possible reinforcers: Play videogames for 10 minutes, play board game with mom
- Bonus: If I do all of them, I can go to the mall on Saturday.
- If I don't meet my goals, I will lose videogame privileges for the weekend.
- This contract will be reviewed and possibly revised next week.
- Signatures

# Research on Contracting

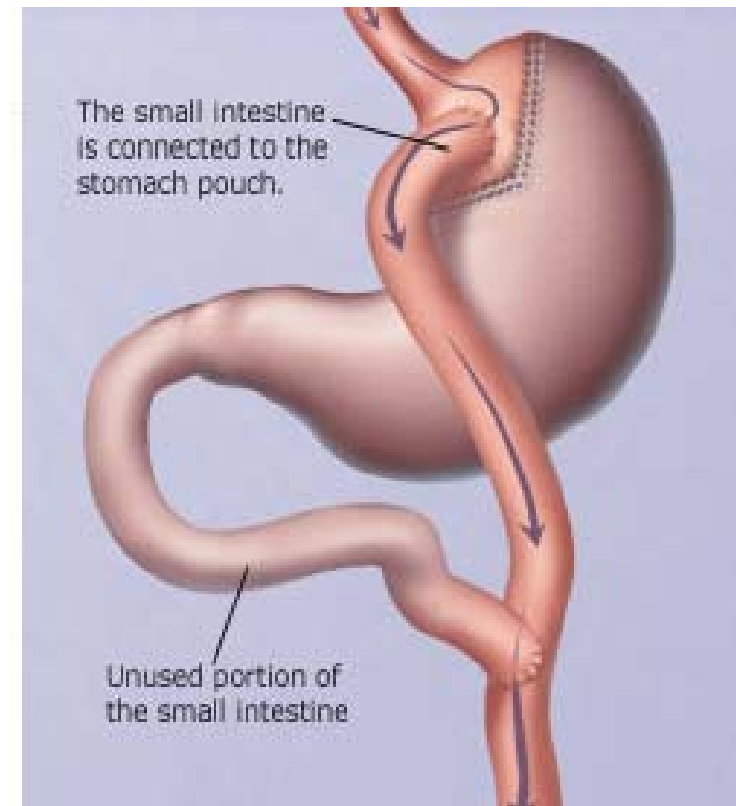
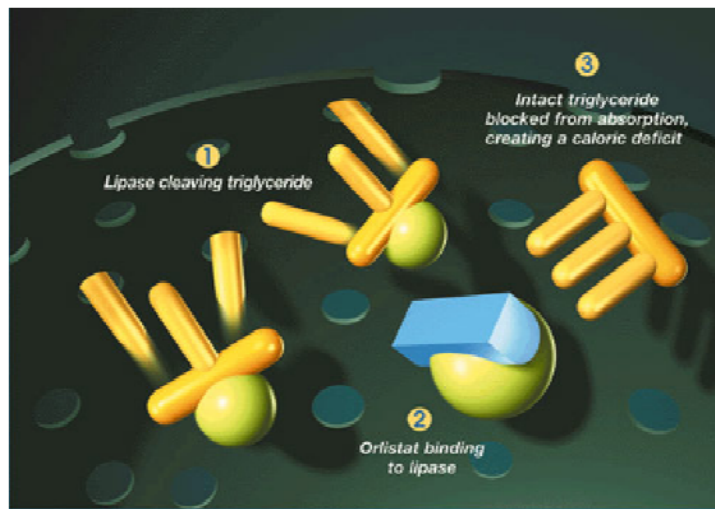
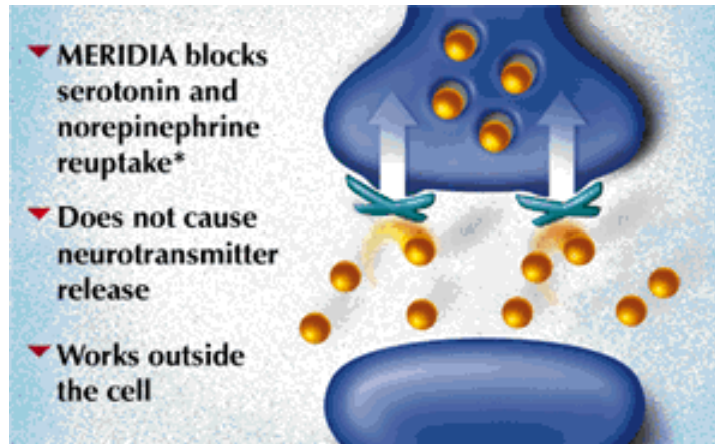
- Behavior contracting more effective than no treatment or attention-only controls
- Behavior contracting more effective than nutrition education
- Parent involvement in contracting important for long-term maintenance (10-year follow-up data)

# Pharmacologic and surgical interventions

- Reserved for patients that have increased risk from co-morbid conditions
  - Drug therapy
    - Sibutramine (Meridia)
    - Orlistat (Xenical, Alli)
    - Metformin (Glucophage)
  - Bariatric surgery
- Safety and long-term outcomes



# NOT the silver bullets





# Resources for Managing Pediatric Obesity

- Patient education
  - Pamphlets
  - Multi-media
- Clinical tools
- Professional information
- Advocacy



# NIH – Obesity Education Initiative

DEPARTMENT OF HEALTH AND HUMAN SERVICES • NATIONAL INSTITUTES OF HEALTH



National Heart Lung and Blood Institute • Obesity Education Initiative

➔ BMI Calculator

➔ Menu Planner

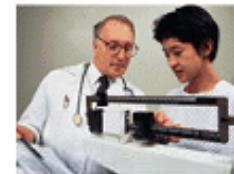
➔ Portion Distortion

➔ WeCan!

## Aim For A Healthy Weight



*Information for  
Patients and  
the Public*



*Information  
for Health  
Professionals*



[Information for Patients](#) • [Information for Professionals](#)

[BMI Calculator](#) • [Menu Planner](#) • [Portion Distortion](#) • [WeCan!](#)

[NHLBI Home](#) • [OEI Home](#) • [NHLBI Privacy Statement](#) • [Contact the NHLBI](#) • [Accessibility](#)



[http://www.nhlbi.nih.gov/health/public/heart/obesity/lose\\_wt/index.htm](http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/index.htm)

# Meal Planner Tool

DEPARTMENT OF HEALTH AND HUMAN SERVICES • NATIONAL INSTITUTES OF HEALTH

## Interactive Menu Planner



National Heart Lung and Blood Institute • Obesity Education Initiative

[Healthy Weight Home](#)

[BMI Calculator](#)

[Portion Distortion](#)

[WeCan!](#)

[About the Menu Planner](#)

[Start Over](#)

[Track Your Food Intake](#)

### Select Calories and a Meal



Number of daily planned calories:

Select Meal:

Total Allowable Calories:

**Total Calories Used:**

**Calories Remaining:**

**Total Fat (gm):**

**Total Carbohydrates (gm):**

### Meal Menu



Item	Serv.	Cal.
1 sm. Orange	1	60
Vegetables	0	0
8 oz Milk, skim	1	90
1/4 (1 oz) Bagel (varies)	4	320
Meats & Proteins	0	0
Beverages	0	0
1 T Cream Cheese	1	45

### Meal Selections



#### Breakfast

Servings	Item	Calories
1	1 sm. Orange	60
1	8 oz Milk, skim	90
4	1/4 (1 oz) Bagel (varies)	320
1	1 T Cream Cheese	45

# Portion Distortion

DEPARTMENT OF HEALTH AND HUMAN SERVICES • NATIONAL INSTITUTES OF HEALTH  
National Heart Lung and Blood Institute

## Portion Distortion Interactive Quiz

[Healthy Weight Home](#) [BMI Calculator](#) [Menu Planner](#) [WeCan!](#) [OEI Home](#)

[Previous Question](#) • [Back to Beginning](#) • [Next Question](#)

## Cheeseburger

**20 Years Ago**



**333 calories**

**Today**



**??? calories**

A cheeseburger 20 years ago had 333 calories. How many calories do you think are in today's cheeseburger?

590  620  700

[Check Your Answer!](#)



## What's We Can!?



### Overview

**We Can!** stands for Ways to Enhance Children's Activity & Nutrition. **We Can!** is a national education program designed for parents and caregivers to help children 8-13 years old stay at a healthy weight.

Parents and caregivers are the *primary influencers* for this age group. **We Can!** offers parents and families tips and fun activities to encourage healthy eating, increase physical activity and reduce sedentary or screen time.

It also offers community groups and health professionals resources to implement programs and fun activities for parents and youth in communities around the country.

Four of the National Institutes of Health have come together to bring you **We Can!** The [National Heart, Lung, and Blood Institute](#) in collaboration with the [National Institute of Diabetes and Digestive and Kidney Diseases](#), the [National Institute of Child Health and Human Development](#), and the [National Cancer Institute](#) have combined their unique resources and activities as part of **We Can!**



### We Can! Animation

**We Can!** has produced a 60-second animated presentation that highlights the importance of preventing overweight and obesity for families.

[View the animation](#)



### We Can! Video

**We Can!** has produced an 8-minute video called **We Can! And You Can Too!** that highlights the program and the importance of preventing overweight and obesity for families.

[View the video](#)

### We Can! Partners



A growing number of

### We Can! Communities



[Communities](#) across the



**CHILDHOOD OBESITY**

- View the Program Online
- Earn CME Credit
- Faculty Profiles
- References and Resources
- Help/FAQs
- Discovery Health CME Main



## Childhood Obesity

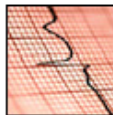
Join patients, practicing physicians and a panel of experts for a timely and dynamic discussion of how to diagnose, and treat overweight children.

Watch a Preview

### Features



**View the Program Online**  
If you have a high-speed connection, you can view the entire program online! Click [here](#) to watch.



**Reference Material**  
Click [here](#) for a list of the studies, and all the charts and graphs used in the program. CDC growthcharts are available by clicking [here](#).



**Order the Physician DVD!**  
Click [here](#) for information on how to order the program on DVD!

### Earn CME Credit

Earning free CME credit is a simple three-step process:

**Step 1: Register**  
If this is your first time here, you will need to register. Click [here](#) to register. If you have already registered, please [sign-in here](#).

**Step 2: Take the CME Test**  
Take the CME test and fill out the evaluation form. Click [here](#).

### Welcome

Watch



**Sundays  
@9 or 10 AM•ET/PT**

### Upcoming CME programs:

#### April 22

9 AM ET: HPV and Cervical Cancer: Managing the Risk

10 AM ET: Type 2 Diabetes: A Case for Cardiovascular Intervention

#### April 29

9 AM ET: The Premenstrual Continuum: Improving Diagnosis and Treatment

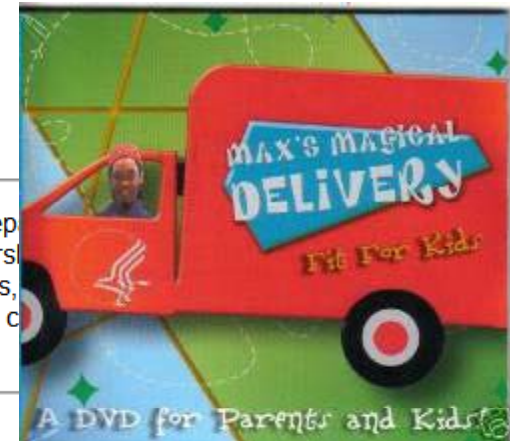
10 AM ET: Bariatric Surgery:

# Agency for Healthcare Research and Quality (AHRQ)

## Combating Childhood Obesity

### Get DVDs to Help Prevent Obesity in Children

In response to the growing epidemic of childhood obesity in this country, the Department of Health and Human Services and the Agency for Healthcare Research and Quality (AHRQ) worked in partnership to develop two new DVD programs. One DVD program is for children and families, treat childhood obesity and overweight. These are excellent tools that clinicians can use in their office, and they can share them with children and families to use as a resource.



### Children and Their Families

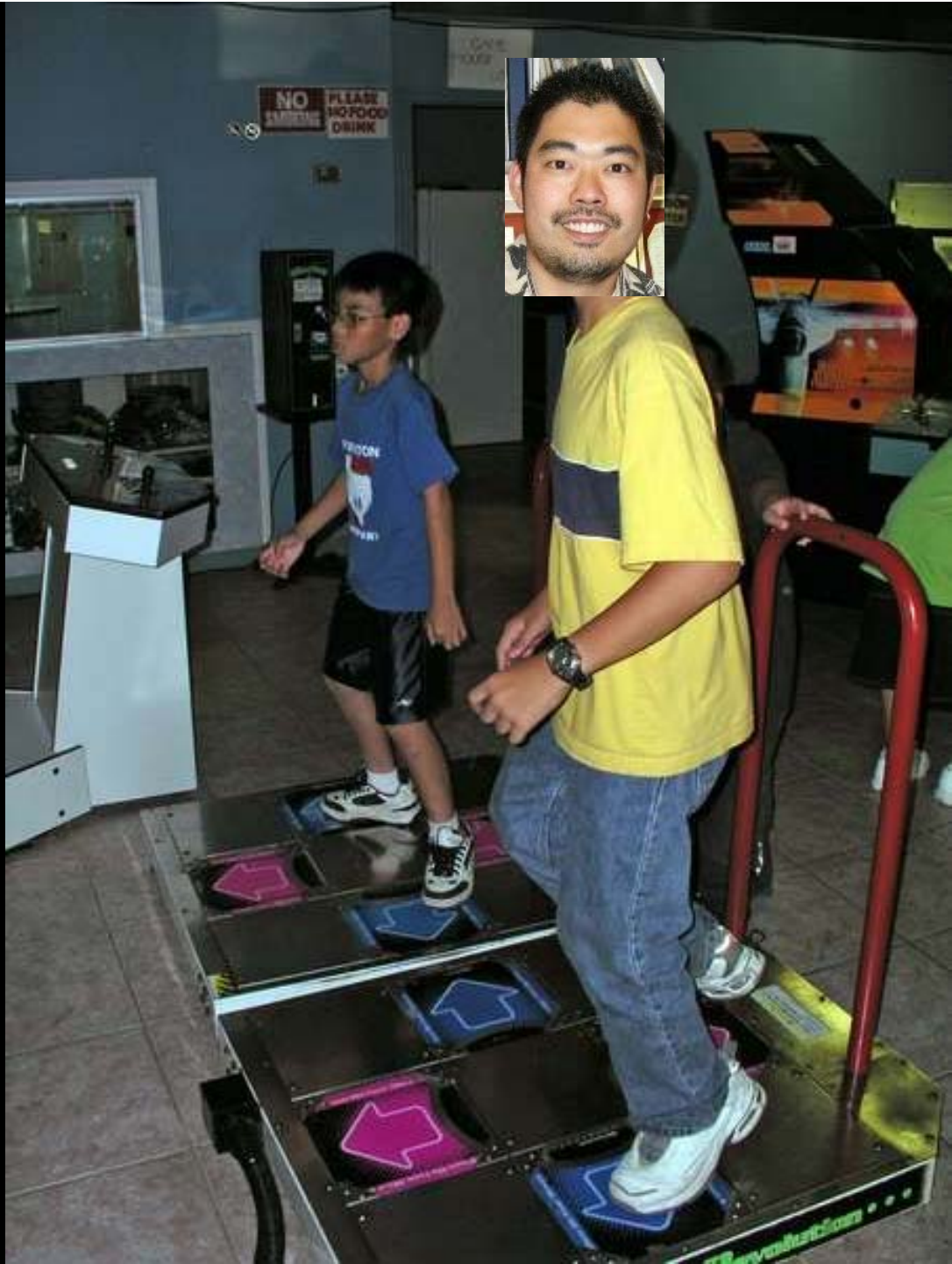
*Max's Magical Delivery: Fit for Kids* is a fun, interactive DVD targeted to children ages 5-9 and their families. The DVD offers suggestions to:

- Try to eat five fruits and vegetables a day.
- Get away from the TV and computer screens and move around.
- Find fun ways to be physically active inside and outside.

There is a separate section for parents on small, achievable steps they can take to encourage these healthy habits in their children and themselves.

Select to open a message from Surgeon General Richard H. Carmona, M.D. (Streaming Video: [Dial-up Connection](#), 4:39)

<http://www.ahrq.gov/child/dvdobesity.htm>



# Overweight and Obesity

The American Academy of Pediatrics (AAP) is committed to children's health and recognizes childhood overweight and obesity as a serious health concern. The Academy continues to work for improvements in obesity prevention, treatment, advocacy and reimbursement.



**News**



**Physician Education**



**Family Resources**



**Advocacy**

The increase in the number of overweight children, and the related health and financial problems, are issues every pediatrician faces on a daily basis.

The AAP policy statement titled **Active Healthy Living** outlines ways that pediatric health care providers and public health officials can encourage, monitor, and advocate for increased physical activity for children and teenagers.

The AAP policy statement titled **Prevention of Pediatric Overweight and Obesity** proposes strategies to foster prevention and early identification of overweight and obesity





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  - Parks Master Plan
  - Shute Park Aquatic Center
  - Team of Recreational Youth (TRY)
  - Volunteer Opportunities
  - Walters Art Center
  - Youth Sports

**Questions?**  
[Contact Webmaster](#)

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**Go!**



## Parks & Recreation

4400 NW 229th Avenue Main Office 503.681.6120 Registration 503.681.5397

People ♦ Parks ♦ Programs ♦ Partnerships

### Calendar of Events

To register for classes call the Registration Line at 503.681.5397.

**April 14, 2007 - American Red Cross Babysitting Class.** Learn the skills needed to become a great babysitter! For kids ages 11 - 15. Saturday from 9:00 am - 3:45 pm at the Tyson Recreation Center. Register for class #13688.

**April 17, 2007 - Bronze & Silver Boxing class begins.** For 8 year olds on up through Adults. Tuesday & Thursday from 6:00 - 7:30 pm at the Thomas Middle School Gym. Register for class #13121.

**April 17, 2007 - Drawing in Color class begins.** Learn the basics of shape, line and form and create a beautiful work of art that will demand framing. For kids ages 7 - 12 at the Cultural Arts Center. Register for class #13025.

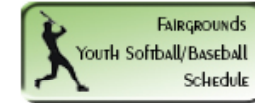
**April 19, 2007 - Illustration class begins.** Students (ages 8 - 12) will go through the process of making a picture book. They'll develop drawing skills while participating in games that promote creativity. 4:00 - 6:00 pm at the Cultural Arts Center. Register for class #13031.

**April 21, 2007 - Life Writing Class begins.** Write and share stories and/or poems about your experiences. Saturday's from 10:00 am - 12:00 pm (8 weeks) at the Cultural Arts Center. For adults. Register for class #13062.

**April 25, 2007 - Weird Wednesday Science - Spiders & Scorpions.** They're creepy. They're crawly. And they're not insects! Learn about tarantulas, scorpions, centipedes, and more creepy critters. For children ages 5 - 9. 4:00 - 5:00 pm at the Tyson Recreation Center. Register for class #13719.

**May 1, 2007 - Summer Activity Guide will be available and Summer Registration begins.**


**May 1, 2007 - Recreational Bowling class begins.** Tuesday's from 4:00 - 5:00 pm (4 weeks). For kids ages 5 - 16 at Four Seasons Bowling Center. Register for class #12766.



# What's new?

The screenshot shows the PubMed website interface. At the top, the NCBI logo is on the left, and the PubMed logo with the URL [www.pubmed.gov](http://www.pubmed.gov) is in the center. To the right, it says "A service of the National Library of Medicine and the National Institutes of Health" and has a "My NCBI" button with "Sign In" and "Register" links. Below this is a navigation bar with tabs for "All Databases", "PubMed", "Nucleotide", "Protein", "Genome", "Structure", "OMIM", "PMC", "Journals", and "Books". The search bar contains the text "Search PubMed" and a dropdown menu set to "PubMed". The search query is "pediatrics AND obesity AND treatment" with "Go" and "Clear" buttons. Below the search bar are buttons for "Limits", "Preview/Index", "History", "Clipboard", and "Details".


On the left side, there is a blue sidebar with the following links:

- About Entrez
- Text Version
- Entrez PubMed
  - Overview
  - Help | FAQ
  - Tutorials
  - New/Noteworthy 
  - E-Utilities
- PubMed Services
  - Journals Database
  - MeSH Database
  - Single Citation Matcher
  - Batch Citation Matcher
  - Clinical Queries
  - Special Queries
  - LinkOut
  - My NCBI

In the main content area, there are two bullet points:

- ◆ To get started, enter one or more search terms.
- ◆ Search terms may be [topics](#), [authors](#) or [journals](#).

A promotional box with a yellow border contains the following text:

 **Set up an automated PubMed update in less than 5 minutes.**

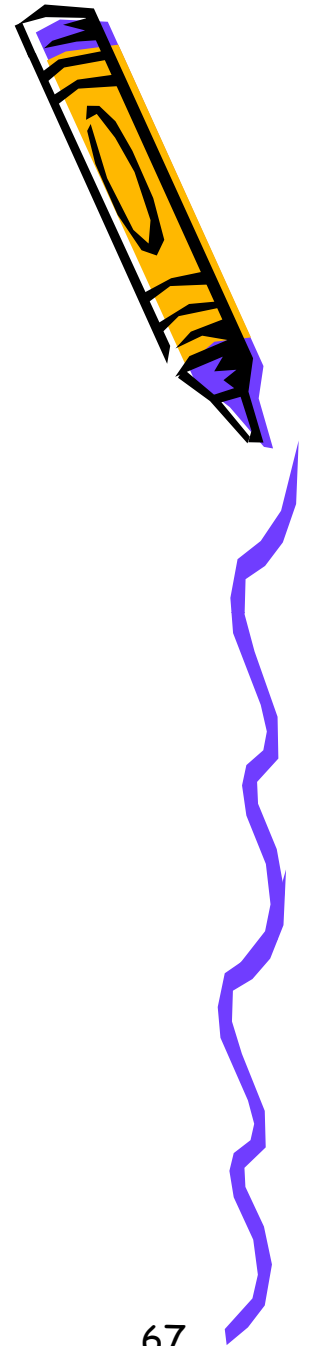
(1) Get a [My NCBI account](#). (2) Save your search.  
(3) Your PubMed updates can be e-mailed directly to you.

Read the [My NCBI Help](#) material to explore other options, such as automated updates of other databases, setting search filters, and highlighting search terms.

PubMed is a service of the [U.S. National Library of Medicine](#) that includes over 16 million citations from MEDLINE and other life science journals for biomedical articles back to the 1950s. PubMed includes links to full text articles and other related resources.

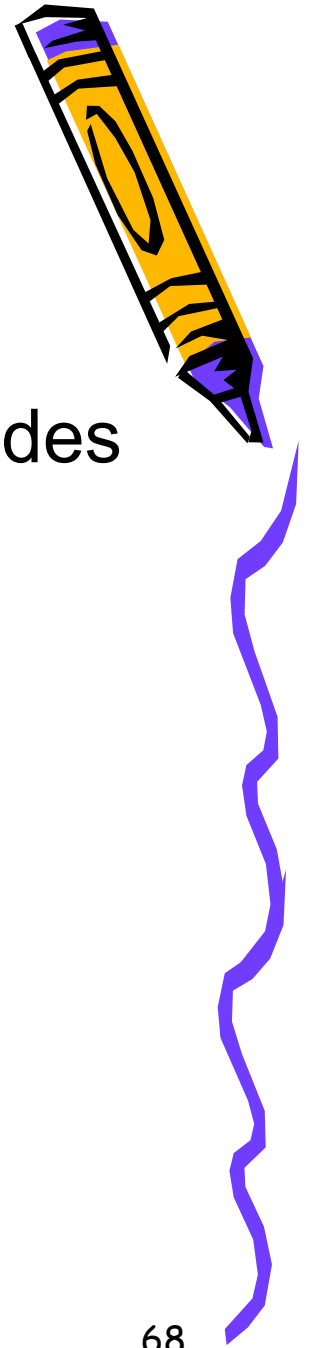
# Pediatric Obesity Research

- Harvard Growth Study
- Healthy People 2010
- Healthy Start
- Youth Risk Behavior Survey



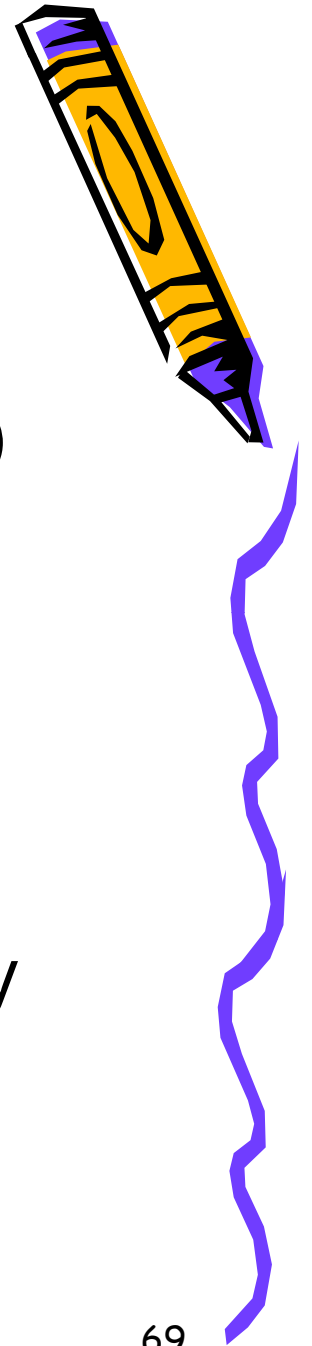
# Psychosocial Research

- Evaluating quality of life in research, includes social, emotional, physical, and school performance in children



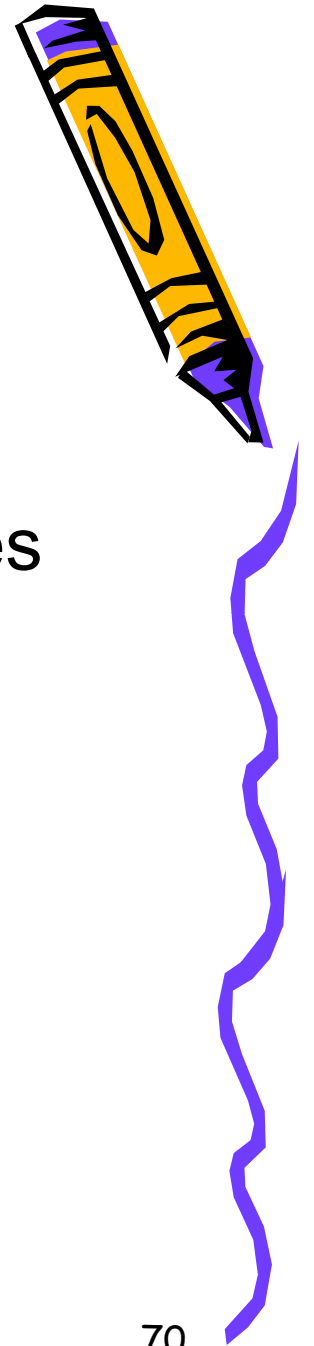
# Treatment Research

- Appetite suppressants (e.g., Sibutramine)
- Diet
- Exercise
- Behavioral therapy
- Problem-solving
- Lifestyle changes for both child and family



# Etiology Research

- Diet
- Media: television, computers, videogames
- Genetics
- Parental lifestyle choices
- Exercise and physical fitness



# Future of Pediatric Obesity

- Diet
- Media: television, computers, videogames
- Parental lifestyle choices
- Exercise and physical fitness

