Can The Obesity Curve Change?

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Heart Disease Prevention Program
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Presentation Objectives

1) Cite our historical, community and national demographics on obesity and its related diseases.

2) Describe the health issues associated with obesity, such as diabetes, hypertension, cholesterol, etc.

3) Summarize strategies to effect obesity.
BACKGROUND AND RATIONALE
Foraging Range of Different Primates*

* from Leonard and Robertson. 
Traditional Agriculture
The Agricultural Period
Search For Food
David, After His Visit to the U.S.
Obesity Trends* Among U.S. Adults
(*BMI ≥30, or about 30 lbs. overweight for 5’4” person)
## Top 10 - Adults

<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
<th>Percentage of Adult Obesity (Based on 2008-2010 Combined Data, Including Confidence Intervals)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mississippi</td>
<td>34.4% (+/- 0.9)</td>
</tr>
<tr>
<td>2</td>
<td>Alabama</td>
<td>32.3% (+/- 1.0)</td>
</tr>
<tr>
<td>3</td>
<td>West Virginia</td>
<td>32.2% (+/- 1.1)</td>
</tr>
<tr>
<td>4</td>
<td>Tennessee</td>
<td>31.9% (+/- 1.2)</td>
</tr>
<tr>
<td>5</td>
<td>Louisiana</td>
<td>31.6% (+/- 0.9)</td>
</tr>
<tr>
<td>6</td>
<td>Kentucky</td>
<td>31.5% (+/- 1.0)</td>
</tr>
<tr>
<td>7</td>
<td>Oklahoma</td>
<td>31.4% (+/- 0.8)</td>
</tr>
<tr>
<td>8</td>
<td>South Carolina</td>
<td>30.9% (+/- 1.0)</td>
</tr>
<tr>
<td>9</td>
<td>Arkansas</td>
<td>30.6% (+/- 1.2)</td>
</tr>
<tr>
<td>10</td>
<td>Michigan</td>
<td>30.5% (+/- 0.8)</td>
</tr>
</tbody>
</table>
## States with the Lowest Obesity Rates

<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
<th>Percentage of Adult Obesity (Based on 2008-2010 Combined Data, Including Confidence Intervals)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>Colorado</td>
<td>19.8% (+/- 0.7)</td>
</tr>
<tr>
<td>50</td>
<td>D.C.</td>
<td>21.7% (+/- 1.0)</td>
</tr>
<tr>
<td>49</td>
<td>Connecticut</td>
<td>21.8% (+/- 0.9)</td>
</tr>
<tr>
<td>48</td>
<td>Massachusetts</td>
<td>22.3% (+/- 0.6)</td>
</tr>
<tr>
<td>47</td>
<td>Hawaii</td>
<td>23.1% (+/- 0.9)</td>
</tr>
<tr>
<td>46</td>
<td>Utah</td>
<td>23.4% (+/- 0.8)</td>
</tr>
<tr>
<td>45</td>
<td>Vermont</td>
<td>23.5% (+/- 0.8)</td>
</tr>
<tr>
<td>44</td>
<td>Montana</td>
<td>23.8% (+/- 0.9)</td>
</tr>
<tr>
<td>43</td>
<td>New Jersey</td>
<td>24.1% (+/- 0.7)</td>
</tr>
<tr>
<td>42</td>
<td>Rhode Island</td>
<td>24.3% (+/- 1.0)</td>
</tr>
</tbody>
</table>
## Obesity – North America

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>18%</td>
</tr>
<tr>
<td>United States</td>
<td>31%</td>
</tr>
<tr>
<td>Mexico</td>
<td>24%</td>
</tr>
</tbody>
</table>
Scope of the USA Obesity Problem
Both overweight and obesity occur regardless of race/ethnicity

<table>
<thead>
<tr>
<th></th>
<th>Overweight</th>
<th>Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>33.6%</td>
<td>17.1%</td>
</tr>
<tr>
<td>White</td>
<td>33.5%</td>
<td>16.3%</td>
</tr>
<tr>
<td>Black</td>
<td>35.1%</td>
<td>20.0%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>37.0%</td>
<td>19.2%</td>
</tr>
</tbody>
</table>

Source: Ogden et al., JAMA 295:1549-1555, 2006
### States with the Highest Rates of Obese 10- to 17-year-olds

<table>
<thead>
<tr>
<th>Rank</th>
<th>States</th>
<th>Percentage of Obese 10- to 17-year-olds (95 percent Confidence Intervals)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mississippi</td>
<td>21.9% (+/- 3.5)</td>
</tr>
<tr>
<td>2</td>
<td>Georgia</td>
<td>21.3% (+/- 5.1)</td>
</tr>
<tr>
<td>3</td>
<td>Kentucky</td>
<td>21.0% (+/- 3.5)</td>
</tr>
<tr>
<td>4 (tie)</td>
<td>Illinois</td>
<td>20.7% (+/- 3.6)</td>
</tr>
<tr>
<td>4 (tie)</td>
<td>Louisiana</td>
<td>20.7% (+/- 4.0)</td>
</tr>
<tr>
<td>6</td>
<td>Tennessee</td>
<td>20.6% (+/- 3.7)</td>
</tr>
<tr>
<td>7 (tie)</td>
<td>Arkansas</td>
<td>20.4% (+/- 3.6)</td>
</tr>
<tr>
<td>7 (tie)</td>
<td>Texas</td>
<td>20.4% (+/- 5.0)</td>
</tr>
<tr>
<td>9</td>
<td>D.C.</td>
<td>20.1% (+/- 3.9)</td>
</tr>
<tr>
<td>10</td>
<td>West Virginia</td>
<td>18.9% (+/- 3.2)</td>
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### States with the Lowest Rates of Obese 10- to 17-year-olds

<table>
<thead>
<tr>
<th>Rank</th>
<th>States</th>
<th>Percentage of Obese 10- to 17-year-olds (95 percent Confidence Intervals)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>Oregon</td>
<td>9.6% (+/- 2.7)</td>
</tr>
<tr>
<td>50</td>
<td>Wyoming</td>
<td>10.2% (+/- 2.7)</td>
</tr>
<tr>
<td>48 (tie)</td>
<td>Washington</td>
<td>11.1% (+/- 3.4)</td>
</tr>
<tr>
<td>48 (tie)</td>
<td>Minnesota</td>
<td>11.1% (+/- 3.0)</td>
</tr>
<tr>
<td>46 (tie)</td>
<td>Iowa</td>
<td>11.2% (+/- 2.7)</td>
</tr>
<tr>
<td>46 (tie)</td>
<td>Hawaii</td>
<td>11.2% (+/- 2.8)</td>
</tr>
<tr>
<td>44 (tie)</td>
<td>Utah</td>
<td>11.4% (+/- 3.5)</td>
</tr>
<tr>
<td>44 (tie)</td>
<td>North Dakota</td>
<td>11.4% (+/- 2.5)</td>
</tr>
<tr>
<td>42 (tie)</td>
<td>Montana</td>
<td>11.8% (+/- 2.8)</td>
</tr>
<tr>
<td>42 (tie)</td>
<td>Idaho</td>
<td>11.8% (+/- 2.7)</td>
</tr>
</tbody>
</table>
Percentage of U.S. Youth who are Obese by age

BMI Equal or greater than 95% age/sex CDC Growth Charts

Sources: Medline, 2006; Ogden et al. JAMA;195:1549-55, Hedley et al. JAMA;291:2847-2850
32% are overweight or obese.

- Pacific Islanders (42%), Latinos (40%), American Indians (37%)

75% of overweight children will become overweight or obese adults.
OC Obesity: Low Income 2-4 Year Olds (2009)

Obesity prevalence among low income 2-4 year olds
OC Obesity: Low Income 5-19 Year Olds (2009)

Pediatric Nutrition Surveillance System 2009
OC Obesity: Adults (2008)

California Health Interview Survey 2009
Prevalence in Orange County

<table>
<thead>
<tr>
<th>Population</th>
<th>Overweight</th>
<th>Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td>40.0%</td>
<td>19.0%</td>
</tr>
<tr>
<td>Children 5-19</td>
<td>18.5%</td>
<td>21.2%</td>
</tr>
<tr>
<td>Children 2-4</td>
<td>15.9%</td>
<td>16.6%</td>
</tr>
</tbody>
</table>

Behavioral Risk Factor Surveillance System (BRFSS) 2009
Pediatric Nutrition Surveillance System  2008
Healthy Body Composition Among Ninth Graders,
Orange County Unified and Secondary School Districts,
Orange County, California, 2008-2009

Legend
Percent of 9th graders with healthy body composition, 2008-2009
- 66.5% - 75.1%
- 75.2% - 77.7%
- 77.8% - 84.1%
- 84.2% - 94.8%

Sources:
California Department of Education, Physical Fitness Test, 2008-2009;
US Census Bureau, 2008 TIGER/Line.
Why Does it Matter?
Diabetes

- 80 – 90% of diabetics are overweight or obese
- Obese women are 7 times more likely to develop diabetes
- One in three Americans born in 2000 will likely develop diabetes in their lifetime
  - The rate is 2x for Latinos!
Healthcare Costs

$1,429 in avoidable cost per person per year.

Over $800 million in Orange County!
Farm Subsidies USA Obesity: Apples to Soda

1995-2010 Farm Subsidies $16.9 Billion to producers of Corn Syrup products.

Taxpayers given $7.36 to buy Corn Syrup products (Soda etc)

$11cts to buy APPLES !!!!

California Public Interest Research Group 2011
Cost of Obesity

• Overweight and obese individuals are more likely to:
  – Develop chronic disease risk factors, such as high blood pressure and dyslipidemia.
  – Develop chronic diseases, such as type 2 diabetes, heart disease, osteoarthritis, and some cancers.
  – Experience complications during pregnancy.
  – Die at an earlier age.

– Avoidable cost in Orange County

US Centers for Disease Control and Prevention 2010
How did we get here?
What are the genes associated with an increased risk for obesity?

The evidence is growing in support of the hypothesis of a polygenic risk profile, each with a relatively small contribution.
What can we expect from the observations on assortative mating for body size and mass?

A growing increase in the prevalence of obesity, particularly in the number of cases with a strong genetic predisposition.
Family Patterns

“Thanks for almost everything dad and mom”

- 7-8% of obese adults are born to parents both lean
- 40% of obese adults have one parent who is obese
- 66% of obese adults have two obese parents

Comment – Genetics predicts obesity but the environment causes it.
A Balancing Act
What is the importance of the energy imbalance, the so-called energy gap?

The energy differential between obese and normal weight children is commonly grossly underestimated.
Why Are We More Sedentary?

- How Our Society Discourages Physical Activity

- Behavior is shaped, in large measure, by one's environment. Our young people live in a social and physical environment that makes it easy to be sedentary and inconvenient to be active.
Transportation
New technology has conditioned our young people to be less active, while new electronic media (e.g., video and computer games, cable and satellite television) have made sedentary activities more appealing.
What do Children think of Play?

Real Play

Simulated Play
“You don’t double-click it, dear. It’s a ball.”
Community Design

- Community design centered around the automobile has discouraged walking and bicycling and has made it more difficult for children to get together to play.
Community Design

- Increased concerns about safety have limited the time and areas in which children are allowed to play outside.
Community Physical Inactivity

- Communities have failed to invest adequately in close-to-home physical activity facilities (e.g., parks, recreation centers).
States and school districts have reduced the amount of time students are required to spend in physical education classes, and many of those classes have so many students that teachers cannot give students the individual attention they need.
Trends in Physical Inactivity

- Among American Youth 12-21 years of age, enrollment among physical activity classes declined from 42% in 1991 to 27% in 1997. Decline continues to 22% in 2009.
- Vigorous physical activity participation declined from 66% in girls and 79% in boys in grade 9 to 44% in girls and 68% in boys by grade 2009.
- From 1988 to 1992, doubling in prevalence of white males reporting no physical activity from 13% to 25%. 2009: 33%. 
The 7 deadly environmental sins of obesity

1. The "commodified" environment: an obsession with consumption
2. The harried environment: time pressures
3. The pressurised parent environment: excess demands
4. The technological environment
5. The car-reliant environment
6. The marketed environment
7. The environment of competing authorities

The seven deadly sins of obesity: how the modern world is making us fat Dixon J & Broom DH Eds. UNSW Press 2007
Primary Prevention
- Health Screening -

- Height
- Weight
- BMI
- Waist circumference
- Blood pressure
- Fasting blood draw
  - insulin and glucose
  - lipids (total cholesterol, HDL, LDL, triglycerides)
  - other laboratory indicators of diabetes and obesity risk, such as HbA1c
What Is BMI?

Body mass index (BMI) = weight (kg)/height (m)^2

BMI is an effective SCREENING tool; it is not a diagnostic tool.

For children, BMI is age and gender specific, so BMI-for-age is the measure used.
Definitions

Body Mass Index (BMI) describes relative weight for height: weight (kg)/height (m²)

- Overweight = 25–29.9 BMI
- Obesity = ≥ 30 BMI
Intra-abdominal (Visceral) Fat

*The dangerous inner fat!*

Front

Back

Visceral AT

Subcutaneous AT
How to Measure Waist Circumference

- Locate upper hip bone and top of right iliac crest
- Place measuring tape in horizontal plane around abdomen at iliac crest
- Ensure tape is snug, but does not compress the skin
- Tape should be parallel to floor
- Record measurement at the end of a normal expiration

Women

>35 inches increased risk*

Men

>40 inches increased risk*

*Ethnic/age-related differences in body fat distribution may affect validity of waist circumference as surrogate for abdominal fat

NIH, NHLBI, NHLBI Obesity Education Initiative, NAASO. NIH Publication Number 00-4084. October 2000.
FIG. 1A: Women

Cumulative Incidence of Heart Failure (%)

Years

Normal
Overweight
Obese

N. AT RISK
Normal 1729 1688 1834 1588 1477 1227 295
Overweight 955 929 880 815 757 834 248
Obese 483 477 448 408 372 296 104
FIG. 1B: Men

The graph illustrates the cumulative incidence of heart failure (%) over years for men categorized by their weight status: Normal, Overweight, and Obese. The table below shows the number of individuals at risk at each year follow-up:

<table>
<thead>
<tr>
<th>Weight Status</th>
<th>No. at Risk 0</th>
<th>No. at Risk 3</th>
<th>No. at Risk 6</th>
<th>No. at Risk 9</th>
<th>No. at Risk 12</th>
<th>No. at Risk 15</th>
<th>No. at Risk 18</th>
<th>No. at Risk 21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>869</td>
<td>822</td>
<td>758</td>
<td>890</td>
<td>637</td>
<td>512</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>Overweight</td>
<td>1378</td>
<td>1322</td>
<td>1254</td>
<td>1163</td>
<td>1071</td>
<td>871</td>
<td>171</td>
<td></td>
</tr>
<tr>
<td>Obese</td>
<td>457</td>
<td>433</td>
<td>403</td>
<td>370</td>
<td>342</td>
<td>276</td>
<td>51</td>
<td></td>
</tr>
</tbody>
</table>
Cardiometabolic Risk

Effect of Moderate Weight Loss On Cardiometabolic Risk Factors

- Weight (lbs): Initial 250, 4 weeks 190, Final (avg. 16.7 weeks) 185 (15.1% decrease)
- BMI (kg/m²): Initial 25, 4 weeks 20, Final (avg. 16.7 weeks) 18 (15.0% decrease)
- Systolic BP (mm Hg): Initial 155, 4 weeks 135, Final (avg. 16.7 weeks) 120 (10.5% decrease)
- Diastolic BP (mm Hg): Initial 90, 4 weeks 80, Final (avg. 16.7 weeks) 70 (9.3% decrease)
- Glucose (mg/dL): Initial 120, 4 weeks 100, Final (avg. 16.7 weeks) 90 (16.5% decrease)
- TG (mg/dL): Initial 200, 4 weeks 100, Final (avg. 16.7 weeks) 80 (44.8% decrease)
- Cholesterol (mg/dL): Initial 200, 4 weeks 150, Final (avg. 16.7 weeks) 120 (11.7% decrease)

Percent changes are initial visit to final visit.

Physical Activity and CVD

• Only 22% of adults report regular sustained physical activity of any intensity 30 min of more 5x per week.
• Behavioral Risk Factor Surveillance Study shows a sedentary lifestyle in 51 – 68% of persons—percentage of adults reporting no leisure time physical activity ranges from 17.5% in Utah to 51.1% in Georgia, with 55% in California.
• Physical inactivity is more prevalent among women and men, among Blacks and Hispanics that Whites, and among older vs. young adults and among less vs. more affluent persons.
Cardiovascular Benefits of Physical Activity

• In children and young adults, the Young Finns Study (n=2358 aged 9-24) showed level of physical activity positively related to HDL-C and negatively associated with triglycerides, apolipoprotein B, and insulin levels in males (but only triglycerides in females).
• Pawtucket Heat Study showed estimated maximal oxygen consumption and self-reported physical activity related to blood pressure, BMI, and HDL-C.
• Study of 3331 Japanese men showed frequency of physical activity related to HDL-C and number of risk factors-- those who exercised 1, 2, and >=3 days per week had 1.38, 1.19, and 0.99 risk factors.
• PEPI study showed in 851 post-menopausal women self-reported physical activity positive associated with HDL-C and inversely related to insulin and fibrinogen.
Heart Disease
Blood Pressure
Aches, pains

Physical Activity

Age

Exercise

Fat

Self-esteem

Physical abilities
Strength
Energy

The Exercise-Aging Cycle
Determining a Healthy Body Weight

- Assess your body composition by waist circumference
- Choose a target value for BMI or percent body fat that is realistic for you and will ensure good health.
- Determine the recommended body weight based on your BMI or percent body fat goal.
- Examine the body weight that the formulas generate for you and allow for individual genetic, cultural, and lifestyle factors.
A Balancing Act
Conceptual Model of How Childhood Exercise Habits May Affect Health Throughout Life
Exercise & Weight Control

“To induce weight loss in youth we need to increase total energy expenditure by about 8-12%”

D. Cooper, @ NIDDK 2/2003
Exercise Benefit Zone

Estimated maximum heart rate (MHR) (beats per minute)

Upper threshold EBZ (85 percent level)

Exercise Benefit Zone

Lower threshold EBZ (60 percent level)

Age in years
Effect of 5 Exercise Sessions per Week on Total Energy Expenditure (TEE)

Mean HR During Exercise Session (bpm)

Expect ≥ 8-10% increase in fitness

Amount of Exercise Needed to Improved Fitness

Mean HR During Exercise Session (bpm)
INSULIN CHANGE RELATED TO THE INTENSITY OF EXERCISE

Percent of Maximal Capacity
Physical Activity Recommendations

- Aerobic exercise a minimum of 30 minutes, 5 times weekly
- Optimal physical activity is at least 30 minutes daily
- Resistance exercise training using free weights or machines 2 days a week in the absence of contraindications
"What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?"
The Activity Pyramid

**SEDENTARY ACTIVITIES**
Do infrequently
- Watching television
- Surfing the Internet
- Talking on the telephone

**STRENGTH TRAINING**
2–3 days per week
(all major muscle groups)
- Biceps curls
- Push-ups
- Abdominal curls
- Bench press
- Calf raises

**FLEXIBILITY TRAINING**
2 or more days per week (all major joints)
- Calf stretch
- Side lunge
- Step stretch
- Hurdler stretch

**CARDIORESPIRATORY ENDURANCE EXERCISE**
3–5 days per week (20–60 minutes)
- Walking
- Jogging
- Bicycling
- Swimming
- Aerobic dancing
- In-line skating
- Cross-country skiing
- Dancing
- Basketball

**MODERATE-INTENSITY PHYSICAL ACTIVITY**
Most days—preferably every day
(about 30 minutes)
- Walking to the store or bank
- Washing windows or your car
- Climbing stairs
- Working in your yard
- Walking your dog
- Cleaning your room
Physical Activity Prescription
Physical Activity Prescription

• What do You Know?
• Physical Activity Range of Activities
  – Incidental/Workout
• Patient History
  – Dosage
  – Duration
  – Age
  – Gender
  – Behavioral
  – Risks
    • Cardiovascular
    • Muscular/Skeleton
Physical Activity Prescription?

Role Model

Patient observing YOU:

Message or the Messenger?

Look whose Talking?

Walk the walk?

Talk the Talk?
Guidelines For Training

- Train the way you want your body to change.
- Train regularly.
- Get in shape gradually.
- Warm up before exercising, and cool down afterward.
- Listen to your body.
- Try training with a partner.
- Train your mind.
- Keep your exercise program in perspective.
Putting Together Your Own Program

- Step 1. Set goals.
- Step 2. Select activities.
- Step 3. Set targets for each activity
  - intensity
  - duration
  - frequency
- Step 4. Make a commitment.
- Step 5. Begin and maintain your program.
- Step 6. Record and assess your progress.
Principles of Physical Training

- Specificity - To develop a particular component, exercises must be performed that are specific.

- Progressive overload - When the amount of exercise (overload/stress) is progressively increased. The three dimensions of progressive overload are: frequency - how often, intensity - how hard, duration - how long.

- DeConditioning - The body adjusts to lower levels of physical activity the same way it adjusts to higher levels.
Achieving Progressive Overload

To achieve progressive overload, you must increase one or more of the following factors:

Intensity = How Hard
- Increase the resistance
- Increase the repetitions
- Increase the rate of speed

Duration = How Long
- Increase the time
- Increase the distance
- Increase the number of sets

Frequency = How Often
- Increase the number of workouts
Specificity

- Your fitness program must be specifically designed to meet your goals. For every fitness goal there are a variety of appropriate activities to choose from.

- Select activities based on the principle of specificity: Only those body systems stressed by an exercise program will benefit from the training.
Choosing Activities

- Fun activity that will be interesting over time.
- Activity that will help you reach the goals you have set for yourself.
- Activity you can fit into your daily schedule.
- Plan for special requirements and costs (facilities, equipment, etc.).
- Activity conforms to your special needs and preferably one that enhances your ability to cope with your special health needs.
Assessment of Physical Activity and Fitness

• Direct Monitoring - requires behavioral observation or the use of mechanical or electronic devices, or physiologic measures such as calorimetry.

• Self-report techniques:
  – Diaries detail physical activity in a given period
  – Logs provide a record of specific activities
  – Recall surveys useful in large populations
  – Retrospective quantitative history
  – Global self-reports
Recommendations of 2007 NIH Consensus Conference

• All Americans should engage in regular physical activity at a level appropriate to their capacity, needs, and interests.
• Children and adults should set a goal of accumulating at least 30 min of moderate intensity physical activity on most and preferably all days of the week.
• For those with known cardiovascular disease, cardiac rehabilitation programs that combine physical activity with reduction in other risk factors should be more widely used.
### Summary of Care: A Balancing ACT?

**ACT's for Providers**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td><strong>Exercise</strong></td>
</tr>
<tr>
<td>B</td>
<td><strong>Food Choices</strong></td>
</tr>
<tr>
<td>C</td>
<td><strong>Drug Therapy:</strong> IF lifestyle change has not worked: (3 months of Treatment). Candidate for Surgery</td>
</tr>
</tbody>
</table>
Treatment of Obesity

• Establish initial goal: BMI below 85%tile
• Improve diet: Prescription for balanced hypocaloric diet or protein sparing modified fast, learn about food, cooking, label reading, tips for dining out
• Increase exercise: Prescription based on degree of obesity, strength training, flexibility exercises, motivation to increased activity
• Behavioral modification: Family behavior intervention, self monitoring, goal setting, positive role modeling, limit setting, cue elimination, relapse prevention
• Caregivers: Physician, Nurse, Dietitian, Exercise Physiologist, Psychologist
• Research trials: Medications, Surgery
Preparation for Life style Counseling

Ask Yourself:

• Are you a role model for healthy behavior?

• Do you discuss diet specifics with your patients?

• Do you discuss activity specifics with your patients?

• Do you know the contents of patient daily food plans?
Preparation for Life Style Counseling

Ask Yourself:

• Do you know what community resources are available to help families maintain a healthy lifestyle?

• Do you feel comfortable counseling the families on what dietary and activity modifications are safe for them to implement?
Counseling During Office Visits

- Physical activity
- Diet
- Weight reduction

Stage 1: Prevention Plus

- Once Overweight or obesity is diagnosed.
- **Focus** is on basic healthy lifestyle eating and activity habits.
- **Goal** is improved habits and as a result improved habitus (BMI Status).
- Frequent Monitoring.

Focus is on basic healthy lifestyle eating and activity habits

- Minimize Sugar-sweetened beverages with a goal of 0**.
- Increase meals prepared at home**.
- Education and modification of portion sizes**
- Reduction of inactive time to < 2 hours/day and if less than 2 years old to 0 time**.
- Increasing active time for children and families to >=1 hour each day**.
- Involve the whole family in lifestyle changes.
- Cultural sensitivity

** = strong evidence

Farm Subsidies USA Obesity: Apples to Soda

1995-2010 Farm Subsidies $16.9 Billion to producers of Corn Syrup products.

Taxpayers given $7.36 to buy Corn Syrup products (Soda etc)

$11cts to buy APPLES !!!!

California Public Interest Research Group, 2011
SODA

20 Years Ago

85 Calories
6.5 ounces

Today

How many calories are in today’s portion?
SODA

20 Years Ago

85 Calories
6.5 ounces

Today

250 Calories
20 ounces

Calorie Difference: 165 Calories
Soda

- Coke glass bottle (8 fl. oz.) = 100 kcals.
- Coke can (12 fl. oz) = 150 kcals.
- Coke plastic bottle (20 fl. oz.) = 250 kcals.
- Super Big Gulp (44 fl. oz.) = 550 kcals.
- ***1 big gulp a day = 57 pounds / year!!!!
- What does the future hold??
Maintaining a Healthy Weight is a Balancing Act
Calories In = Calories Out

How long will you have to work in the garden to burn those extra calories?*

*Based on 160-pound person
If you work in the garden for 35 minutes, you will burn approximately 165 calories.*

*Based on 160-pound person
PRACTICAL SUGGESTIONS

- Encourage parents to limit contribution of calories from beverages (only milk required).
- Encourage 5 a day program.
- Suggest Stoplight Diet (Epstein).
- Stress Family Commitment - entire family needs to follow new eating habits.
ADA Nutritional Guidelines

- Patients with pre-diabetes should receive individualized Medical Nutrition Therapy (MNT)
- Weight loss recommended for all overweight or obese individuals who have or are at risk for diabetes
- Physical activity and behavior modification effective for weight loss and maintenance
- Fiber 14 g/1000 kcal intake
- Saturated fat 7% with minimal trans fat
Cultural Openness

• Strategies

- Follow the ABCs of Counseling
  • Active listening
  • Body language (no barriers between you and patient)
  • Caring and open mind

- Motivational Interviewing
  • “...method of communication rather than a set of techniques. It is a fundamental way of being with & for people - a facilitative approach to communication that evokes change.”

Motivational Interviewing

- Strong evidence provider style, the way they talk, influences outcomes (Miller & Rollnick 2002)
- When patients are motivated and express verbal commitments to change, they have better treatment outcomes (Armhein et al 2004)
Motivation - it’s complicated!

I want a fitness video. Do you deliver?
The Goal:

Empower families to integrate physical fitness and optimal nutrition into daily activities to reach optimal health and wellness.
Goals of Weight Management/Treatment

- Prevent further weight gain (minimum goal).
- Reduce body weight.
- Maintain a lower body weight over long term.
Behavioral Modification

• Multidisciplinary team to teach, monitor and praise

• Reduce access to high fat, low nutrient foods

• Shop differently

• Cook healthier foods

• Avoid situations that increase food consumption
Behavioral Modification (Cont)

- Increase access to physical activity
- Decrease access to behaviors that promote inactivity
- Don’t use food as a reinforcer or to alter moods
- Practice methods for dealing with peer pressure
Weight Loss Goals

Goal: Decrease body weight by 10 percent from baseline.

- If goal is achieved, further weight loss can be attempted if indicated.
- Reasonable timeline: 6 months of therapy.
  - Moderate caloric deficits
  - Weight loss 1 to 2 lb/week
Target Weight: Realistic Goals

• Substitute “healthier weight” for ideal or landmark weight.

• Accept slow, incremental progress to goal.
  — Short-term goal: 5 to 10 percent loss, 1 to 2 lb per week.
  — Interim goal: Maintenance.
  — Long-term goal: Additional weight loss, if desired, and long-term weight maintenance.
Weight Loss Goals

• Start weight maintenance efforts after 6 months.
  – May need to be continued indefinitely.

• If unable to lose weight, prevent further weight gain.
Key Messages

- Adolescents and young adults, both male and female, benefit from physical activity.
- Physical activity need not be strenuous to be beneficial.
- Moderate amounts of daily physical activity are recommended for people of all ages. This amount can be obtained in longer sessions of moderately intense activities, such as brisk walking for 30 minutes, or in shorter sessions of more intense activities, such as jogging or playing basketball for 15-20 minutes.
- Greater amounts of physical activity are even more beneficial, up to a point. Excessive amounts of physical activity can lead to injuries, menstrual abnormalities, and bone weakening.
CVD Lifestyle Management: Obesity / Physical Activity

- **Obesity / weight management**: low fat – high fiber diet resulting in 500-1000 calorie reduction per day to provide a 7-10% reduction on body weight over 6-12 mos, ideal goal BMI <25

- **Physical activity**: at least 30, pref. 60 min moderate intensity on most or all days of the week as appropriate to individual

# Comparison Between Exercise Therapy and Drug Therapy

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Physical Activity Counseling Recommendations

- What do You Know?
- Physical Activity Range of Activities
  - Incidental/Workout
- Patient History
  - Dosage
  - Duration
  - Age
  - Gender
  - Behavioral
  - Risks
    - Cardiovascular
    - Muscular/Skeleton Status
Putting Together Your Own Patient Program

- Step 1. Set goals WITH the Patient.
- Step 2. Select activities: Incidental and Treatment
- Step 3. Set targets for each activity
  - intensity
  - duration
  - frequency
- Step 4. Make a written commitment in Charts.
- Step 5. Begin program.
Specificity

- Your fitness program must be specifically designed to meet your goals. For every fitness goal there are a variety of appropriate activities to choose from.

- Select activities based on the principle of specificity: Only those body systems stressed by an exercise program will benefit from the training.
Choosing Activities

• Choose a fun activity that will be interesting over time.
• Choose an activity that will help you reach the goals you have set for yourself.
• Choose an activity that your current level of fitness skills will allow you to participate in fully.
• Choose an activity you can fit into your daily schedule.
• Plan for special requirements and costs (facilities, equipment, etc.).
• If you have any special health concerns, choose an activity that conforms to your special needs and preferably one that enhances your ability to cope with your special health needs.
Life Style Treatment

- **Establish initial goal:** BMI below 85%tile
- **Improve diet:** Prescription for balanced hypocaloric diet or protein sparing modified fast, learn about food, cooking, label reading, tips for dining out
- **Increase exercise:** Prescription based on degree of obesity, strength training, flexibility exercises, motivation to increased activity
- **Behavioral modification:** Family behavior intervention, self monitoring, goal setting, positive role modeling, limit setting, cue elimination, relapse prevention
- **Caregivers:** Physician, Nurse, Dietitian, Exercise Physiologist, Psychologist
Expectations

• Patient compliance critical end points:
  • 2 weeks
    1 month
    3 month
    6 months

Best Compliance with Lifestyle Changes is?
Physical Activity Prescription

Physician Role Model
Patient observing YOU:

Message or the Messenger?

Look whose Talking?

Walk the walk?

Talk the Talk?
Physician Physical Activity Preparation

Ask Yourself:

- Do you know how active you are?
- Let’s Find Out.
  - Have some paper and something to write with.
- We Follow HIPPA Guidelines (Personal and Confidential).
How Active Are You?

• Your intensity ___ × Your duration ___ × Your frequency ___ = Your activity index.
**Intensity: How Hard Do You Exercise?**

<table>
<thead>
<tr>
<th>If your exercise results in:</th>
<th>Your intensity score is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>No change in pulse from resting level</td>
<td>0</td>
</tr>
<tr>
<td>Little change in pulse from resting level – as in slow walking, bowling, yoga</td>
<td>1</td>
</tr>
<tr>
<td>Slight increase in pulse and breathing – As in table tennis, active golf</td>
<td>2</td>
</tr>
<tr>
<td>Moderate increase in pulse and breathing – As leisurely bicycling, easy swimming, rapid working</td>
<td>3</td>
</tr>
<tr>
<td>Intermittent heavy breathing and sweating – As in tennis singles, basketball, squash</td>
<td>4</td>
</tr>
<tr>
<td>Sustained heavy breathing and sweating – As in jogging, cross country skiing, rope skipping</td>
<td>5</td>
</tr>
</tbody>
</table>
**Duration: How Long Do You Exercise?**

<table>
<thead>
<tr>
<th>If each session continues for:</th>
<th>duration is</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5 minutes</td>
<td>0</td>
</tr>
<tr>
<td>5-14 minutes</td>
<td>1</td>
</tr>
<tr>
<td>15-29 minutes</td>
<td>2</td>
</tr>
<tr>
<td>30-44 minutes</td>
<td>3</td>
</tr>
<tr>
<td>45-59 minutes</td>
<td>4</td>
</tr>
<tr>
<td>60 minutes</td>
<td>5</td>
</tr>
</tbody>
</table>
Frequency: How Often Do You Exercise?

<table>
<thead>
<tr>
<th>If you exercise:</th>
<th>Your frequency score is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 time a week</td>
<td>0</td>
</tr>
<tr>
<td>1 time a week</td>
<td>1</td>
</tr>
<tr>
<td>2 times a week</td>
<td>2</td>
</tr>
<tr>
<td>3 times a week</td>
<td>3</td>
</tr>
<tr>
<td>4 times a week</td>
<td>4</td>
</tr>
<tr>
<td>5 times a week</td>
<td>5</td>
</tr>
</tbody>
</table>
Here’s How You Can Translate Your Activity Index Into Your Estimated Level of Activity:

<table>
<thead>
<tr>
<th>If your activity index is:</th>
<th>Your estimated level of activity is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 15</td>
<td>sedentary</td>
</tr>
<tr>
<td>15-24</td>
<td>low active</td>
</tr>
<tr>
<td>25-60</td>
<td>moderate active</td>
</tr>
<tr>
<td>41-60</td>
<td>active</td>
</tr>
<tr>
<td>Over 60</td>
<td>high active</td>
</tr>
</tbody>
</table>
Recommendations

• Decrease Television viewing
• Decrease consumption of high fat foods
• Increase fruit and vegetable intake
• Increase moderate and vigorous physical activity
Steps to Meet these recommendations
Activities:

- Develop, and implement the Lifestyle Log
- Launched the Reach out and Play Activity
- Community Fitness Directory to Family
Evaluation Results
Family Obesity Prevention

Legislation & Policy

Media

Urban Design & Transportation Systems

Food Supply & PA Opportunities

Healthcare System

Community

Schools

Home & Family

The Child

Environmental Change

Individual Change: Knowledge, Skills, Motivation

Source: UC Berkeley Center for Weight & Health
OC Obesity Prevention Plan

Sports & Entertainment

Schools

Increase consumption of fruits and vegetables.
Increase physical activity.
Increase breastfeeding ...
Decrease consumption of sugar-sweetened beverages and high energy dense foods.
Decrease television viewing time.

Employers

Families

Healthcare Providers & Insurers

133
OC Public Health Activities

FIT Cities

International Walk to School

Orange County N uP AC

Nutrition and Physical Activity Collaborative
Move More, Eat Healthy OC

Orange County NuPAC (Nutrition and Physical Activity Collaborative) is a county-wide collaborative whose mission is to lead coordinated efforts and maximize resources to decrease obesity and improve healthy eating and physical activity among OC families and communities.

MOVE MORE, EAT HEALTHY OC

Congratulations on your commitment to the county-wide, multi-year NUPAC "Move More, Eat Healthy OC" campaign. Together we can help fight obesity within the communities we live, work and play. NUPAC recognizes this unique opportunity for facilitating a toolkit for organizations to build a healthier community. As we all know, creating a healthy community is about creating physical and policy changes to our environment. Furthermore, in this toolkit, we have identified several resources by sector to assist you in helping your organization find the right programs, policies and best practices. As new resources become available we will update this toolkit. Remember, you can always count on NUPAC if you need technical assistance or further information or resources. Thank you for your commitment and good luck!

The Move More, Eat Healthy OC Campaign was created to help OC organizations commit to specific actions that together will help address obesity in our community. The NUPAC Obesity Prevention Plan and the California Obesity Prevention Plan support six key strategies identified by the CDC that have been shown to produce positive results.

- Increase consumption of fruits and vegetables
- Increase physical activity
- Increase breastfeeding initiation, duration and exclusivity
- Decrease consumption of sugar-sweetened beverages
- Decrease consumption of high energy dense foods (foods that are high in calories but have low nutritional value)
- Decrease television viewing time

The strategies can be implemented in a variety of ways through multiple sectors.

The Move More Eat Health OC commitment forms list activities that support these strategies.
Do you think TREATMENTS HAVE WORKED?

- **Establish initial goal**: BMI below 85%tile
- **Improve diet**: Prescription for balanced hypocaloric diet or protein sparing modified fast, learn about food, cooking, label reading, tips for dining out
- **Increase exercise**: Prescription based on degree of obesity, strength training, flexibility exercises, motivation to increased activity
- **Behavioral modification**: Family behavior intervention, self monitoring, goal setting, positive role modeling, limit setting, cue elimination, relapse prevention
- **Caregivers**: Physician, Nurse, Dietitian, Exercise Physiologist, Psychologist
- **Research trials**: Medications, Surgery
High spirit of collaboration

• Clinician is not the “expert”
• Willing to negotiate with the patient
• Open to ideas from the patient
• Avoids persuasion
• Explores and support what the patient wants to do
• Patient is the “partner” (e.g., dancing)
High spirit of evocation

• Elicits the patients’s ideas about change
• “Curious and patient”
• Stays focused on whatever behavior change the patient is willing to do
High Autonomy/Self-efficacy

- Accepts the patients may not choose to change
- Are invested in behavior change but does not push it in order to maintain patient doctor alliance
- Reinforces ultimately any behavior change is within the realm of the patient
How is Spirit of MI different?

• Not sympathy
• No emphasis on expertise (on the part of the health provider)
• Education of the patient is not considered effective (not to be confused with Giving Information)
• Does not focus on skill-building
• Does not analyze unconscious motivations
• Not passive
Steps to Meet these recommendations
Cultural Openness

Motivational Interviewing is a method of exploring ambivalence, the dilemma of change (pros and cons) through:

✓ Open ended Questions
✓ Affirm (emphasize a strength, notice a positive action).
✓ Reflect (are statements not questions, making a guess about what the patient is meaning)
✓ Summarize
Evaluation of the Lifestyle Log and Reach out and Jump Intervention

• Utilized a time-series design with systematic chart reviews to collect information at six months prior to intervention, the point of first-intervention, and at one month, six months and 12 months post-intervention.

• Intervention was defined as the date when the lifestyle log was placed in the chart and utilized or a jump rope was first given.

• Conducted by Danielle Cameron, MPH for her MPH thesis and Wendy Slusser, MD as thesis advisor.
Evaluation of Physical Activity

• Direct Monitoring - requires behavioral observation or the use of mechanical or electronic devices, or physiologic measures such as calorimetry.

• Self-report techniques:
  – Diaries detail physical activity in a given period
  – Logs provide a record of specific activities
  – Recall surveys
  – Retrospective quantitative history
  – Global self-reports
Both male and female, benefit from physical activity. Moderate amounts of daily physical activity are recommended for people of all ages. Amount can be obtained in longer sessions of moderately intense activities, such as brisk walking for 30 minutes, or in shorter sessions of more intense activities, such as jogging or playing basketball for 15-20 minutes. Greater amounts of physical activity are even more beneficial, up to a point. Excessive amounts of physical activity can lead to injuries, menstrual abnormalities, and bone weakening.
Focus is on Basics:
Lifestyle and Physical Activity Habits

• Reduction of inactive time to < 2 hours

• Increasing active time for children and families to >=1 hour each day.

Counsel the Whole Family
Physical Activity Recommendations

Goal: 30 minutes 7 days/week, minimum 5 days/week

- Assess risk with a physical activity history and/or an exercise test, to guide recommendations.

- Encourage 30 to 60 minutes of moderate intensity aerobic activity such as brisk walking, on most, preferably all, days of the week, supplemented by an increase in daily lifestyle activities.

- Advise medically supervised programs for high-risk patients (e.g. recent acute coronary syndrome or revascularization, HF)
Counseling During Office Visits

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In Conclusion:
Our hope is to empower families to integrate physical fitness, optimal nutrition and emotional wellbeing into daily activities to reach optimal health and wellness.
Resources

- www.motivationalinterview.org
- http://casaa.unm.edu
  - Motivational Interviewing Treatment Integrity (coding for MI fidelity)
What makes the biggest difference to your health..?
KNEE ARTHRITIS

47%

DEMENTIA & ALZHEIMER'S

50%
DEPRESSION

30%

HARVARD ALUMNI

23% LOWER RISK OF DEATH
Exercise
It's the strongest predictor of death.
The shape of things to come

More to Come in Obesity Prevention

THANK YOU...
“All parts of the body which have a function, used in moderation and exercised in labours in which each is accustomed, become thereby healthy, well-developed and age more slowly, but if unused and left idle, they become liable to disease, defective in growth and age quickly.”
Hippocrates
Other Concerns and Questions?

It's QUESTION TIME!!
Thank you