THE OBESITY EPIDEMIC
HOW WILL WE CONTAIN IT?

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OBJECTIVES

1. Review what has happened over the last decade
2. Describe the seriousness of the obesity epidemic
3. Define the importance of obesity in childhood as causal for the epidemic
4. Discuss strategies as solutions for the obesity epidemic

The original obesity initiative in Texas

- Oct 1, 2000: TDH received 3yr grant from the CDC
  * Support for state nutrition and physical activity programs in Texas
  * Develop a plan to address the problem of obesity in Texas
- 2001 - 2002: Statewide obesity task force formed and strategic plan developed
- Spring 2002: Community forums conducted across state
- Aug 8, 2002: Stake holders meeting
- Feb 13, 2003: Strategic plan released at statewide conference in San Antonio

STATEWIDE OBESITY TASK FORCE

Chairman
William J. Klish, MD

Staff
Claire Heiser, MS, RD, LD

Vice Chairman
George Kenneth Goodrick, Ph.D

Members
Stephen Barnett, MD
Sonia Cotto-Moreno, RD, LD
Tommy Fleming
Fred Fidinger, Dr. PH, CHES
Jose L. Gonzalez, MD, JD, MS, Ed
Ron Grabowski, RD, DC
Mike Hill
Camille Hoy, RD
Ellen Kelsey
Ann Pauli
Stephanie Tahone, MSN, RN

Strategic Plan for the Prevention of Obesity in Texas

Proposed Four Goals

Goal 1
Increase awareness of obesity as a public health issue that impacts the quality of life of families

Objective
Identify, develop, and disseminate messages and material regarding obesity and its impact on quality of life
Goal 2
Mobilize families, schools, and communities to create opportunities to choose lifestyles that promote healthy weight

Objective 1: Identify and evaluate existing plans and activities that promote healthful eating habits and physical activity
Objective 2: Develop, implement, and evaluate new plans and activities that promote healthful eating habits and physical activity

Goal 3
Promote policies and environmental changes that support healthful eating habits and physical activity

Objective
Increase advocacy for initiatives and policies that support healthful eating habits and physical activity

Goal 4
Monitor obesity rates and related behaviors and health conditions for planning, evaluation, and dissemination activities

Objective 1: Create a system for data collection, monitoring, and reporting activities
Objective 2: Implement data management systems that assure quality and consistent data

What has happened since the Task Force first convened?

Figure 1. Trends in Child and Adolescent Overweight

Source: Overweight is defined as BMI ≥ 85th percentile for the 2000 CDC growth charts. National Center for Health Statistics. Data from NCHS, Vital and Health Statistics, Series 11, No. 204, October 2002.
Prevalence of Obesity - Texas Children
1999-2002

<table>
<thead>
<tr>
<th>Region</th>
<th>Number</th>
<th>BMI &gt; 85th</th>
<th>BMI &gt; 95th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houston</td>
<td>5,266</td>
<td>36.2%</td>
<td>19.2%</td>
</tr>
<tr>
<td>Fort Worth</td>
<td>1,065</td>
<td>29.9%</td>
<td>15.0%</td>
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<tr>
<td>Hart</td>
<td>308</td>
<td>39.4%</td>
<td>20.7%</td>
</tr>
<tr>
<td>Rio Grand Valley</td>
<td>4,375</td>
<td>40.1%</td>
<td>22.1%</td>
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<tr>
<td>El Paso County</td>
<td>899</td>
<td>32.0%</td>
<td>18.0%</td>
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<tr>
<td>Texas Mexico Border</td>
<td>3,025</td>
<td>53.8%</td>
<td>37.6%</td>
</tr>
<tr>
<td>Total (age 6-18)</td>
<td>14,938</td>
<td>38.0%</td>
<td>22.1%</td>
</tr>
<tr>
<td>TX WIC (age 1-5)</td>
<td>128,004</td>
<td>28.0%</td>
<td></td>
</tr>
</tbody>
</table>

Preliminary Obesity Prevalence Data:
Hispanic Children (grades 1-5)
Houston HISD

<table>
<thead>
<tr>
<th></th>
<th>BOYS</th>
<th>GIRLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>28.6%</td>
<td>26.3%</td>
</tr>
<tr>
<td>2006</td>
<td>31.7%</td>
<td>26.4%</td>
</tr>
<tr>
<td>2007</td>
<td>33.8%</td>
<td>26.6%</td>
</tr>
</tbody>
</table>

OBESITY IS A DISEASE

THE FOUR HORSEMAN OF THE ADIPO-LYPSE

DIABETES
NAFLD
HYPERTENSION (CVD)
SLEEP APNEA

From Steven Ponder M.D.

Prevalence of Type II Diabetes:

Houston Metropolitan area: (pop. 5.5 million)
21% or 1,155,000 are children 5-17 years of age

- 19.2% or 221,760 Houston children are obese (BMI > 95th)
- 25% of obese children have evidence of impaired glucose tolerance (Sinha et al, NEJM 2002; 346)
- Then 4.8% or 55,440 Houston children either have or are developing type II diabetes

(Estimated from U.S. 2006 census)

Co-Morbidities of Obesity
Glucose Intolerance

Current projections by the CDC include scenarios in which up to one third of the children born today will develop type 2 diabetes mellitus during their lifetime, a percentage that rises to 50% for Hispanics and Blacks.

Co-Morbidities of Obesity

**NAFLD (Non-alcoholic Fatty Liver Disease)**

- A spectrum of disease
  - Fatty infiltration of the liver (up to 40% of obese children by ultrasound)
  - Hepatic inflammation (~15% of obese and 40-50% of super obese children elevated ALT)
  - Fibrosis and cirrhosis
- If inflammation present it is called Steatohepatitis or “NASH” for nonalcoholic steatohepatitis
- Weight loss is the only treatment
- Estimated 25% of US adults have this disease


**Co-Morbidities of Obesity**

**Steatohepatitis**

- We studied 332 obese children (BMI>95th percentile)
- Aminotransferases were elevated (>1.5 times normal) in 52 children (15.7%)
- ALT elevated in 100%, AST in 49% & GGT in 80%
- 40 of these children had liver biopsy
- Mean age 10.9 ± 2.4 years (range: 6-16y)

Ruben Quiros, et al

**Co-Morbidities of Obesity**

**NAFLD**

~ 20% of adult patients with this disorder eventually develop cirrhosis, and can progress to liver failure.

(Roberts,Curr Gastroenterol Rep, 2003)
Prevalence of Obesity-Associated Steatohepatitis

Houston Metropolitan area: (pop. 5.5 million)
21% or 1,155,000 are children 5-17 years of age

- 221,760 or 19.2% are obese (BMI >95th)
- 33,264 or ~15% will have elevated transaminases
- 21,621 or ~65% will have significant (>stage 2) fibrosis or cirrhosis in their liver bx.
- At least 4,324 or 20% will develop hepatic failure and be candidates for liver transplantation as young adults

(Estimated from U.S. 2006 census)

Hypertension

CDC Health Statistics

- Prevalence of Hypertension in Children
  - 1.5-2.5% of all children (HISD screening 2.2%)
  - 19.2% of obese children
- Prevalence of Hypertension in the US
  - 30% of all adults
  - 58% of obese adults
  - 61% of adults over 65yr
  - 80% of African Americans over 65yr

Co-Morbidities of Obesity

Sleep Disorders

- Up to 37% of obese children have an abnormal polysomnogram when studied.
  (Wing, Arch Dis Child, 2003)

- True sleep apnea occurs in ~7% of obese children.
  (Dietz, Pediatrics, 1998)

Psychosocial Complications

- Higher risk for poor self-esteem, withdrawal from social interactions, depression, and anxiety.
  (Deckelbaum, Obes Res, 2001)

- More likely to remain unmarried, have lower income, and to live in poverty
  (Gortmaker, N Engl J Med, 1993)

- Less likely to be accepted into college
  (Deckelbaum, Obes Res, 1993)

- Cannot be quantified in a monetary sense

- These perhaps are the most significant "costs" this disorder inflicts on society.

THE OBESITY CRISIS

If an answer to this obesity epidemic is not found soon, the present generation of children will not live as long as their parents and society as we know it will change.
Most logical approach to control the obesity epidemic

Prevention

Most logical target for preventing obesity

Children and their families

Prevention of obesity

1. Must start with public awareness of the problem
2. Must start early in life
3. Must not interfere with quality of life
4. Must also include strategies for treatment

OBESITY TREATMENT

Contrary to popular belief

EVERYTHING WORKS!

(But not for long)

Classic Obesity Treatment

DIET, EXERCISE AND BEHAVIOR MODIFICATION:
Very high dropout rate!

APPETITE SUPPRESSANTS AND OTHER DRUGS:
Side effects significant and benefits marginal.

BARIATRIC SURGERY:
Significant cost, side effects and not entirely effective.

OBESITY TREATMENT/PREVENTION

NEEDS TO BE FUN!

or

NEEDS TO BE TRANSPARENT!
OBESITY TREATMENT/PREVENTION NEEDS TO BE FUN!

KAMP K’AANA
Ave. 4.0 kg weight loss (BMI -1.5)
OVER ONLY 2 WEEKS

HEALTHY KIDS HOUSTON
Ave. Wt. loss for obese was -0.3%
Ave wt. gain for normal wt. kids was +0.3%
2 TIMES A WEEK FOR 6 WEEKS

OBESITY TREATMENT/PREVENTION NEEDS TO BE TRANSPARENT

- Public transportation
- Smaller portion size in restaurants and prepackaged foods
- Safe streets
- Recess and physical education in schools
- Bicycle paths
- Wide attractive side walks
- Etc.

OBESITY TREATMENT/PREVENTION NEEDS TO BE REINFORCED

- 3 to 6 months after completing a weight loss program gains begin to erode

OBESITY TREATMENT/PREVENTION NEEDS TO BE REINFORCED

- We need to become more imaginative
- We need to become more collaborative
- We need to create more linkage
  (As soon as a subject is successfully completes one program, plans need to be made to refer them to another program within 3 to 6 months)

OBESITY TREATMENT/PREVENTION NEEDS TO BE CHEAP FOR THE INDIVIDUAL

- Requires insurance recognition
- Requires more public programs through our cities, parks, church’s, schools, community centers and neighborhoods.

If we do all of this, we just might be successful in combating this obesity epidemic.
THANK YOU