The Truth about Obesity & Cancer: Focus on communities of color

Antronette (Toni) Yancey, MD, MPH
Associate Professor,
Department of Health Services,
UCLA School of Public Health
Summary Points

- Current strategies are not containing the obesity and sedentariness epidemics.
- Need shift away from clinical view of obesity as personal disorder requiring medical Rx.
- An ecological approach regards obesity as a normal response to an abnormal environment, rather than vice versa.
- Understanding, measuring, and altering the “obesogenic” environment is critical—society has key role in sharing, with individuals, the high “costs” of healthy lifestyle change/maint.
Obesity & Risk of Common Cancers

- Women: endometrial, ovarian, colon, breast (post-menopausal), renal cell
- Men: prostate, colon

Possible Mechanisms:
1. hyperinsulinemia (especially central adiposity) associated with cell growth & proliferation
2. adipose 1o source of estrogens—growth stimulation associated with carcinogenesis
Dietary Components & Risk of Common Cancers

- Breast: vegetables (-), alcohol (+)
  - monounsaturated fats (-), excess energy intake (+), weight gain (+)

- Colon: red meat (+), fruit/vegetable fiber (-), alcohol (-)

- Lung: vegetables, esp. green/yel. (-)

- Prostate: meat (+), lycopene (tomatoes) (-)

- GI: fruit/vegetables (-), alcohol (+), Na (+)
Physical Activity & Risk of Common Cancers

- Colon: 30-40% decreased risk among active men & women (Rectal—no association)
- Breast: inconsistent association—time period may be critical
- Prostate: findings inconclusive
- Possible mechanisms:
  1. decreased GI transit time (dec carc expos)
  2. enhanced immune function (moderate PA)
  3. lowered levels of reproductive hormones
### Population Attributable Fraction Cancer Mortality – Male Never Smokers

<table>
<thead>
<tr>
<th>BMI</th>
<th>Population Exposure*</th>
<th>RR†</th>
<th>PAR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.0-29.9</td>
<td>42%</td>
<td>1.1</td>
<td>4.0%</td>
</tr>
<tr>
<td>30.0-34.9</td>
<td>21%</td>
<td>1.4</td>
<td>6.8%</td>
</tr>
<tr>
<td>≥35.0</td>
<td>13%</td>
<td>1.3</td>
<td>3.4%</td>
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*NHANES 2000, men age 50-69
### Population Attributable Fraction Cancer Mortality – Women Never Smokers

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<td>1.3</td>
<td>6.1%</td>
</tr>
<tr>
<td>35.0-39.9</td>
<td>11%</td>
<td>1.4</td>
<td>3.5%</td>
</tr>
<tr>
<td>≥40.0</td>
<td>8%</td>
<td>1.9</td>
<td>7.0%</td>
</tr>
</tbody>
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*NHANES 2000, women age 50-69
Obesity Trends* Among U.S. Adults

BRFSS, 1985

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

Obesity Trends* Among U.S. Adults

BRFSS, 1986

(*BMI ≥30, or ~30 lbs overweight for 5’4” woman)

Obesity Trends* Among U.S. Adults

BRFSS, 1987

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Obesity Trends* Among U.S. Adults

BRFSS, 2001

(*BMI ≥30, or ~ 30 lbs overweight for 5’4” woman)

Detection of the Obesity Epidemic Using BMI

**20 to 74 Years of Age**

*Age-adjusted prevalence of overweight for US population vs year 2000 objective.
Overweight = BMI ≥ 27.3 for women and ≥ 27.8 for men. NHES = National Health Examination Survey; NHANES = National Health and Nutrition Examination Survey.

Prevalence of Overweight Among U.S. Children and Adolescents Ages 6-19 Years

SOURCE: CDC/NCHS, NHES and NHANES
Age-Adjusted Prevalence of Overweight & Obesity by Race: NHANES Adults

Left bars = BMI 25.0 or higher; right bars = BMI 30.0 or higher
Prevalence of Obesity among LAC Adults by Ethnicity, 1997-2002
## Black-White Mortality Ratios: Women in the U.S.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Black-White Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart disease</td>
<td>1.63</td>
</tr>
<tr>
<td>Cancer</td>
<td>1.21</td>
</tr>
<tr>
<td>Diabetes</td>
<td>3.00</td>
</tr>
<tr>
<td>Pulmonary disease</td>
<td>0.68</td>
</tr>
</tbody>
</table>
Excess physical environmental risk in underserved communities:

- targeted/exploitative marketing
- excess fast food outlets
- few supermarkets
- limited shelf choices
- high-fat food availability (home, church, other social outlets)
- poorer public/less pvt transportation
- distance to private fitness facilities
- few worksite fitness opportunities
- few/poor neighborhood recreation facilities
- lesser neighborhood safety
- poorer public/less pvt transportation
Excess economic environmental risk in underserved communities

- low neighborhood demand for healthy food choices
- low family incomes
- other household expenses
- little homegrown food
- financial incentives for under-resourced schools by commercial vendors
- limited investment in parks/rec facil.
- fitness facility fees
- cost of exercise equipment
- less stable employment patterns
- fewer trained PE instructors
- large PE classes
- poorly equipped facil.
A smile is just a swipe away.

McDonald's + MasterCard = Burger
Excess sociocultural environmental risk in underserved communities

- traditional cuisine
- fasting-feasting
- prevalent obesity/norms
- body image
- female roles
- (perceived) food insecurity
- cultural attitudes about PA, rest
- fears about safety
- female roles
- cultural reverence for cars
- hairstyle-related concerns about sweating
Does Physical Inactivity Contribute to the Obesity Epidemic?

A brisk walk in the park keeps Marcy B in shape between dog shows. Her owner, Columbus resident Cathy Stambaugh, got up early to give her 2-year-old Doberman his regular workout. They typically log 15 miles in Berlinton Park.
Population benefit estimates of risk factor change: weight

- Weight loss of 8-15 lbs or 5-10% would decrease Type 2 diabetes risk by 30-60%, without achieving ideal body weight.

- Modest weight loss normalizes BP (Resnick et al., 2000), elevates mood and relieves anxiety (Wadden et al., 1996)
  --5% reduction in SBP would reduce stroke incidence by 30% (Law et al., 1991)
  --2% decrease in DBP would decrease CHD risk by 6%, stroke/TIA by 15% (Cook et al., 1995)
Population benefit estimates of risk factor change: PA

- If the entire U.S. population increased its PA level by 30 min. of brisk walking/day, colon CA incidence would decrease by 15% (Colditz et al., 1997) and CHD risk by 30-40% in women (Manson et al., 1999).

- Maintenance of moderate PA is assoc. with a 1/3 to 2/3 lowering of Type 2 diabetes (DM) incidence over 4-14 yrs (Clark, 1997).

- Type 2 DM risk was 50% lower among individuals physically active at any level, and 66% lower among those at least moderately active (James et al., 1998).

- Sedentary behaviors (e.g., TV watching) as well as sub-optimal >moderate PA levels contributed to DM & obesity risk over 6 yrs in women (Hu et al., 2003).
Spectrum of Prevention

The most effective and sustainable PH intervention approaches of the past 2 decades are the more “upstream” ones (structural/environmental vs. individual-level), involving social norm change:

- Tobacco control
- Alcohol consumption and driving
- Breastfeeding
Physical Activity Promotion in Underserved Communities

- Physical environmental change is not enough, e.g., French et al. (1994). Social norms and values must also be addressed. Unlike hunger, there’s no inherent drive for PA—we must make it easier to do it than not to do it.

- In order to avoid increasing health disparities, “demand generation” must get equal attention to “supply creation.”
# Overweight Rates, %

## L.A. County Adults

<table>
<thead>
<tr>
<th>District</th>
<th>1997</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>County</td>
<td>47</td>
<td>+1</td>
</tr>
<tr>
<td>Compton</td>
<td>59</td>
<td>±8</td>
</tr>
<tr>
<td>South</td>
<td>62</td>
<td>±8</td>
</tr>
<tr>
<td>Inglewood</td>
<td>49</td>
<td>±6</td>
</tr>
<tr>
<td>Long Beach</td>
<td>46</td>
<td>±6</td>
</tr>
<tr>
<td>West</td>
<td>38</td>
<td>±4</td>
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</table>
Physical Activity Levels, %
L.A. County Adults, 1999

<table>
<thead>
<tr>
<th>District</th>
<th>Sedentary (&lt;10 min/wk)</th>
</tr>
</thead>
<tbody>
<tr>
<td>County</td>
<td>41 ±1</td>
</tr>
<tr>
<td>Compton</td>
<td>45 ±6</td>
</tr>
<tr>
<td>South</td>
<td>50 ±9</td>
</tr>
<tr>
<td>Inglewood</td>
<td>46 ±6</td>
</tr>
<tr>
<td>Long Beach</td>
<td>37 ±5</td>
</tr>
<tr>
<td>West</td>
<td>31 ±3</td>
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Translating Evidence-Based CDC/ACSM Recommendations into Culturally-Targeted Intervention

Integrating 10-’ PA into organizational routine:

- environmental intervention, eg, stair prompts
- short bouts accommodate higher proportion sedentary individuals (incremental change)
- variable (max moderate) intensity, low-impact PA accommodates higher proportion overweight/obese and disabled individuals (higher perceived exertion, discomfort, func. limitat.)
- passive strategy relies less on individual motivation (lower proportion early adopters)
Translating Evidence-Based CDC/ACSM Recommendation into Culturally-Targeted Intervention

Integrating 10'- PA into organizational routine:

- short bouts minimize perspiration, hairstyle disturbance
- dance, music more integral to African-American, Latino culture
- social support & conformity desires drive participation (collectivist vs. indiv orientation)
- addresses less activity conducive outdoor environments (safety, utility, aesthetics)
- designed for organizational settings for work, worship, other purposes--less disposable t, $
Translating Evidence-Based CDC/ACSM Recommendation into Culturally-Targeted Intervention

5 examples in different settings:

- 3 “efficacy”
  - local health dept—Fuel Up/Lift Off LA (LAC)
  - state health dept—FitWIC (CA DHS)
  - federal agency—”Pausa para tu salud” (Mexico)

- 2 adoption/implementation
  - CBOs—REACH 2010
  - faith-based organizations—Health-e-AME Physically-e-Fit
Fuel Up/Lift Off! LA

- Social marketing campaign to create organizational practice change & social support for healthy eating and active living, raising the visibility of obesity epidemic

- Two main components:
  1. In-person and media-facilitated exercise demonstrations in meetings/gatherings
  2. CBO staff training sessions (*Steppin’ Up to Better Health*)
Chronic Disease Prevention & Health Promotion

Physical Activity Program

FUELA
Foot Up/ End Off

Programa de Actividad Física

Get 30 minutes of physical activity every day, U.S. Surgeon General

WHY BE ACTIVE:
- Manage Stress, Anxiety & Depression
- Control Blood Pressure & Diabetes
- Increased Energy
- Higher Self-Image
- Lower Body Weight, Fat, Cholesterol
- Increased Sexual Enkeuipment

¿Por qué debe ser activo?:
- Control del estrés, ansiedad, y depresión
- Control de la presión arterial y diabetes
- Aumento de energía
- Mejor autoestima y autoimage
- Disminución de peso, grasa, y colesterol
- Aumento de energía
- Mayor autoestima y autoimage

CORICA
USA + Community Research in Cancer
Your How-to Guide for 10-Minute Aerobic Exercise Breaks

The following are a sample of exercises that may be used while lifting those hours off the chair. Exercises are targeted to sedentary, overweight adults.

Guiding principles are:
- Work your upper and lower body at the same time, beginning with legs, adding arms.
- Alternate more vs. less strenuous movements.
- If you get tired, slow your pace and/or lower your arms.
- Build slowly, both in intensity and duration; reduce your own pace or stop if you experience discomfort or are too breathless to talk.
- As long as you are moving and smiling, a Lift Off is in progress!

**The Hulk**
March in place. Bend forward at the hips while maintaining a straight back. While bending forward, let your arms hang to the floor with your hands in loose fists. Bend at the elbow to form a 90-degree angle; spread your arms to sides at the same time until your palms face the floor (elbows should still be at a 90-degree angle), and your hands are at about ear height; squeeze. Slowly return to starting position and repeat.

**Shoulder Press**
March in place. Touch thumbs to your shoulders, palms facing out. Push your arms to ceiling until your elbows are nearly straight; return to start position; repeat.

**Rock Step**
Beginning with your feet shoulder width apart, rock from side to side. As you rock to the right, tap your left toe in place; rock to the left and tap your right toe in place. Repeat.

**Punches**
Begin with the rock step. As you tap your right toe, punch in front of your body with your right arm; as you tap left, punch with the left arm. Be sure not to straighten your arm completely as you punch.

The Surgeon General recommends that you get 30 minutes of physical activity every day. And, don’t forget to eat at least 5 servings of fruits and vegetables a day.

A message from the California Department of Health Services, funded by the U.S. Department of Agriculture.
Fuel Up/Lift Off! LA

Video/audiotape excerpt:
movement break (Lift Off) demonstration
Community “Cost-Sharing”

Example: Culver City provides 60 min./wk (20 min. on 3 days) of work time for PA breaks;

Example: REACH project (African Am. Building a Legacy of Health)-- >100 CBOs actively incorporated PA breaks into mtgs/events

Example: CA FitWIC wellness training– inc. PA priority in workplace, types of foods served at mtgs, & PA prom counseling of WIC clients

Example: Fuel Up/Lift Off! LA (Sabor y Energia) – demonstrated feasibility & psychological benefits of incorporating PA breaks in county mtgs/training sessions
WIC Staff Wellness Training
Community “Cost-Sharing” (cont.)

VISION: Employees feel the same sense of entitlement to exercise breaks & healthy food choices on “company time” as breaks for smoking or coffee

MODEL: Smokefree workplace practices, often mandated by funding agencies, pre-dated legislative policy smokefree workplace mandates