Does Acculturation Make Our Immigrants Sick?

Lucia Kaiser, PhD RD
UC Davis, Dept of Nutrition
UC Cooperative Extension Specialist
From Latin America

To the United States
Why does lifestyle change occur after immigration?

- Traditional foods not available or too expensive
- Convenience
- Low prestige of traditional foods
- Food assistance programs (WIC)
- Changes in work schedules
- Pressure from children, in part due to advertising
- Knowledge/ awareness
Relationship of generation status and length of US residence to prevalence of obesity and diabetes in Latino men


P< 0.001
Acculturation definitions

- Process of adopting attitudes, values, or behaviors of another culture
- Process whereby immigrants change their behavior and attitudes towards that of a host, mainstream culture
- But what is the *mainstream culture*? And what is the ethnic culture? Is ethnic stereotyping a serious issue?

Acculturation scale for Mexican-Americans

- 20 items (5-point Likert Scale)
- Language use, ethnic identification, social interactions, media preferences, birthplace, contact with Mexico, food preferences, ethnic pride
- 1=Very Mexican to 5=Very Anglo

Measuring Acculturation

- Instruments (Cuellar, Hazuda, Marin)
- Other
  - Birthplace
  - Language preference
  - Length of residence in US
  - Generational status ($1^{st}$, $2^{nd}$, $3^{rd}$)
Studies of acculturation are inconsistent related to:

- Breastfeeding
- Fruit & vegetables
- Fat & sugar
- Smoking
- Alcohol
- Physical activity

Perez-Escamilla and Putnik J Nutr 2007; 137: 860
Acculturation vs. Assimilation

- Acculturation: process of adopting attitudes, values, or behaviors of another culture
- Assimilation: integration of minority group members into the dominant culture
Global Changes in Health: the Nutrition transition

- Shifts in diet and physical activity patterns and the effects on the body composition and health over the history of humans
Overweight and obesity exceed underweight in most countries
What is driving the nutrition transition worldwide?

- Diet has “sweeter” & higher in animal fat, processed foods
- Activity patterns at work & home are shifting towards lower energy expenditure
- Lower food prices, modern technology and urbanization: all play a role
Samoan starchy vegetables

- High in fiber and potassium
- Low in sodium
Samoan fruits and leafy vegetables

- High in vitamin A, C, folate
Food patterns: Modern

- Sausage
- Eggs
- Cheese, milk
- Butter, margarine
- Rice
- Instant noodles
- Bread
- Cereal
- Pancakes
- Chips

Di Bello, Mc Garvey et al J Nutr 2009
Prevalence of type 2 diabetes in American Samoan adults (25-54 yrs)

Keighley, Mc Garvey et al 2007
What is happening in Mexico and Latin America?

- **Fat (% of Energy)**
  - From 23% in 1988 to 30% in 1999

- **Overweight & Obesity**
  - From 33% in 1988 to 60% in 1999

- **Diabetes**
  - Mortality up by 62%

Rivera et al, Public Health Nutrition 2002;5 (1A):113
Mexico (& Latin America) has changed profoundly during the last 3 decades
How does past food insecurity influence nutrition?

- About 40% experienced some degree of hunger during childhood
- At least half expressed the desire to give their children more food, better quality food, foods they lacked in Mexico
- People may eat less or reject foods they had to eat all the time
- Some eat compulsively or go out to eat all the time

Kuyper, Espinosa-Hall et al, JNEB Dec 2006
Comment from focus groups

“When people didn’t have enough to eat in their childhood, practically on looking at food, one automatically goes back to the time he didn’t. He feels the anxiety, the hunger, and says, ‘I didn’t have enough to eat, I am going to serve this child a huge plate’”

Kuyper, Espinosa-Hall et al, JNEB Dec 2006
sabor para tu mesa
flavor for your table

destapa la felicidad
open happiness
Prevalence of BMI for age > 95th percentile in children 6-11 yrs (NHANES 2007-8)

Ogden et al. JAMA 2010; 303 (3) 242–249
Purpose

- To compare cultural attitudes and beliefs, child feeding practices, and overweight status of children ages 1 to 6 years among Mexican families living in California (CA) or Mexico (MX).
Study design and sites

- Cross-sectional study; interviews from May through October 2006 among:
  - 95 families in Ventura, CA (urban);
  - 107 in Cuerámaro, GTO (small town);
  - 98 in San Gregorio, GTO (village)
Anthropometric Measurements

All children under 7 yrs: measured weight and height (if < 2 yrs, length)

Used new WHO growth reference, 12-60 mos; CDC for > 60

BMI-for-age z-scores
Greater Prevalence (%) of Food Insecurity (FS) in Mexican than in US immigrant families (n = 281)

P<0.0001

Luz Vera-Becerra, Dissertation 2012
Comparison of food patterns

- Immigrant children consume more:
  - Cheese
  - Pizza
  - Hamburgers
  - Fried chicken
  - Hot dogs
  - Cereal
  - Instant noodles

- Mexican children consume more:
  - Fried beans
  - Corn tortillas
  - Rice

US foods and BMI:
\[ r = +0.21, \]
\[ p < 0.0008 \]

MX foods and BMI:
\[ r = -0.26, \]
\[ p < 0.0001 \]

Luz Vera Becerra, Dissertation, 2012
# Differences in Child Feeding & Environmental Factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>US Immigrant %</th>
<th>Mexican %</th>
<th>P &lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child takes food from frig/pantry</td>
<td>87</td>
<td>67</td>
<td>0.0002</td>
</tr>
<tr>
<td>Important that child finish food on plate</td>
<td>67</td>
<td>90</td>
<td>0.002</td>
</tr>
<tr>
<td>Eat with family daily</td>
<td>72</td>
<td>94</td>
<td>0.0001</td>
</tr>
<tr>
<td>Watch 2 or more hours TV daily</td>
<td>18</td>
<td>11</td>
<td>NS</td>
</tr>
</tbody>
</table>

Luz Vera Becerra, Dissertation, 2012
Weight status of children, ages 12-60 months (n=269, year= 2006)

Luz Vera Becerra, Dissertation, 2012
What factors explain the difference in BMI between US & MX*?

- **Decrease BMI:**
  - Food insecurity
  - Mx food pattern
  - Family meals
  - Important that child finishes plate of food

- **Increase BMI:**
  - Child takes snacks from frig/pantry
  - US food pattern
  - More calories from protein, more juice

In best model, factors partially explain (32%) the difference in BMI z-scores among US Immigrant and MX children, controlling for education and household size.

Luz Vera Becerra, Dissertation 2012
Perspectives of an Immigrant Population on Childhood Obesity

- Getting less exercise in US (less walking, working on the farm)
- Mothers have less time (both parents work)
- Poor quality of US foods (not fresh, chemicals); also not enough (f&v) variety locally
- Fast food not good for health
- Parents give in too easily—just give what kids want

*Blame schools for introducing kids to fast foods*

Firebaugh, 2010
Immigrant families say:

- Physical activity: “Children in the US are more overweight because children in Mexico always walk. For example, in my hometown, they walk to school everyday. Here they take the bus or we drive them”
Immigrant parents say:

- Parenting: Sometimes the parents let children buy whatever they want. The child says, “I’m hungry” and the mother will let the child eat whatever they want...the child goes to the refrigerator and makes himself a sandwich with plenty of mayonnaise and as many times as they want...there are no rules”
Immigrant families say:

- School: In Mexico, whatever you feed them, they’ll eat it. Here, they only want what they feed them in school. My daughter tells me “You do not know how to cook like the one at school...She’ll call her older brother “bring us a pizza because mom doesn’t know how to make us food”
Summary

- While many studies show that acculturation in Latino populations is related to poorer diet quality, socioeconomic status is an important influence on health.
- Worldwide changes in diet and lifestyle will have a profound effect on health in the next 50 years.
Research team

Mexico

California