

Does Acculturation Make Our Immigrants Sick ?



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From Latin America



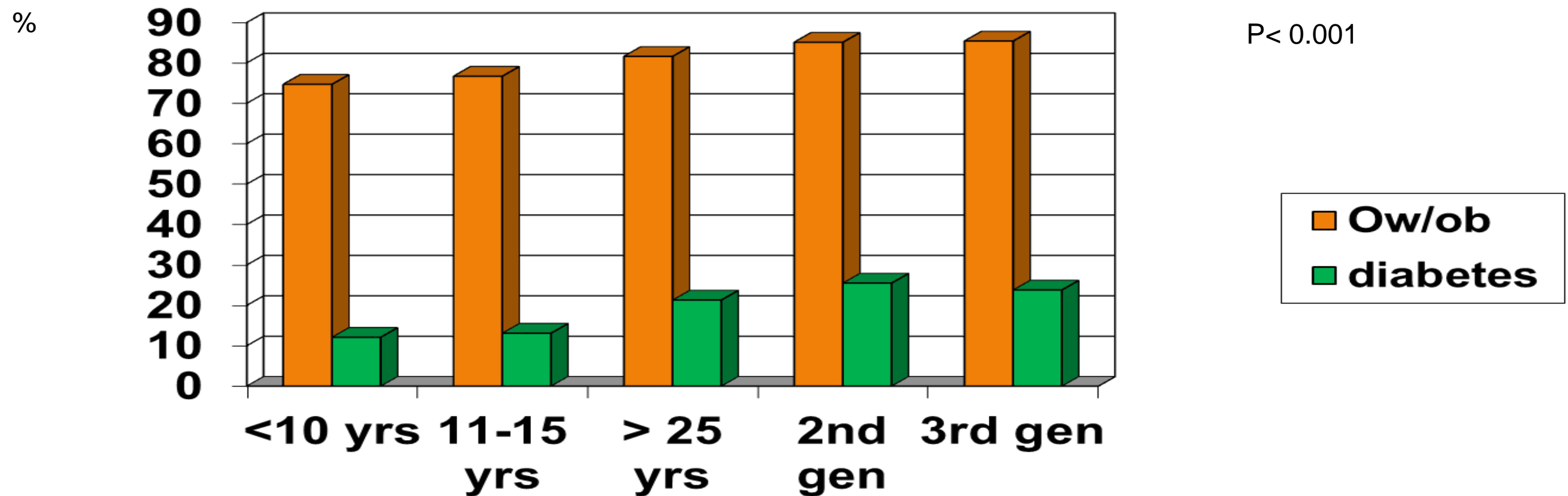
To the United States

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



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 (1st, 2nd, 3rd)

Studies of acculturation are inconsistent related to:



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

Acculturation vs. Assimilation

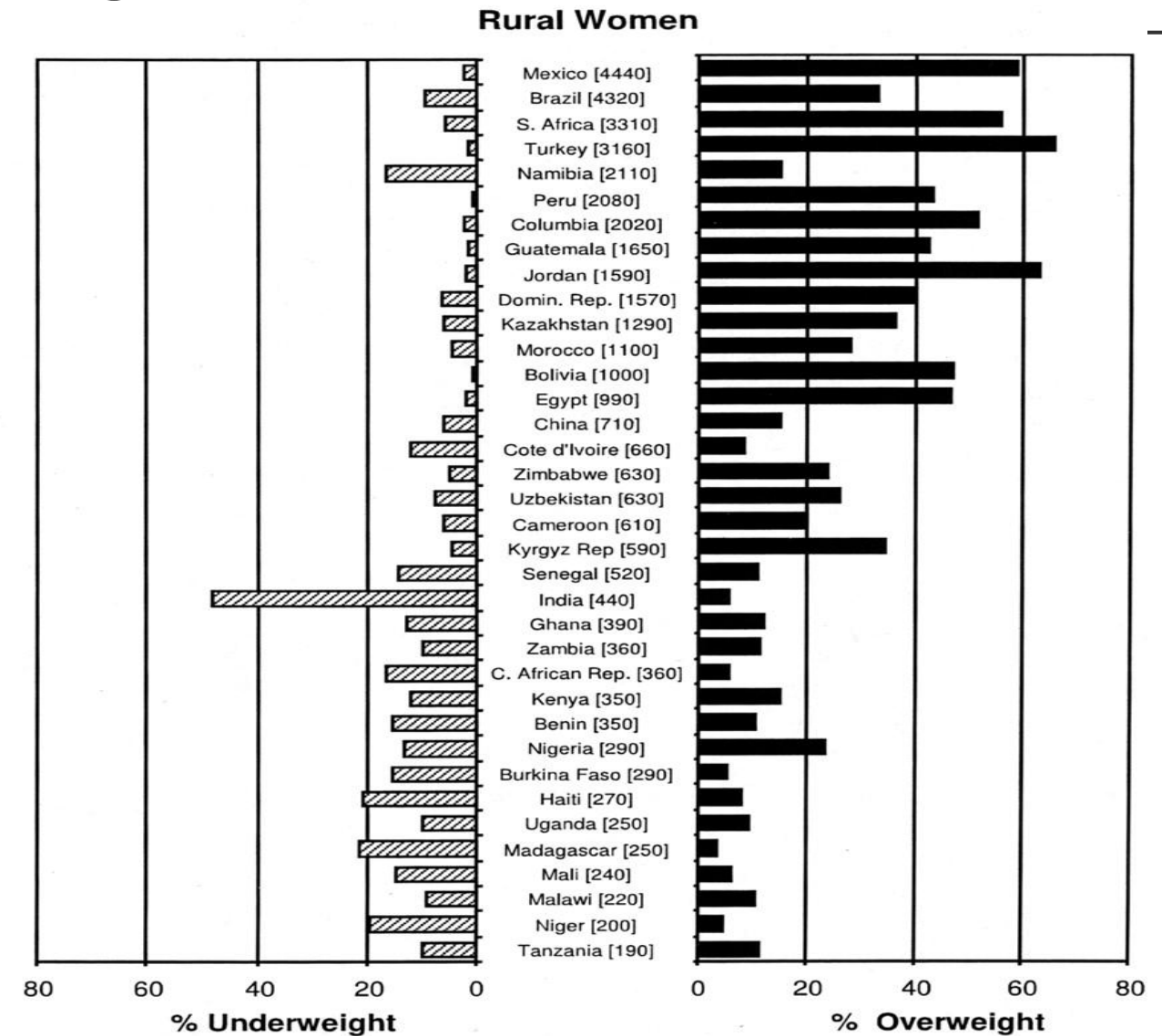
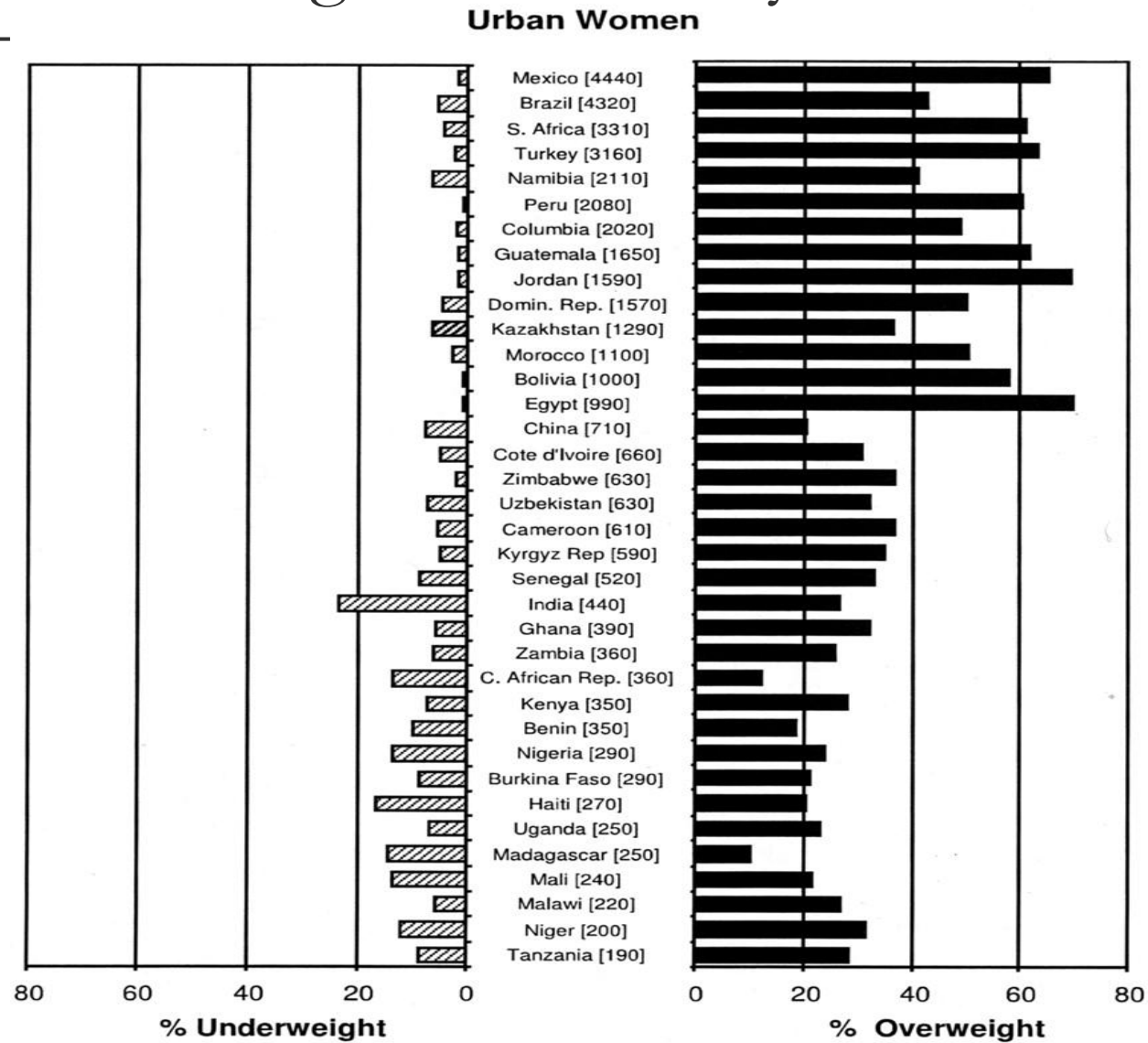
- Acculturation: process of adopting attitudes, values, or behaviors of another culture
- Assimilation: integration of minority group members into the dominant culture

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



Popkin B M Am J Clin Nutr 2006;84:289-298

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



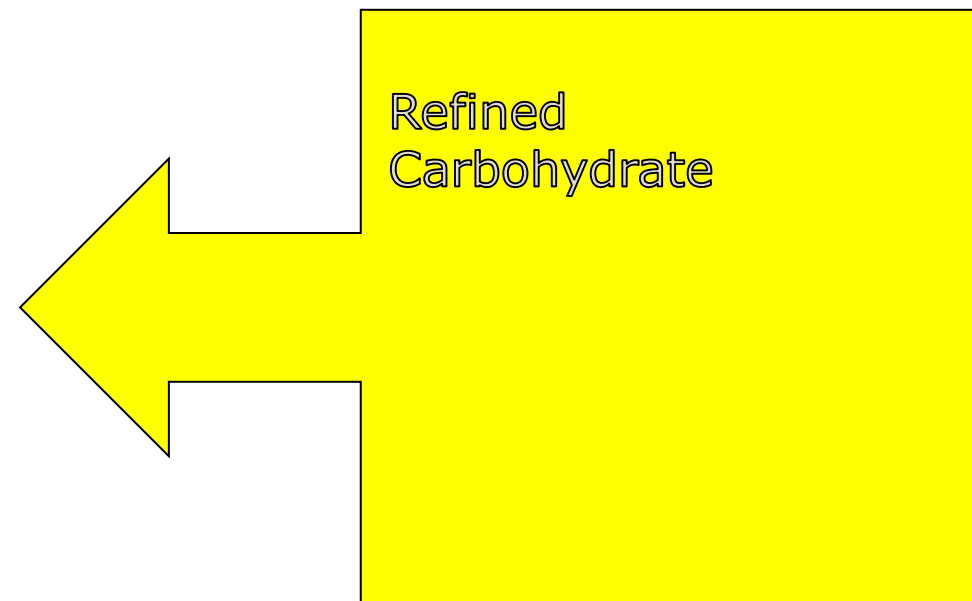
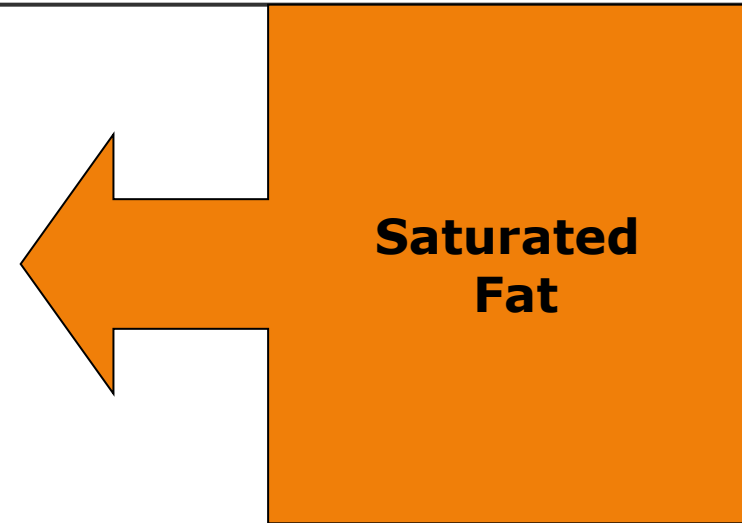
Samoan fruits and leafy vegetables

- ▣ High in vitamin A, C, folate

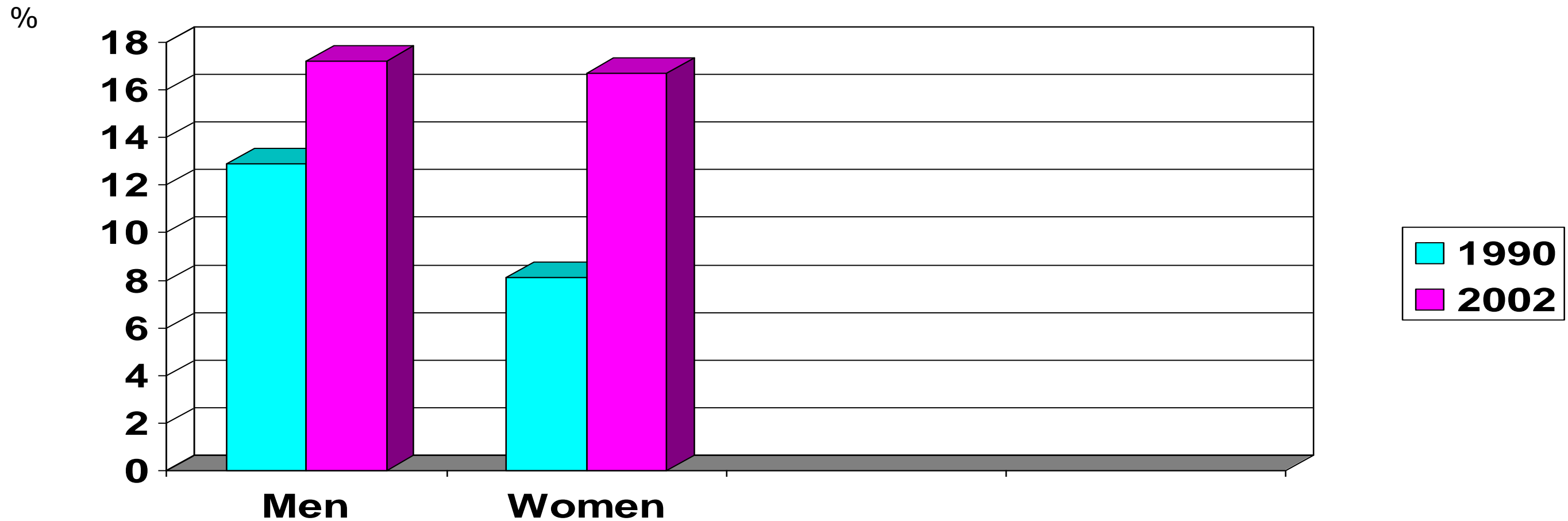


Food patterns: Modern

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



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

Rivera et al, Public Health Nutrition 2002; 5 (4): 413

■ Mortality up by 62%

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

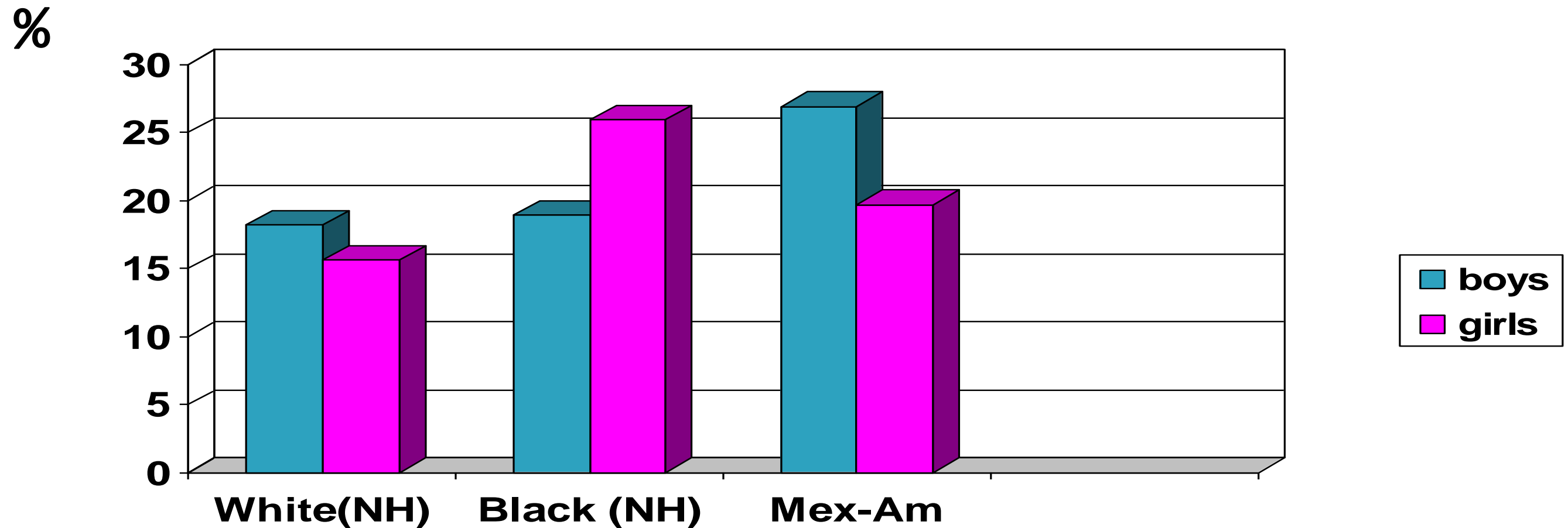


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Prevalence of BMI for age > 95th percentile) in children 6-11 yrs (NHANES 2007-8)



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

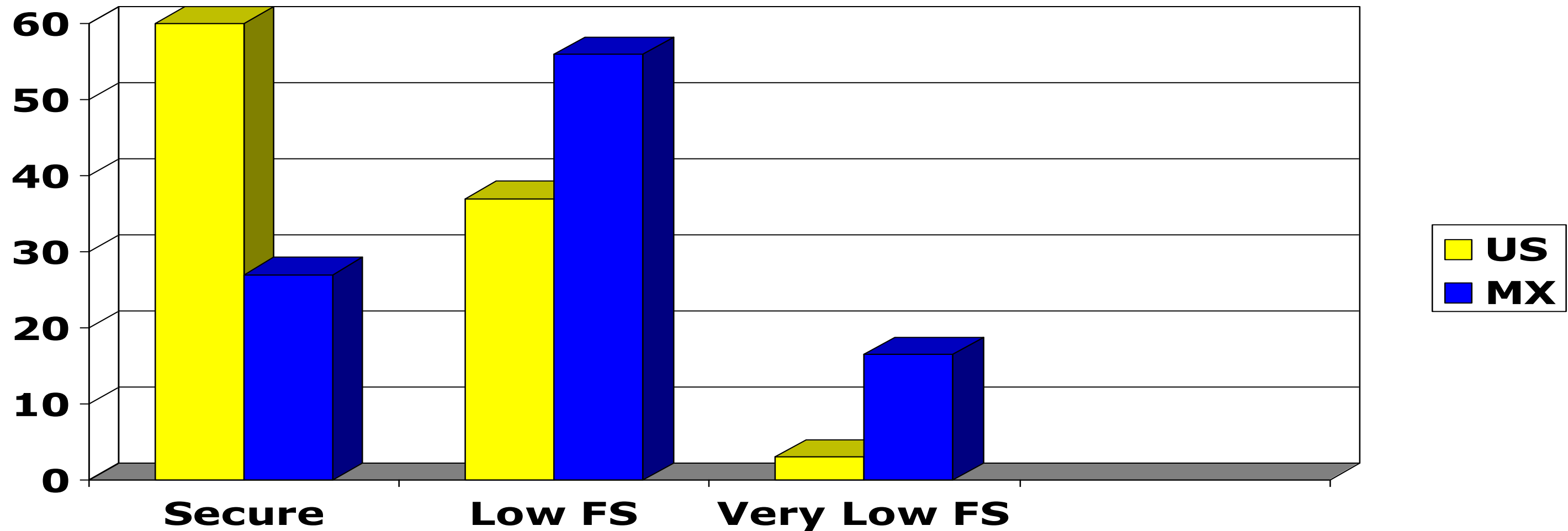


All children under 7 yrs: measured weight and height (if < 2 yrs, length)

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

US foods and BMI:
 $r = +0.21$,
 $p < 0.0008$

□ Mexican children consume more:

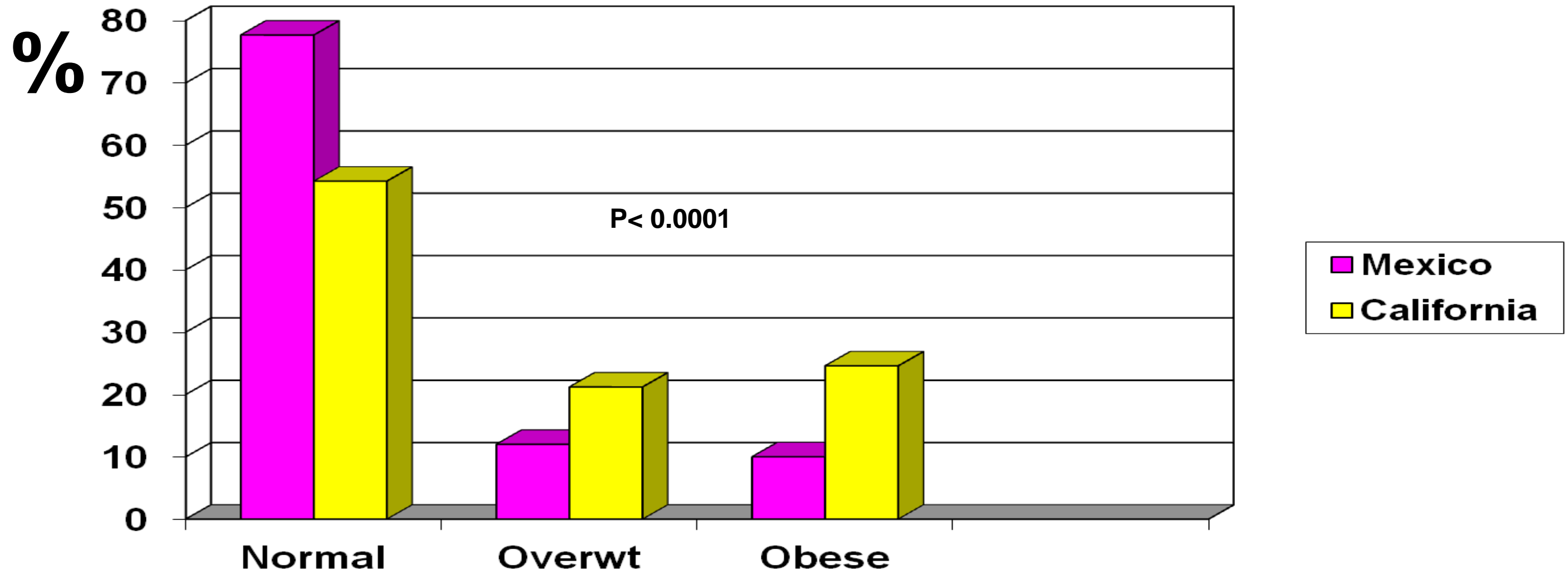
- Fried beans
- Corn tortillas
- Rice

MX foods and BMI:
 $r = -0.26$,
 $p < 0.0001$

Differences in Child Feeding & Environmental Factors

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

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

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***

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



California

Mexico

