



Diabetes and Hispanic/Latino Population in Utah

Utah Diabetes Center

Brenda Ralls

Michael Friedrichs

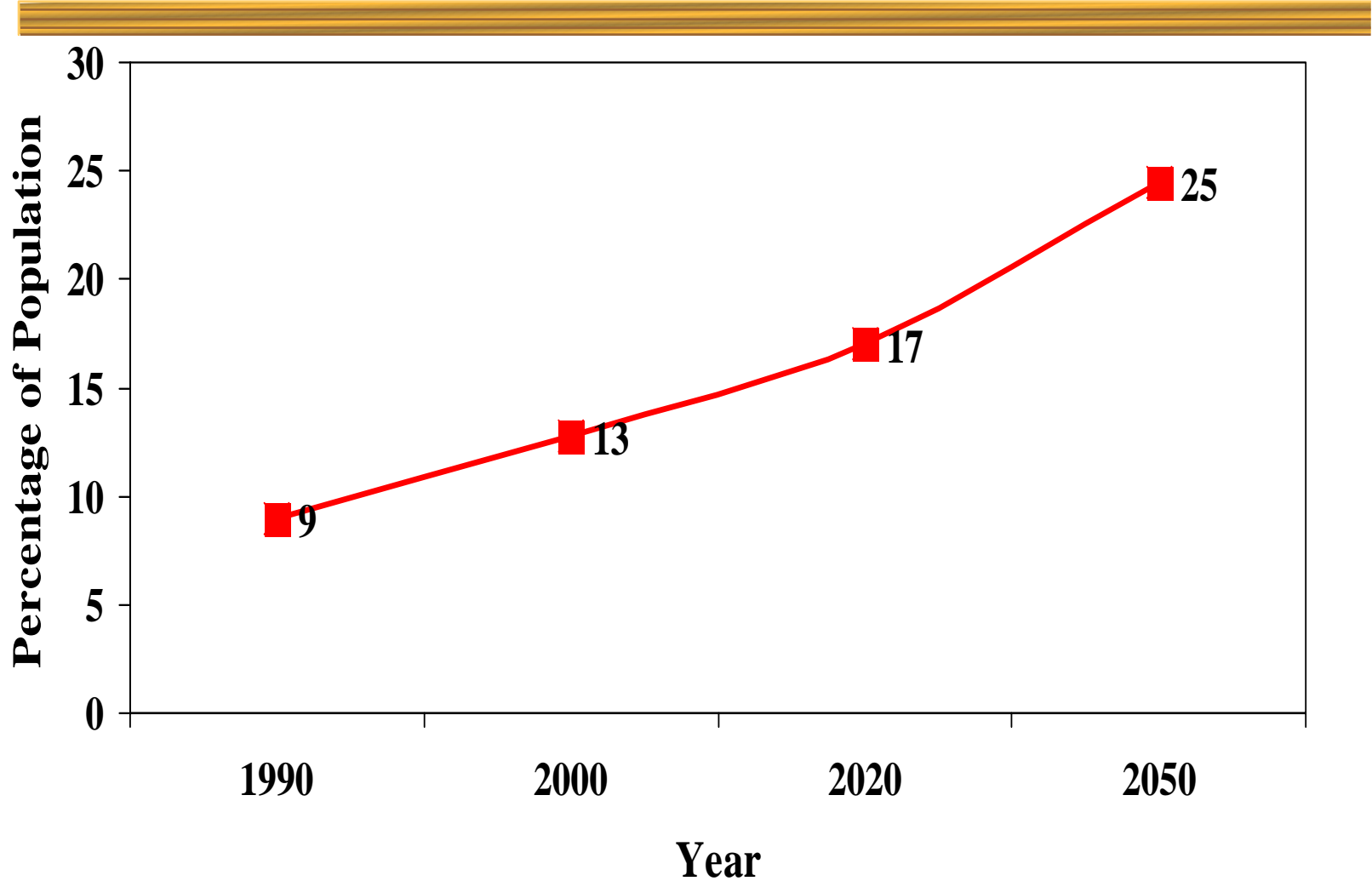
Bureau of Health Promotion

Utah Department of Health

August 9, 2005

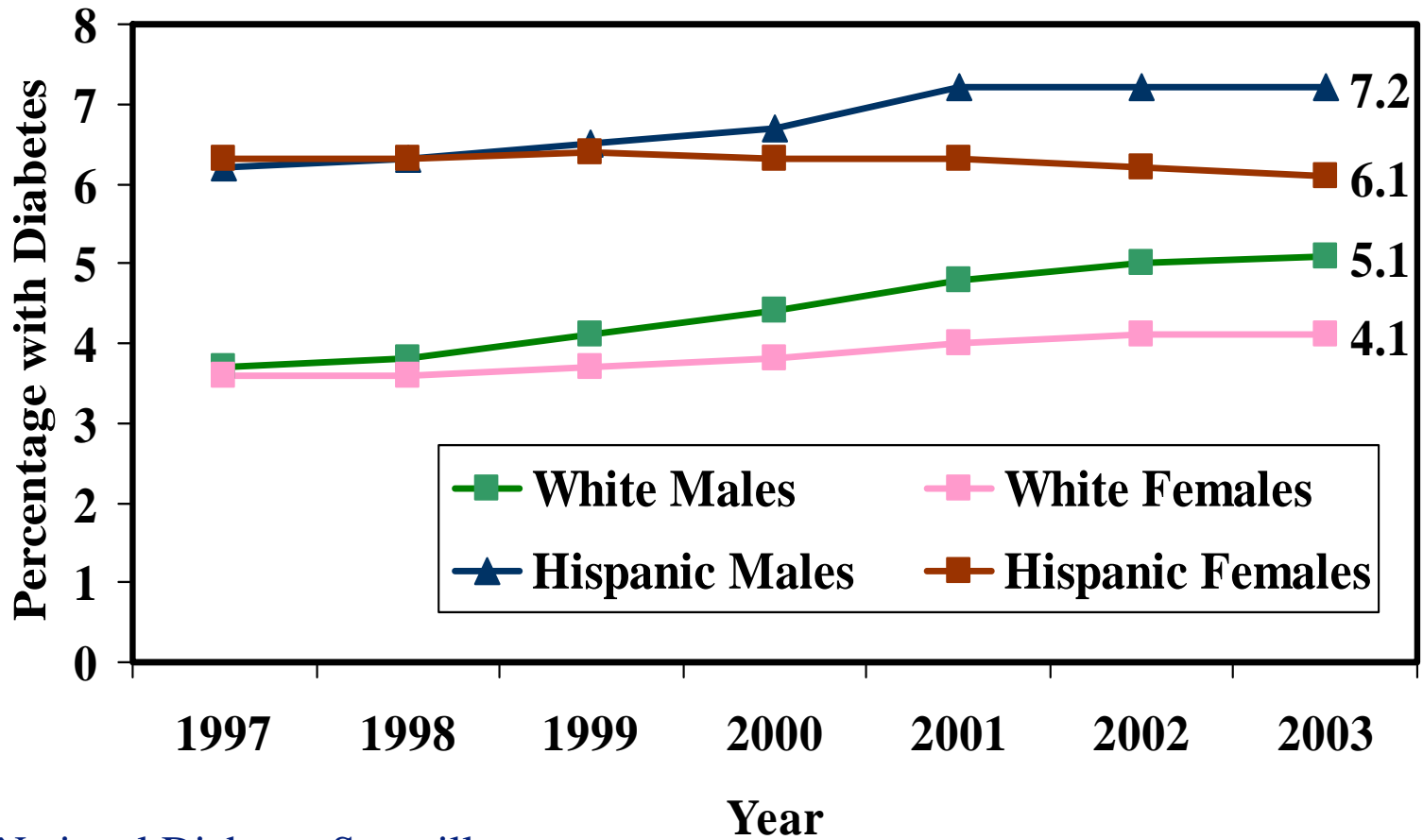


Changes in the Percentage of U.S. Population That Is Hispanic 1990-2050





Age-Adjusted Prevalence of Diagnosed Diabetes by Race/Ethnicity and Sex 1997-2003



National Diabetes Surveillance system

www.cdc.gov/diabetes/statistics/prev/national /tableraceethsex.htm



Leading Causes of Death for Hispanic/Latino and Non-Hispanic/Latino Utah Residents 1999-2003



Hispanic/Latino

- ★ Cancer
- ★ Heart Disease
- ★ Accidents
- ★ Diabetes
- ★ Stroke
- ★ Suicide



Non-Hispanic/Latino

- ★ Heart Disease
- ★ Cancer
- ★ Stroke
- ★ Accidents
- ★ Respiratory Disease
- ★ Diabetes





Hispanic Focus Group on Diabetes

- ★ **We don't think diabetes is important**
- ★ **A lot of us are not very educated about diabetes**
- ★ **It's just something you get**
- ★ **People think they can't afford testing so they don't even try**



Gestational Diabetes



*Healthy People 2010 Objective 5-8
(Developmental)*

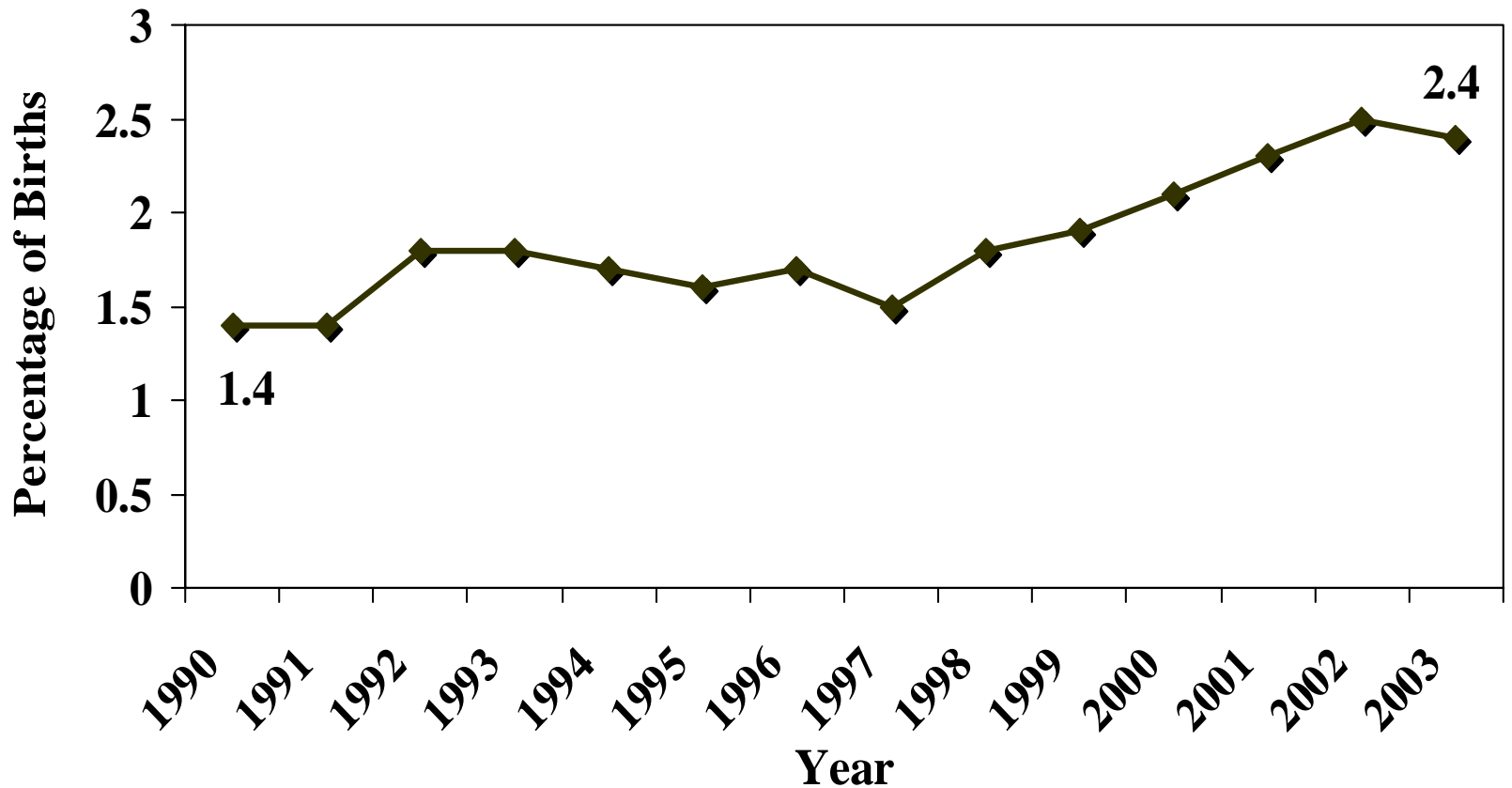
*Decrease the proportion of
pregnant women with
gestational diabetes*



History of Gestational Diabetes Among Utah Mothers

- ★ Utah was one of the first states to differentiate between pre-existing and gestational diabetes on birth certificates
- ★ There appears to be a gradual but steady increase in rates of gestational diabetes among Utah mothers

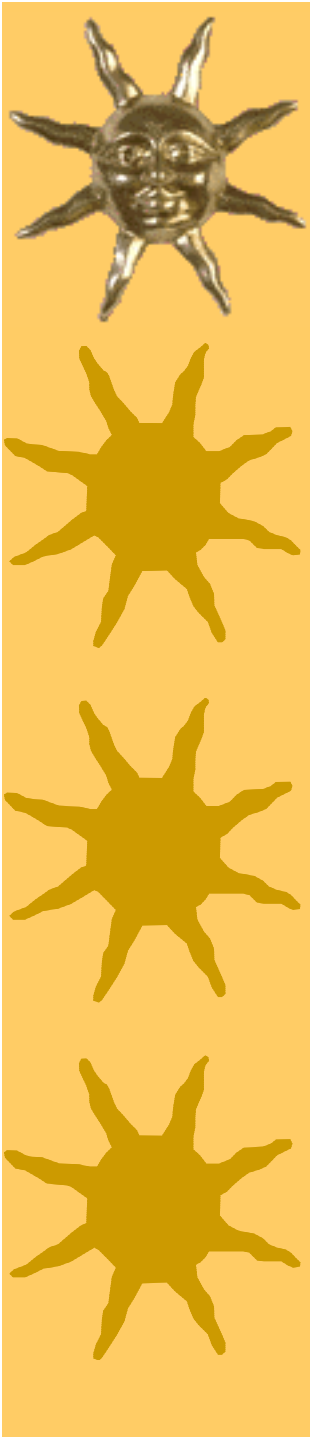
Births to Mothers with Gestational Diabetes as a Percentage of All Births



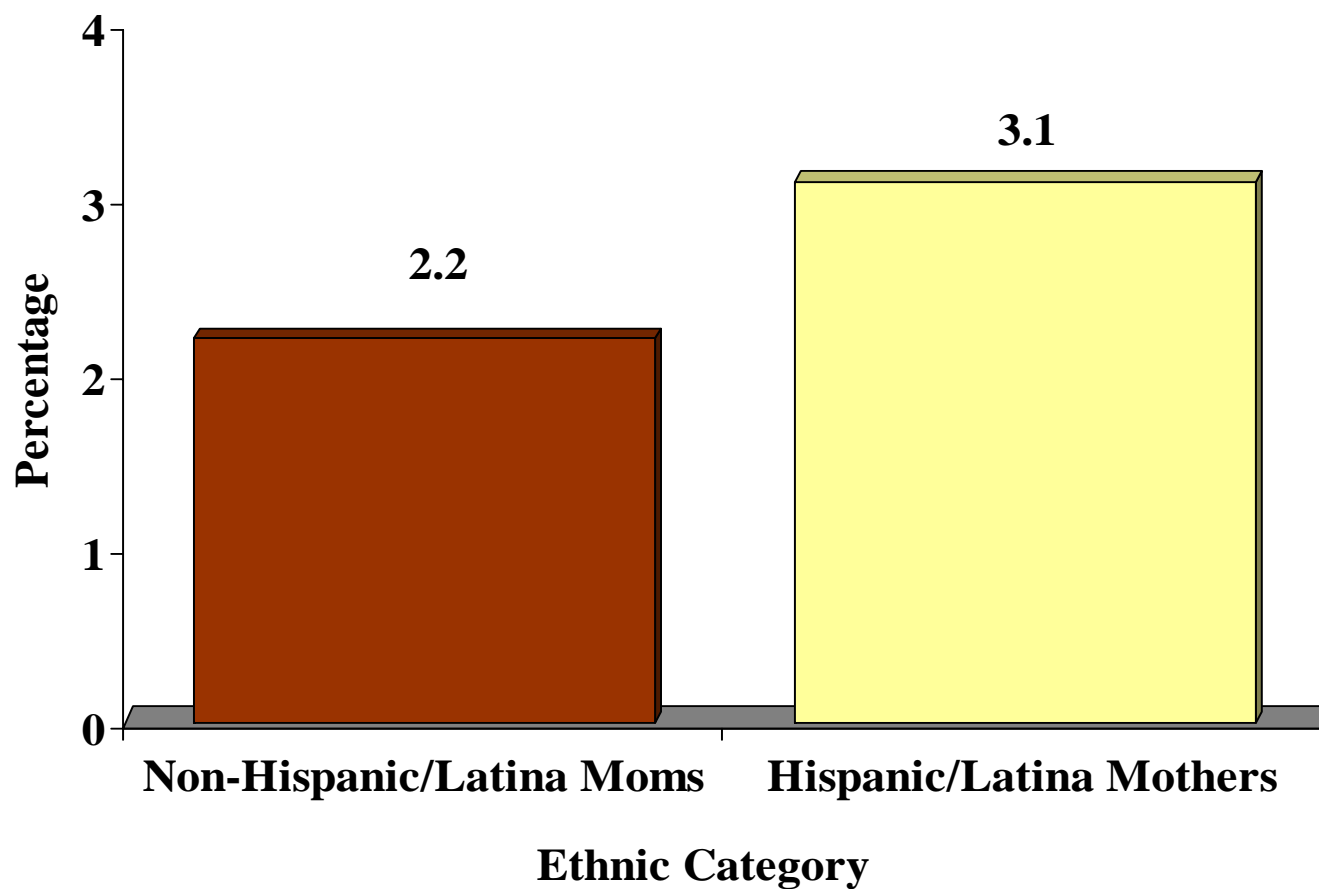


Risk Factors for Gestational Diabetes

- ★ Risk factors are generally the same as for type 2 diabetes
- ★ Possible risk factors included on birth records: age, body mass index (pre-pregnancy), ethnicity, and socio-economic status (education), parity



Percentage of Mothers with Gestational Diabetes by Ethnicity



Utah Office of Vital Records and Statistics, 2002



Methods



- ★ We developed models to identify the factor or factors that might explain the higher prevalence of gestational diabetes in our Hispanic/Latina mothers
- ★ We focused on singleton births
- ★ We examined the effect of ethnicity, singly and adjusting for the effects of known risk factors



Differentials in Selected Risk Factors by Ethnicity



Characteristic	Non-Hispanic/Latina Mothers	Hispanic/Latina Mothers
Age in years	26.7	25.6
Pre-pregnancy BMI (kg/m ²)	24.3	24.8
Parity	1.3	1.2
Education in years	13.6	10.6

Model: Likelihood of Obtaining Gestational Diabetes by Ethnicity with Controls



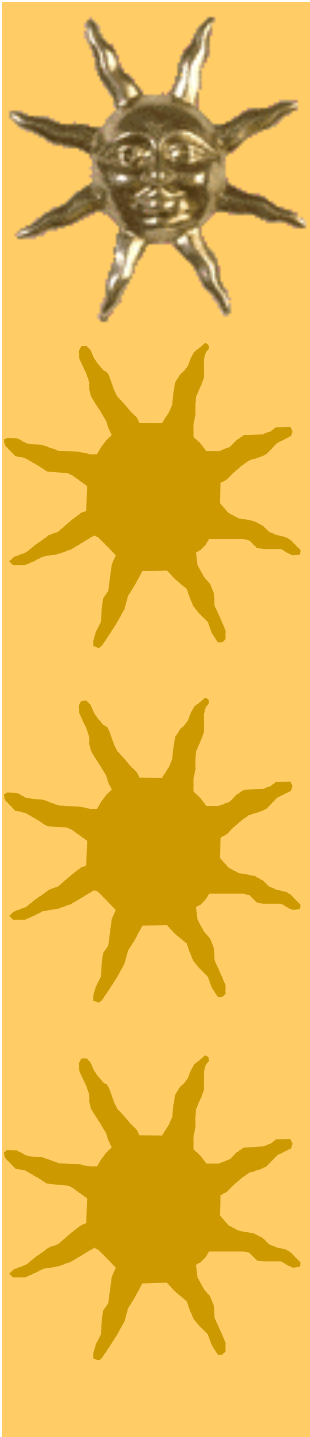
Ethnicity***



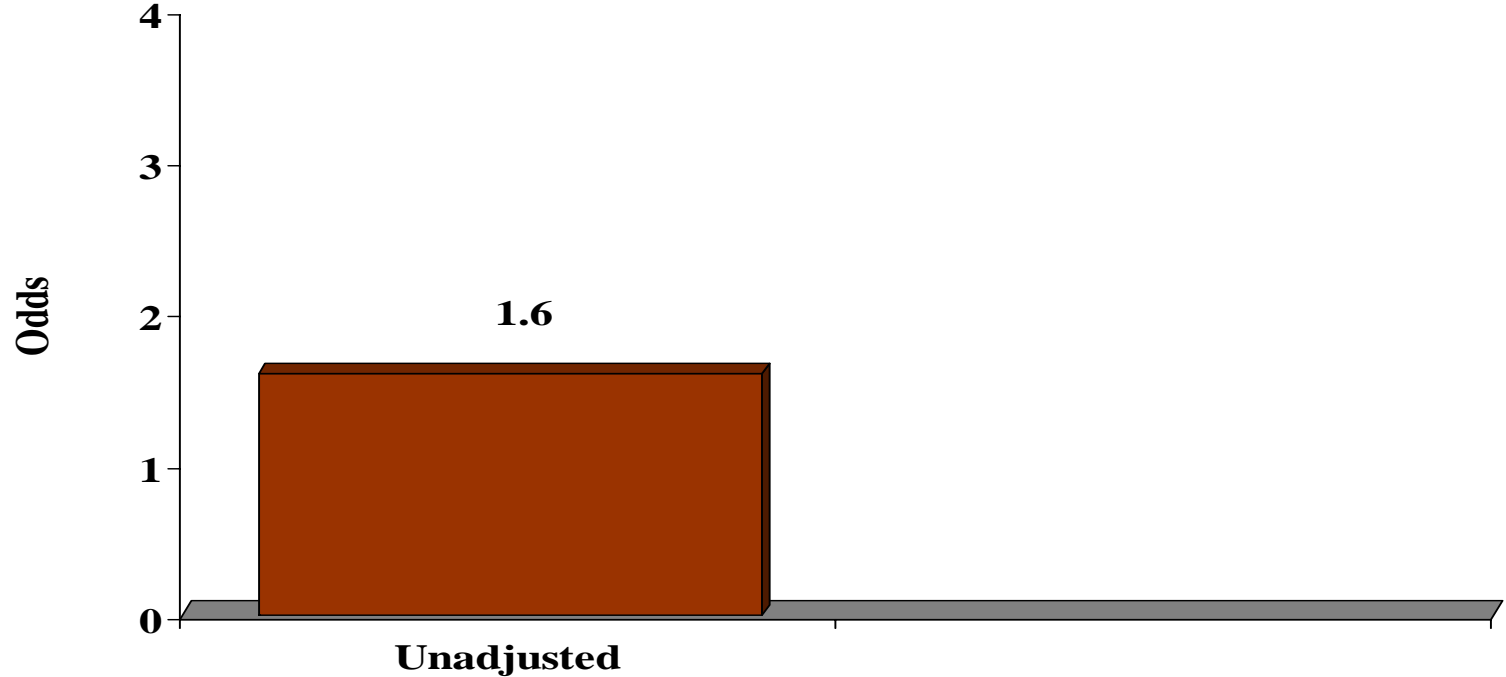
**Gestational
Diabetes**

p<.05; ** p<.01; *p<.001**

2002 Utah Birth Records, Office
of Vital Records and Statistics

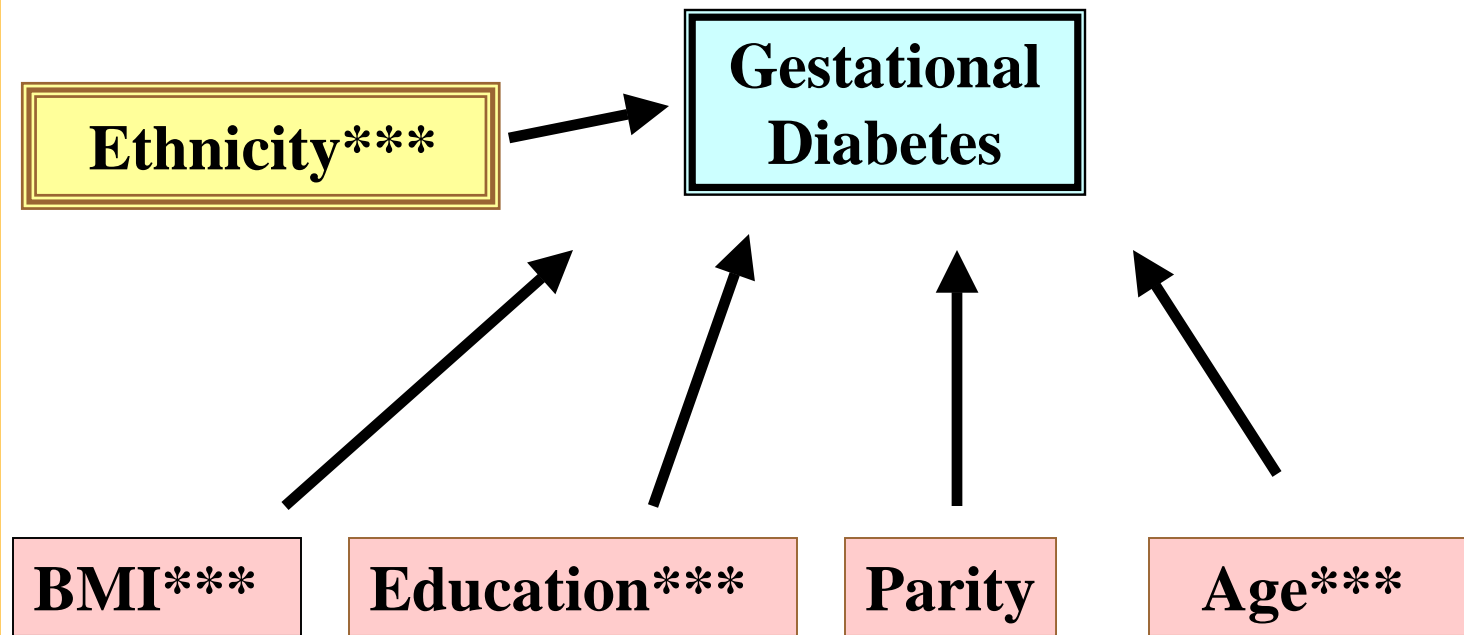


Unadjusted and Adjusted Odds of Being a Hispanic/Latina Mother for Gestational Diabetes*



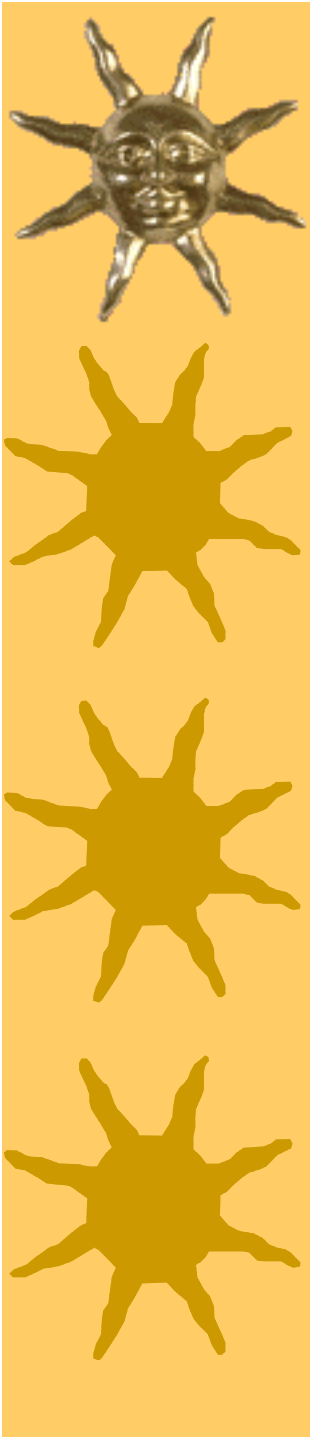
*Adjusted for pre-pregnancy BMI, age, parity and education

Model: Likelihood of Obtaining Gestational Diabetes by Ethnicity with Controls

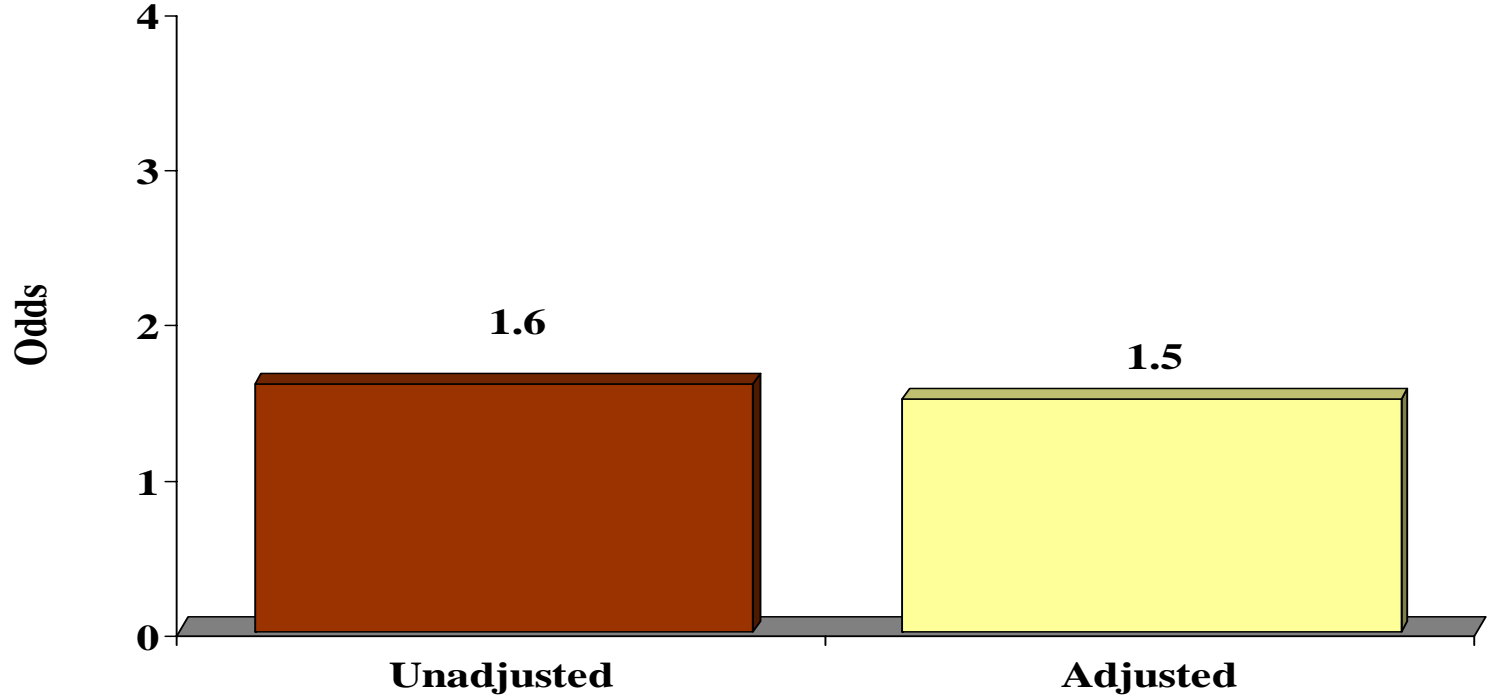


p<.05; ** p<.01; *p<.001**

2002 Utah Birth Records, Office of Vital Records and Statistics

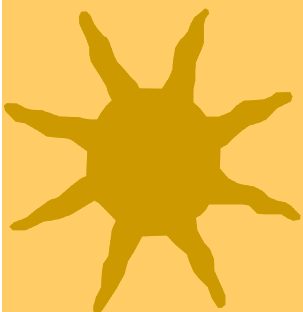
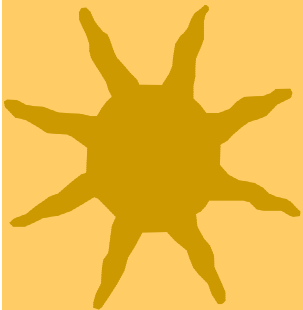
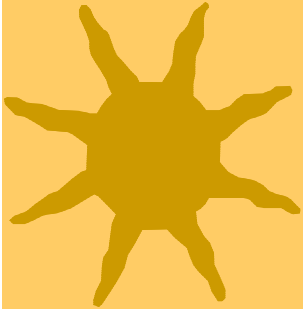


Unadjusted and Adjusted Odds of Being a Hispanic/Latina Mother for Gestational Diabetes*



*Adjusted for pre-pregnancy BMI, age, parity and education

Odds Ratios for Effect of Characteristics on Gestational Diabetes

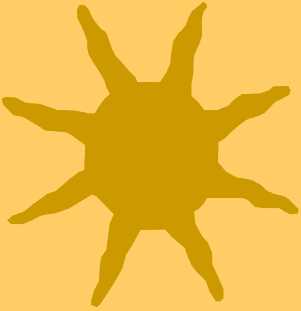


Characteristic	Odds Ratios	
	Non-Hispanic/Latina	Hispanic/Latina
Parity	(ns)	(ns)
Moderately Overweight	2.0***	1.9***
Obese	4.5***	3.3***
Age 25-34	2.0***	2.3***
Age 35+	3.5***	5.2***
More than high school degree	(ns)	(ns)
High school degree	1.3**	(ns)
	Model χ^2 496.0; -2LL 7278.5***	Model χ^2 168.0; -2LL 1747.8***

Source: Utah Office of Vital Records and Statistics 2002



Findings



★ Hispanic/Latina mothers are 60% more likely to have gestational diabetes



★ After adjusting for potential risk factors, there is only a slight reduction in the odds





Consequences for the Mothers

- ★ About 40% of mothers with gestational diabetes will develop diabetes within 20 years of their pregnancies
- ★ Some findings indicate rates as high as 70% within 28 years

Cousan, *Diabetes in America*, 1995;
Kim, et al. *Diabetes Care* 25, 2002



Pregnancy Complications for Mothers with Gestational Diabetes



- ★ Macrosomic baby
- ★ Breech presentation
- ★ Premature rupture of the membranes
- ★ Pre-term birth



Yang, et al., *Diabetes Care* 25, 2002

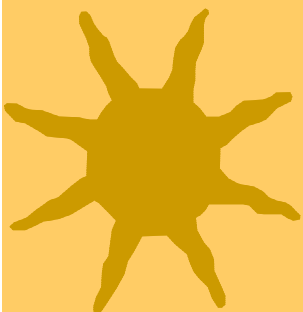
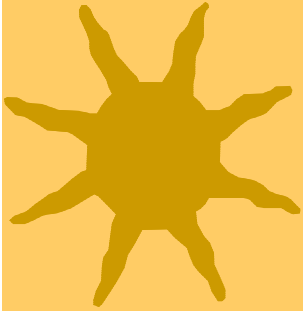


Immediate Consequences for Offspring at Birth

- ★ Neonatal hypoglycemia
- ★ Jaundice
- ★ Respiratory distress syndrome



Cousan, *Diabetes in America*, 1995



Long-term Consequences for the Offspring Exposed to Intrauterine Hyperglycemia

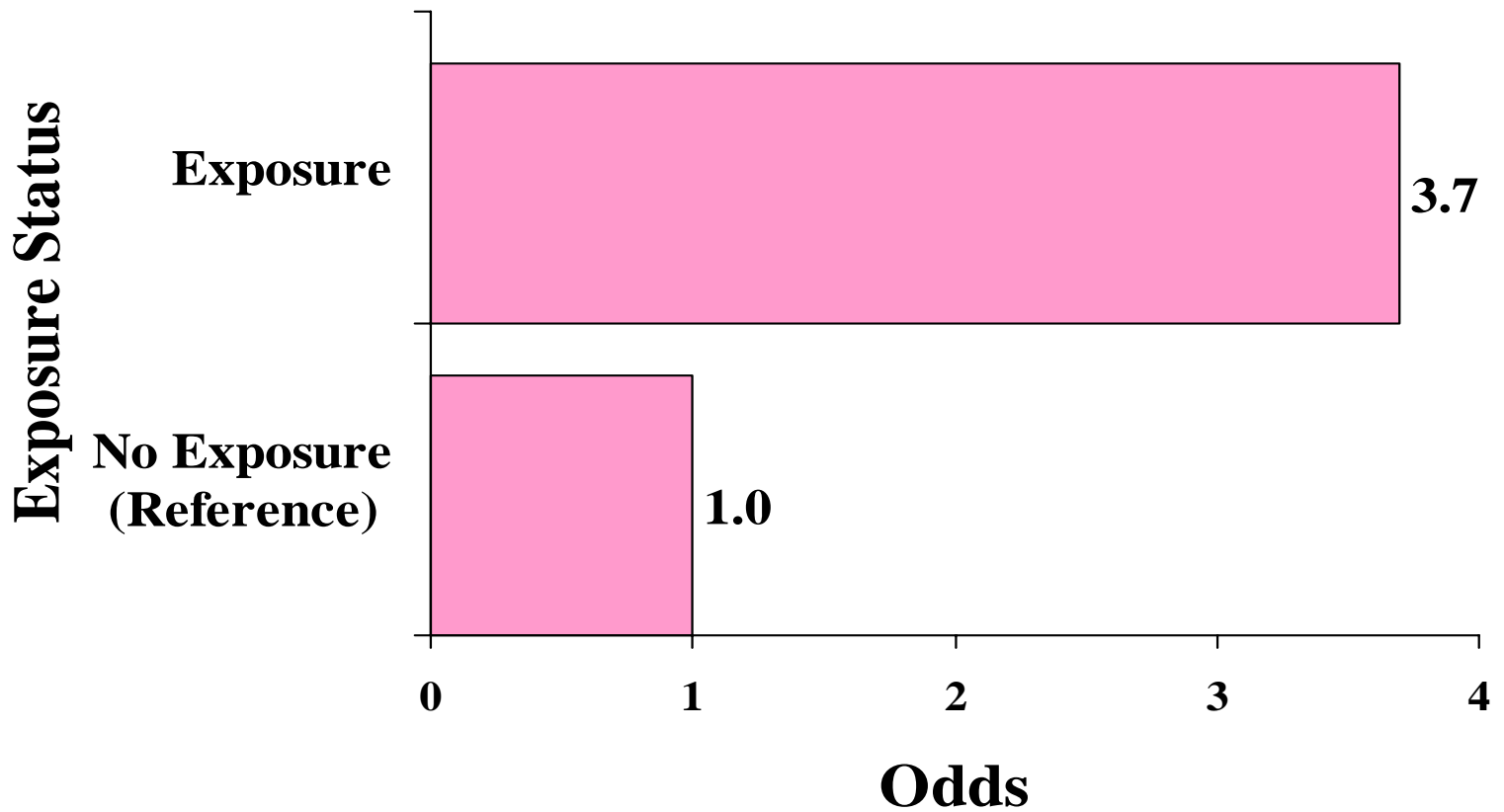
- ★ Increased risk of obesity
- ★ Increased risk of diabetes



Dabelea, Hanson, Lindsay, Pettitt, Imperatore, et al., *Diabetes* 49, 2000



Odds for Developing Diabetes Among Siblings by Exposure to Diabetes in Utero Among Pima Population



Dabelea, Hanson, Lindsay, Pettitt, Imperatore, et al., *Diabetes* 49, 2000:2208

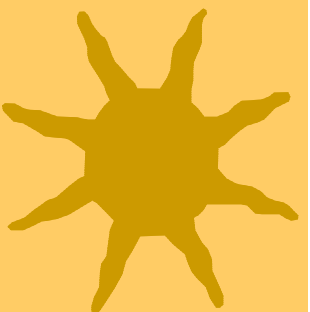


Diabetes Among the Pima Indians



“Both genetic and environmental risk factors contribute to the high rate of diabetes in the Pimas. In Pima Indian children aged 5-19 years, the strongest single risk factor for type 2 diabetes was exposure to diabetes in utero.”





Our Utah Hispanic Health Survey



Rationale

- ★ We couldn't reach enough Hispanics through regular surveys
- ★ We were missing all Hispanics who didn't speak English
- ★ We needed baseline data to know where we are and to see where we need to go



Methods

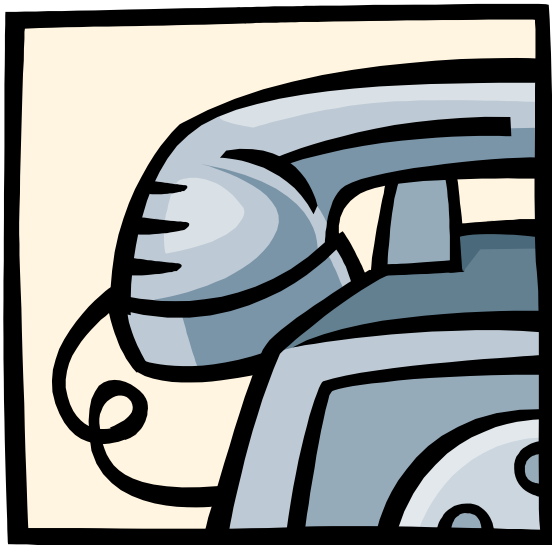
- ★ Used a Hispanic surname list
- ★ Oversampled rural areas and weighted the data to reflect Utah Hispanic population
- ★ Advertised
- ★ Conducted the interviews in English and Spanish (“language variable”)



*National Data Estimate
25% of Hispanics in U.S.
Do Not Speak English*



***Salt Lake Tribune: August 7, 2005—57% of
SL County Residents Who Do Not Speak
English Speak Spanish***



*In our Utah survey, 57% of
the respondents stated that
Spanish was the language
most often spoken in the
home*



Demographics

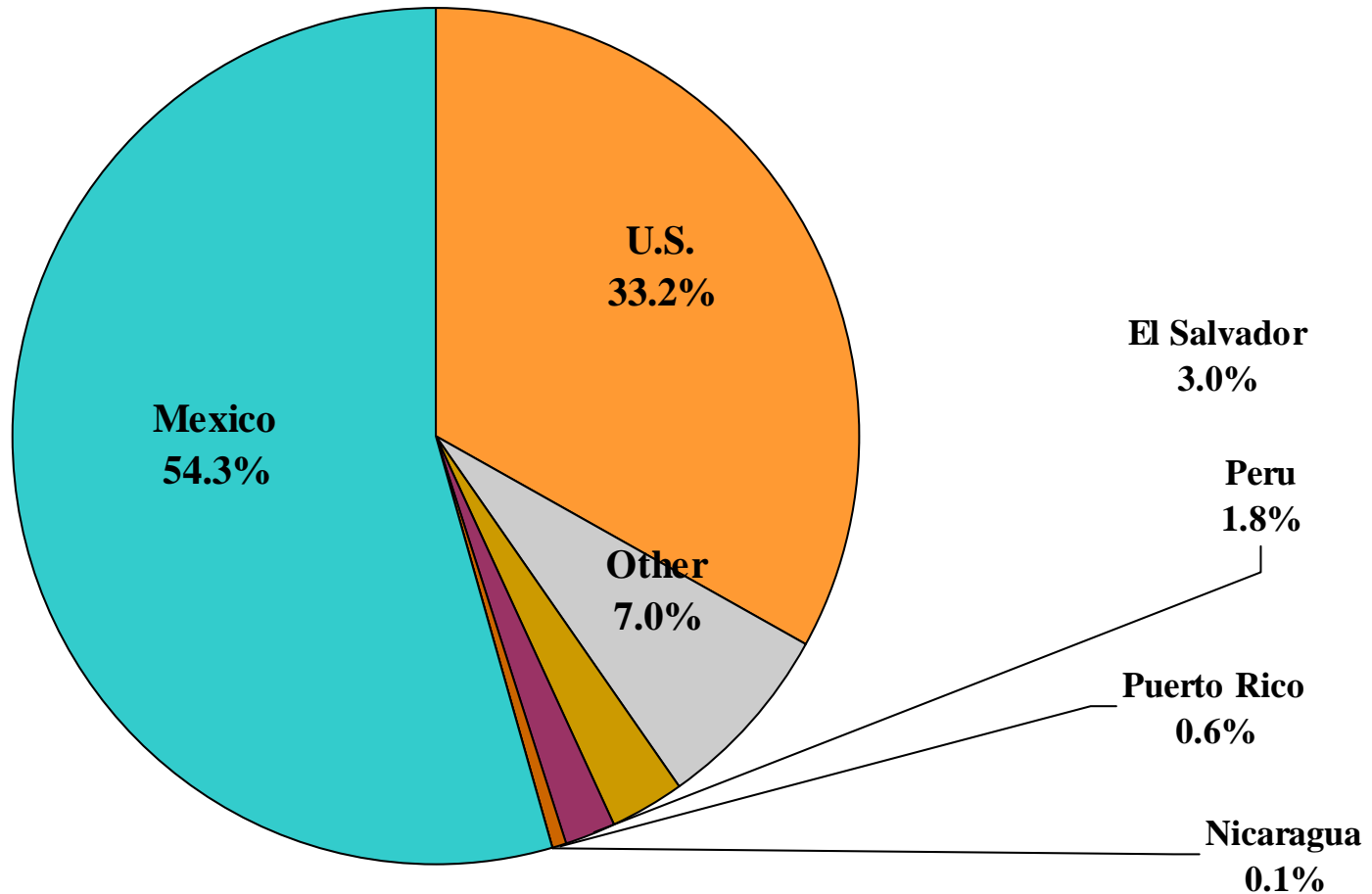


Urban and Rural Distribution

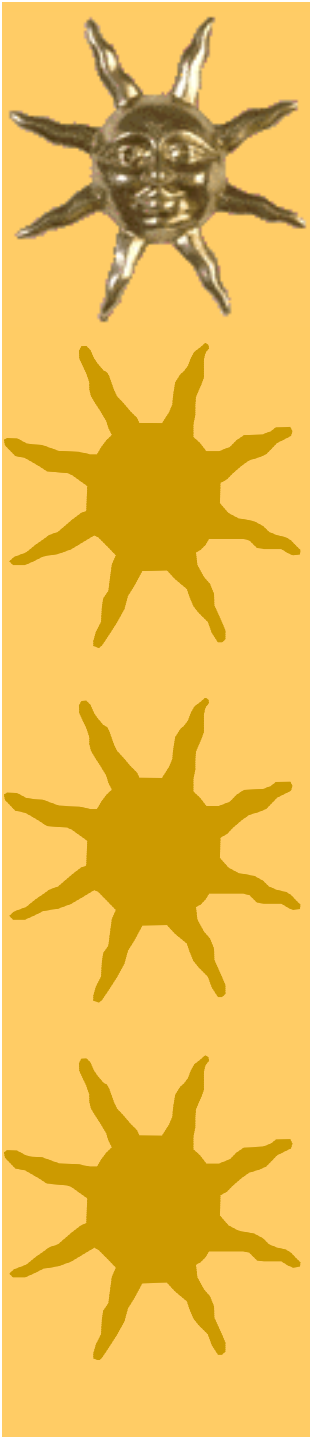
- ★ **15% of respondents lived in rural areas**
- ★ **There was little difference in rural/urban percentage of interviews conducted in Spanish**
- ★ **There was little difference in rural/urban age distribution**



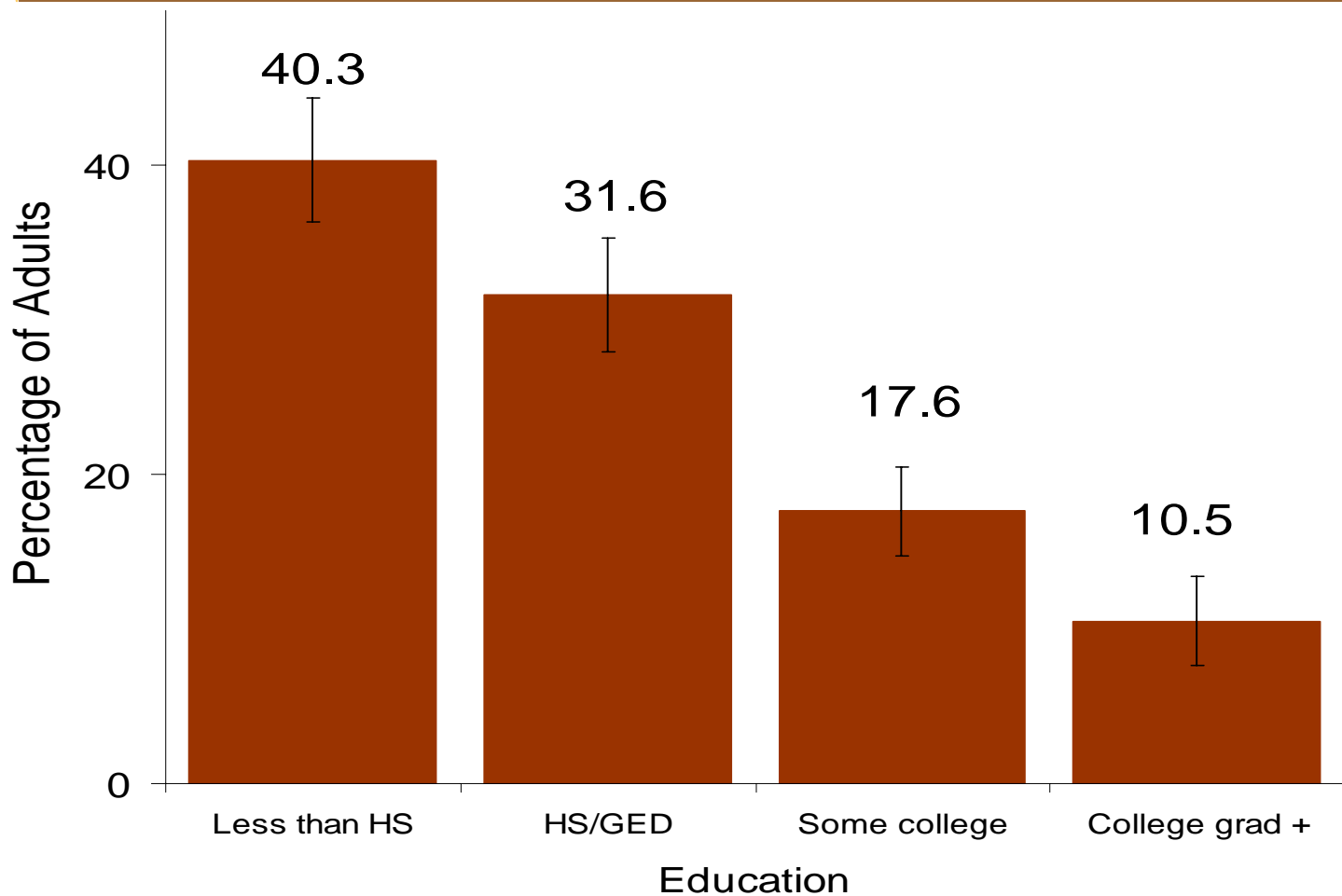
Percentage Distribution of Country of Birth



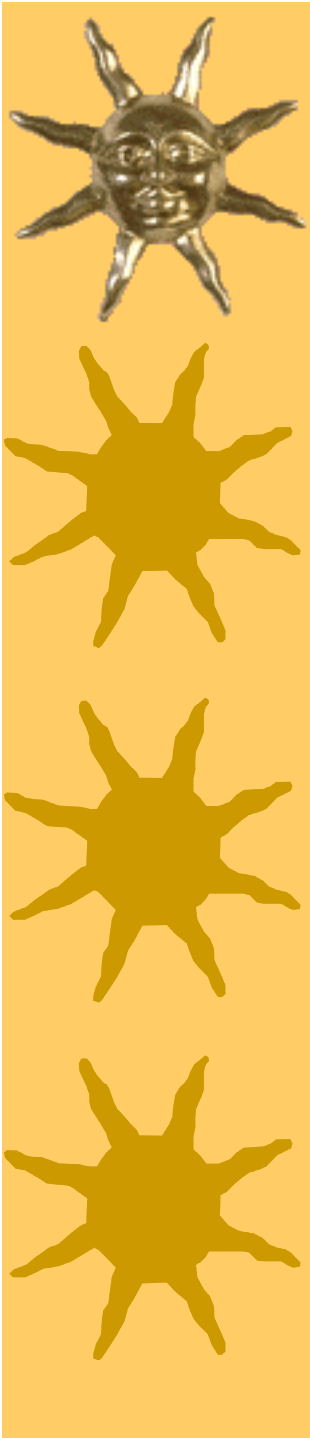
Source: Utah Hispanic Health Survey 2001



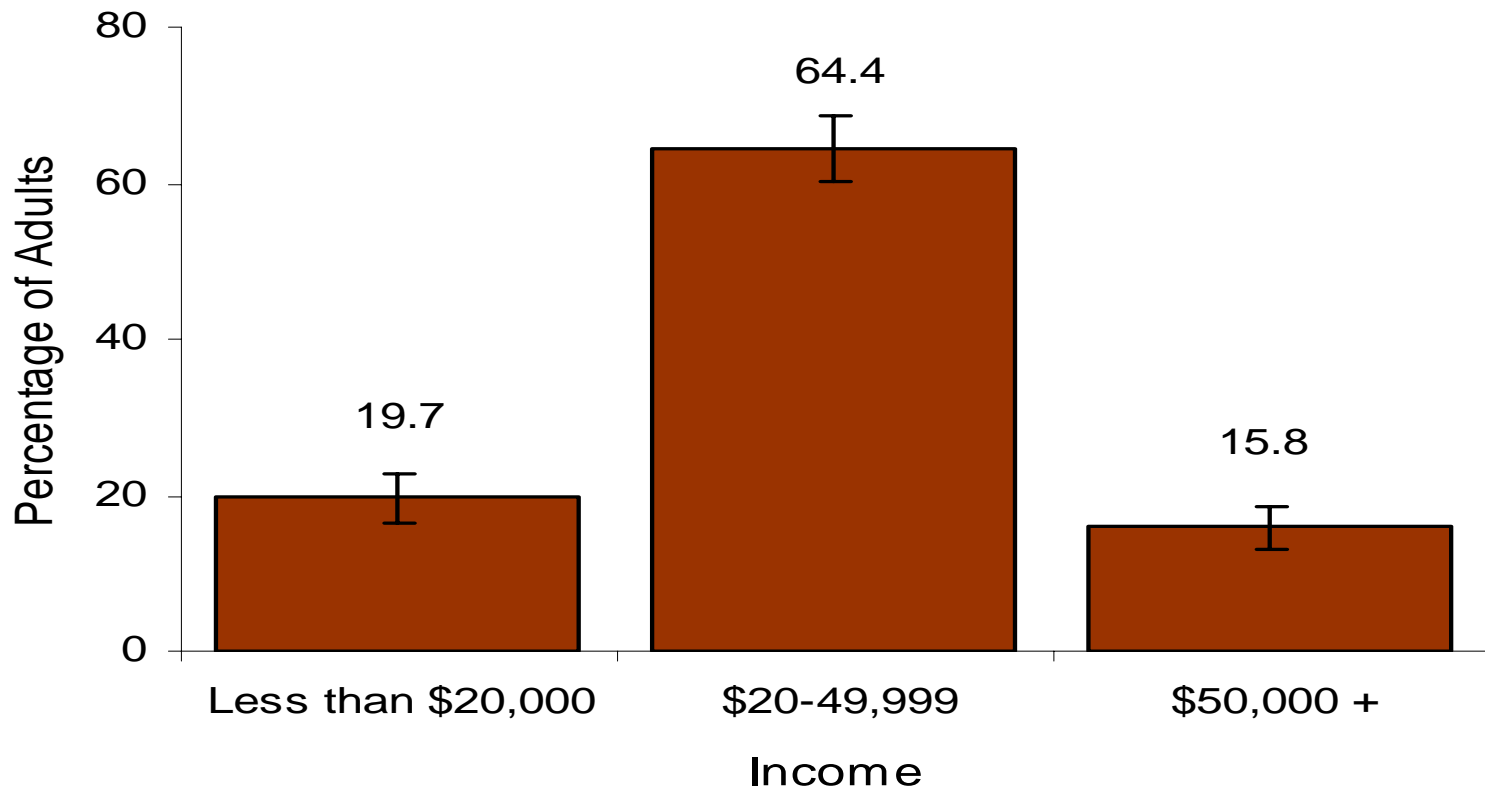
Percentage Distribution of Education of Hispanic/Latino Adults in Utah



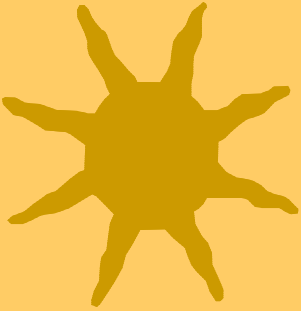
Source: 2001 Utah Hispanic Health Survey



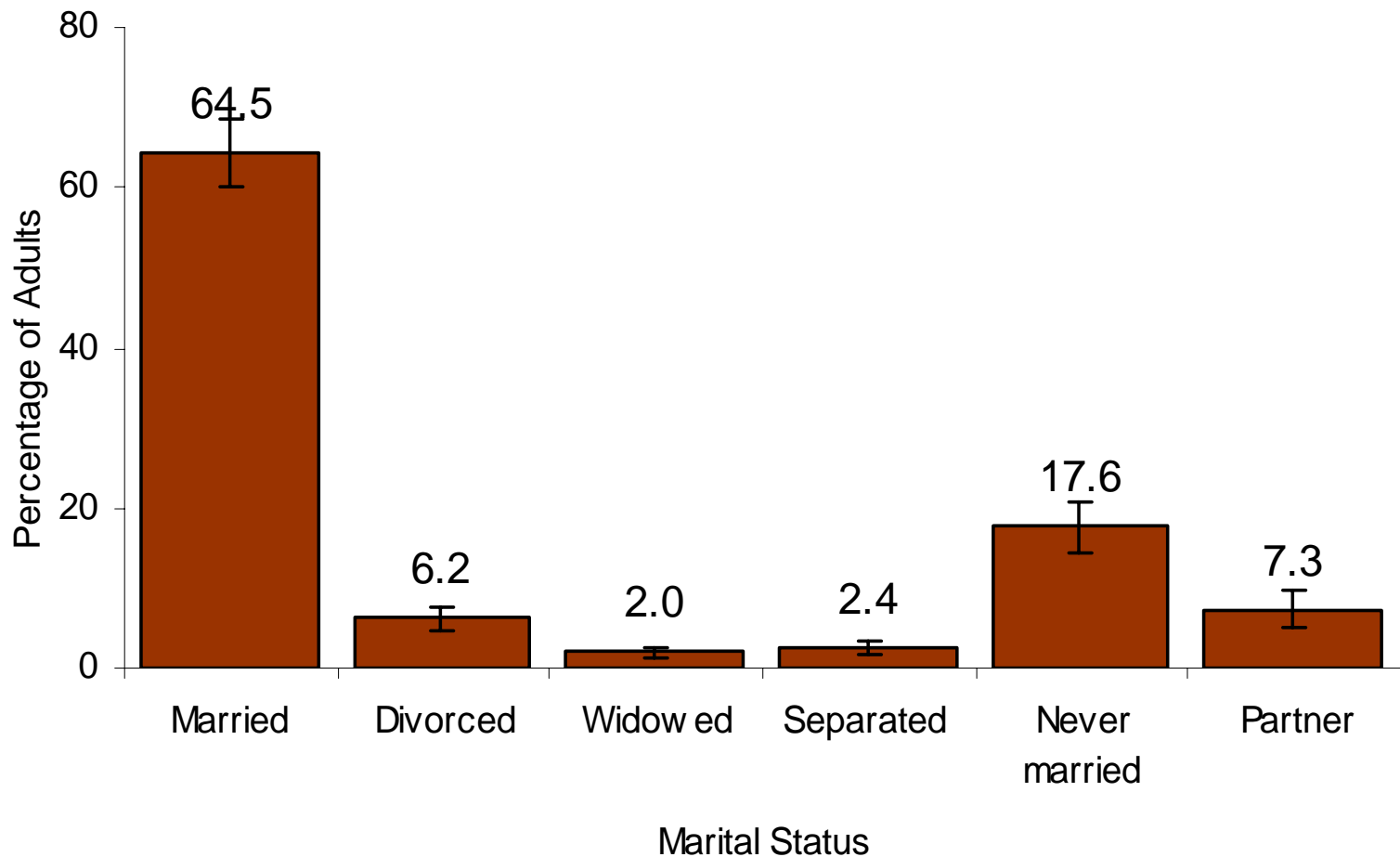
Percentage Distribution of Annual Household Income of Hispanic/Latino Adults in Utah



Source: 2001 Utah Hispanic Health Survey



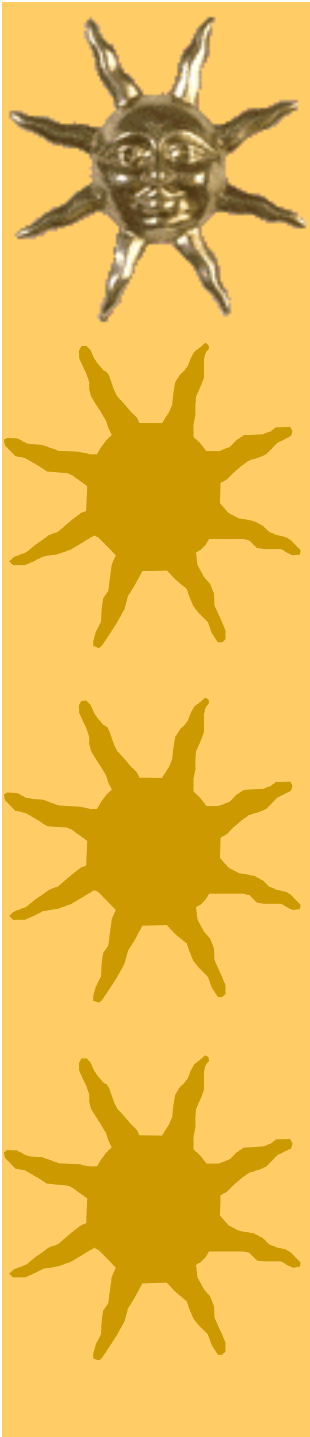
Marital Status Distribution of Utah Hispanic/Latino Adults



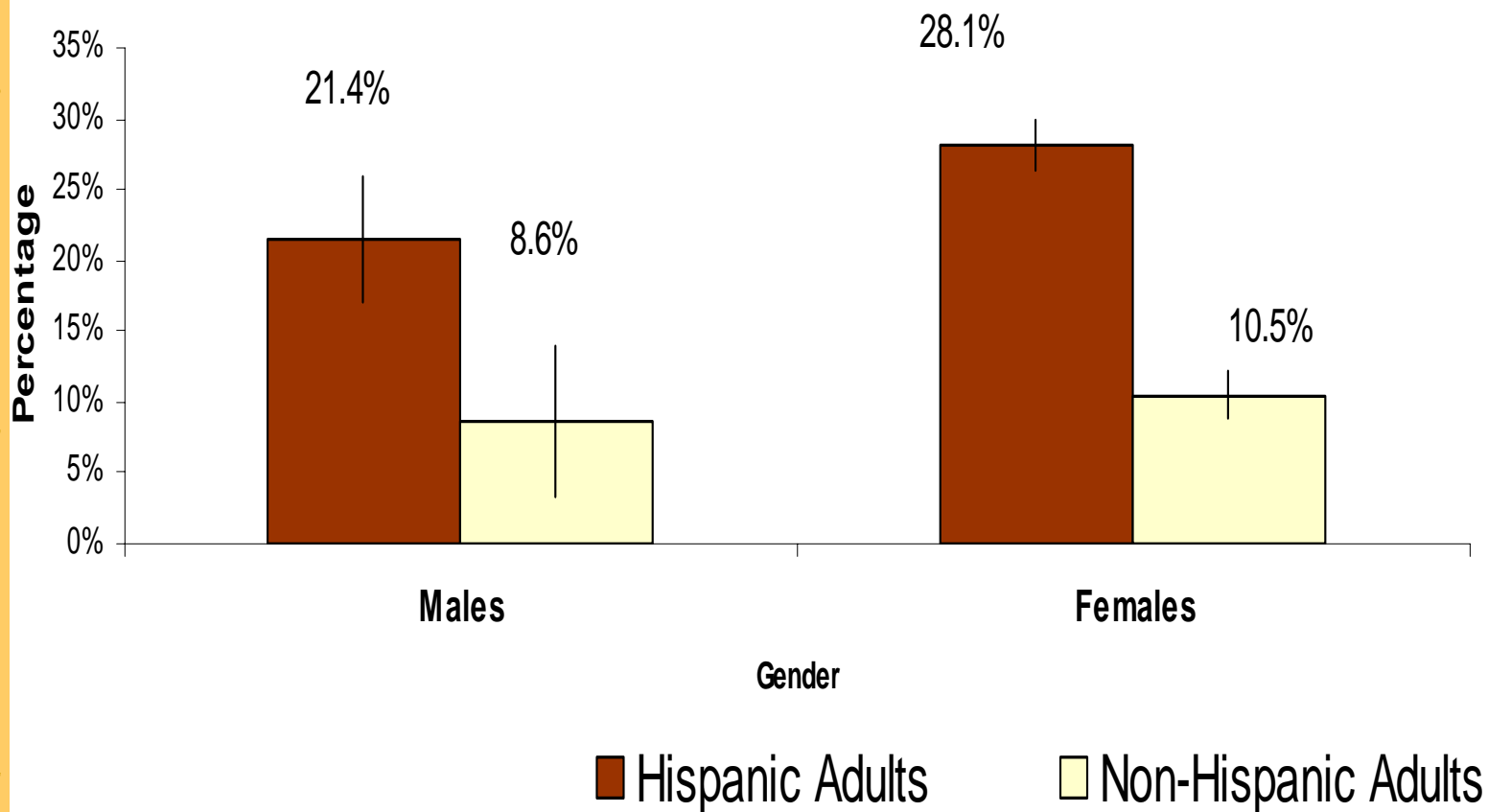
Source: 2001 Utah Hispanic Health Survey



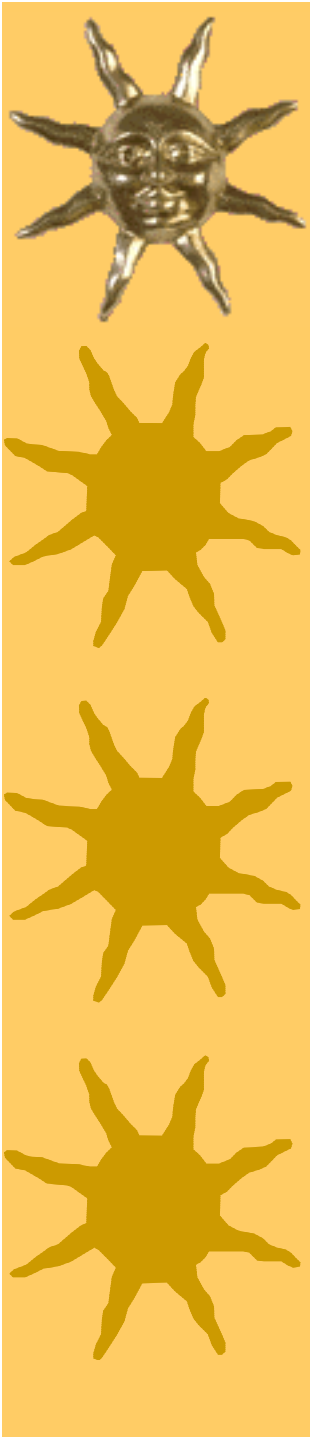
*Respondents at Risk for
Developing Diabetes*



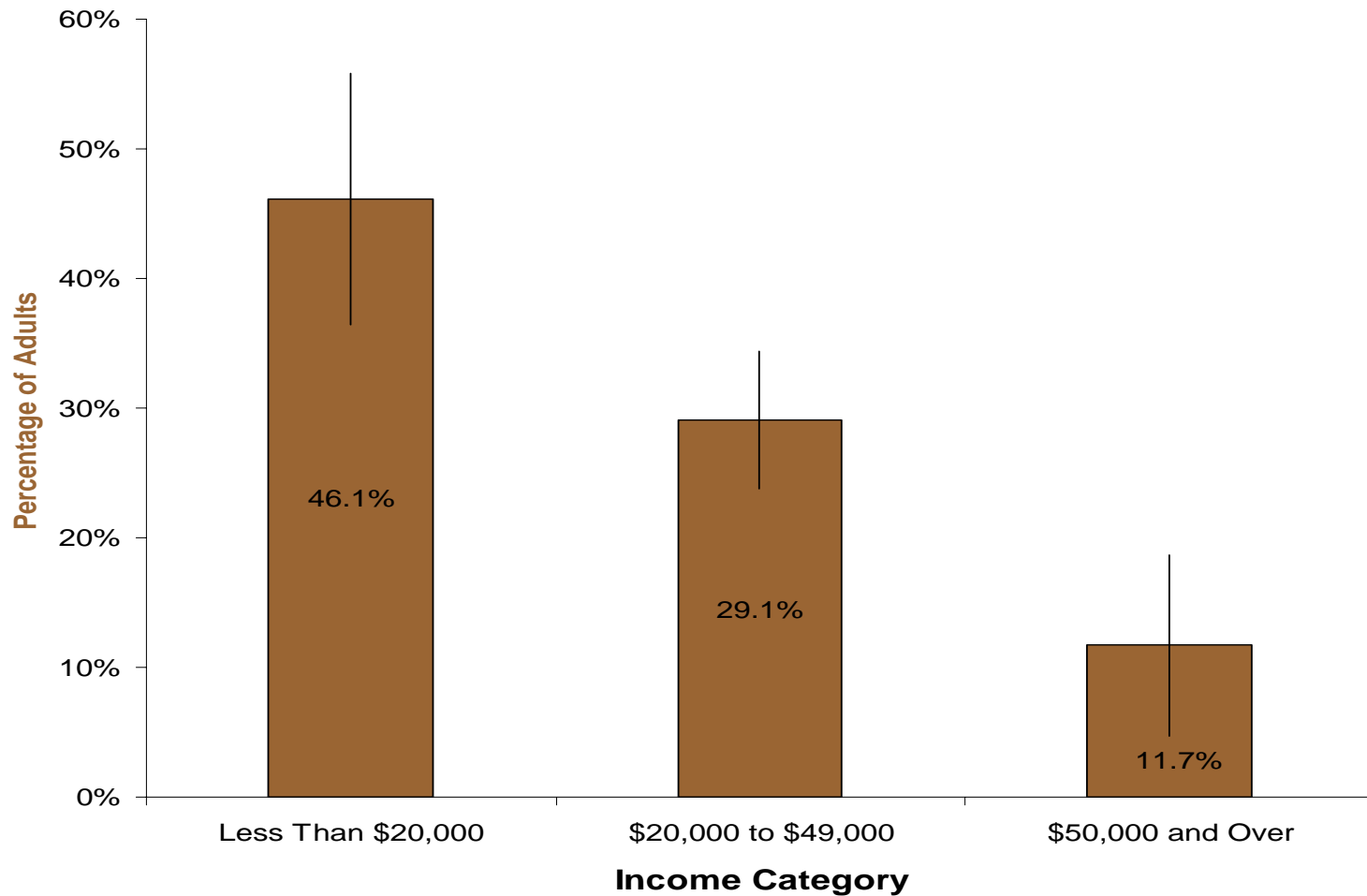
Percentage of Respondents Who Reported Being in Fair or Poor Health by Ethnicity



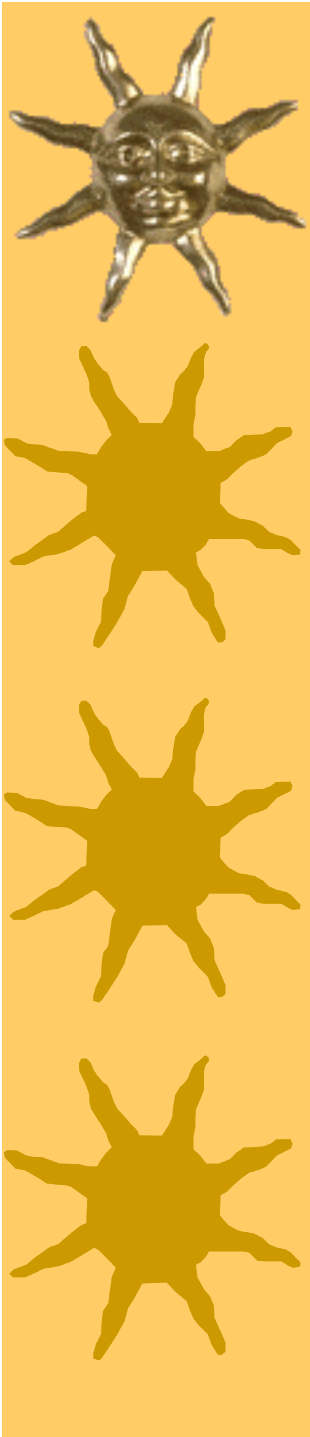
Source: 2001 Utah Hispanic Health Survey ; BRFSS 2001



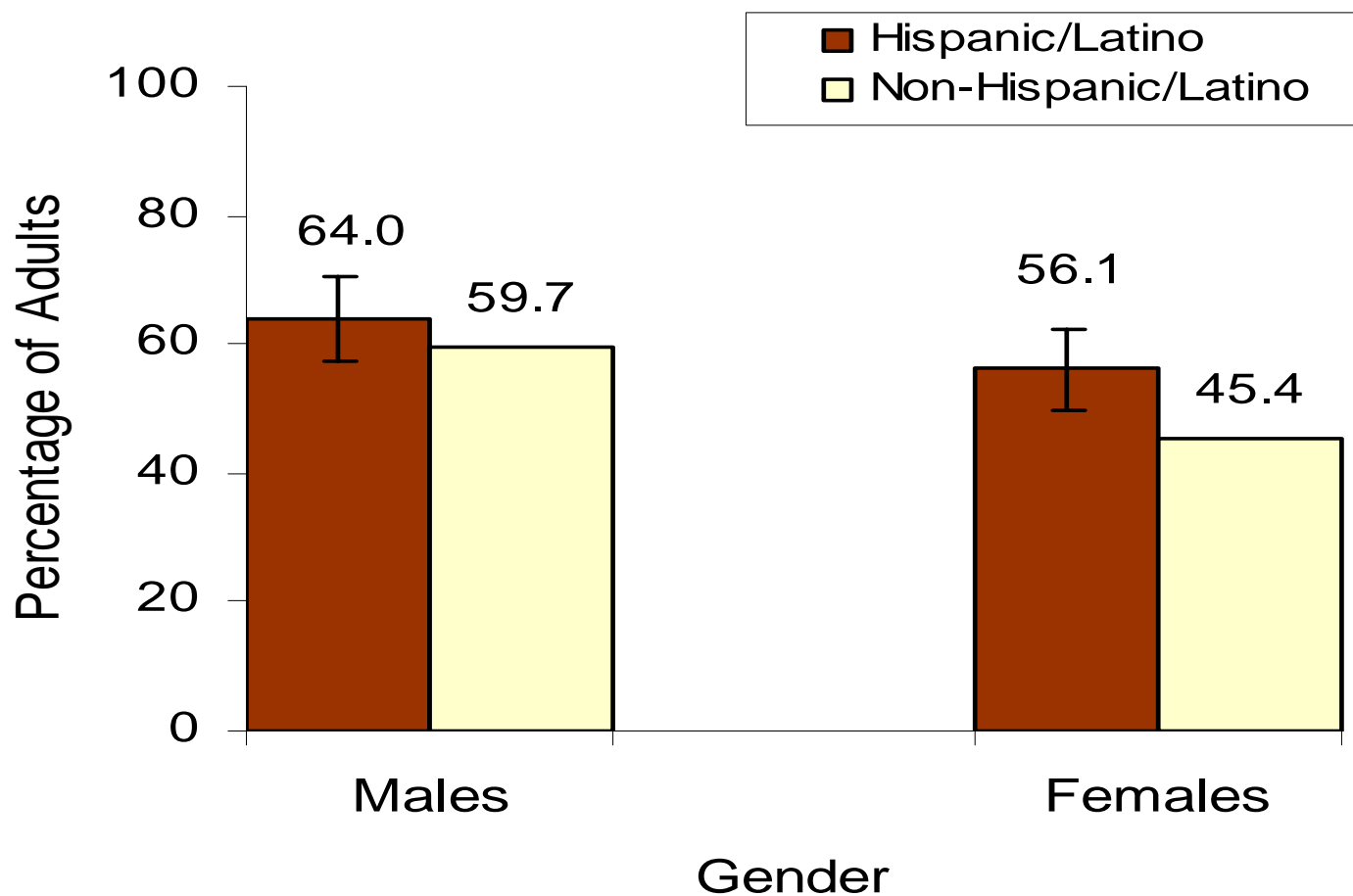
Percentage of Utah Hispanic/Latino Adults Who Reported No Leisure Time Physical Activity by Annual Income



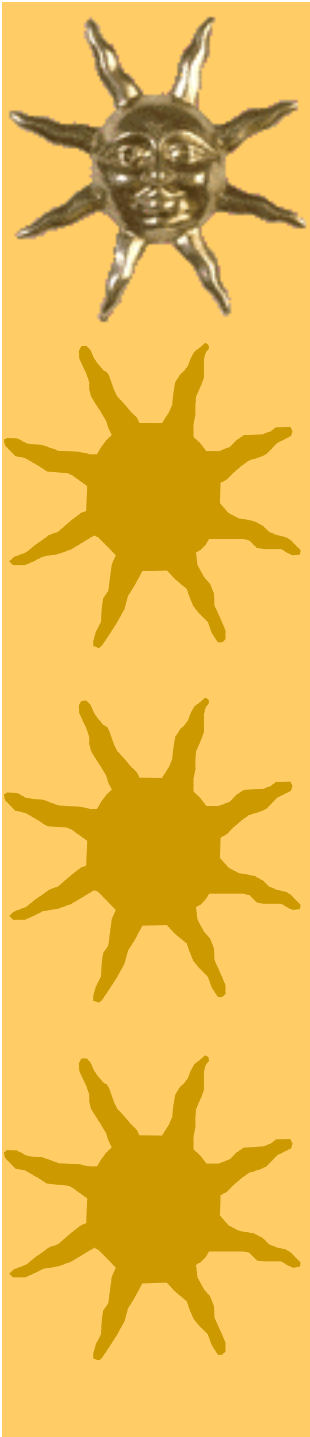
Source: Utah Hispanic Health Survey, 2001



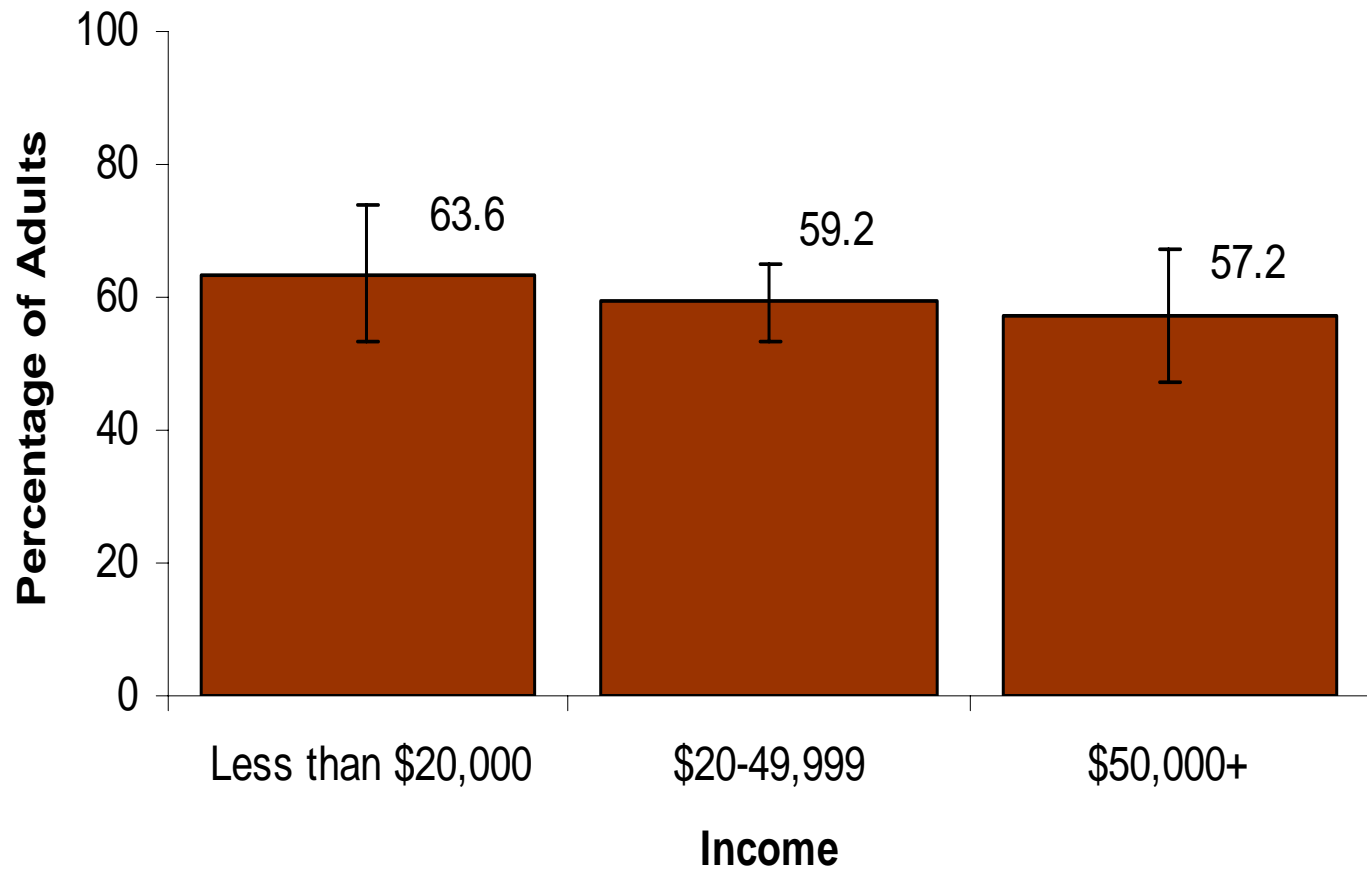
Percentage of Adults Who Were Overweight/Obese by Ethnicity and Gender



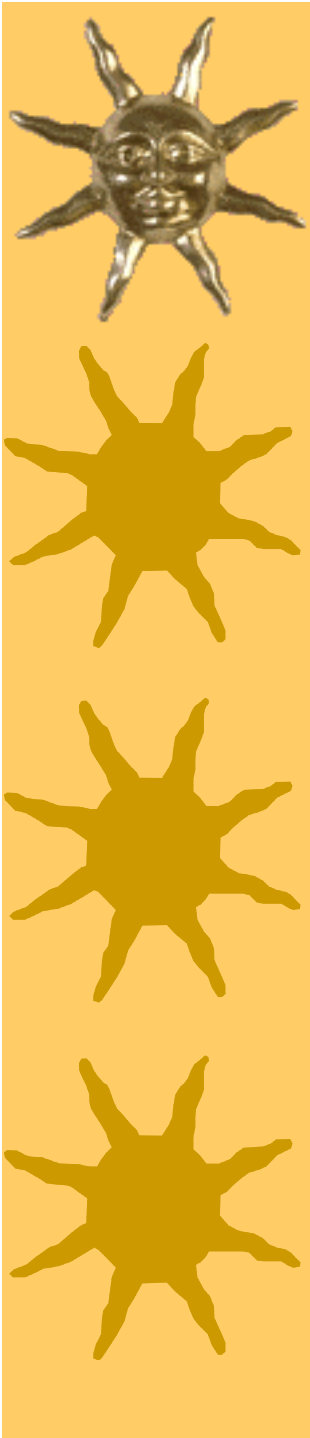
Source: 2001 Utah Hispanic Health Survey; BRFSS 2001



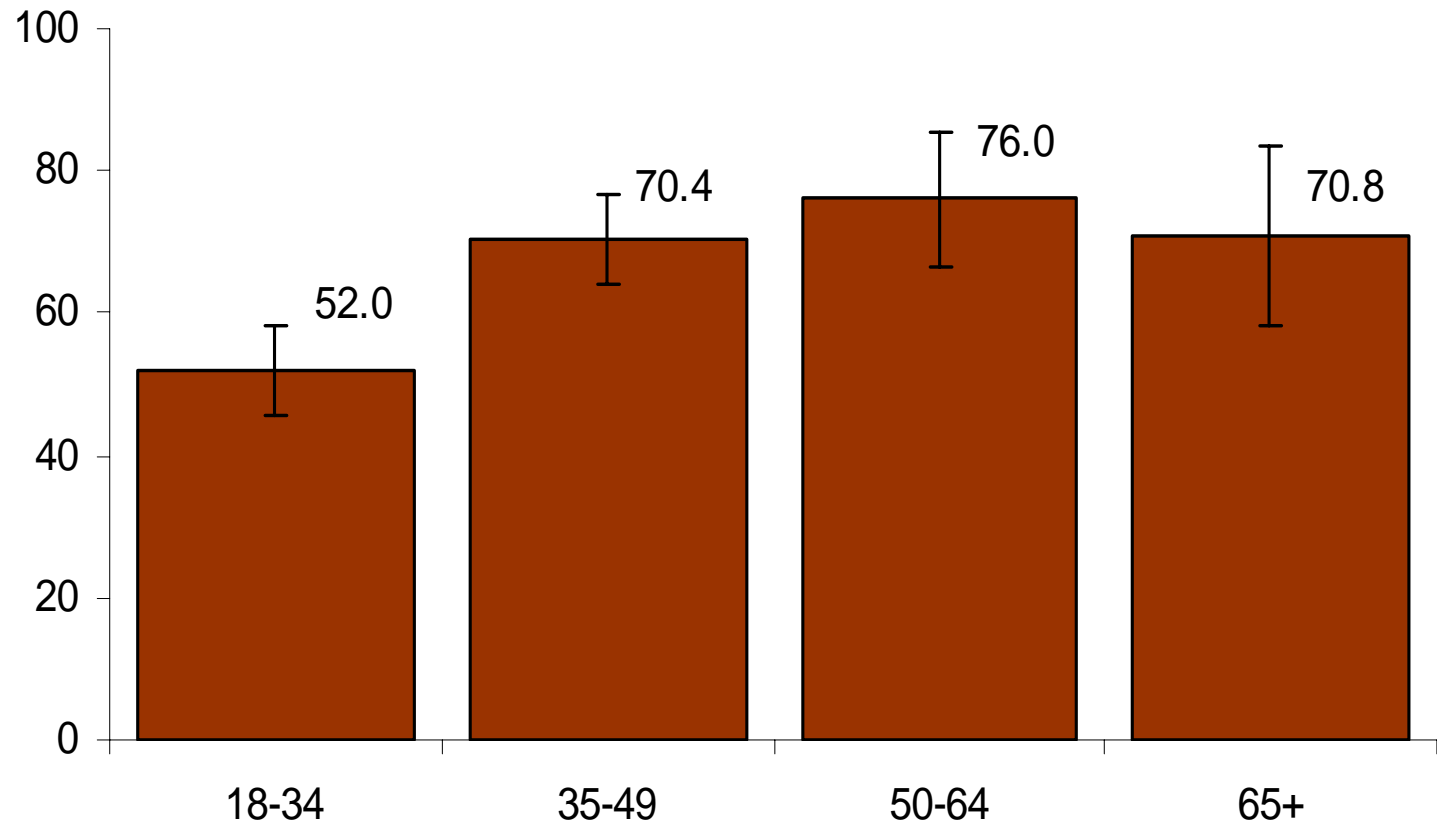
Percentage of Adults Who Were Overweight/Obese by Ethnicity and Income



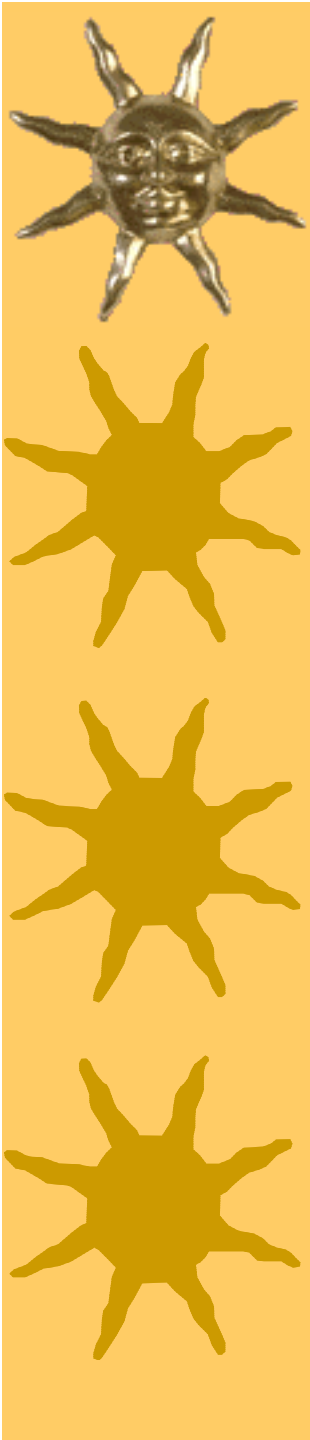
Source: 2001 Utah Hispanic Health Survey; BRFSS 2001



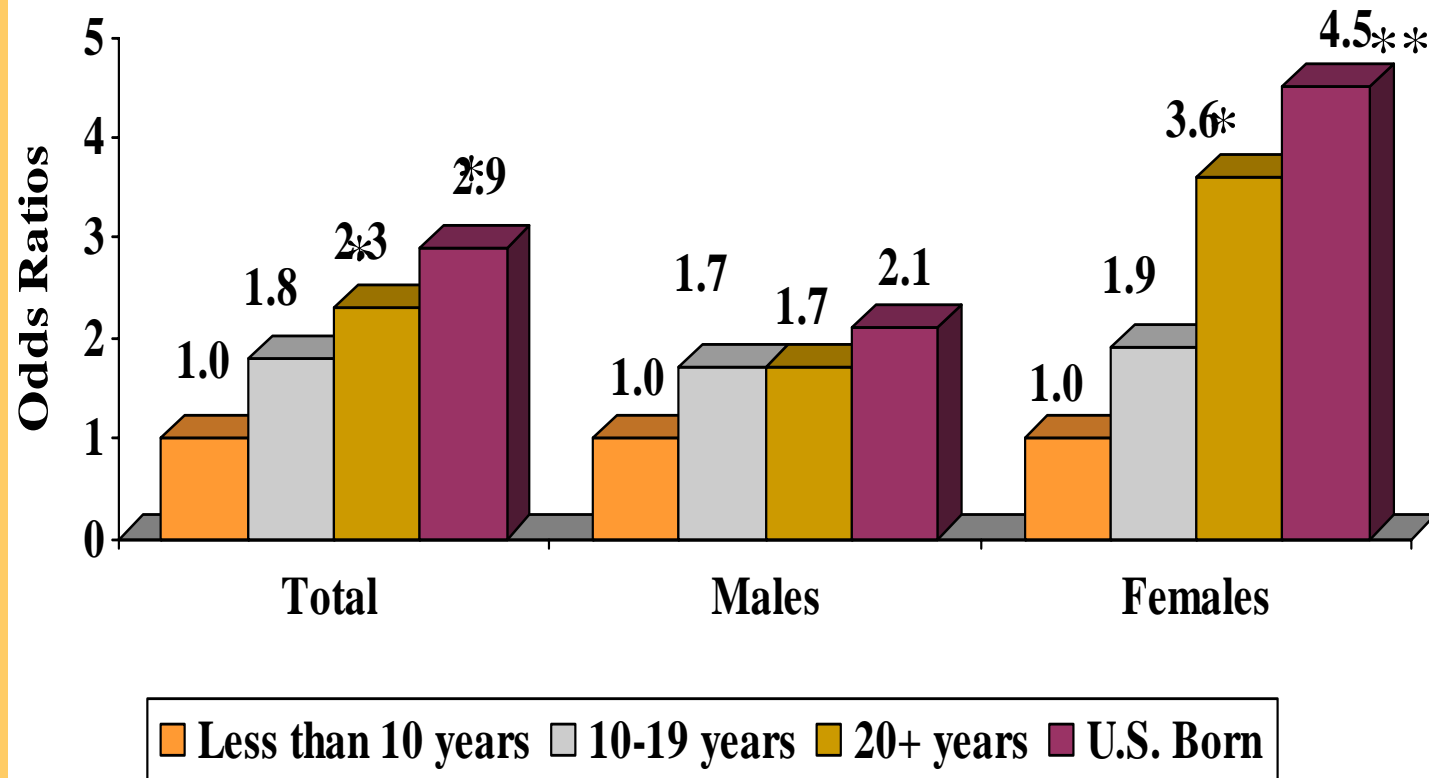
Percentage of Adults Who Were Overweight/Obese by Ethnicity and Age



Source: 2001 Utah Hispanic Health Survey; BRFSS 2001



Adjusted Odds Ratios for Effect of Birthplace/Duration of Residence on Obesity by Gender



Source: 2001 Utah Hispanic Health Survey

Adjusted for age, household income, health insurance, marital status, rural-urban residence, and physical activity status



Risk of Obesity in Utah Hispanic/Latino Population

- ★ Even after adjusting for SES, demographic and lifestyle variables, the risk of obesity increases with increasing acculturation
- ★ This impact of duration of residence/U.S.-born history was stronger for females than for males



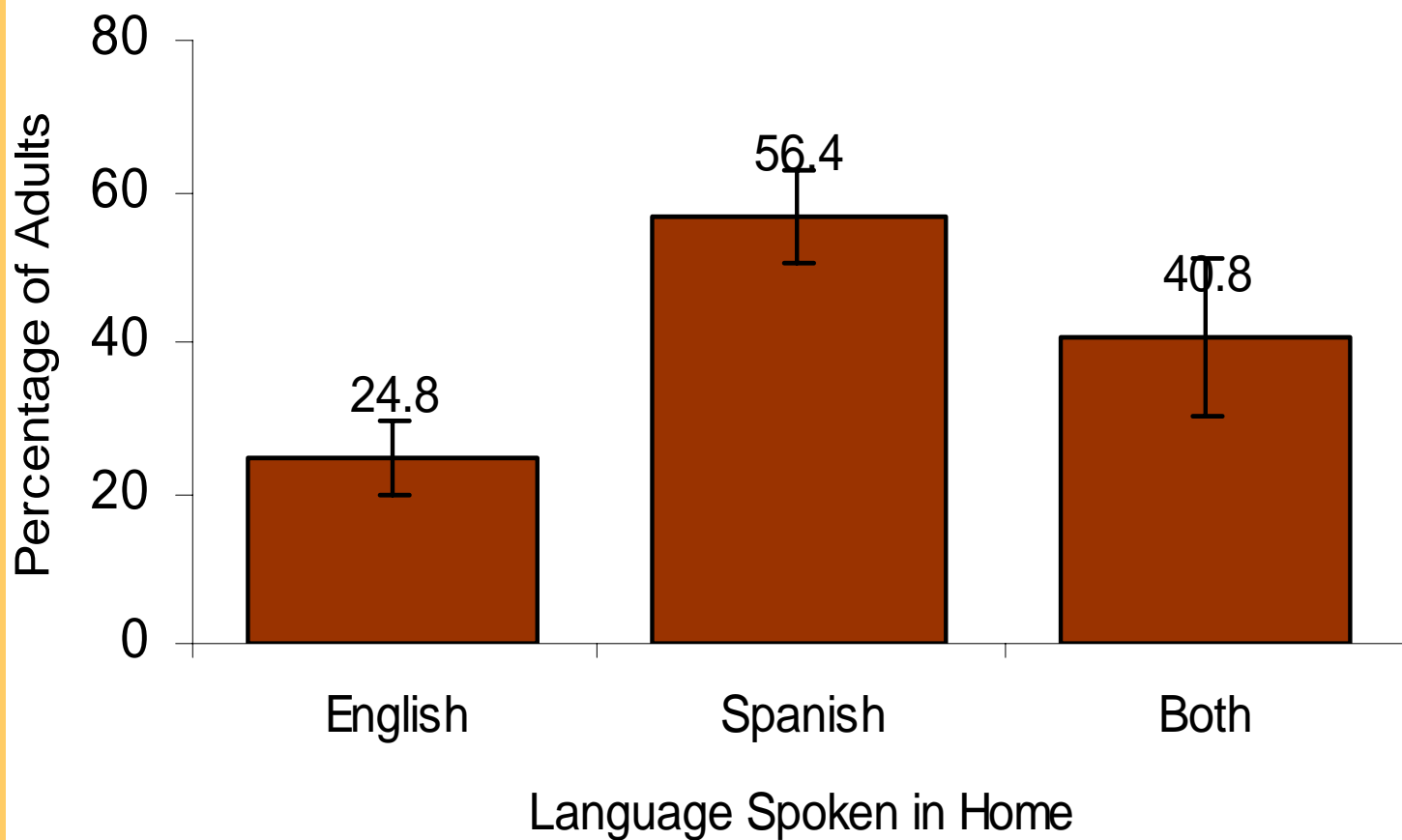
Insurance Issues



*Almost 45% of the adults had
no health insurance at
the time of the survey*

Source: 2001 Utah Hispanic Health Survey

*Percentage of Hispanic/Latino
Adults With No Insurance
Coverage by Language at Home*



Source: 2001 Utah Hispanic Health Survey



Prescriptions

14.0% of respondents said that, at least one time in past year, they needed prescription medicines but could not get them because of cost

Source: 2001 Utah Hispanic Health Survey



Pharmaceutical Issues



★ Pain pills may not be available in local pharmacies



★ Payment methods



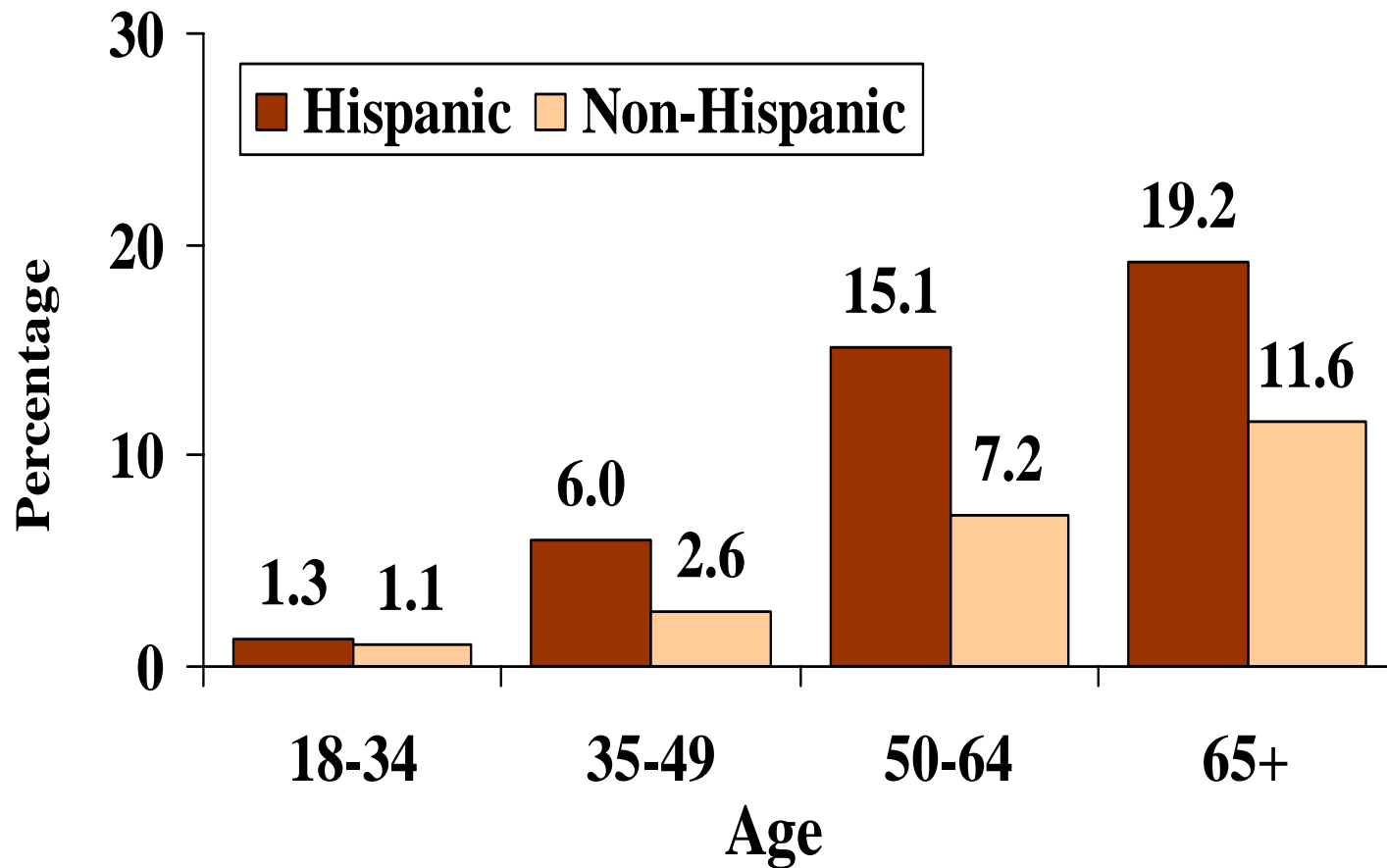
★ Language



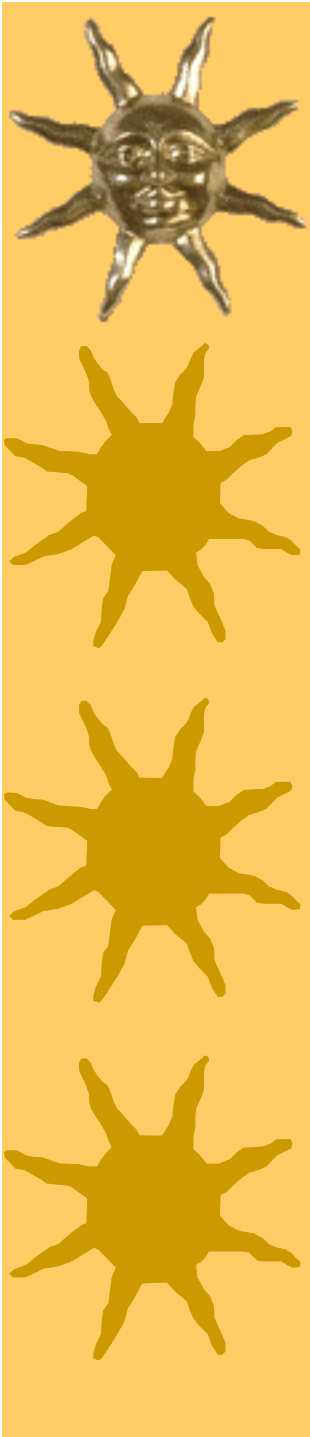
Percentage of U.S. Population Age 45 -74 With Diabetes

Non-Hispanic White	12.0
Non-Hispanic Black	19.3
Hispanic	22.9
<u>Source:</u> NHanesII, HHanes (NCHS)	

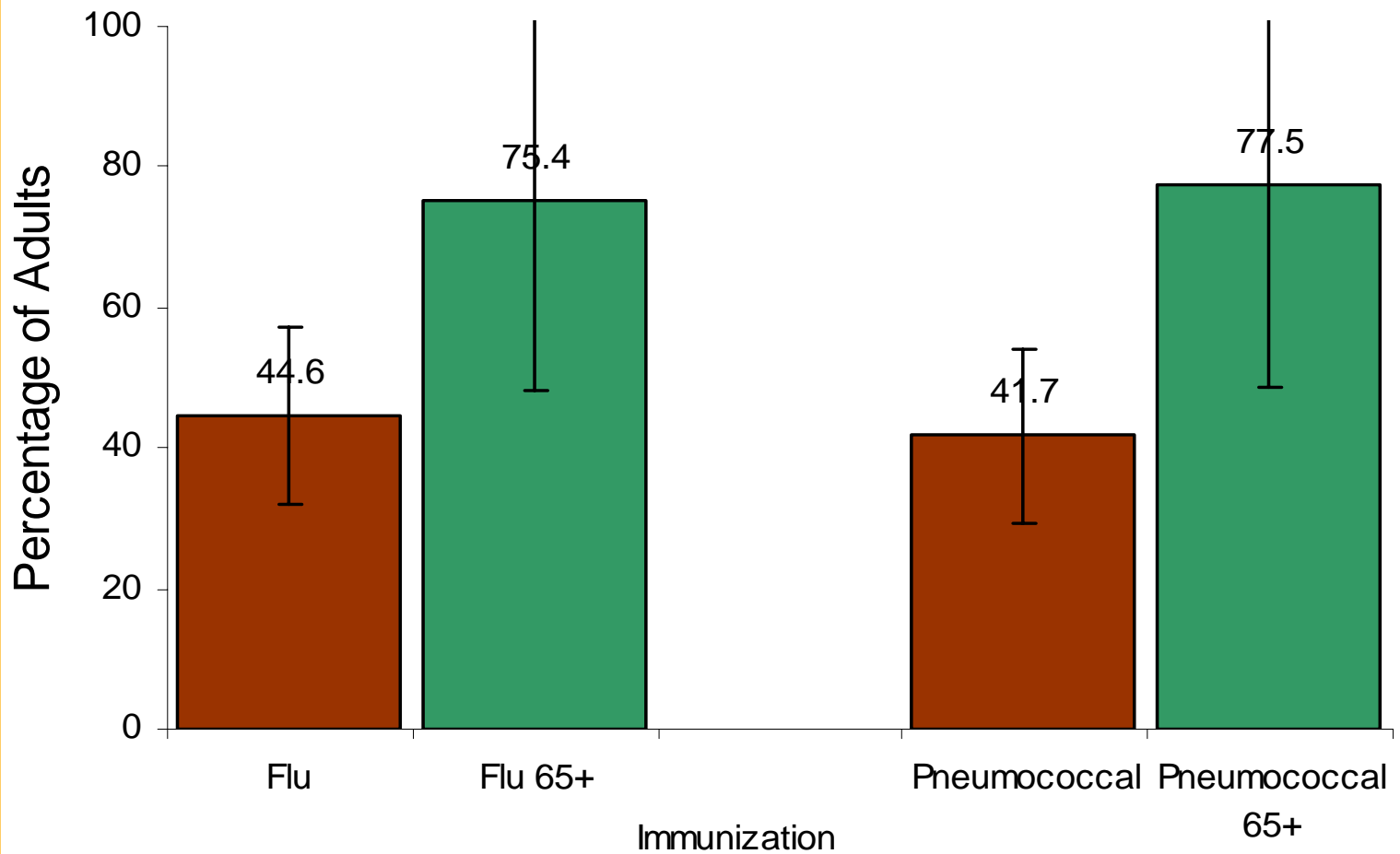
Percentages of Utah Adults With Diagnosed Diabetes by Age Group and Ethnicity



Source: 2001 Utah Hispanic Health Survey ; 2001 BRFSS



Percentage of Hispanic/Latino Adults With Flu Shot in Past 12 Months and Ever Had Pneumococcal Vaccination



Source: 2001 Utah Hispanic Health Survey



Conclusions

- ★ Our Hispanic/Latino population
 - Has higher risk of diabetes prevalence
 - Has higher risk of mortality from diabetes
 - Has mothers with higher risk of gestational diabetes
 - Is less likely to have access to care



Implications

- ★ We need to ensure adequate testing for early detection of diabetes and adequate care for those who are diagnosed
- ★ Lack of health insurance is likely to lead to a high proportion of Hispanic/Latino Americans with undiagnosed diabetes
- ★ Higher GDM in Hispanic/Latino mothers may lead to higher diabetes rates in their offspring

Contact Information



Brenda Ralls
Utah Diabetes Prevention and Control Program
bralls@utah.gov

Michael Friedrichs
Bureau of Health Promotion
mfriedrichs@utah.gov

<http://health.utah.gov/diabetes>