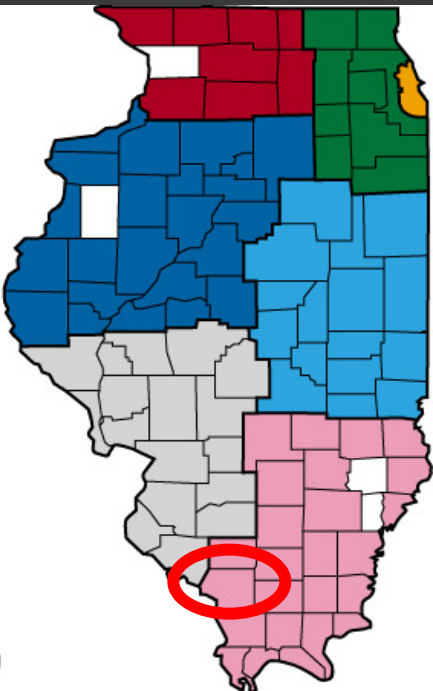


Assessment of Cardiovascular Risk Factors in Rural vs. Non-rural Adolescents

Public Health Implications for one Rural Illinois Community



Jackson County, IL

- Population: 58,838¹
- Predominantly rural; 110 persons per mi² (223.4 persons per mi² in IL)
- Jackson County IPLAN: cardiovascular health is #1 priority health problem¹.
- Percentage mortality from cardiovascular disease is consistently higher in Jackson County when compared with the leading causes of mortality in all of Illinois, with Jackson County having a higher percentage than the state in five of the years between 1990 and 1998².

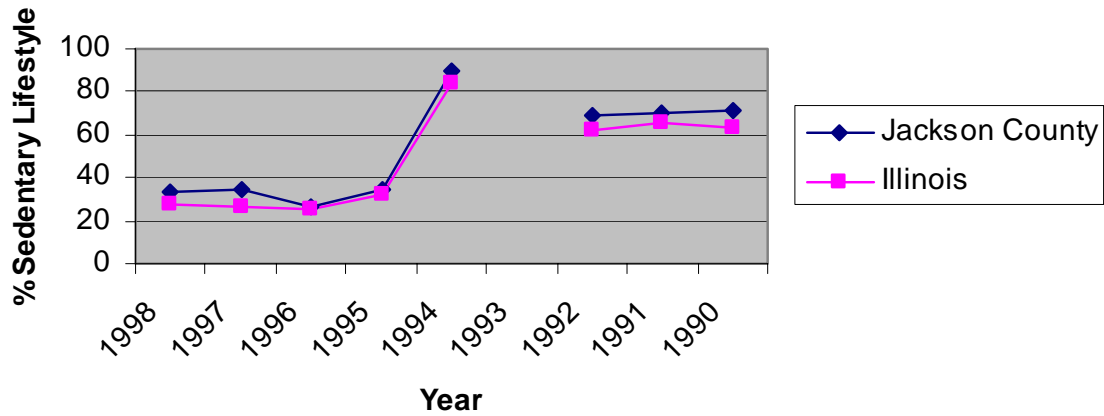
¹Source: <http://www.jchdonline.org>

²Source: <http://app.idph.state.il.us>

Jackson County, IL

- Jackson County has consistently higher percentages of cardiovascular risk factors than the rest of the state.
- According to IPLAN data, the obesity rate was an average of 3% higher than the rest of Illinois between 1990 and 1998.
- In the same time period, an average of 5% more people in Jackson County lived a sedentary lifestyle as compared with the rest of Illinois.
- ~47% of Jackson County's population is under the age of 25. This demographic makeup provides an opportunity to target cardiovascular disease prevention.

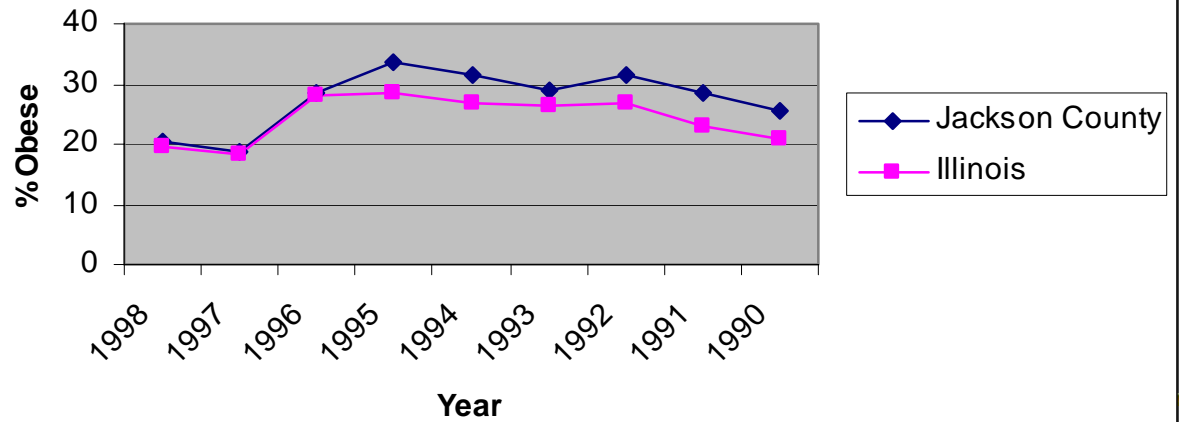
Sedentary Lifestyle



*1993 data not available

**Data derived from BRFSS data, which evaluates adults >18 years old

Obesity



Importance of Targeting Adolescents

- In one study, more than 80% of men and women who were obese in their mid-30s are obese in early adulthood³.
- Reversal of obesity was uncommon, with less than 15% of those who were obese at ages 20-22 becoming non-obese by ages 35-37.
- These findings suggest that prevention of obesity is critical, as studies have demonstrated limited success with obesity reversal. Studies have also shown that dietary and physical activity habits are developed in early adulthood, and that health status in later years may be determined by the health risk behaviors practiced in adolescence.⁴

3 McTigue, KM, et al. The Natural History of the Development of Obesity in a Cohort of Young U.S. Adults between 1981 and 1998.

Annals of Internal Medicine, 136(12),857-864.

4 Williams, Christine, et al. Cardiovascular Health in Childhood: A Statement for Health Professionals From the Committee on Atherosclerosis, Hypertension, and Obesity in the Young (AHOY) of the Council on Cardiovascular Disease in the Young, American Heart

Association. Circulation, 106(1),143-160.

YRBS Data Analysis-Methods

- Rural defined by population density
- According to US Census Bureau, Midwest defined as; ND,SD,NE,KS,MO,IA,MN,WI,MI,IL,IN,OH
- National dataset; 13,600 cases were included in the analysis. Of these, 11,951 were non-rural, 1,649 were rural. The Midwest dataset included 2443 cases, of which 2095 were non-rural and 348 were rural.
- Participants were grouped by responses to questions regarding self-described weight status, age, gender, race, participation in physical education, the amount of time spent in toning, moderate, and vigorous exercise and hours per day spent watching television.
- Frequencies and Crosstabs used for data analysis

MIDWEST RURAL BODY IMAGE (SELF-PERCEPTION)

PERCEIVE OVERWIGHT

30.5%



Results

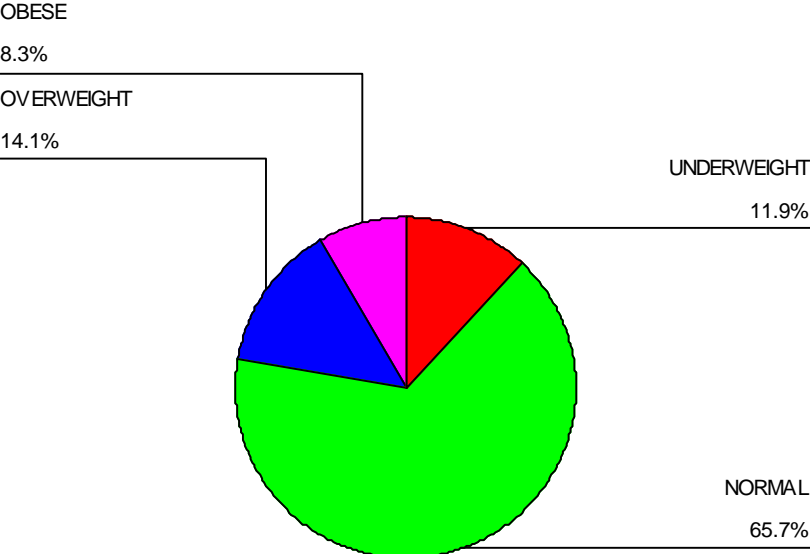
MIDWEST NONRURAL BODY IMAGE (SELF-PERCEPTION)

PERCEIVE BODY AS OVE

30.4%

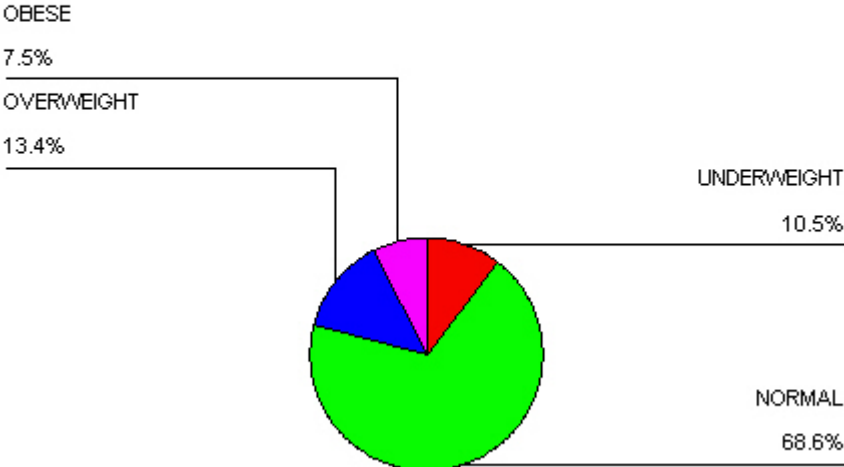


MIDWEST RURAL BMI



Results

MIDWEST NONRURAL BMI



Vigorous Exercise-United States

	RURAL	NON RURAL	Pearson Chi-square
Females			.982
No vigorous Exercise	20.0%	20.0%	
1-3 days	35.6%	35.6%	
4 or more days	44.4%	44.1%	
Males			.000
No Vigorous Exercise	7.7%	11.8%	
1-3 days	23.4%	27.6%	
4 or more days	68.9%	60.6%	

Vigorous Exercise-Midwest

	RURAL	NON RURAL	Pearson Chi-square
Females			.002
No vigorous Exercise	10.3%	19.2%	
1-3 days	45.7%	34.3%	
4 or more days	44.0%	46.5%	
Males			.572
No Vigorous Exercise	9.9%	10.2%	
1-3 days	30.2%	26.3%	
4 or more days	59.9%	63.5%	

Moderate Exercise-United States

	RURAL	NON RURAL	Pearson Chi-square
Females			.018
No Moderate exercise	29.4%	29.7%	
1-3 days	37.3%	41.4%	
4 or more days	33.3%	28.9%	
Males			.000
No Moderate Exercise	25.3%	30.4%	
1-3 days	33.2%	34.9%	
4 or more days	41.4%	34.7%	

Moderate Exercise-Midwest

	RURAL	NON RURAL	Pearson Chi-square
Females			.096
No Moderate exercise	24.6%	30.7%	
1-3 days	49.2%	41.1%	
4 or more days	26.2%	28.2%	
Males			.087
No Moderate Exercise	25.3%	28.4%	
1-3 days	43.2%	34.2%	
4 or more days	37.3%	37.3%	

TV Viewing-United States

	RURAL	NON RURAL	Pearson Chi-square
Females			.001
<1 hour/day	25.4%	24.6%	
1-3 hours/day	43.8%	38.3%	
4 or more hours/day	30.8%	37.2%	
Males			.000
<1 hour/day	20.2%	19.0%	
1-3 hours/day	44.9%	36.5%	
4 or more hours/day	34.9%	44.5%	

TV Viewing-Midwest

	RURAL	NON RURAL	Pearson Chi-square
Females			.808
<1 hour/day	25.7%	26.9%	
1-3 hours/day	41.2%	42.3%	
4 or more hours/day	33.2%	30.8%	
Males			.014
<1 hour/day	19.3%	21.1%	
1-3 hours/day	50.3%	38.4%	
4 or more hours/day	30.4%	40.5%	

Conclusions and Implications for Jackson County Public Health

- Similar percentages of rural and non-rural adolescents perceive themselves as overweight (a subjective measure of obesity)
- No statistically significant difference in percentage of adolescents who are obese or overweight by BMI (objective measure of obesity)
- In evaluating objective measures of sedentary lifestyle, adolescents in rural areas appear to be less sedentary than their non-rural counterparts nation-wide. To a lesser degree, the same is true in the Midwest
- Higher BMI and increased perception of body weight cannot be completely attributed to physical activity level
- Future adolescent health initiatives in Jackson county and other Midwest rural communities must address other cardiovascular risk factors in addition to sedentary lifestyle.