

Knox County Health at a Glance

Cholesterol Awareness in Knox County, TN

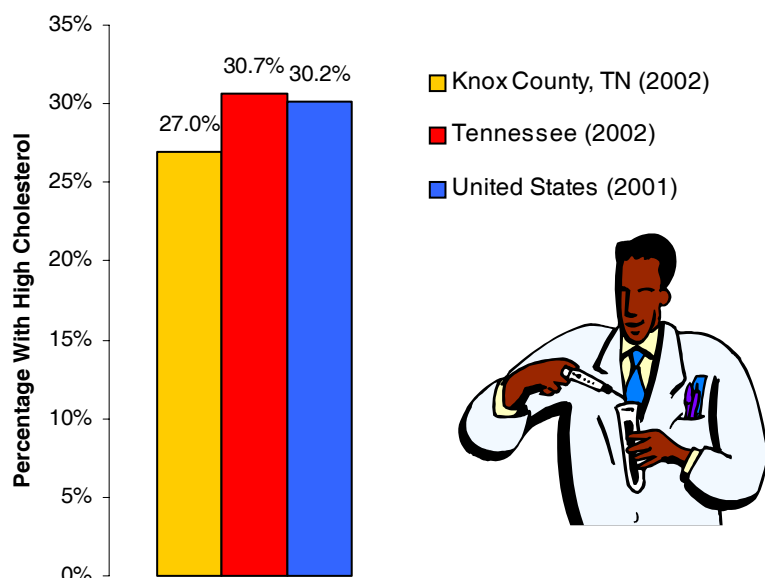
Approximately one out of three American (30.2%) and Tennessee (30.7%) adults have been diagnosed with high cholesterol (CDC, 2003). The American Heart Association (AHA) identifies high cholesterol (hypercholesterolemia) as a major risk factor for coronary heart disease and stroke, the first and third leading causes of death among adults in the United States (AHA Website, 2003). *Healthy People 2010 (HP2010)*, an extensive report by the Department of Health and Human Services that establishes national goals for health promotion and disease prevention, recommends that the number of adults with high blood cholesterol should be reduced to 17.0% by the year 2010. *HP 2010* also recommends that following a diet low in fat, increasing physical activity, and maintaining weight can lower the risk for hypercholesterolemia in adults (USDHHS, 2000). Early identification and treatment is considered key to reducing the risk of cardiovascular disease (US Preventive Services Task Force, 1996). Toward this end, *HP 2010* has established the objective that 80.0% of adults should have their cholesterol level checked at least once every five years.

Purpose

The purpose of this publication is to report the prevalence of elevated or high cholesterol among Knox County adults. Specific risk factors that contribute to high cholesterol will also be examined. Finally, the proportion of Knox County adults that comply with the recommendation that a blood cholesterol test be done every five years will be examined. It is hoped that this information will assist health care providers and prevention specialists to better target interventions to at-risk segments of the adult population. Data in this report will serve as baseline measures for future cholesterol surveillance. The methodology used to create this report can be found on page 4.

HIGH CHOLESTEROL AMONG KNOX COUNTY ADULTS

Figure 1. Percent of Adults Diagnosed with High Cholesterol: A Comparison of Local, State, and National Prevalence



Source: 2002 Knox County Behavioral Risk Factor Survey and the Behavioral Risk Factor Survey

Figure 1 shows a comparison of the prevalence of high cholesterol among adults in Knox County, the state of Tennessee, and the nation. The data were drawn from the national/state Behavioral Risk Factor Survey, and the 2002 Knox County Behavioral Risk Factor Survey ($n = 5,005$ adults). Respondents were asked if a health care provider had ever “diagnosed them with high cholesterol.”

In 2002, Knox County adults (27.0%) had a lower prevalence of high cholesterol than either Tennessee in 2002 (30.7%) or the nation (30.2%) in 2001 (the last available national estimate). However, Knox County’s prevalence still exceeds the national *HP 2010* objective that no more than 17.0% of adults will be diagnosed with high cholesterol.

Table 1. Prevalence of Knox County Adults Diagnosed with High Cholesterol: 2002

	% of Population	Confidence Intervals
TOTAL	27.0	(25.9-28.1)
Gender		
Males	27.6	(26.2-28.9)
Females	26.5	(25.2-27.8)
Age		
18-24	3.9	(2.1-5.6)
25-34	11.4	(9.2-13.6)
35-44	22.2	(19.7-24.8)
45-54	32.8	(30.1-35.6)
55-64	49.4	(45.8-53.0)
65-74	48.7	(44.3-53.0)
75-84	46.9	(41.6-52.2)
85+	28.7	(17.1-40.2)
Ethnicity/Race		
White	26.9	(25.7-28.0)
African-American	27.0	(22.4-31.7)
Other	29.2	(23.8-34.7)
Household Income		
<\$15,000	32.3	(28.2-36.4)
\$15K-\$24,999	27.7	(24.8-30.6)
\$25K-\$34,999	25.1	(22.0-28.1)
\$35K-49,999	26.7	(24.0-29.4)
\$50K+	25.8	(23.5-28.1)
Education		
< High School	30.1	(26.2-34.0)
High School	29.5	(27.2-31.7)
Some College	24.5	(22.4-26.6)
College Graduate	25.6	(23.6-27.5)
Weight*		
Normal Weight	22.2	(20.6-23.8)
Overweight	28.1	(26.0-30.1)
Obese	33.4	(30.6-36.1)
Physical Activity Level*		
Recommended	23.6	(21.4-25.8)
Insufficient	27.6	(25.4-29.7)
Inactive	30.4	(26.8-34.0)
Have a Personal Physician		
Yes	27.6	(26.4-28.8)
No	21.7	(17.9-25.5)
Eat 5 Fruits & Vegetables a Day		
Yes	24.6	(22.3-26.9)
No	27.3	(25.5-29.0)
Have Health Insurance		
Yes	27.9	(26.7-29.1)
No	17.8	(13.3-22.4)

* See Table Notes in the methodology section on Page 4.

As previously mentioned, one out of four Knox County adults (27.0%) have been told they have high cholesterol by a physician or other health care provider; this statistic represents an estimated 80,143 adults in the general Knox County population. As seen in Table 1, adults with a personal physician and adults that have health insurance were more likely to report that they had been diagnosed with high cholesterol than adults not having a personal physician or health insurance. No clear trends emerged for gender, race/ethnicity, household income, or compliance with the recommendation for five fruits and vegetables per day.

A more detailed examination of the data in Table 1 uncovers three clear trends regarding high cholesterol diagnosis:

Prevalence increases with age

The prevalence for high cholesterol increases with age. Only 3.9% of adults in the 18-24 years of age range had high cholesterol. In contrast, approximately one out of two (49.4%) adults in the 55 to 64 years of age group had been diagnosed with high cholesterol.

Prevalence increases with weight

The prevalence for high cholesterol increases with weight. Obese adults (33.4%) were significantly more likely to report having been diagnosed with high cholesterol compared to adults of normal weight (22.2%). Statistically, this can be interpreted as obese adults being 80% more likely to be diagnosed with high cholesterol.

Prevalence increases with sedentary lifestyle

The prevalence of high cholesterol increases as physical activity decreases. Adults that reported having no physical activity in the past week (30.4%) had significantly higher prevalence of high cholesterol compared to adults that met the CDC’s guidelines for weekly exercise (23.6%). Statistically, this means that inactive adults are 50% more likely to have high cholesterol compared to adults that meet the CDC recommended guidelines for weekly fitness activities.

Source: 2002 Knox County Behavioral Risk Factor Survey

CHOLESTEROL SCREENINGS

In 2001, it was estimated that 73.4% of American adults and 69.5% of Tennessee adults had a blood cholesterol screening within the past five years (Ahluwalia et. al, 2003). Table 2 displays the proportion of Knox County adults that reported they had a blood cholesterol screening in the past five years. Three out of four (77.4%) Knox County adults reported that they had a cholesterol test within the past five years--higher than the national and state averages, and approaching the *HP 2010* objective of 80%.

The following trends are noted in Table 2:

Cholesterol screening increases with age

As Knox County adults age, they are more likely to have had a cholesterol test within the past five years. Those in the 85+ age group (87.8%) were significantly more likely to report that they had a cholesterol screen in the past five years compared to those in the 18 to 24 years of age group (51.5%).

Cholesterol screening increases with weight

The more Knox County adults weigh, the more likely they are to have had a cholesterol test in the past 5 years. Obese adults (81.4%) were significantly more likely to have had a cholesterol test within the past 5 years compared to normal weight adults (74.9%).

Other findings from Table 2:

Physically inactive adults (70.3%) were less likely than adults meeting the CDC exercise recommendations (78.9%) to report having had a cholesterol test within the past five years.

Respondents with a personal physician (80.7%) were more likely to have had a cholesterol test in the last five years compared to respondents with no personal physician (59.6%).

Respondents with health insurance (78.9%) were more likely to have a cholesterol test in the past five years than respondents with no insurance (61.1%).

No clear trends emerged for gender, ethnicity/race, household income, education, or if the adults met the recommendation for eating five fruits and vegetables per day.

Table 2. Percentage of Knox County Adults Having Recommended Cholesterol Screening in Past 5 Years: 2002

Had Cholesterol Screen in Past 5 Years	% of Population	Confidence Intervals
	77.4	(76.2-78.6)
Gender		
Males	75.8	(73.9-77.8)
Females	78.9	(77.5-80.3)
Age		
18-24	51.5	(46.9-56.1)
25-34	63.6	(60.2-67.0)
35-44	78.6	(76.0-81.2)
45-54	85.8	(83.7-87.9)
55-64	91.8	(89.8-93.8)
65-74	91.4	(88.7-94.1)
75-84	92.4	(89.6-95.3)
85+	87.8	(79.3-96.3)
Ethnicity/Race		
White	77.3	(76.0-78.5)
African-American	76.2	(71.3-81.1)
Other	78.6	(73.7-83.4)
Household Income		
<\$15,000	71.5	(67.1-75.8)
\$15K-\$24,999	72.5	(69.4-75.6)
\$25K-\$34,999	76.8	(73.4-80.1)
\$35K-49,999	78.4	(75.4-81.3)
\$50K+	82.8	(80.4-85.2)
Education		
Less than High School	65.4	(60.6-70.2)
High School	74.9	(72.4-77.3)
Some College	77.5	(75.3-79.7)
College Graduate	81.3	(79.4-83.2)
Physical Activity*		
Recommended	78.9	(76.8-81.0)
Insufficient	77.0	(74.8-79.1)
Inactive	70.3	(65.9-74.7)
Weight*		
Normal Weight	74.9	(73.2-76.7)
Overweight	78.5	(76.3-80.8)
Obese	81.4	(78.6-84.1)
Five Fruits & Vegetables		
Yes	77.0	(74.5-79.6)
No	77.0	(75.3-78.7)
Have a Personal Physician		
Yes	80.7	(79.4-81.9)
No	59.6	(55.7-63.6)
Health Insurance		
No Insurance	61.1	(56.4-65.7)
Have Insurance	78.9	(77.7-80.1)

*See Table Notes in the methodology section on Page 4.

Source: 2002 Knox County Behavioral Risk Factor Survey

SUMMARY

The overall level of cholesterol awareness among adults in Knox County is encouraging. Knox County adults have a lower prevalence of diagnosed high cholesterol compared to the state or the nation. In addition, Knox County's rate of adults having a cholesterol screening within the past five years is higher than the rate for the state or the nation, indicating that Knox County's lower prevalence rate for high cholesterol may not be simply due to inadequate testing. Despite these findings, it is important to remember that the prevalence of Knox County adults reporting a diagnosis of high cholesterol (27.0%) is still far removed from the *Healthy People 2010* national objective of 17.0%.

This data also reveals groups in our community who have higher prevalence of high cholesterol, including: (1) adults over the age of 55 years, (2) obese adults, and (3) physically inactive adults. This presents an opportunity for health care providers and prevention specialists to target these groups to ensure early diagnosis and the onset of treatment.

Based on the results of this analysis, the following two recommendations are made:

- While nothing can be done about aging, health care providers and community health education specialists should encourage all adults in Knox County to exercise and maintain their weight for the primary prevention of hypercholesterolemia.
- For secondary prevention, health care providers and community health educators should continue to stress cholesterol tests for all adults, but with a special emphasis on the following groups that have the lowest level of cholesterol screenings:
 1. Normal weight adults
 2. Physically inactive adults
 3. Younger adults (especially under the age of 45 years)
 4. Adults without a personal physician or health insurance

It should be remembered that one out of five Knox County adults (22.6%--an estimated 67,108 people) reported that they did not have a cholesterol screen within the past five years.

REFERENCES

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METHODOLOGY

This report presents prevalence data from the 2002 Knox County Behavioral Risk Factor Survey, a population-based telephone survey that collected health information from adults (18 or older) in Knox County, TN ($n = 5,005$) from November 2001 to September 2002 and national and state data from the 2002 Behavioral Risk Factor Survey available at www.cdc.gov/brfss. Data trends were analyzed using logistic regression.

* *Table Notes for Tables 1 & 2:*

1. Physical activity is based on the CDC recommendations for physical activity of moderate exercise for 30 minutes at least 5 or more days per week or vigorous exercise for 20 minutes at least 3 or more days per week. Those meeting the requirements were classified as "recommended," those doing some physical activities in the past week but not meeting the guidelines were classified as "insufficient," and those not participating in physical activities were classified as inactive.
2. Obesity and overweight were measured using Body Mass Index (BMI). BMI was established in 1997 by the World Health Organization as an international standard to study body weight. BMI is calculated by dividing a person's weight in pounds by height in inches, then dividing that answer again by height in inches and multiplying the result by 703. A BMI of 24 or less is normal; overweight is 25-30; and obese is greater than 30.

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