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Milk consumption rates and student attitudes, selected schools, Hamilton County, Tennessee, 1964

Robert A. Childress

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To the Graduate Council:

I am submitting herewith a thesis written by Robert A. Childress entitled "Milk consumption rates and student attitudes, selected schools, Hamilton County, Tennessee, 1964." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Extension.

Lewis H. Dickson, Major Professor

We have read this thesis and recommend its acceptance:

Stanton P. Parry, Charles L. Cleland

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

December 1, 1965

To the Graduate Council:

I am submitting herewith a thesis written by Robert A. Childress entitled "Milk Consumption Rates and Student Attitudes, Selected Schools, Hamilton County, Tennessee, 1964." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agricultural Extension.

Lewis H. Dickson
Major Professor

We have read this thesis and recommend its acceptance:

Stanton P. Parry

Charles L. Cleland

Accepted for the Council:

Hilton A. Smith
Dean of the Graduate School

MILK CONSUMPTION RATES AND STUDENT ATTITUDES,
SELECTED SCHOOLS, HAMILTON COUNTY,
TENNESSEE, 1964

A Thesis
Presented to
the Graduate Council of
The University of Tennessee

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

by
Robert A. Childress
December 1965

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CHAPTER I

INTRODUCTION

The decline which has occurred in national per capita milk consumption since 1947 is of concern to dairy farmers, milk dealers, consumers, educators, legislators, and other public officials. Although the estimated per capita consumption of milk and milk products only declined from 629 pounds in 1963 to 627 pounds in 1964, there was a 10 pound average annual decline from 1956 through 1963.

This continuing decline in milk consumption may be due to several different factors: (1) in recent years, dairy products have had increasing competition from lower priced vegetable fats as seen in Table I. The per capita consumption of butter decreased from 17 pounds in 1940 to 6.8 pounds in 1964--a decrease of 10.2 pounds. The per capita consumption of margarine increased from 2.4 pounds in 1940 to 9.7 pounds in 1964--an increase of 7.3 pounds. The per capita consumption of vegetable shortening increased from 9 pounds in 1940 to 13.6 pounds in 1964--an increase of 4.6 pounds; (2) Table I shows that during this same time, consumers have been making an attempt to limit fat intake. The per capita consumption of total milk fat solids decreased from 32.5 pounds in 1940 to 23.3 pounds in 1964--a decrease of 9.2 pounds. Total non-fat milk solids increased from 38.1 pounds in 1940 to 41.7 pounds in 1964--an increase of 3.6 pounds. In the Chattanooga Marketing Area (Hamilton, Bradley, and McMinn Counties in

TABLE I
 APPARENT CIVILIAN PER CAPITA CONSUMPTION OF MAJOR FOOD COMMODITIES: 1940 TO 1964

Commodity	Pounds							
	1940	1950	1955	1960	1961	1962	1963	1964 ^a
Total milk fat solids	32.5	29.4	27.2	24.5	23.9	23.7	23.3	23.3
Total non-fat milk solids	38.1	43.7	44.6	43.2	42.5	42.0	41.4	41.7
Butter (actual weight)	17.0	10.7	9.0	7.5	7.4	7.1	6.8	6.8
Margarine (actual weight)	2.4	6.1	8.2	9.4	9.4	9.3	9.3	9.7
Shortening	9.0	11.0	11.5	12.6	12.8	13.4	13.3	13.6

^aPreliminary.

Source: United States Bureau of Census, Statistical Abstract of the United States 1965.
 (Washington, D. C.: Government Printing Office, 1965), p. 85.

Tennessee), the per capita consumption of fluid cream decreased from 14 pounds in 1960 to 12 pounds in 1964--a decrease of 2 pounds in the past four years (13)*. This loss was partially overcome by an increase in the use of low fat dairy products. In the Chattanooga Marketing Area, the per capita consumption of fluid skim milk products increased from 45 pounds in 1960 to 50 pounds in 1964--an increase of 5 pounds in the past four years; (3) another factor that affects per capita milk consumption is the rapid change in the composition of the population as seen in Table II. There has been a large increase in the younger age group of the population, especially in the 5 to 13 year age group--an age group which is known to have a high rate of milk consumption. In 1960, this group made up 18 percent of the total population, exceeded in number only by the 35 to 49 year age group which made up 19 percent of the total population. Population projections by Bureau of the Census, shown in Table II, indicates that by 1980, the 5 to 13 year age group will comprise 19 percent of the total population--an increase of 16 million over the 1960 census. There are differences in consumption even within groups. For example: children between the ages of 5 to 13 years are normally good consumers of milk but there is still a discrepancy. Boys are generally steady consumers of milk but girls tend to drink less milk as they get older; and (4) the rate of employment and per capita income of a community may also affect milk consumption.

*Numbers in parentheses refer to numbered references in the bibliography; those after the colon are page numbers.

TABLE II
 POPULATION BY AGE GROUPS, SELECTED YEARS, 1940-1980^a

Year	Numbers in Millions								
	Age Groups								
	All Ages Total	Under 5	5-13	14-17	18-21	22-34	35-49	50-64	65 and Over
1940	132	11	20	10	10	28	27	18	9
1950	151	16	22	8	9	31	31	22	12
1960	179	20	33	11	9	29	35	25	17
1970 ^a	214	25	39	16	14	35	35	30	20
1980 ^a	261	33	49	18	17	49	36	33	25

Percent Increase Over Preceding Census									
1940	7	-8	-10	4	8	11	10	24	36
1950	14	53	12	-13	-10	9	15	21	36
1960	19	25	46	33	3	-5	14	16	35
1970 ^a	19	24	18	39	55	20	1	19	21
1980 ^a	22	30	28	17	21	41	3	10	22

TABLE II (continued)

Year	Percent of Population								
	Age Groups								
	All Ages Total	Under 5	5-13	14-17	18-21	22-34	35-49	50-64	65 and Over
1940	100	8	15	7	7	21	20	14	7
1950	100	11	15	6	6	20	20	14	8
1960	100	11	18	6	5	16	19	14	9
1970 ^a	100	12	18	7	7	16	16	14	9
1980 ^a	100	13	19	7	7	19	14	13	9

^a1970-1980, projected census.

Source: United States Bureau of Census, United States Census of Population: 1960 (Washington, D. C.: Government Printing Office, 1962), pp. 73-74; United States Bureau of Census, Current Population Reports, Series P-25, No. 241 (Washington, D. C.: Government Printing Office, 1962); Ibid., No. 189.

Table III shows that unemployment in the Chattanooga Marketing Area has been decreasing since 1962. In 1957, the per capita annual income for Hamilton County was \$1,829 as noted in Table III. In 1962, it was \$2,073--an increase of \$244. For every 1 percent increase in income, an increase of 0.16 percent in the consumption of fluid milk and cream is to be expected (2:17). Thus milk consumption is not very responsive to income changes.

One of the challenging problems in comparing milk consumption is that the apparent rates of consumption in individual markets may differ greatly from national consumption rates. Since 1957, the national per capita consumption of all fluid milk products has been declining. In contrast Table IV indicates the annual per capita consumption of all fluid milk in the Chattanooga Marketing Area increased from 265 pounds in 1957 to 279 pounds in 1964. Milk consumption per capita is increasing in all the Tennessee markets, with the exception of Memphis. Many markets other than those in Tennessee are decreasing in per capita milk consumption; however, even with this decreased consumption rate these out-of-state markets have a higher consumption rate than any of the Tennessee markets. An increase in consumption of milk in the Chattanooga Marketing Area could result in better health and nutrition of the people in the community. Increased sales would decrease the amount of surplus milk on the local market, resulting in greater economic returns to the milk producers. Increased sales would also result in greater economic returns to the milk processors. The total economy of

TABLE III
 PERCENT OF UNEMPLOYMENT AND PER CAPITA INCOME, HAMILTON COUNTY,
 TENNESSEE, 1957-1965

Year	Percent Unemployment	Per Capita Income
1957	6.0	\$1,829
1958	8.0	1,859
1959	6.5	1,905
1960	6.2	1,987
1961	7.7	1,969
1962	7.6	2,073
1963	7.0	a
1964	5.1	a
1965	3.1	a

^aNo data available.

Source: Tennessee Department of Labor, Market Letter. Nashville, 1957-1965; University of Tennessee, College of Business Administration, Bureau of Business and Economic Research, Comparative Economic Growth Measures--Population and Personal Income Estimates for Tennessee Counties, 1950-1962, Knoxville, May 1964.

TABLE IV
ANNUAL PER CAPITA CONSUMPTION OF ALL FLUID MILK PRODUCTS FOR SELECTED
MARKETING AREAS, 1957-1964

Marketing Area	Pounds							
	1957	1958	1959	1960	1961	1962	1963	1964
Chattanooga	265	256	258	251	257	259	266	279
Knoxville	280	279	287	291	279	284	292	301
Nashville	a	227	234	214	214	220	228	245
Memphis	207	203	206	180	176	197	192	202
Chicago	375	361	353	348	332	325	324	319
Rochester, N. Y.	340	333	329	326	318	312	314	315
Fort Wayne	322	314	314	321	305	307	297	304

^aNo data available.

Source: United States Department of Agriculture, Fluid Milk and Cream Consumption in Selected Marketing Areas 1950-1959. Statistical Bulletin 312. (Washington, D. C.: Government Printing Office, May, 1962); United States Department of Agriculture, Fluid Milk and Cream Report 1960-1964 (Washington, D. C.: Government Printing Office).

the area would likewise be strengthened because of the indirect benefits to all business related to the milk industry.

I. STATEMENT OF THE PROBLEM

Over the years there has been a national decline in per capita milk consumption. Although it is not definitely known in which segments of the population this is occurring, the most rapid decline seems to be found in the teens and early adult years when individuals especially need the nutrients found in milk. It is at this age individuals make decisions about food habits which will last for a lifetime.

Because of the impact of declining milk consumption on personal health, community growth, and prosperity, more information needs to be made available to parents, educators, and business leaders as to why this decline in milk consumption.

This study attempts to measure rate of consumption in a segment of the school population and to point out how changing attitudes within this group may be contributing to the rate of decline in milk consumption.

II. OBJECTIVES OF THE STUDY

This study will attempt:

1. To ascertain the amount of milk consumed by fifth, eighth, and eleventh grade students in selected schools in Hamilton County.
2. To determine the relationship between family income and milk consumption of fifth, eighth, and eleventh grade students in selected

schools in Hamilton County.

3. To determine the attitudes toward milk of those students in selected schools in Hamilton County.

4. To determine the relationship, if any, between their attitudes toward milk and their milk consumption.

5. To point out to those in the milk industry the effect of these changing attitudes of adolescents on the consumption of milk.

III. METHOD OF PROCEDURE

The design of this study is that of random sampling with the use of a questionnaire as the way in which information concerning milk consumption and attitudes toward milk among a representative group of school children could most accurately be measured. Questions on consumption were based on a 24-hour recall. The statements on pages 3 and 4 of the questionnaire were expressed in such a way as to reflect an attitude. These statements were then given a range of value according to the Likert Scale (7:486) in which the column "strongly disagree" was assigned a value of 1 and the column "strongly agree" assigned a value of 5.

The following hypothesis were formulated for this study:

1. Adolescents, especially girls, drink less milk as they progress from the fifth to the eleventh grade.
2. There is a less favorable attitude toward milk by adolescents as they progress from the fifth to the eleventh grade.

3. There is a high degree of negative correlation between family income and the amount of milk consumed at school by adolescents.

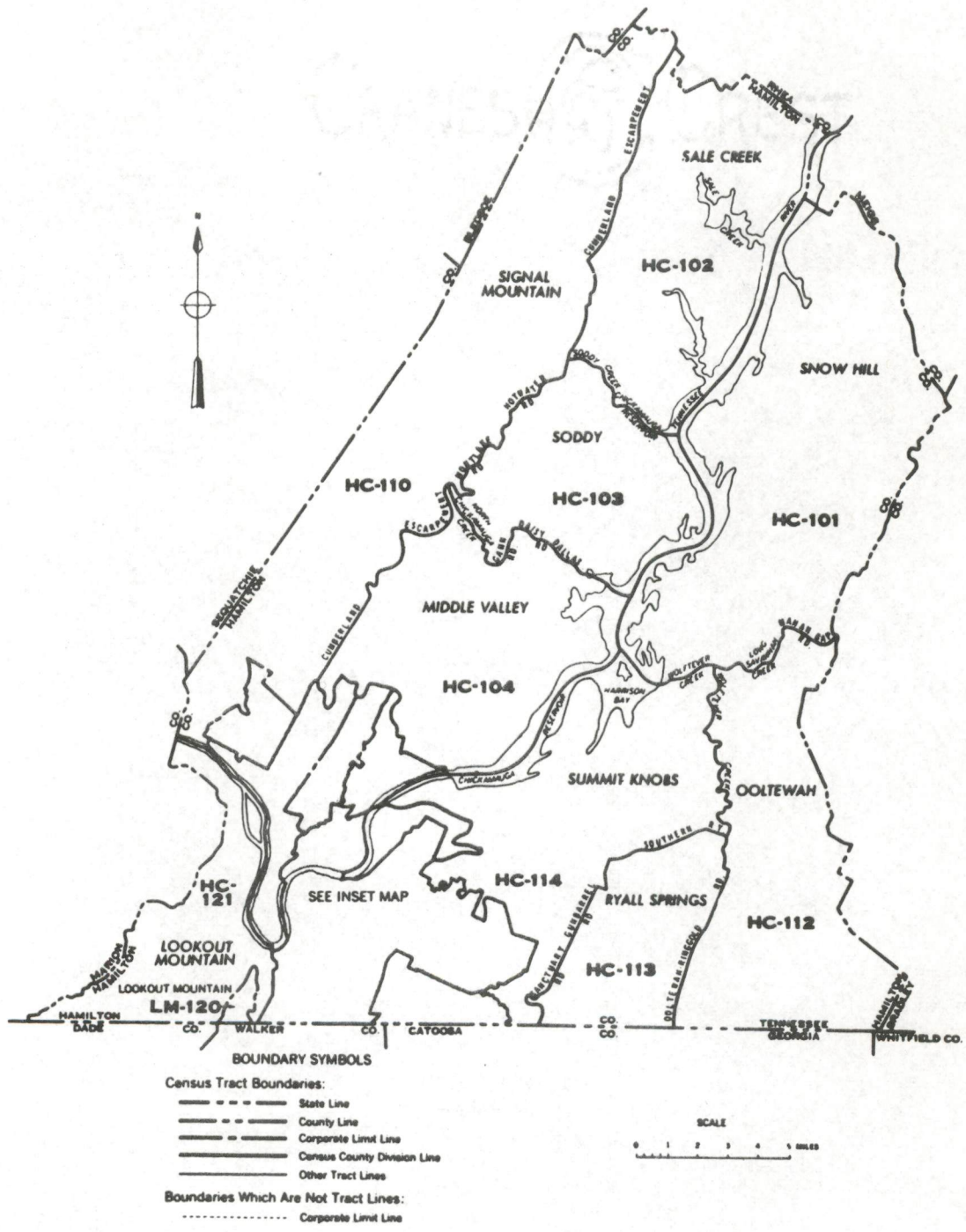
Selection of Schools

Prior to beginning this study, a conference was held with the Elementary Supervisor of the Hamilton County Department of Education to discuss the possibility of collecting the necessary data in the Hamilton County Schools. A conference was arranged with the Superintendent of Schools who approved the procedure for collecting the data in the Hamilton County schools and dictated a letter of consent (Appendix A) to be given to the principals of the schools which would be involved in the study.

A random stratified sample was used in selecting schools for this study. Elementary schools were stratified according to size of enrollment as follows: less than 299; 300 to 499; and 500 and over. Junior and senior high schools (all in the 500 and over group) could not be stratified according to enrollment.

All schools in the Hamilton County school system were then placed in the correct census tract based on income data from the 1960 Census of Population (Figure 1). It was determined that the median income per family by tracts in Hamilton County varied from \$3,800 to \$17,000. As shown in Table V, income areas from which the sample schools were selected varied as follows: low income, \$4,499 and less; medium income, \$4,500 to \$6,499; high income, \$6,500 and over. In

CENSUS TRACTS IN CHATTANOOGA, TENN. AND ADJACENT AREA



CHATTANOOGA S.M.S.A.
HAMILTON Co., TENN.

Figure 1. Hamilton County census tracts, 1960.

TABLE V

SELECTED SCHOOLS ACCORDING TO ENROLLMENT AND LOCATION BY
CENSUS TRACTS IN HAMILTON COUNTY 1963-1964

School Code	Enrollment			Income Area ^a		
	Less Than 299	300-499	500 and Over	Low	Medium	High
1	x			x		
6	x				x	
11	x					x
2		x		x		
7		x			x	
12		x				x
3			x	x		
8			x		x	
13			x			x
4			x	x		
9			x		x	
14			x			x
5			x	x		
10			x		x	

TABLE V (continued)

School Code	Enrollment			Income Area ^a		
	Less Than 299	300-499	500 and Over	Low	Medium	High
15			x			x

^aLow income--\$4,499 and less; medium income--\$4,500 to \$6,499; and high income--\$6,500 and over.

Source: Hamilton County Department of Education, Second Monthly Report, October 31, 1963; Research Department, Greater Chattanooga Chamber of Commerce, April 1963.

addition to stratifying the schools by income based on census tracts, each principal of the selected school or teacher of the selected class was asked to estimate the family income of each student in the survey within the selected ranges. The individual schools to participate in the study were then selected at random as follows (Table V): nine elementary schools, three junior high schools, and three senior high schools--a total of fifteen schools to participate in the survey.

It was decided to survey grades five, eight, and eleven as grades in which attitudes toward milk at different age levels could be more accurately measured. The fifth grade was selected because it was thought that these students would have attained the level of understanding necessary to complete a questionnaire. The eighth grade in junior high school was selected because these students would have received a half year of health education as part of the formal curriculum. Eleventh grade students would have received one and a half years of health and physical education at the time of the survey.

According to the Second Monthly Report (October 31, 1963) of the Hamilton County Department of Education, the total enrollment in grades from which the sample was selected was as follows: fifth grade, 2,432; eighth grade, 2,196; eleventh grade, 1,799. After the schools were selected, the number of students in the survey was as follows: fifth grade, 273; eighth grade, 93; eleventh grade, 79.

Table VI shows how the schools varied in their participation in the National School Lunch Program and the Special Milk Program. All of the elementary schools, except two, participate in both program. With one exception, the junior and senior high schools participate only in the Special Milk Program. Only four of the selected schools (Pineville, Hillcrest, Signal Mountain Elementary, and East Ridge Junior High) had milk available for students to drink other than at lunch time.

Collection of Data

After the selection of the sample, the principals of the selected schools were visited. On the first visit, the particular class within the grade level to be surveyed was selected. This selection was based on average intelligence quotient. In schools where students were grouped according to ability, the average class was selected. A conference was held with the teacher of the selected class and a time was scheduled for the survey.

On the second visit to the school, the selected class was surveyed. The teacher remained in the classroom during the survey, but all instructions (Appendix B) in the use of the questionnaire (Appendix C) and all questions concerning the questionnaire were the responsibility of the interviewer. Instructions for completing the questionnaire were identical for all the students in all the grades. A one-half pint milk carton and a cup measuring one-half pint were shown to the students to illustrate the terms "carton" and "cup" used in the questionnaire to

TABLE VI

PARTICIPATION BY SCHOOL IN THE NATIONAL SCHOOL LUNCH AND THE SPECIAL MILK PROGRAMS IN HAMILTON COUNTY SCHOOLS 1963-1964

Both Programs ^a	Special Milk Program Only	No Participation
Pineville	McBrien	Lookout Mountain
John Allen	Soddy Daisy Senior High	
Soddy Elementary	Hixson Junior High	
Ooltewah Junior High	Hixson Senior High	
Booker T. Washington	East Ridge Junior High	
Hillcrest	Red Bank Senior High	
Hixson Elementary		

^aThe National School Lunch Program, administered by the United States Department of Agriculture, provides for a half-pint of milk to be included in the price of Type A lunch. The Special Milk Program, administered by the United States Department of Agriculture, provides a system of reimbursement for each half-pint of milk consumed other than Type A lunch as provided under the National School Lunch Program.

Source: Marvin Lane, Supervisor, School Lunch Program, Hamilton County School System; permission to quote secured.

determine amounts of milk consumed. Instructions for each page of the four page questionnaire were given seperately. As soon as all students had completed the first page, instructions were given for the second page. This procedure was followed for all the pages of the questionnaire and in all classes in every school participating in the study.

CHAPTER II

REVIEW OF LITERATURE

There has been considerably more research in the area of quantity of milk consumed by adolescents rather than in the area of their attitudes toward milk.

I. LITERATURE ON MILK CONSUMPTION

Dickins and Ferguson (5:12) in their study "Dairy Products Consumption and the Market, Four Mississippi Towns" found that families with higher incomes spent more on dairy products than families with lower incomes. The average cost of dairy products used by the 400 participating families during the week of the study was as follows:

<u>Income</u>	<u>Cost of Dairy Products Used</u>
Under \$1,000	\$1.59
1,000 - 2,500	2.22
2,500 - 4,000	3.34
4,000 and Over	3.86

In this study, it was found that very low milk product consumption was usually found in families with children. Of those families who consumed less than half the recommended quantities of milk products, three-fourths were families with children (5:21).

This same study also revealed that more families received milk products in the recommended quantities when the homemaker drank milk every day. The milk drinking habits of the homemaker appeared to be related to the total consumption of milk products by her family (5:27).

Dwoskin, Boynton, and Hofnagle (6:7) stated in a study entitled "Changing Patterns of Milk Consumption in Memphis, Tennessee" that homemakers reported that males in their families drank most of the milk. With respect to age, the homemakers stated that children consumed 68 percent of the milk in the family.

A survey by Market Facts, Inc., (1:6) for the American Dairy Association, showed that more boys than girls drank a milk beverage at any time of the day and that in all age groups, females drank fewer ounces of milk than males, the greatest differences being in the 13 to 24 year age group.

John and Price (8:8) in the report "The Story of Adolescents and Milk" show that boys not only drink more milk than girls but that milk consumption of boys does not decline as fast as that of girls as they get older. It was also found that fifth grade boys consumed 3.5 glasses of milk per day compared to 3.2 glasses for girls. In this same study, twelfth grade boys consumed 3.9 glasses of milk while the girls drank only 1.9 glasses daily (8:9).

II. LITERATURE ON ATTITUDES TOWARD MILK

John and Price (8:10) in their study of the milk drinking patterns of adolescents, found that they drink milk for the following

reasons:

1. They believe it contributes to good health and personal appearance.

2. They believe it provides energy.

3. They had formed the habit of drinking milk.

4. They like the taste of milk.

It was also found that young people do not drink milk for the following reasons (8:12).

1. They think it is for babies and children.

2. They believe it will make them fat.

3. Their peer group does not drink milk.

4. They find milk not as stimulating as other beverages.

5. They do not consider milk to be a social drink.

Dickins (4:11) in a study called "Use, Knowledge, and Attitudes Concerning Milk Products by Homemakers" reported that in Mississippi, a group of homemakers were asked why they thought a teen-ager who likes milk would drink soft drinks most of the time. Their reasons were that teen-agers like to do what the crowd does, that they like the taste of soft drinks, that drinking soft drinks becomes a habit or custom, that soft drinks are easier to get and are cheaper, and that drinking soft drinks is grown up.

In summary, it would appear that, based on previous studies, boys drink more milk than girls and their rate of milk consumption declines less than girls as they get older.

Very little information is available which measures children's attitudes toward milk. It is therefore, difficult to determine why young people generally drink less milk as they grow older.

CHAPTER III

FINDINGS AND DISCUSSION

One primary purpose of this study is to show that attitudes toward milk may be affecting milk consumption. It will be necessary to discuss consumption and attitudes separately. Data on consumption will be analyzed first. Attitudinal data will then be analyzed as it relates to milk consumption.

I. MILK CONSUMPTION

Related to Age and Sex

The data presented in Table VII confirms previous findings in other studies related to pre-teens' and teenagers' consumption of milk. Boys in the three selected grades consumed more milk both at home and at school than did the girls. Of even greater significance, for the purpose of this study, is the fact that in most cases the consumption of milk by both boys and girls declined as they grew older, the one exception being the boys' increased consumption at school by 0.5 cup between the fifth and eleventh grades as seen in Table VII.

Although the boys in all the grades surveyed drank more milk than the girls, the rate of decline in milk consumption between fifth and eleventh grade boys and girls at home was the same (0.4 cup). At the same time boys' consumption of milk at school increased by 0.5 cup

TABLE VII

A COMPARISON OF DAILY MILK CONSUMPTION AT HOME, AT SCHOOL, AND TOTAL CONSUMPTION OF FIFTH, EIGHTH, AND ELEVENTH GRADE BOYS AND GIRLS IN SELECTED SCHOOLS, HAMILTON COUNTY, 1964

Where Consumed	Cups of Milk Consumed ^a								
	Boys			Girls			All Boys and Girls		
	Fifth Grade	Eighth Grade	Eleventh Grade	Fifth Grade	Eighth Grade	Eleventh Grade	Fifth Grade	Eighth Grade	Eleventh Grade
At Home	4.4	4.7	4.0	2.9	2.4	2.5	3.5	3.8	3.1
At School	1.1	1.6	1.6	1.0	.9	.8	1.0	1.3	1.3
Total Consumption	5.5	6.3	5.6	3.9	3.3	3.3	4.6	5.1	4.4

^aRounded to the nearest tenth.

virtually the same amount as it declined at home. On the other hand, girls' milk consumption at school declined by an additional 0.2 cup over this grade range.

As a group, total consumption of milk by boys in all three grades increased 0.1 cup as they advanced from the fifth to the eleventh grade, while total consumption by girls in all three grades declined 0.6 cup.

The largest difference in consumption rates between boys and girls from within the same grade occurred in the eighth grade when boys consumed a total of 3 cups per day more than the girls, most of this gain being at home.

Related to Family Income

An effort was made to measure the effect of family income on milk consumption. Table VIII shows, that in all schools surveyed, the highest consumption of milk occurred in schools located in the high income tracts. A significant fact however, is the slight difference in milk consumption between the high income and low income groups. In comparing milk consumption rates at home and at school, the highest consumption rate at school occurred among children in low income areas, indicating that without Federal milk programs (Table VI) the adverse effect of low family income on milk consumption would be even greater than is indicated by Table VIII.

Because the estimate of family income based on census tracts was believed to be higher than family income in some poverty areas of

TABLE VIII

A COMPARISON OF DAILY MILK CONSUMPTION OF STUDENTS IN SELECTED GRADES
 AT HOME, AT SCHOOL, AND TOTAL CONSUMPTION AS RELATED TO
 FAMILY INCOME BASED ON INCOME CENSUS TRACTS,
 HAMILTON COUNTY, 1964

Where Consumed	Cups of Milk Consumed ^a		
	Low Income (\$4,499 and Less)	Medium Income (\$4,500-\$6,499)	High Income (\$6,500 and Over)
At Home	3.5	3.4	3.7
At School	1.2	1.0	1.1
Total Consumption	4.7	4.4	4.8

^aRounded to the nearest tenth.

Hamilton County, teachers in the classes selected for the study were asked to indicate on each questionnaire their estimate of family income according to an adjusted income average as indicated in Table IX. Since some of the schools surveyed were located in poverty areas, Table IX is probably a more realistic appraisal of milk consumption as related to family income.

By using the adjusted family income in Table IX, it can be seen that milk consumption at home decreased more when the incomes were at poverty level (using President Johnson's definition of poverty as family income less than \$3,000). In this same income group, milk consumption at school increased slightly.

Related to Federal Milk Programs

As noted in Table VI, schools within the study area participated in either one of the federal milk programs or both, the exception being one school which participated in neither program. Table X indicates that schools which participated in both programs had a higher milk consumption in the three grades surveyed than those schools which participated in only one program. The one school which participated in neither program was located in a high income area and was known to have a high rate of milk consumption.

It is interesting to observe in Table XI that the three elementary schools within the group surveyed which provided a milk break (additional milk other than that provided at lunch) had a higher milk consumption rate (by 0.5 cup) than schools which did not provide a

TABLE IX

A COMPARISON OF DAILY MILK CONSUMPTION OF STUDENTS IN SELECTED GRADES
 AT HOME, AT SCHOOL, AND TOTAL CONSUMPTION AS RELATED TO
 FAMILY INCOME BASED ON TEACHERS' ESTIMATES,
 HAMILTON COUNTY, 1964

Where Consumed	Cups of Milk Consumed ^a		
	Low Income (\$2,999 and Less)	Medium Income (\$3,000-\$7,499)	High Income (\$7,500 and Over)
At Home	3.0	3.5	4.2
At School	1.2	1.1	1.0
Total Consumption	4.2	4.6	5.2

^aRounded to the nearest tenth.

TABLE X

A COMPARISON OF DAILY MILK CONSUMPTION OF STUDENTS IN SELECTED GRADES
 AT HOME, AT SCHOOL, AND TOTAL CONSUMPTION BY SCHOOLS
 PARTICIPATING IN FEDERAL MILK PROGRAMS
 HAMILTON COUNTY, 1964

Where Consumed	Cups of Milk Consumed ^a		
	Both Programs	Special Milk Program Only	Neither
At Home	3.6	3.4	4.2
At School	1.1	1.1	1.0
Total Consumption	4.7	4.5	5.2

^aRounded to the nearest tenth.

TABLE XI

A COMPARISON OF DAILY MILK CONSUMPTION OF STUDENTS IN SELECTED GRADES
IN ELEMENTARY SCHOOLS WITH AND WITHOUT MILK AVAILABLE AT TIMES
OTHER THAN LUNCH, HAMILTON COUNTY, 1964

Where Consumed	Cups of Milk Consumed ^a	
	With Milk Available Other Than at Lunch ^b	Without Milk Available Other Than at Lunch ^c
At Home	3.6	3.6
At School	1.4	.9
Total Consumption	5.0	4.5

^aRounded to the nearest tenth.

^bThree schools have milk available other than at lunch.

^cSix schools do not have milk available other than at lunch.

milk break.

II. ATTITUDES TOWARD MILK

Compared by Grade

Statements in the questionnaire were expressed in such a way as to reflect attitudes. These statements were then given a range of value in which the column "strongly disagree" was assigned a value of 1 and the column "strongly agree" was assigned a value of 5. For comparison, the statements in Table XII were arranged in order of descending value from 5 to 1 for the fifth grade. Attitudes of the three different grades were compared.

Students in all three grades scored high on statements 1, 2, 7, and 9 (Table XII) and were in general agreement on the value of milk during the growth period. Very little change in score was noted between the fifth and eleventh grades. Statement 1, relating milk to the development of bones and teeth, was given the highest score by all students in all grades. Apparently they learned well and retained their knowledge. The highest score (4.9) given to any question was in the eleventh grade in response to the above statement and to statement 9 to the effect that milk was necessary for babies and children. As would be expected, this response probably reflects increased knowledge about nutrition.

Eleventh grade students showed a rather sharp decline from the fifth grade students on statement 5 (the more milk I drink, the healthier

TABLE XII

AN ANALYSIS OF STATEMENTS ON MILK BY FIFTH, EIGHTH, AND ELEVENTH GRADE STUDENTS IN
SELECTED SCHOOLS, HAMILTON COUNTY, 1964

Statement	Average Values on Scale ^a		
	Fifth Grade	Eighth Grade	Eleventh Grade
1. b Milk helps build strong bones and teeth.	4.7	4.7	4.9
2. Milk is necessary for growth of boys and girls.	4.7	4.6	4.6
3. Milk is necessary for all age groups.	4.7	4.6	4.5
4. Milk provides energy for sports and outdoor activity.	4.5	4.5	4.1
5. The more milk I drink the healthier I will be.	4.5	4.3	3.7
6. When bones and teeth stop growing milk is still needed in the diet.	4.4	4.6	4.5
7. Every teenager should drink at least three (3) glasses of milk a day.	4.4	4.5	4.4
8. As one becomes an adult milk is a good source of energy.	4.4	4.1	3.9
9. Milk is very important in the diet of babies and children.	4.3	4.8	4.9

TABLE XII (continued)

Statement	Average Values on Scale ^a		
	Fifth Grade	Eighth Grade	Eleventh Grade
10. ^b Milk is a refreshing drink after hard work or exercise.	4.3	4.0	3.6
11. Milk should be included in every person's diet.	4.2	4.4	4.3
12. Milk is very important in the diet of healthy adults.	4.2	4.2	4.3
13. I prefer to drink milk when I eat a snack at night.	4.2	4.1	3.9
14. An office worker needs as much milk as a ball player.	4.2	3.8	3.5
15. I prefer to drink milk with a snack after school.	3.8	3.7	3.4
16. Milk is a popular drink with students my age.	3.8	3.0	3.1
17. I like milk because it has a refreshing taste.	3.7	3.8	3.5
18. Drinking milk helps one have a better complexion.	3.7	3.6	3.5
19. Milk should be included in a weight reducing diet.	3.6	3.7	3.6
20. I drink milk because I have been drinking it since childhood.	3.6	3.3	3.5
21. Drinking milk is as refreshing as drinking soft drinks.	3.4	4.2	4.1

TABLE XII (continued)

Statement	Average Values on Scale ^a		
	Fifth Grade	Eighth Grade	Eleventh Grade
22. ^b Teenagers need more milk than adults.	3.4	4.2	4.1
23. All of my friends drink milk.	3.3	3.1	3.0
24. I drink milk because my parents insist that I need it to be healthy.	3.2	2.5	2.2
25. Milk is an appropriate drink to serve at parties.	3.1	2.5	2.5
26. When I eat out with my family I prefer to drink milk.	3.0	2.6	2.3

^aValues were assigned to scale as follows:

- 1--Strongly disagree
- 2--Moderately disagree
- 3--Indifferent
- 4--Moderately agree
- 5--Strongly agree.

^bNumbers preceding statements in this table are arranged in numerical order rather than by the number preceding them in the questionnaire (Appendix C).

I will be). Students apparently reflected the value of health instruction in erasing an earlier concept that if something is good for health more of it is even better.

Statements 16 and 23 concerning the popularity of milk within the peer group showed a drop in score from the fifth to the eleventh grade but all grades scored low probably indicating the increasing need to conform within this age group. It may also show the increased competition which milk has from soft drinks and the failure of the milk industry to sell the idea of milk as a status symbol to adolescents.

The greatest drop in score from the fifth to the eleventh grade was noted in statement 24 (I drink milk because my parents insist that I need it to be healthy). This possibly reflects increasing parental permissiveness as well as rebellion at any mention of parental authority.

Compared by Sex

In comparing attitudes as scored by boys and girls in Table XIII, very little change was noted. The greatest change was in statement 17, where girls agreed less than boys that they drank milk because they had done so since childhood. Girls' score also was less than boys' in statement 23 that all of their friends drank milk. According to statement 25 (when I eat out with my family, I prefer to drink milk) girls were in less agreement than boys.

Statements 49 and 50 (Appendix C) in the questionnaire did not lend themselves to an analysis within the framework of this study.

TABLE XIII

AN ANALYSIS OF STATEMENTS ON MILK BY BOYS AND GIRLS IN SELECTED SCHOOLS,
HAMILTON COUNTY, 1964

Statement	Average Value on Scale ^a	
	Boys	Girls
1. ^b Milk helps build strong bones and teeth.	4.8	4.8
2. Milk is necessary for growth of boys and girls.	4.7	4.7
3. Milk is necessary for all age groups.	4.6	4.7
4. Milk is very important in the diet of babies and children.	4.5	4.6
5. When bones and teeth stop growing milk is still needed in the diet.	4.5	4.5
6. Milk provides energy for sports and outdoor activity.	4.4	4.4
7. Every teenager should drink at least three (3) glasses of milk a day.	4.4	4.5
8. The more milk I drink the healthier I will be.	4.4	4.3
9. As one becomes an adult milk is a good source of energy.	4.3	4.2

TABLE XIII (continued)

Statement	Average Value on Scale ^a	
	Boys	Girls
10. ^b Milk is very important in the diet of healthy adults.	4.3	4.2
11. I prefer to drink milk when I eat a snack at night.	4.2	4.0
12. Milk is a refreshing drink after hard work or exercise.	4.2	4.1
13. Milk should be included in every person's diet.	4.2	4.3
14. An office worker needs as much milk as a ball player.	3.9	4.1
15. I prefer to drink milk with a snack after school.	3.8	3.6
16. I like milk because it has a refreshing taste.	3.8	3.6
17. I drink milk because I have been drinking it since childhood.	3.7	3.3
18. Teenagers need more milk than adults.	3.7	3.7
19. Drinking milk helps one have a better complexion.	3.5	3.8
20. Milk is a popular drink with students my age.	3.5	3.5
21. Milk should be included in a weight reducing diet.	3.5	3.7
22. Drinking milk is as refreshing as drinking soft drinks.	3.4	3.4

TABLE XIII (continued)

Statement	Average Value on Scale ^a	
	Boys	Girls
23. ^b All of my friends drink milk.	3.3	3.0
24. Milk is an appropriate drink to serve at parties.	3.0	2.8
25. When I eat out with my family I prefer to drink milk.	2.9	2.6
26. I drink milk because my parents insist that I need it to be healthy.	2.8	2.9

^aValues were assigned to scale as follows:

- 1--Strongly disagree
- 2--Moderately disagree
- 3--Indifferent
- 4--Moderately agree
- 5--Strongly agree.

^bNumbers preceding statements in this table are arranged in numerical order rather than by the number preceding them in the questionnaire (Appendix C).

Because of their general interest, however, they are included in this discussion. Only 26 percent of all students surveyed agreed to statement 49 (I would drink more milk if it were in bottles like soft drinks). A total of 69 percent of all students agreed with statement 50 (chocolate milk tastes better than regular white milk).

Statement 22 (Appendix C) was eliminated from the study because it was not a positive statement and could not be analyzed according to the values scale.

III. ATTITUDES AS THEY AFFECT MILK CONSUMPTION

It is difficult to explain pre-teens' and teenagers' changes in milk consumption pattern because of the many unknown factors which exert an influence during the formative years of growth and development. This study can only point out the areas where changing attitudes parallel a decline in milk consumption.

As indicated in Table XII, statement 24 (I drink milk because my parents insist that I need it to be healthy) showed the greatest amount of change in score from the fifth to the eleventh grade. In Table XIII, the same statement (statement 26) showed that both boys and girls averaged the same low score. Since the greatest decline in consumption among both boys and girls occurred at home (Table VII), it is significant that parent permissiveness and family eating habits may be playing an important part in this area.

Statements relating milk consumption to sports and physical energy (4, 8, and 14 in Table XII) showed a decline in value from the fifth

to the eleventh grade, with boys and girls averaging about the same score (Table XIII). A changing attitude downward in this area correlates with the declining milk consumption from fifth to eleventh grades.

Statements referring to the popularity of milk or its use for special occasions (16, 23, 25, and 26 in Table XII) were all low in value beginning with the fifth grade and also declined from the fifth to the eleventh grade with boys' and girls' score (Table XIII) being about the same. It would appear that competition from other beverages has already had its effect on milk consumption even before the fifth grade level and that milk becomes even less popular as a beverage as youngsters progress from the fifth to the eleventh grade.

The above assumption can be carried out further in responses to statements 13 and 15 in Table XII, concerning drinking milk with snacks. Fifth graders were more favorably inclined to drink milk with snacks than to drink milk at parties or when eating out with their family. Eleventh graders scored lower than fifth graders on the statement concerning drinking milk with snacks. One of the lowest scores (2.3) was that of eleventh graders in response to statement 26 (when I eat out with my family I prefer to drink milk).

CHAPTER IV

SUMMARY

A steady decline in per capita milk consumption over the past fifteen years is of growing concern to educators, nutritionists, and public health officials as well as to the milk industry.

Some factors, such as the increased consumption of lower priced vegetable oils and an attempt by a weight conscious public to limit fat intake, are known to be partly responsible for the continuing decline in milk consumption. But these above factors would not account for all the decline especially in a rapidly growing younger population who are considered to be good consumers of milk. It seems paradoxical that milk consumption rates continue to decline in a rapidly expanding economy where family income is steadily increasing. Although it is not definitely known in what segments of the population the milk consumption rates are declining, the most rapid decline seems to be found in the pre-teen and the teen years when individuals especially need the nutrients found in milk. It is at this age also that individuals make decisions about food habits that will last a lifetime.

Research which shows that milk consumption rates decline rapidly in the younger population, indicates only to a limited extent why this decline occurs.

Very little information is available which relates milk consumption to attitudes in an effort to find a possible cause and effect relationship to account for the declining milk consumption rates. It is to this end that the present study was designed.

The objectives of this study were:

1. To ascertain the amount of milk consumed by fifth, eighth, and eleventh grade students in selected schools in Hamilton County.
2. To determine the relationship between family income and milk consumption of fifth, eighth, and eleventh grade students in selected schools in Hamilton County.
3. To determine the attitudes toward milk of these students in selected schools in Hamilton County.
4. To determine the relationship, if any, between their attitudes toward milk and their milk consumption.
5. To point out to those in the milk industry the effect of these changing attitudes of adolescents on the consumption of milk.

The study was designed to show the amount of milk consumed by students in the selected grades through the use of a questionnaire based on a 24-hour recall. Attitudes were measured by means of a series of statements about milk expressed in such a way as to reflect attitudes through the use of the Likert Scale. Students indicated an attitude toward a statement by marking one of five columns labeled in the following way: strongly disagree, moderately disagree, indifferent, moderately agree, and strongly agree. These statements were then given

a value ranging from 1 for the column, strongly disagree to 5 for the column, strongly agree. Data processing was used to obtain a statistical average for each attitude expressed.

I. REVIEW OF FINDINGS

The analysis of findings was divided into three main parts as follows:

1. Milk consumption as related to age and sex, family income and Federal milk programs.
2. Attitudes toward milk compared by grade and sex.
3. Attitudes as they affect milk consumption.

Milk Consumption

Findings in regard to milk consumption when related to age and sex indicated that boys in all three grades consumed more milk than girls. Milk consumption by boys and girls declined as they grew older as represented by their changing grade levels.

As family income increased milk consumption of students at home increased. Milk consumption of students at school increased as family income decreased.

Total milk consumption was highest in schools that participated in both Federal milk programs. It is believed, however, that schools providing milk other than at lunch were partially responsible for this increase.

Attitudes Toward Milk

Students in all grades were in general agreement on the value of milk during the growth period. Statements that had a low score in all grades were those relating to the popularity of milk within their peer group. The statement showing the greatest drop in score from the fifth to eleventh grade was the statement relating to parental authority in the consumption of milk, indicating that parents' influence on milk consumption decrease as students go through their teens.

Attitudes as They Affect Milk Consumption

Parental influence on milk consumption seemed to be rather low in the fifth grade and declines even more in the eleventh grade. Milk does not appear to be a favorite drink for parties or when eating out with the family. The popularity seemed to decrease from the fifth to eleventh grade.

Hypothesis number one (adolescents, especially girls, drink less milk as they progress from the fifth to the eleventh grade) was accepted as stated. Adolescents, as a group, drank less milk as they progressed from the fifth to the eleventh grade. The milk consumption rate of girls steadily declined from the fifth to the eleventh grade. Even though boys' rate of consumption increased slightly from the fifth to the eleventh grade, girls' consumption rate, already much lower than boys', continued such a steady decline that the rate of consumption for all adolescents showed the expected decline.

With regard to hypothesis number two (there is a less favorable attitude toward milk by adolescents as they progress from the fifth to the eleventh grade), it was accepted as stated. Generally, both boys and girls tended to show a less favorable attitude toward milk as they progressed from the fifth to the eleventh grade. There seemed to be general acceptance of the value of milk in the development of bones and teeth. There was, however, evidence to indicate that changes in attitude toward milk from favorable to less favorable was related to the decline in rate of milk consumption from the fifth to the eleventh grade.

Hypothesis number three (there is a high degree of negative correlation between family income and the amount of milk consumed at school by adolescents) was accepted as stated since milk consumption rates of both boys and girls seemed to increase at school as family income decreased to poverty level (less than \$3,000).

II. IMPLICATIONS FOR FURTHER STUDY

1. Similar studies should be conducted in elementary grades to determine why milk consumption of fifth grade girls is lower than that of fifth grade boys. An effort should be made to determine what beverages they are substituting for milk.

2. Similar studies of pre-teen and teen age girls are needed to further determine their consumption rates and attitudes toward milk and other competing beverages.

3. Studies similar to the present one should be conducted among adult segments of the population.

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BIBLIOGRAPHY

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APPENDIXES

APPENDIX A

LETTER OF CONSENT

Hamilton County Department of Education

305 Court House

Chattanooga, Tennessee 37402

Sam P. McConnell
Superintendent

July 23, 1964

To the Principals of the various schools in Hamilton County.

Dear Principal:

This is to introduce to you Mr. Bob Childress who is presently doing a study for his Master's Degree at the University of Tennessee and he conferred with me relative to making part of his study in the Hamilton County Schools. It is dealing with the number of children who drink milk in the 5th, 8th, and 11th grade levels of our various schools and your school has been designated as one in which he would like to work. He will work with only one classroom in each school and I will appreciate it very much if you will permit him to talk to the students and the teacher relative to this study and cooperate with him in it. It do not feel that it will take much time other than that necessary to explain the questionnaire to the students and distribute them for completion.

I am of the opinion that it will not take a great deal of the teacher's time nor your time, however, I trust that you will cooperate with him in every respect.

Sincerely yours,

Sam P. McConnell
Superintendent

SPM:lfv

APPENDIX B

DIRECTIONS GIVEN TO STUDENTS FOR COMPLETION OF QUESTIONNAIRE

Selected classes were surveyed before the noon meal at school. The following information and instructions for completing the questionnaire were given as written to each class participating in the survey.

In the last few years, the milk drinking habits of students have been changing. The amount of milk which students drink may be changing. Nutritionists and the milk industry want to study this situation. I am conducting this study for the University of Tennessee at Knoxville.

Your school and your class have been selected to participate in this study. I have a questionnaire which I would like each of you to complete. The information you give will be reported as a class and no one will know how you answer the questions individually.

After I have given you the questionnaire, you will fill out the first page. Do not list your name under question 9 because it will already be listed under question 1. When you have finished the first page, turn your paper over. When everyone has finished the first page, we will all complete page 2.

(Allow all students to complete page 1).

On this second page, I would like for you to answer each question to the best of your ability as to when and how much milk you drank yesterday. I want you to think of this half-pint carton or this size cup (hold carton and cup for students to see) when you answer the questions about how much milk you drank yesterday. If you ate the school lunch yesterday, answer question 10. If you brought your lunch from home yesterday, answer question 11. If you ate lunch away from school yesterday, answer question 12.

In the lower section on milk consumption not in school, please write in the number of cups which you drank if it was more than two cups. When you have finished the second page, turn your paper over. When everyone has finished the second page, we will complete pages 3 and 4.

(Allow all students to complete page 2)

(Read aloud the instructions at the top of page 3, stressing the importance of each student checking only one column and the need for each statement to be checked).

I will read each statement separately and you will be given time to check the column that best describes your feeling about the statement. The column marked "indifferent" means that you are not sure whether you agree or disagree.

(Read each statement and wait until all students have marked it before reading the next statement).

Now that you have completed marking all statements, look at all the statements carefully to see that each statement is marked only once.

Please pass your paper to the student in front of you and I will collect them at the front of the room.

APPENDIX C

QUESTIONNAIRE

Department of Agriculture Economics
University of Tennessee
Knoxville, Tennessee

A STUDY OF MILK CONSUMPTION
By Students in Hamilton County

1. Name _____ 2. Age _____ 3. Boy _____
Girl _____
4. Your School's Name _____ 5. Your Grade in School _____
6. Your Homeroom Teacher's Name _____
7. Your Father's Occupation _____ L M H
8. How Many People Live in Your House? _____
9. List These People and the Age of Each: (Use 1st Name and Age)
- 9(A) Check in the box at left for those that regularly work outside the home.

<input type="checkbox"/>	Father	_____	
<input type="checkbox"/>	Mother	_____	
<input type="checkbox"/>	Brothers	_____	Age _____
<input type="checkbox"/>		_____	Age _____
<input type="checkbox"/>		_____	Age _____
<input type="checkbox"/>	Sisters	_____	Age _____
<input type="checkbox"/>		_____	Age _____
<input type="checkbox"/>		_____	Age _____
<input type="checkbox"/>	Other	_____	Age _____
<input type="checkbox"/>	People	_____	Age _____
<input type="checkbox"/>		_____	Age _____
<input type="checkbox"/>		_____	Age _____

MILK CONSUMPTION IN SCHOOL

10. If you ate the school lunch in the cafeteria yesterday, how much milk did you drink with your lunch? Check
- None 1 Carton 2 Cartons
11. If you brought your lunch from home yesterday, how much milk did you drink with your lunch? Check
- None 1 Carton 2 Cartons
12. If you ate lunch away from school yesterday, how much milk did you drink with your lunch? Check
- None 1 Carton 2 Cartons
13. If you drank milk at school other than that at lunch please check the amount you drank below. Check
- None 1 Carton 2 Cartons
14. Is this about the same amount of milk you drink each day at school?
- Less Than Usual Same as Usual More than Usual
- If more or less than usual consumption, please explain.

MILK CONSUMPTION NOT IN SCHOOL

15. After you left school yesterday and before you ate your evening meal, how much milk did you drink? Check
- None 1 Cup 2 Cups ___ Cups
16. How much milk did you drink with your evening meal yesterday? Check
- None 1 Cup 2 Cups ___ Cups
17. After your evening meal yesterday and before you went to bed, how much milk did you drink? Check
- None 1 Cup 2 Cups ___ Cups
18. This morning before you came to school, how much milk did you drink for breakfast? Check
- None 1 Cup 2 Cups ___ Cups
19. Did you eat dry cereal with milk for breakfast this morning?
- Yes No
20. Is this about the same amount of milk you drink each day at home?
- Less than Usual Same as Usual More than Usual
- If more or less than usual consumption, please explain.

Strongly Disagree	Moderately Disagree	Indifferent	Moderately Agree	Strongly Agree	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	21. Milk is necessary for growth of boys and girls.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22. Drinking milk will make a person fat.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	23. Milk helps build strong bones and teeth.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24. Milk provides energy for sports and outdoor activity.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25. Milk is very important in the diet of babies and children.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26. Drinking milk helps one have a better complexion.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27. Drinking milk is as refreshing as drinking soft drinks.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	28. Milk is a popular drink with students my age.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	29. The more milk I drink the healthier I will be.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	30. I like milk because it has a refreshing taste.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	31. All of my friends drink milk.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	32. When bones and teeth stop growing milk is still needed in the diet.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	33. Milk is a refreshing drink after hard work or exercise.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	34. As one becomes an adult milk is a good source of energy.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	35. Milk is necessary for all age groups.

Listed below is a group of statements about milk. Think about the statement and check the box that best describes your feelings about the statement. You may strongly disagree, moderately disagree, be indifferent, moderately agree or strongly agree with the statement. Check only one answer for each statement. Do not leave any questions unanswered.

Strongly Disagree	Moderately Disagree	Indifferent	Moderately Agree	Strongly Agree	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	36. Milk is very important in the diet of healthy adults.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	37. I drink milk because I have been drinking it since childhood.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	38. Adult milk needs are provided in other foods.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	39. I drink milk because my parents insist that I need it to be healthy.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	40. An office worker needs as much milk as a ball player.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	41. Milk is an appropriate drink to serve at parties.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	42. When I eat out with my family I prefer to drink milk.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	43. Teenagers need more milk than adults.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	44. I prefer to drink milk when I eat a snack at night.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	45. Milk should be included in a weight reducing diet.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	46. I prefer to drink milk with a snack after school.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	47. Every teenager should drink at least three (3) glasses of milk a day.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	48. Milk should be included in every persons diet.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	49. I would drink more milk if it were in bottles like soft drinks.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50. Chocolate milk tastes better than regular white milk.