

Documentation for the Hamburger Preparation Quiz

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1. About the Survey

The 1996 Hamburger Preparation Quiz (HPQ) was conducted by the Market Research Corporation of America as a supplement to its ongoing Menu Census Survey during March 1996 - February 1997. As part of the Menu Census Survey, respondents completed and mailed in a 2-week diary of all food consumption for themselves and their families. The Hamburger Preparation Quiz was added as a supplement to the Menu Census Survey attitude questionnaire, which respondents completed and mailed in after completing the two-week food intake diaries. The supplement (Appendix A) included questions on the respondent's usual hamburger cooking style, and how the respondent usually ordered hamburgers in a restaurant, as well as questions about taste preferences for hamburger styles, risk perceptions about foodborne illness, sources for food safety information, and foodborne illness experience.

The household adult who celebrated the most recent birthday completed the supplement in order to randomize the selection of adult respondents within the household. The survey supplement was completed by 1,133 individuals, of which 1036 provided complete responses to demographic questions for weighting purposes. Weights were applied to each observation to match the 1990 Census proportions for categories based on sex, ethnicity, and education. These variables were chosen so that weights would be comparable to the weights used in the 1993 Food

Safety Survey conducted by the Food and Drug Administration and USDA's Food Safety and Inspection Service. Weights were derived as the ratio of the Census cell proportion to the HPQ respondent's cell proportion. Unfortunately, three cells were completely missing in the HPQ responses: Black males with less than 12 years education, Black females with less than 12 years education, and other males with less than 12 years education. Thus, the sample provides no representation for these groups.

2. How to Use the Data File

The file hpq.dat contains an ASCII version of the data set, with each column separated by a space. Note that the list format of this data set differs from the format of other Federal public access data sets such as those available from USDA's Agricultural Research Service, the National Center for Health Statistics, and the Census Bureau, which use column format, ie. the variables are in the same column position on every record. The format of this file was chosen as appropriate for the file's relatively small size.

Each record contains household and personal characteristics of respondents who completed the Hamburger Preparation Quiz, as well as their responses to the Quiz. Researchers who use SAS can use the SAS program below to read the data into a SAS data set and check descriptive statistics against the values in Appendix B. Researchers using other statistics packages can modify the SAS program accordingly.

```
/* Here is a file to read the data into a SAS data set. Just fill in the correct directories in the libname statement and the infile statement. Note that some operating systems may require special input statements or modifications of the INFILE statement to run SAS jobs */
```

```
Libname data 'FILL IN THE DIRECTORY WHERE YOU HAVE PUT hpq.dat';  
Options obs=max;  
  
data data.hpq;
```

```

infile 'DIRECTORY\hpq.dat';
input hhid quizid wtquiz
age male censreg areasize hhsiz e agehmkr hhinc
children ochead eduhead emplhmkr ethnic diet
freq outnow outago outtst outwory
outill outpeer outnut outsel outetc outdk cook
cooknow cookago cooktst cookwory
cookill cookpeer cooknut cooketc cookdk color
impjuicy imprisk imp taste imp tendr
jcyrare jcymedr jcymed jcymedw jcywell jcydk
tstrare tstmedr tstmed tstmedw tstwell tstdk
tndrare tndmedr tndmed tndmedw tndwell tnddk
illrare illmedr illmed illmedw illrdk illmr dk illmdk illmwdk illwddk
bias family newspaper magazine cookbook tvradio
doctor label brochure govt othersrc heatkill
illburg illmeat illfish homesame restsame
pnknow_h pnknow_o pnkago_h pnkago_o
impign impnot impnev impdk impall;
run;

proc means;
run;

```

The data in hpq.dat can be merged with the data from the Hamburger and Egg Consumption Diary (HECD) in hecdburg.dat by matching HHID. This creates a data set with one record for every hamburger eaten in the household. Each record will include the responses from one adult member of the hamburger eater's household to HPQ questions about usual hamburger cooking and ordering, attitudes about risks and palatability characteristics of hamburgers, and sources of food safety information. Since the responses of one household member may not reflect the attitudes of the hamburger eater, these additional variables provide limited information about the factors influencing the hamburger eater's choice of doneness.

A subset of the data set can be created by selecting records in which INDID = QUIZID, where QUIZID is the identification number of the individual in the household who completed the HPQ survey. This data set will have one record for every hamburger eaten by household

members that answered the HPQ survey, together with information about the respondent's usual hamburger cooking and ordering, attitudes about risks and palatability characteristics of hamburgers, and sources of food safety information. This would allow modeling of that individual's doneness choice as a function of attitudes toward foodborne illness risk and the palatability characteristics of hamburgers, but it is a fairly small subset of hecdbg.dat.

3. Variable Definitions

| | |
|----------|--|
| hhid | Household identifier (10 – 97611) |
| quizid | Identification code of individual who filled out attitude quiz |
| wtquiz | Weight to match proportions of respondents to Hamburger Preparation Quiz in categories by ethnicity, gender, and education of household head to proportions according to the 1990 U.S. Census. |
| year | Year |
| age | Age of respondent |
| male | 1=yes 0=no |
| censreg | Census region: 1 = New England 2 = Mid Atlantic 3 = West North Central 4 = East North Central 5 = West South Central 6 = East South Central 7 = South Atlantic 8 = Pacific 9 = Mountain (These can be used to create 4 dummy variables for regions: 1 plus 2 = New England, 3 plus 4 = Midwest, 5,6, and 7 = South, 8 and 9 = West) |
| areasize | Size of respondent's metropolitan area: 1 = Farm 2 = Under 2,500 |

3 = 2,500-9,999
4 = 10,000-49,999
5 = 50,000-99,999
6 = 100,000-249,000
7 = 250,000-499,999
8 = 500,000-999,999
9 = 1million - 2 million
0 = more than 2 million

hhsize Household size: number of persons

agehmk Age of homemaker:

2 = Under 29
3 = 30 – 34
4 = 35 - 39
5 = 40 - 49
6 = 45 - 49
7 = 50 - 54
8 = 55 - 59
9 = 60 - 64
0 = 65 and over

hhinc Household income, in thousands

children Presence of children:

0 = No children
2 = Under 6 years only
3 = 6-12 years only
4 = 13-17 years only
5 = All under 12 only
6 = Under 6 or 13-17 only
7 = All three ages

occhead Occupation of household head:

1 = White collar
2 = Blue collar
3 = Farm
4 = Not a worker

educhead Education of household head:

1 = Completed grammar school (0-8 years)

2 = Completed high school (9-12 years)
3 = Completed some college (over 12 years)

emplhmk Employment of homemaker:

1 = employed
2 = not employed

ethnic Ethnicity of respondent:

1=White
2=Black
3=Other

diet Special diet of respondent

0 = Not on diet
1 = Diet for medical/health
2 = Diet to gain weight
3 = Diet to maintain weight
4 = Diet to reduce weight
5 = Diet for other reasons

freq Frequency of hamburger consumption:

(HPQ Question 1: In the past 12 months, about how often did you eat hamburgers, both at home and away from home?)

0= not reported
1= "Once a week or more"
2= "Two or three times a month"
3= "About once a month"
4= "Less than once a month"
5= "Never in the past 12 months"

outnow Ordering choice in restaurant:

(HPQ Question 2: A hamburger patty (the meat in a hamburger) may be cooked differently, from rare to well-done. When you eat in a restaurant, how do you ask to have your hamburger patties cooked?)

0= not reported

1= "Rare"

2= "Medium Rare"

3= "Medium"

4= "Medium well"

5= "Well done"

6= "Don't ask for a certain way"

7= "Don't order hamburgers"

outago Ordering choice in restaurant five years ago:

(HPQ Question 3: Think about how you used to order hamburger patties FIVE YEARS AGO in a restaurant. Five years ago, how did you ask to have your hamburger patties cooked?)

0= not reported

1= "Rare"

2= "Medium Rare"

3= "Medium"

4= "Medium well"

5= "Well done"

6= "Don't ask for a certain way"

7= "Don't order hamburgers"

Reasons for changes:

(HPQ Question 4: If the way you order your hamburger patties now is different than it was five years ago, what made you change? (Mark 'Yes' or 'No' for each))

outtst "I prefer the taste of what I order now"

0 = No

1 = Yes

outwory “I became concerned that I might get sick because of how hamburger patties are cooked”

0 = No

1 = Yes

outill “I got sick from hamburger patties because of how they were cooked”

0 = No

1 = Yes

outpeer “It’s the way that people I know order their hamburger patties”

0 = No

1 = Yes

outnut “The way I order now is more nutritious (for example, has less fat/cholesterol)”

0 = No

1 = Yes

outsel “There are more/fewer choices in restaurants now”

0 = No

1 = Yes

outetc “Other”

0 = No

1 = Yes

outdk “Don’t know/Not sure”

0 = No

1 = Yes

cook

Proportion of hamburgers cooked by respondent:

(HPQ Question 5: Which of the following best describes the hamburger patties you ate in the past 12 months?)

0 = Not reported

1 = I cooked almost all the hamburger patties that I ate in the past 12 months

2 = I cooked some of the hamburger patties that I ate in the past 12 months

3 = I cooked only a few of the hamburger patties that I ate in the past 12 months

4 = I did not cook any of the hamburger patties that I ate in the past 12 months

cooknow

Current hamburger cooking practice:

(HPQ Question 6: When cooking hamburgers for yourself to eat, how do you cook them?)

0 = Not reported

1 = Rare

2 = Medium-Rare

3 = Medium

4 = Medium-Well

5 = Well-Done

cookago

Hamburger cooking five years previously

(HPQ Question 7: Think about how you used to cook hamburger patties for yourself *FIVE YEARS AGO*. Five years ago, how did you cook your hamburger patties?)

0 = Not reported

1 = Rare

2 = Medium-Rare

3 = Medium

4 = Medium-Well

5 = Well-Done

Reasons for change

(HPQ Question 8: If the way you cook your hamburger patties now is different than it was five years ago, what made you change? (Mark 'Yes' or 'No' for each))

cooktst

"I prefer the taste of what I cook now"

0 = No

1 = Yes

cookwory “I became concerned that I might get sick because of how hamburger patties are cooked”

0 = No

1 = Yes

cookill “I got sick from hamburger patties because of how they were cooked”

0 = No

1 = Yes

cookpeer “It’s the way that people I know cook their hamburger patties”

0 = No

1 = Yes

cooknut “The way I cook now is more nutritious (for example, has less fat/cholesterol)”

0 = No

1 = Yes

cooketc “Other”

0 = No

1 = Yes

cookdk “Don’t know/Not sure”

0 = No

1 = Yes

color Color of a medium hamburger:

(HPQ Question 9: Which of the following colors do *YOU* think best describes the *INSIDE* of a hamburger patty that is cooked *MEDIUM*?)

0 = Not reported

1 = “Still has some red in the middle”

2 = “Still has some pink in the middle”

3 = “Light brown all the way through”

4 = “Dark brown all the way through”

5 = “Don’t know/Not sure”

Ratings of sensory attributes of hamburger patties cooked to different levels of doneness:

(HPQ Question 10: “Some factors people may consider in deciding how to cook or order hamburger patties for themselves to eat are listed below. How important is each one *TO YOU* in deciding how to cook or order hamburger patties *FOR YOURSELF TO EAT*? (Mark the appropriate space for each factor)”)

impjcy For “How juicy the patty is”, respondent checked:

0= “Never thought about it” (or respondent did not answer)

1= “Not at all important”

2= “Somewhat unimportant”

3= “Somewhat important”

4= “Very important”

imprisk For “How likely it is to make me sick”, respondent checked:

0= “Never thought about it” (or respondent did not answer)

1= “Not at all important”

2= “Somewhat unimportant”

3= “Somewhat important”

4= “Very important”

imptst For “How tasty the patty is”, respondent checked:

0= “Never thought about it” (or respondent did not answer)

1= “Not at all important”

2= “Somewhat unimportant”

3= “Somewhat important”

4= “Very important”

imptnd For “How tender it is”, respondent checked:

0= “Never thought about it” (or respondent did not answer)

1= “Not at all important”

2= “Somewhat unimportant”

3= “Somewhat important”

4= “Very important”

Respondent rankings of sensory attributes of hamburger patties cooked to different levels of doneness

(HPQ Question 11: “How would YOU rank hamburger patties in terms of the amount of JUICINESS? Rank them from 1 to 5 with “1 being the most juicy.”)

THESE ANSWERS WERE RECODED SO THAT VARIABLE INCREASES WITH JUICINESS

jcyrare

Juiciness of rare hamburgers:

- 1 = Respondent ranked rare hamburgers as least juicy
- 2 = Respondent ranked rare hamburgers as next to least juicy
- 3 = Respondent ranked rare hamburgers as third most juicy
- 4 = Respondent ranked rare hamburgers as second most juicy
- 5 = Respondent ranked rare hamburgers as most juicy

jcymedr

Juiciness of medium rare hamburgers:

- 1 = Respondent ranked medium-rare hamburgers as least juicy
- 2 = Respondent ranked medium-rare hamburgers as next to least juicy
- 3 = Respondent ranked medium-rare hamburgers as third most juicy
- 4 = Respondent ranked medium-rare hamburgers as second most juicy
- 5 = Respondent ranked medium-rare hamburgers as most juicy

jcymed

Juiciness of a medium hamburger:

- 1 = Respondent ranked medium hamburgers as least juicy
- 2 = Respondent ranked medium hamburgers as next to least juicy
- 3 = Respondent ranked medium hamburgers as third most juicy
- 4 = Respondent ranked medium hamburgers as second most juicy
- 5 = Respondent ranked medium hamburgers as most juicy

jcymedw

Juiciness of a medium-well hamburger:

- 1 = Respondent ranked medium-well hamburgers as least juicy
- 2 = Respondent ranked medium-well hamburgers as next to least juicy
- 3 = Respondent ranked medium-well hamburgers as third most juicy
- 4 = Respondent ranked medium-well hamburgers as second most juicy
- 5 = Respondent ranked medium-well hamburgers as most juicy

jcywell

Juiciness of a well-done hamburger:

- 1 = Respondent ranked well-done hamburgers as least juicy
- 2 = Respondent ranked well-done hamburgers as next to least juicy
- 3 = Respondent ranked well-done hamburgers as third most juicy
- 4 = Respondent ranked well-done hamburgers as second most juicy
- 5 = Respondent ranked well-done hamburgers as most juicy

jcydk

Respondent checked "Don't know/Not sure" in response to question on ranking of hamburger juiciness

- 1= yes
- 0= no

(HPQ Question 12: How would *YOU* rank hamburger patties in terms of their TASTE? Rank them from 1 to 5 with "1" being the best, "2" the next best and "5" the worst. Write in one number per box. (Mark "Don't know/Not sure" if applicable.))

THESE ANSWERS WERE RECODED SO THAT VARIABLE INCREASES WITH RESPONDENT'S DESIRED TASTE.

tstrare

Taste of a rare hamburger:

- 1 = Respondent ranked rare hamburgers as least tasty
- 2 = Respondent ranked rare hamburgers as next to least tasty
- 3 = Respondent ranked rare hamburgers as third most tasty
- 4 = Respondent ranked rare hamburgers as second most tasty
- 5 = Respondent ranked rare hamburgers as most tasty

tstmedr

Taste of a medium-rare hamburger:

- 1 = Respondent ranked medium-rare hamburgers as least tasty
- 2 = Respondent ranked medium-rare hamburgers as next to least tasty
- 3 = Respondent ranked medium-rare hamburgers as third most tasty
- 4 = Respondent ranked medium-rare hamburgers as second most tasty
- 5 = Respondent ranked medium-rare hamburgers as most tasty

tstmed

Taste of a medium hamburger:

- 1 = Respondent ranked medium hamburgers as least tasty
- 2 = Respondent ranked medium hamburgers as next to least tasty
- 3 = Respondent ranked medium hamburgers as third most tasty
- 4 = Respondent ranked medium hamburgers as second most tasty
- 5 = Respondent ranked medium hamburgers as most tasty

tstmedw

Taste of a medium-well hamburger:

- 1 = Respondent ranked medium-well hamburgers as least tasty
- 2 = Respondent ranked medium-well hamburgers as next to least tasty
- 3 = Respondent ranked medium-well hamburgers as third most tasty
- 4 = Respondent ranked medium-well hamburgers as second most tasty
- 5 = Respondent ranked medium-well hamburgers as most tasty

tstwell

Taste of a well-done hamburger:

- 1 = Respondent ranked well-done hamburgers as least tasty
- 2 = Respondent ranked well-done hamburgers as next to least tasty
- 3 = Respondent ranked well-done hamburgers as third most tasty
- 4 = Respondent ranked well-done hamburgers as second most tasty
- 5 = Respondent ranked well-done hamburgers as most tasty

tstdk

Respondent checked "Don't know/Not sure" in response to question 12 on ranking of hamburger taste.

1= yes 0=no

(HPQ Question 13: How would *YOU* rank hamburger patties in terms of how *TENDER* they are? Rank them from 1 to 5 with "1" being the best, "2" the next best, and "5" the worst. Write in one number per box. (Mark "Don't know/Not sure," if applicable.))

THESE ANSWERS WERE RECODED SO THAT VARIABLE INCREASES WITH TENDERNESS.

tndrare

Tenderness of a rare hamburger:

- 1 = Respondent ranked rare hamburgers as least tasty
- 2 = Respondent ranked rare hamburgers as next to least tasty
- 3 = Respondent ranked rare hamburgers as third most tasty
- 4 = Respondent ranked rare hamburgers as second most tasty
- 5 = Respondent ranked rare hamburgers as most tasty

- tndmedr Tenderness of a medium-rare hamburger:
- 1 = Respondent ranked medium-rare hamburgers as least tasty
 - 2 = Respondent ranked medium-rare hamburgers as next to least tasty
 - 3 = Respondent ranked medium-rare hamburgers as third most tasty
 - 4 = Respondent ranked medium-rare hamburgers as second most tasty
 - 5 = Respondent ranked medium-rare hamburgers as most tasty
- tndmed Tenderness of a medium hamburger:
- 1 = Respondent ranked medium hamburgers as least tasty
 - 2 = Respondent ranked medium hamburgers as next to least tasty
 - 3 = Respondent ranked medium hamburgers as third most tasty
 - 4 = Respondent ranked medium hamburgers as second most tasty
 - 5 = Respondent ranked medium hamburgers as most tasty
- tndmedw Tenderness of a medium-well hamburger:
- 1 = Respondent ranked medium-well hamburgers as least tasty
 - 2 = Respondent ranked medium-well hamburgers as next to least tasty
 - 3 = Respondent ranked medium-well hamburgers as third most tasty
 - 4 = Respondent ranked medium-well hamburgers as second most tasty
 - 5 = Respondent ranked medium-well hamburgers as most tasty
- tndwell Tenderness of a well-done hamburger:
- 1 = Respondent ranked well-done hamburgers as least tasty
 - 2 = Respondent ranked well-done hamburgers as next to least tasty
 - 3 = Respondent ranked well-done hamburgers as third most tasty
 - 4 = Respondent ranked well-done hamburgers as second most tasty
 - 5 = Respondent ranked well-done hamburgers as most tasty
- tnddk Respondent checked “Don’t know/Not sure” in response to question 13 on ranking of hamburger tenderness.
- 1= yes 0=no
- (HPQ Question 14: How likely do *YOU* think it is that *YOU* would get sick sometime in the next 12 months from eating a rare, medium rare, medium, medium well, or well-done hamburger patty?

illrare Chances of getting sick from a rare hamburger patty:

- 0 = Don't know/Not sure
- 1 = Not at all likely
- 2 = Somewhat unlikely
- 3 = Somewhat likely
- 4 = Very likely

illmedr Chances of getting sick from a medium-rare hamburger patty:

- 0 = Don't know/Not sure
- 1 = Not at all likely
- 2 = Somewhat unlikely
- 3 = Somewhat likely
- 4 = Very likely

illmed Chances of getting sick from a medium hamburger patty:

- 1 = Not at all likely
- 2 = Somewhat unlikely
- 3 = Somewhat likely
- 4 = Very likely

illmedw Chances of getting sick from a medium-well hamburger patty:

- 1 = Not at all likely
- 2 = Somewhat unlikely
- 3 = Somewhat likely
- 4 = Very likely

illwell Chances of getting sick from a well-done hamburger patty:

- 1 = Not at all likely
- 2 = Somewhat unlikely
- 3 = Somewhat likely
- 4 = Very likely

illrdk Respondent marked Don't know/Not sure about chances of getting sick from a rare hamburger, or didn't answer.

1 = yes 0 = no

illmrdk Respondent marked Don't know/Not sure about chances of getting sick from a medium-rare hamburger, or didn't answer.

1= yes 0=no

illmdk Respondent marked Don't know/Not sure about chances of getting sick from a medium hamburger, or didn't answer.

1= yes 0=no

illmwdk Respondent marked Don't know/Not sure about chances of getting sick from a medium-well hamburger, or didn't answer.

illwddk Respondent marked Don't know/Not sure about chances of getting sick from a well-done hamburger, or didn't answer.

bias (HPQ Question 15: Compared to other men/women who eat as many hamburgers as you do, what would be YOUR chances of getting sick, sometime in the next 12 months, from a hamburger patty because of how it is cooked?)

0 = Not reported

1 = May chances are smaller than average

2 = My chances are about average.

3 = May chances are larger than average

4 = Don't know/Not sure (or didn't answer)

(HPQ Question 16: Where have you heard or read about how to cook hamburger patties so a person won't get sick from eating the patties?)

family Family, relatives, friends, colleagues

0 = No

1 = Yes

news Newspapers

0 = No

1 = Yes

mag Magazines

0 = No

1 = Yes

cookbook Cookbooks

0 = No

1 = Yes

tvradio Television, radio

0 = No

1 = Yes

doctor Physicians

0 = No

1 = Yes

label Label or instructions on a package

0 = No

1 = Yes

brochure Brochures at grocery stores

0 = No

1 = Yes

govt Government sources (hotlines, extension offices)

0 = No

1 = Yes

Othersrc Other

0 = No

1 = Yes

heatkill Knowledge that heat kills bacteria (an indicator of food safety knowledge):

(HPQ Question 17: To the best of your knowledge, why would the amount of time hamburger patties are cooked affect a person's chances of getting sick from eating the patties?)

ANSWERS WERE COUNTED AS CORRECT IF THEY INCLUDED THE CONCEPT THAT HEAT KILLS BACTERIA.

1 = Respondent gave correct answer
0 = Respondent checked "The amount of time has nothing to do with how likely a person will get sick from eating them" or checked "Don't know/Not sure", or didn't answer.

(HPQ Question 18: Have you ever been sick from eating any of the following foods because they were raw or undercooked? (Mark "Yes" or "No", or "Don't know/Not sure" for each))

illburg Experienced illness from hamburger patties:

0 = No
1 = Yes

illmeat Experienced illness from other meats or poultry (chicken and turkey):

0 = No
1 = Yes

illfish Experienced illness from fish or shellfish:

0 = No
1 = Yes

CREATED VARIABLES:

homesame Respondent cooks hamburgers at home same as 5 years ago

0 = No
1 = Yes

restsame Respondent orders hamburgers in restaurant same as 5 years ago

0 = No
1 = Yes

pnknow_h Respondent cooks hamburgers at home pink in center
(Answered rare, medium rare or medium; if answered medium, also answered that medium hamburgers have some pink in the center)

0 = No
1 = Yes

pnknow_o Respondent orders hamburgers pink in center
(Answered rare, medium rare or medium; if answered medium, also answered that medium hamburgers have some pink in the center)

0 = No
1 = Yes

pnkago_h Five years ago, respondent used to cook hamburgers pink in center
(Answered rare, medium rare or medium; if answered medium, also answered that medium hamburgers have some pink in the center)

0 = No
1 = Yes

pnkago_o Five years ago, respondent used to order hamburgers pink in center
(Answered rare, medium rare or medium; if answered medium, also answered that medium hamburgers have some pink in the center)

0 = No
1 = Yes

impign Respondent did not report the importance of any hamburger attributes (taste, tenderness, how likely to make sick, etc.)

0 = No
1 = Yes

impnot Respondent rated all attributes of hamburgers as not important

0 = No
1 = Yes

impnev Respondent rated all attributes of hamburgers as “Never thought about it”.

0 = No
1 = Yes

impdk Respondent rated all attributes of hamburgers as “Don’t know.”

0 = No

1 = Yes

impall Respondent rated all attributes of hamburgers as very important.

0 = No

1 = Yes

OPINION QUIZ ABOUT HAMBURGER PREPARATION

The following questions ask about your opinions regarding **HAMBURGERS**. If this household has more than one adult, please have the questionnaire filled out by the **ADULT WITH THE MOST RECENT BIRTHDAY**.

1. In the past 12 months, about how often did you eat hamburgers, both at home and away from home?

- Once a week or more
- Two or three times a month
- About once a month
- Less than once a month
- Never in the past 12 months (Skip to Question 16 on back.)

2. A hamburger patty (the meat in a hamburger) may be cooked differently, from rare to well-done. When you eat in a restaurant, how do you ask to have your hamburger patties cooked?

- | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|--------------------------|
| Rare | Medium Rare | Medium | Medium Well | Well-Done | Don't ask for a certain way | Don't order hamburgers |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

3. Think about how you used to order hamburger patties **FIVE YEARS AGO** in a restaurant. Five years ago, how did you ask to have your hamburger patties cooked?

- | | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|--------------------------|
| Rare | Medium Rare | Medium | Medium Well | Well-Done | Don't ask for a certain way | Don't order hamburgers |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. If the way you order your hamburger patties now is different than it was five years ago, what made you change? (Mark "Yes" or "No" for each.)

- | Yes | No | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | This question does not apply to me (Go to Question 5.) |
| <input type="checkbox"/> | <input type="checkbox"/> | I prefer the taste of what I order now |
| <input type="checkbox"/> | <input type="checkbox"/> | I became concerned that I might get sick because of how hamburger patties are cooked |
| <input type="checkbox"/> | <input type="checkbox"/> | I got sick from hamburger patties because of how they were cooked |
| <input type="checkbox"/> | <input type="checkbox"/> | It's the way that people I know order their hamburger patties |
| <input type="checkbox"/> | <input type="checkbox"/> | The way I order now is more nutritious (for example, has less fat/cholesterol) |
| <input type="checkbox"/> | <input type="checkbox"/> | There are more/fewer choices in restaurants now |
| <input type="checkbox"/> | <input type="checkbox"/> | Other |
| <input type="checkbox"/> | <input type="checkbox"/> | Don't know/Not sure |

5. Which of the following best describes the hamburger patties you ate in the past 12 months?

- I cooked almost all the hamburger patties that I ate in the past 12 months
- I cooked some of the hamburger patties that I ate in the past 12 months
- I cooked only a few of the hamburger patties that I ate in the past 12 months
- I did not cook any of the hamburger patties that I ate in the past 12 months (Skip to Question 9)

6. When cooking hamburger patties **FOR YOURSELF TO EAT**, how do you cook them?

- | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Rare | Medium Rare | Medium | Medium Well | Well-Done |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

7. Think about how you used to cook hamburger patties for yourself **FIVE YEARS AGO**. Five years ago, how did you cook your hamburger patties?

- | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Rare | Medium Rare | Medium | Medium Well | Well-Done | Don't cook hamburgers |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

8. If the way you cook your hamburger patties now is different than it was five years ago, what made you change? (Mark "Yes" or "No" for each)

- | Yes | No | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | This question does not apply to me (Go to Question 9.) |
| <input type="checkbox"/> | <input type="checkbox"/> | I prefer the taste of what I cook now |
| <input type="checkbox"/> | <input type="checkbox"/> | The way I cook now is more nutritious (for example, has less fat/cholesterol) |
| <input type="checkbox"/> | <input type="checkbox"/> | Other |
| <input type="checkbox"/> | <input type="checkbox"/> | Don't know/Not sure |

9. Which of the following colors do **YOU** think best describes the **INSIDE** of a hamburger patty that is cooked **MEDIUM**?

- Still has some red in the middle
- Still has some pink in the middle
- Light brown all the way through
- Dark brown all the way through
- Don't know/Not sure

10. Some factors people may consider in deciding how to cook or order hamburger patties for themselves to eat are listed below. How important is each one **TO YOU** in deciding how to cook or order hamburger patties **FOR YOURSELF TO EAT**? (Mark the appropriate space for each factor)

| | Very important | Somewhat important | Somewhat unimportant | Not at all important | Never thought about it | Don't Know/Not sure |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| How juicy the patty is | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| How likely it is to make me sick | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| How tasty the patty is | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| How tender it is | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

11. How would **YOU** rank hamburger patties in terms of the amount of **JUICINESS**? Rank them from 1 to 5, with "1" being the most juicy, and "5" the least juicy. Write in one number per box. (Mark "Don't know/Not sure," if applicable.)

| | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Rare | Medium Rare | Medium | Medium Well | Well-Done | Don't know/Not sure |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

12. How would **YOU** rank hamburger patties in terms of their **TASTE**? Rank them from 1 to 5, with "1" being the best, "2" the next best, and "5" the worst. Write in one number per box. (Mark "Don't know/Not sure," if applicable.)

| | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Rare | Medium Rare | Medium | Medium Well | Well-Done | Don't know/Not sure |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

13. How would **YOU** rank hamburger patties in terms of how **TENDER** they are? Rank them from 1 to 5, with "1" being the most tender, and "5" the least tender. Write in one number per box. (Mark "Don't know/Not sure," if applicable.)

| | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Rare | Medium Rare | Medium | Medium Well | Well-Done | Don't know/Not sure |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

14. How likely do **YOU** think it is that **YOU** would get sick sometime in the next 12 months from eating a rare, medium rare, medium, medium well, or well-done hamburger patty?

| | Not at all likely | Somewhat unlikely | Somewhat likely | Very likely | Don't Know/Not sure |
|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Rare | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Medium rare | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Medium | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Medium well | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Well-done | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

15. Compared to other men/women who eat as many hamburgers as you do, what would be **YOUR** chances of getting sick, sometime in the next 12 months, from a hamburger patty because of how it is cooked?

- My chances are smaller than average
- My chances are about average
- My chances are larger than average
- Don't know/Not sure

16. Where have you heard or read about how to cook hamburger patties so a person won't get sick from eating the patties? (Mark "Yes" or "No" for each)

| Yes | No | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Family, relatives, friends, colleagues |
| <input type="checkbox"/> | <input type="checkbox"/> | Newspapers |
| <input type="checkbox"/> | <input type="checkbox"/> | Magazines |
| <input type="checkbox"/> | <input type="checkbox"/> | Cookbooks |
| <input type="checkbox"/> | <input type="checkbox"/> | Television, radio |
| <input type="checkbox"/> | <input type="checkbox"/> | Physicians |
| <input type="checkbox"/> | <input type="checkbox"/> | Label or instructions on a package |
| <input type="checkbox"/> | <input type="checkbox"/> | Brochures at grocery stores |
| <input type="checkbox"/> | <input type="checkbox"/> | Government sources (hotlines, extension offices) |
| <input type="checkbox"/> | <input type="checkbox"/> | Other |

17. To the best of your knowledge, why would the amount of time hamburger patties are cooked affect a person's chances of getting sick from eating the patties?

COMMENTS: _____

18. Have you ever been sick from eating any of the following foods because they were raw or undercooked? (Mark "Yes" or "No", or "Don't know/Not sure" for each)

| | Yes | No | Don't Know/Not sure |
|---|--------------------------|--------------------------|--------------------------|
| Hamburger patties | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other meats or poultry (chicken and turkey) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Fish or shellfish | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Thank you for your participation

Appendix B. Descriptive Statistics of Variables in hpq.dat

The following descriptive statistics were estimated from hpq.dat using SAS proc means, as illustrated in the sample program in Section 2. Note that these are UNWEIGHTED means, referring only to the raw data. Check descriptive statistics against the values presented here to make sure you have downloaded the data correctly. To obtain weighted means, you must specify wtquiz as the weighting variable in the program you will use to analyze these data.

| Variable | N | Mean | Standard Deviation | Minimum | Maximum |
|----------|------|----------|--------------------|----------|----------|
| HHID | 1036 | 39339.62 | 24810.65 | 10 | 97611 |
| QUIZID | 1034 | 1.34236 | 0.474729 | 1 | 2 |
| WTQUIZ | 1036 | 0.918078 | 1.167338 | 0.432788 | 24.04872 |
| AGE | 1015 | 57.0197 | 13.13575 | 3 | 73 |
| MALE | 1036 | 0.292471 | 0.455117 | 0 | 1 |
| CENSREG | 1036 | 4.992278 | 2.449872 | 1 | 9 |
| AREASIZE | 1036 | 4.797297 | 3.163413 | 0 | 9 |
| HHSIZE | 1036 | 2.194015 | 1.125035 | 1 | 8 |
| AGEHMKR | 1036 | 3.809846 | 3.519928 | 0 | 9 |
| HHINC | 1036 | 30.85135 | 21.20945 | 1 | 99 |
| CHILDREN | 1036 | 1.004826 | 1.639776 | 0 | 7 |
| OCCHEAD | 1036 | 2.772201 | 1.283955 | 1 | 4 |
| EDUCHEAD | 1036 | 2.426641 | 0.628951 | 1 | 3 |
| EMPLHMKR | 1036 | 0.494209 | 0.500208 | 0 | 1 |
| ETHNIC | 1036 | 1.088803 | 0.375365 | 1 | 3 |
| DIET | 1015 | 1.049261 | 1.62862 | 0 | 5 |
| FREQ | 1036 | 2.415058 | 1.175238 | 1 | 5 |
| OUTNOW | 980 | 4.581633 | 1.237179 | 1 | 6 |
| OUTAGO | 980 | 4.436735 | 1.408814 | 1 | 6 |
| OUTTST | 324 | 0.506173 | 0.500735 | 0 | 1 |
| OUTWORY | 318 | 0.726415 | 0.446501 | 0 | 1 |
| OUTILL | 316 | 0.139241 | 0.346746 | 0 | 1 |
| OUTPEER | 317 | 0.227129 | 0.419639 | 0 | 1 |
| OUTNUT | 315 | 0.4 | 0.490677 | 0 | 1 |
| OUTSEL | 316 | 0.329114 | 0.470637 | 0 | 1 |
| OUTETC | 311 | 0.18328 | 0.387519 | 0 | 1 |
| OUTDK | 314 | 0.156051 | 0.363483 | 0 | 1 |
| COOK | 978 | 2.019427 | 1.044864 | 1 | 4 |
| COOKNOW | 845 | 4.065089 | 1.166993 | 1 | 5 |
| COOKAGO | 846 | 3.900709 | 1.196474 | 1 | 5 |
| COOKTST | 308 | 0.61039 | 0.488456 | 0 | 1 |
| COOKWORY | 288 | 0.614583 | 0.487541 | 0 | 1 |
| COOKILL | 274 | 0.321168 | 0.46778 | 0 | 1 |

| | | | | | |
|----------|------|----------|----------|---|---|
| COOKPEER | 272 | 0.264706 | 0.44199 | 0 | 1 |
| COOKNUT | 277 | 0.527076 | 0.50017 | 0 | 1 |
| COOKETC | 263 | 0.136882 | 0.344378 | 0 | 1 |
| COOKDK | 259 | 0.227799 | 0.420224 | 0 | 1 |
| COLOR | 977 | 2.550665 | 0.853958 | 1 | 5 |
| IMPJUICY | 975 | 2.831795 | 1.131232 | 0 | 4 |
| IMPRISK | 971 | 3.027806 | 1.466551 | 0 | 4 |
| IMPTASTE | 971 | 3.488157 | 0.781628 | 0 | 4 |
| IMPTENDR | 973 | 3.217883 | 0.987478 | 0 | 4 |
| JCYRARE | 785 | 3.921019 | 1.405666 | 1 | 5 |
| JCYMEDR | 793 | 3.653216 | 0.963759 | 1 | 5 |
| JCYMED | 794 | 3.268262 | 0.866833 | 1 | 5 |
| JCYMEDW | 781 | 2.573624 | 1.034666 | 1 | 5 |
| JCYWELL | 784 | 1.674745 | 1.271588 | 1 | 5 |
| JCYDK | 34 | 1.264706 | 0.447811 | 1 | 2 |
| TSTRARE | 786 | 1.86514 | 1.276792 | 1 | 5 |
| TSTMEDR | 787 | 2.907243 | 1.17449 | 1 | 5 |
| TSTMED | 788 | 3.63198 | 0.952009 | 1 | 5 |
| TSTMEDW | 789 | 3.657795 | 1.124036 | 1 | 5 |
| TSTWELL | 786 | 3.054707 | 1.601213 | 1 | 5 |
| TSTDK | 15 | 1 | 0 | 1 | 1 |
| TNDRARE | 680 | 3.275 | 1.604291 | 1 | 5 |
| TNDMEDR | 682 | 3.639296 | 1.010421 | 1 | 5 |
| TNDMED | 681 | 3.535977 | 0.883982 | 1 | 5 |
| TNDMEDW | 680 | 2.948529 | 1.192267 | 1 | 5 |
| TNDWELL | 680 | 1.805882 | 1.312889 | 1 | 5 |
| TNDDK | 31 | 1 | 0 | 1 | 1 |
| ILLRARE | 953 | 2.588667 | 1.431473 | 0 | 4 |
| ILLMEDR | 950 | 2.303158 | 1.348883 | 0 | 4 |
| ILLMED | 949 | 1.875659 | 1.118189 | 0 | 4 |
| ILLMEDW | 950 | 1.544211 | 0.993998 | 0 | 4 |
| ILLRDK | 1036 | 0.158301 | 0.365199 | 0 | 1 |
| ILLMRDK | 910 | 0 | 0 | 0 | 0 |
| ILLMDK | 918 | 0 | 0 | 0 | 0 |
| ILLMWDK | 925 | 0 | 0 | 0 | 0 |
| ILLWDDK | 957 | 0 | 0 | 0 | 0 |
| BIAS | 971 | 1.942328 | 1.120921 | 1 | 4 |
| FAMILY | 1036 | 0.59749 | 0.49064 | 0 | 1 |
| NEWSPAPR | 1036 | 0.667954 | 0.471175 | 0 | 1 |
| MAGAZINE | 1036 | 0.55695 | 0.496986 | 0 | 1 |
| COOKBOOK | 1036 | 0.3639 | 0.481353 | 0 | 1 |
| TVRADIO | 1036 | 0.69305 | 0.461451 | 0 | 1 |
| DOCTOR | 1036 | 0.26834 | 0.443309 | 0 | 1 |

| | | | | | |
|----------|------|----------|----------|---|---|
| LABEL | 1036 | 0.489382 | 0.500129 | 0 | 1 |
| BROCHURE | 1036 | 0.305019 | 0.460638 | 0 | 1 |
| GOVT | 1036 | 0.30888 | 0.462255 | 0 | 1 |
| OTHERSRC | 1036 | 0.160232 | 0.366998 | 0 | 1 |
| HEATKILL | 1036 | 0.472008 | 0.499457 | 0 | 1 |
| ILLBURG | 1036 | 0.104247 | 0.305728 | 0 | 1 |
| ILLMEAT | 1036 | 0.156371 | 0.363382 | 0 | 1 |
| ILLFISH | 1036 | 0.184363 | 0.387967 | 0 | 1 |
| HOMESAME | 846 | 0.625296 | 0.484333 | 0 | 1 |
| RESTSAME | 980 | 0.632653 | 0.482328 | 0 | 1 |
| PNKNOW_H | 823 | 0.196841 | 0.397853 | 0 | 1 |
| PNKNOW_O | 947 | 0.137276 | 0.34432 | 0 | 1 |
| PNKAGO_H | 824 | 0.25 | 0.433276 | 0 | 1 |
| PNKAGO_O | 947 | 0.193242 | 0.39505 | 0 | 1 |
| IMPIGN | 1036 | 0 | 0 | 0 | 0 |
| IMPNOT | 1036 | 0.000965 | 0.031069 | 0 | 1 |
| IMPNEV | 1036 | 0.012548 | 0.111368 | 0 | 1 |
| IMPDK | 1036 | 0.002896 | 0.05376 | 0 | 1 |
| IMPALL | 1036 | 0.135135 | 0.342033 | 0 | 1 |