



Handling and Storage Practices for Frankfurters, Deli Meats, and Deli Salads: Results of a Consumer Survey

Presented to

The 91st Annual International Association
for Food Protection Meeting

Phoenix, AZ

August 10, 2004

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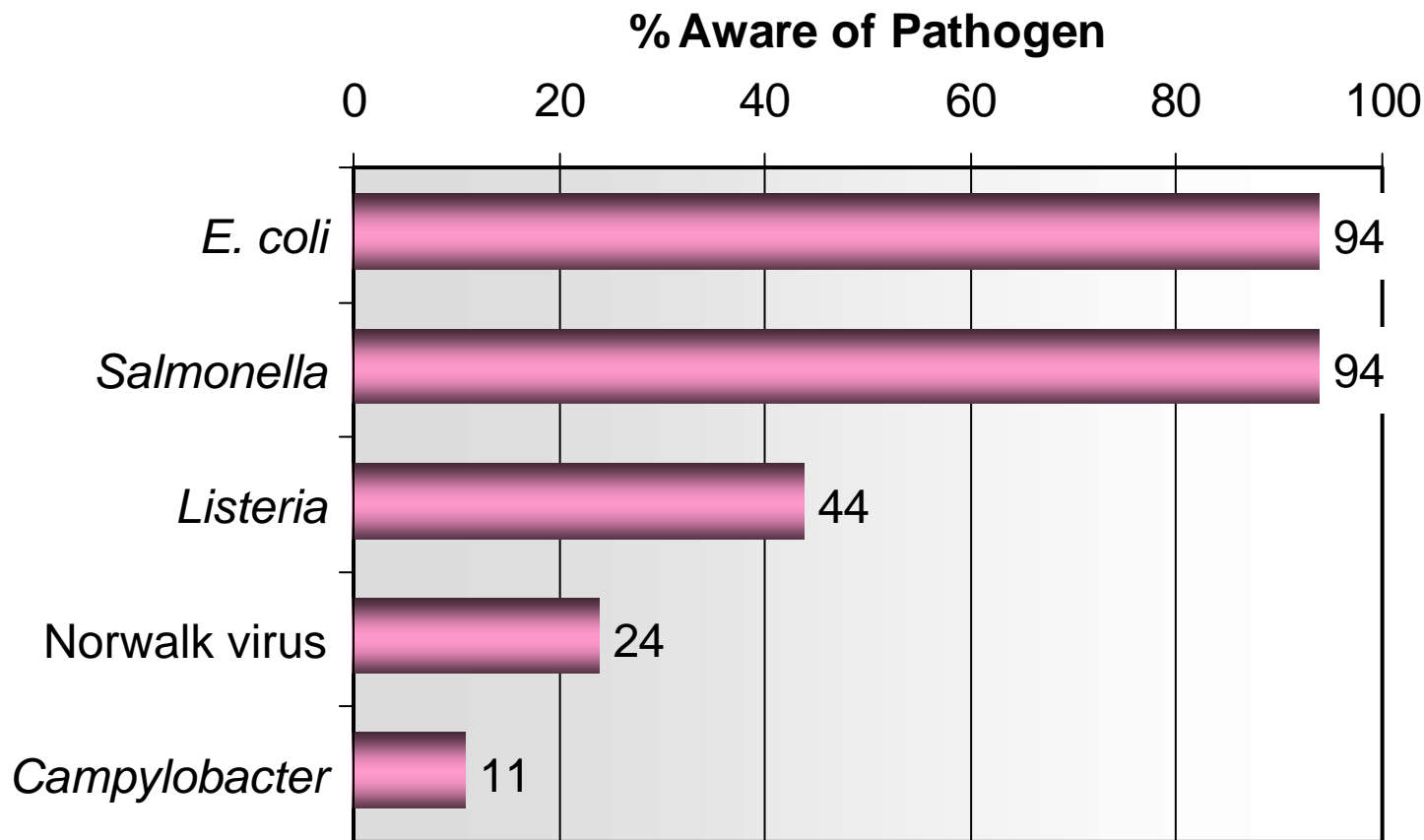
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Study Design

- Survey conducted to determine
 - Consumer knowledge of foodborne pathogens
 - Prevalence of risky storage and handling practices for frankfurters, deli meats, and deli-type salads containing meat, poultry, egg, or seafood
- Surveyed nationally representative sample of U.S. adults using a Web-enabled panel survey approach
- Survey sent to sample of 1,696 adults; received total of 1,212 completed surveys (71% cooperation rate)
- Analyses conducted using weighted survey data; individual and household-level weights

Consumer Awareness of Foodborne Pathogens^a



^aAnalysis was conducted using individual-level weights (n = 1,212).

Consumer Knowledge of Food Vehicles for *Listeria*^a

Food	Identified food as vehicle for <i>Listeria</i> (%)
Raw meat/poultry	19.2
Fruits or vegetables	5.4
Seafood	4.5
Cheese	3.8
Milk	3.6
Processed meats (e.g., deli meats, frankfurters)	3.1
Other	3.1
Don't know/did not respond	67.4

Comparison of Consumers Who Are Aware vs. Unaware of *Listeria* (I)^a

	Aware of <i>Listeria</i>		Unaware of <i>Listeria</i>		p ^b
	# of Respondents	%	# of Respondents	%	
All respondents	553	—	634	—	
Gender of respondent					
Male	275	46.1	315	48.1	
Female	278	53.9	319	51.9	0.575
Respondent is 60+ years	132	17.4	189	25.3	0.003
Child ≤ 5 years of age in household (HH)	102	22.0	81	16.2	0.053
Individual in HH with weakened immune system, diabetes, or kidney disease	84	14.1	114	17.6	0.169
Pregnant woman in HH	20	4.5	17	3.8	0.652

^aAnalysis was conducted using individual-level weights for respondents who answered the question on awareness of *Listeria*.

^bp of χ^2 test.

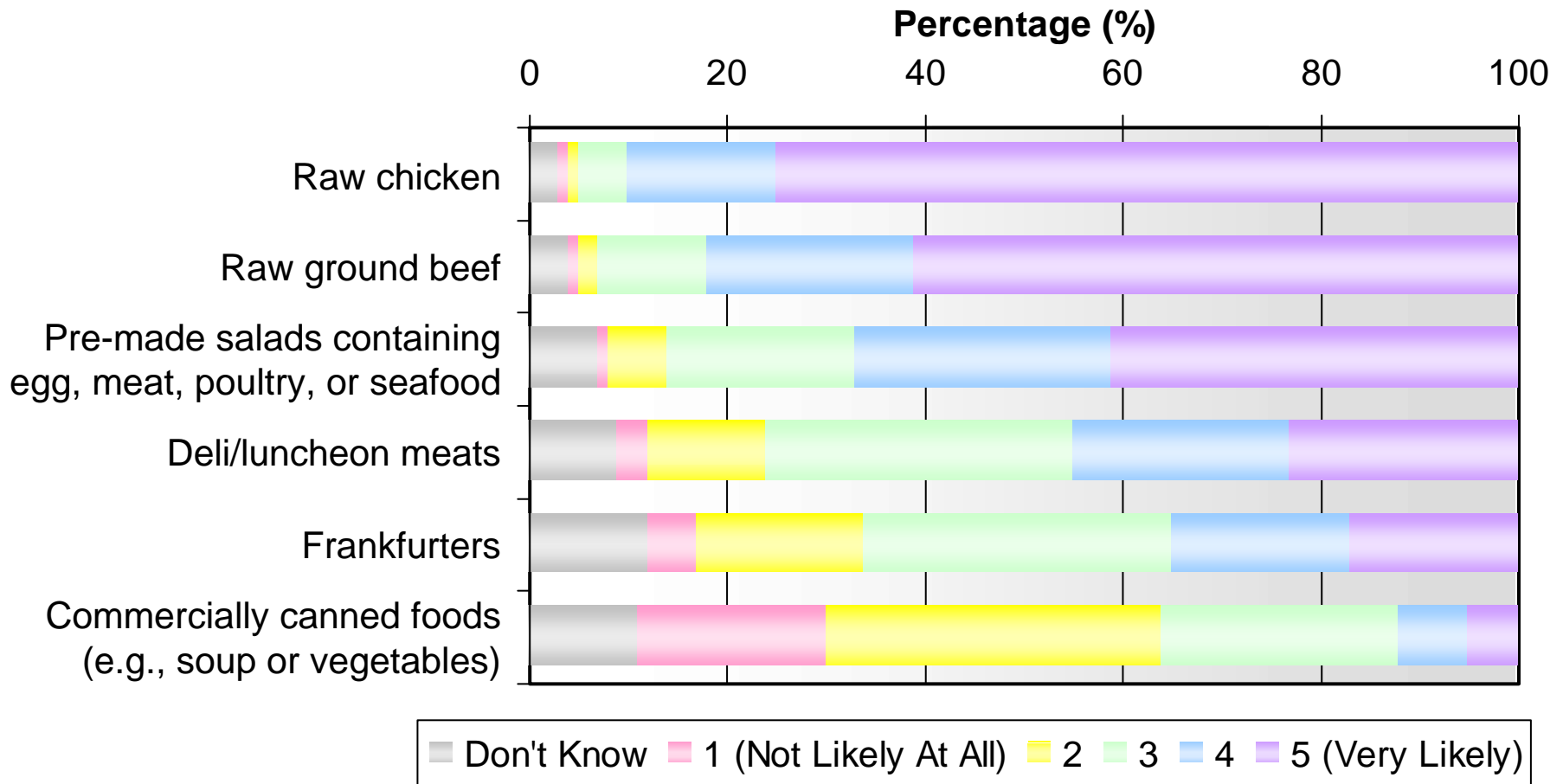
Comparison of Consumers Who Are Aware vs. Unaware of *Listeria* (II)^a

	Aware of <i>Listeria</i>		Unaware of <i>Listeria</i>		p ^b
	# of Respondents	%	# of Respondents	%	
Education level of respondent					
≤ High school graduate	204	38.7	314	54.8	
Any college	349	61.3	320	45.2	0.000
Household income level					
< \$35,000	161	31.7	288	50.5	
\$35,000+	385	67.2	340	48.9	
Not reported	7	1.1	6	0.6	0.000
Level of urbanization					
Metropolitan	476	79.6	532	79.9	
Nonmetropolitan	77	20.4	102	20.1	0.928
Respondent shops for groceries	494	88.1	540	82.5	0.034
Respondent cooks meals	497	90.4	545	83.5	0.004

^aAnalysis was conducted using individual-level weights for respondents who answered the question on awareness of *Listeria*.

^bp of χ^2 test.

Consumer Perception of the Likelihood that Foods Contain Foodborne Pathogens^a



^aAnalysis was conducted using individual-level weights (n = 1,212).

Consumer Practices for Storing and Preparing Frankfurters^a

Practices	Weighted Percentage (%)
Stored unopened packages in freezer	44.2
If refrigerated, stored unopened packages for recommended time or less (≤ 14 days)	96.2
If opened, stored opened packages for recommended time or less (≤ 7 days), stored in freezer, or discarded leftovers	86.7
Heated frankfurters before consumption	99.8
For frozen product, safely defrosted before heating	46.9

^aAnalysis was conducted using household-level weights for respondents who purchase frankfurters, shop for groceries, and cook meals (n = 915).

Consumer Practices for Storing Deli Meats and Deli Salads^a

Practices	Weighted Percentage (%)
<i>Deli meats</i>	
Stored freshly sliced deli meats for recommended time or less (≤ 5 days)	66.1
Stored unopened packages of vacuum packed deli meats for recommended time or less (≤ 14 days)	96.6
If opened, stored opened packages of vacuum packed deli meats for recommended time or less (≤ 5 days) or discarded leftovers	59.2
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<i>Deli salads</i>	
Stored for recommended time or less (≤ 5 days)	83.2
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^aAnalysis was conducted using household-level weights for respondents who purchase the product, shop for groceries, and cook meals (n = 911 for deli meats and 354 for deli salads).

Comparison of Consumers Who Store Frankfurters Within vs. Outside Guidelines (I)^a

	Within Guidelines		Outside Guidelines		p ^b
	# of Respondents	%	# of Respondents	%	
All respondents	783	—	104	—	
Household size					
One person	124	27.6	21	33.9	
More than one person	659	72.4	83	66.1	0.329
Child ≤ 5 years of age in household (HH)	132	21.7	13	14.4	0.148
Individual in HH with weakened immune system, diabetes, or kidney disease	138	14.4	15	12.0	0.544
Senior in HH	247	25.4	34	27.8	0.673
Education level of respondent					
≤ High school graduate	349	46.4	32	31.5	
Any college	434	53.6	72	68.5	0.018

^aAnalysis was conducted using household-level weights for respondents who purchase frankfurters, shop for groceries, and cook meals.

^bp of χ^2 test.

Comparison of Consumers Who Store Frankfurters Within vs. Outside Guidelines (II)^a

	Within Guidelines		Outside Guidelines		p ^b
	# of Respondents	%	# of Respondents	%	
Household income level					
< \$35,000	288	44.2	41	44.2	
\$35,000+	487	54.9	62	55.2	
Not reported	8	0.9	1	0.6	0.935
Level of urbanization					
Metropolitan	655	79.5	99	93.0	
Nonmetropolitan	128	20.5	5	7.0	0.020
Race/ethnicity of respondent					
White, Non-Hispanic	622	76.6	79	70.3	
Black, Non-Hispanic	72	10.9	16	18.9	
Other Non-Hispanic	24	3.2	2	2.8	
Hispanic	65	9.3	7	8.0	0.315
Aware of <i>Listeria</i>	378	49.1	48	46.8	0.717

^aAnalysis was conducted using household-level weights for respondents who purchase frankfurters, shop for groceries, and cook meals.

^bp of χ^2 test.

Comparison of Consumers Who Store Deli Meats Within vs. Outside Guidelines (I)^a

	Within Guidelines		Outside Guidelines		p ^b
	# of Respondents	%	# of Respondents	%	
All respondents	551	—	310	—	
Household size					
One person	89	28.6	56	29.6	
More than one person	462	71.4	254	70.4	0.817
Child ≤ 5 years of age in household (HH)	86	19.7	52	19.7	0.986
Individual in HH with weakened immune system, diabetes, or kidney disease	95	13.9	58	16.6	0.361
Senior in HH	178	26.8	98	23.8	0.412
Education level of respondent					
≤ High school graduate	226	42.2	116	41.6	
Any college	325	57.8	194	58.4	0.898

^aAnalysis was conducted using household-level weights for respondents who purchase deli meats, shop for groceries, and cook meals.

^bp of χ^2 test.

Comparison of Consumers Who Store Deli Meats Within vs. Outside Guidelines (II)^a

	Within Guidelines		Outside Guidelines		p ^b
	# of Respondents	%	# of Respondents	%	
Household income level					
< \$35,000	198	41.8	112	43.5	
\$35,000+	351	58.0	192	54.8	
Not reported	2	0.2	6	1.7	0.088
Level of urbanization					
Metropolitan	468	80.3	266	80.6	
Nonmetropolitan	83	19.7	44	19.4	0.932
Race/ethnicity of respondent					
White, Non-Hispanic	433	76.9	248	78.3	
Black, Non-Hispanic	53	10.3	35	12.0	
Other Non-Hispanic	16	3.5	7	4.1	
Hispanic	49	9.3	20	5.6	0.536
Aware of <i>Listeria</i>	260	49.0	154	51.9	0.521

^aAnalysis was conducted using household-level weights for respondents who purchase deli meats, shop for groceries, and cook meals.

^bp of χ^2 test.



Risk Communication Messages for Listeriosis Should...

- Inform consumers about *Listeria* and potential food sources
- Inform consumers who are at risk
- Provide information on proper storage and handling of RTE foods
- Provide information on proper refrigerator temperature