

Safe Flour Handling: Know Your "Roll"



Welcome from PFSE





Sarah Spencer

The Ohio State University B.S. Environment, Economy, Development, and Sustainability Class of 2026

Program Intern Partnership for Food Safety Education <u>sspencer@fightbac.org</u>



Today's Line Up

- Welcome / Housekeeping with Sarah Spencer, Partnership for Food Safety Education
- Milling Process & Why Flour Is Considered Raw with Jane DeMarchi, North American Millers Association
- **FDA Research on Flour** with Fanfan Wu, Ph.D., U.S. Food and Drug Administration
- FDA Tools and Why Heat Treating at Home Doesn't Work with Sharmi Das, U.S. Food and Drug Administration
- New Educational Resources Available with Katie Weston, Partnership for Food Safety Education
- Q&A with Guest Speakers



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Housekeeping





Join the chat! Or send a question during the webinar.

After the webinar, you'll receive a brief survey. Please complete it.



Help us improve!



One-hour CEU available from ANFP, CDR, NCHEC & NEHA

- Download certificates from chat box
- Follow-up email
- Download at <u>fightbac.org</u> under "Free Resources" tab and "Recorded Webinars"
- Educators seeking NCHEC must complete online questionnaire by Tuesday, Jan. 2



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About the Partnership

We're an active network of...

- 13,000 health and food safety educators
- 40 Partner organizations
- Federal liaisons (CDC, FDA, USDA)

All working together to advance trusted, consistent, science-based behavioral health messaging.





Did You Know?

Every year in the United States...

- 1 in 6 people (or 48 million people) get sick from foodborne illness, commonly called food poisoning
- 128,000 are hospitalized
- 3,000 die from eating contaminated food

Following simple food safety steps can help prevent foodborne illness and the spread of germs.









Do you consider flour a raw ingredient?

- 1. Yes
- 2. No
- 3. Maybe / I'm not sure.
- 4. I've never thought about it.





Flour Food Safety

Jane DeMarchi President jdemarchi@namamillers.org



 Over 40 million acres of wheat are grown in the United States.

 Flour is made from raw grain that is grown and harvested in nature and exposed to the elements.





Flour Facts

- Ground grain was one of civilization's first foods.
- In 2020, U.S. millers grounded over 918 million bushels of wheat to make 42.5 billion pounds of flour.
- The average person in America consumes 130.7 pounds of flour each year.
- A bushel of wheat can produce 90 one -pound loaves of whole wheat bread or 210 servings of spaghetti.



- Wheat flour has a very strong food safety track record, however...
- *E. coli* and other naturally occurring pathogens are present in nature, fields, and crops.

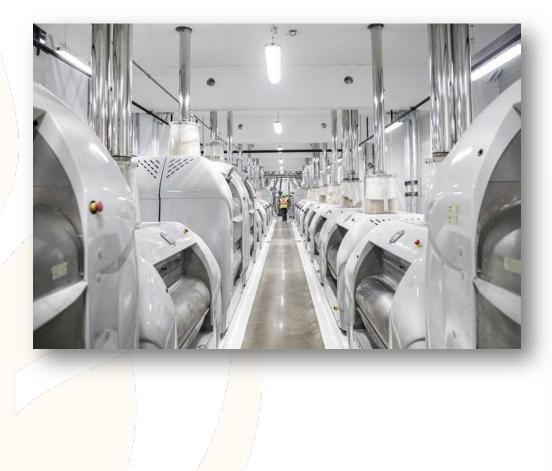












Wheat milling is the science of analyzing, blending, grinding, sifting, and blending again, a variety of wheat.





Flour is not ready -to-eat

- Traditional milling does not include a process to eliminate the presence of pathogens such as *E. coli* and *Salmonella*.
- Peer-reviewed studies have reported pathogen prevalence in wheat as 0.1 to 3% at low MPN levels.
 (Myoda et al., 2019).







Labeling



"Do not eat raw batter"

"Flour is raw" "Please cook fully before enjoying"



Calcium Omg	0%
Iron Omg	0%
Potassium Omg	0%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

INGREDIENTS: Unbleached Hard Red Wheat Flour, Malted Barley Flour.

DISTRIBUTED BY KING ARTHUR BAKING COMPANY, INC. NORWICH, VERMONT 05055 KingArthurBaking.com | 800-827-6836

SAFE HANDLING INSTRUCTIONS: Raw flour is not ready-to-eat and must be thoroughly cooked or baked before eating to prevent illness from bacteria in the flour. Do not eat or play with raw dough; wash hands, utensils, and surfaces after handling. After opening, keep cool and dry in a sealed container. Freeze for prolonged storage.





Stay in Touch



For consumer food safety resources visit:

namamillers.org

homebaking.org/baking -food -safety







Has anyone in your household consumed batter or dough containing raw flour in the past year?

- 1. Yes, several times.
- 2. Yes, a couple of times.
- 3. No, not even once.
- 4. Maybe / I'm not sure.



Recent FDA Research Findings on Flour

Fanfan Wu, Ph.D., Amy Lando, MPP & Linda Verrill, Ph.D. FDA/Center for Food Safety and Applied Nutrition/Consumer Studies Branch <u>Fanfan.Wu@fda.hhs.gov</u>

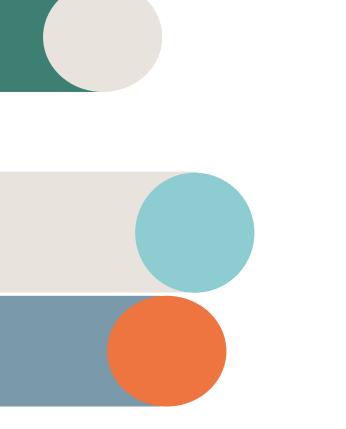


FDA Tools

Sharmi Das, Division Director FDA/Center for Food Safety and Applied Nutrition/ Division of Education, Outreach & Information <u>Sharmi.Das@fda.hhs.gov</u>







- Overview
- Methods
- Results related to flour & uncooked flour

FDA

• Summary



 FDA Quick Turnaround Consumer Surveys on Ongoing Food Recalls

OVERVIEW

- **Goal:** to collect quick turnaround consumer data to inform FDA's communications during an ongoing food recall/outbreak
- Gold Medal flour recall
 - Recall issued: April 28, 2023
 - Survey fielded: May 17 May 21, 2023

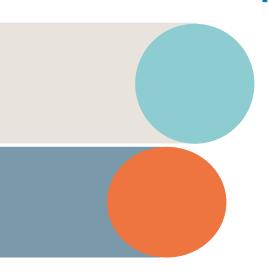




- Survey length: 15 mins
- Sample size: 1,208 respondents
- Non-probability web panel (Dynata): balanced to U.S. population
 - Adults 18 years or older
 - Live in the United States
 - Comfortable reading in English



RESULTS Consumption of Flour



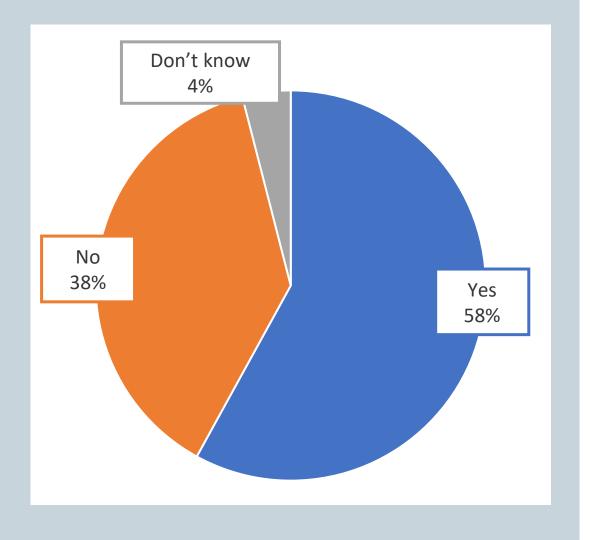
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% In the past 12 months 83% In the past 30 days 66% In the past 7 days 39%

Have you eaten or used flour ... (N = 1,208)

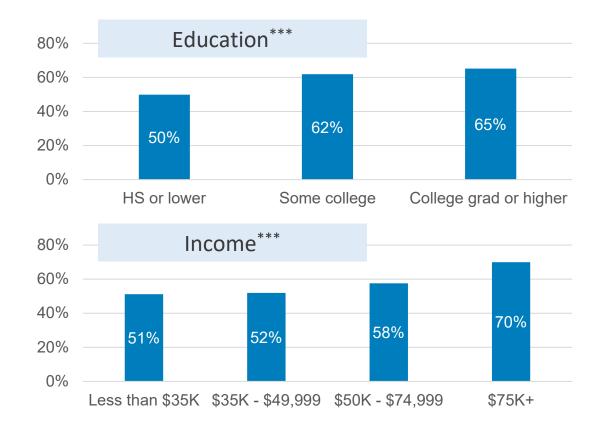




Would you say that flour is something you eat or use regularly? (N = 1,208)

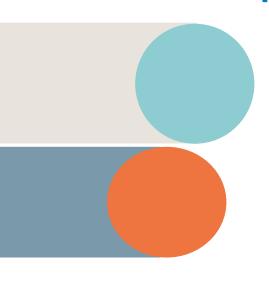


Who uses or consumes flour regularly?





RESULTS Consumption of Uncooked Flour



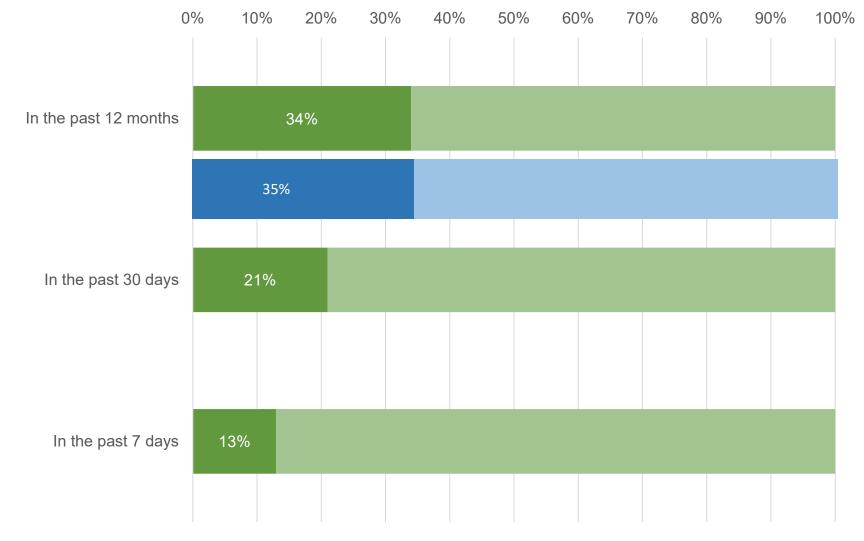
Comparing Results Between Quick Turnaround Survey and the 2019 FSANS

	Quick Turnaround Survey Gold Medal Flour Recall	2019 FSANS Food Safety Version
Question	Have you tasted or eaten something with uncooked flour in it, such as raw dough or raw cake mix? • In the past 12 months • In the past 30 days • In the past 7 days	In the past 12 months have you ever tasted or eaten something with uncooked flour in it, such as raw cake batter or raw, homemade cookie dough?
Sampling Method	Non-probability samplingWeb panelNot national representative	Probability samplingAddress-basedNational representative
Sample Size	N = 1,208	N = 2,218
Data Weighting	Weighted	Weighted
Survey Topics	All questions are related to the Gold Medal flour recall or flour	Questions cover a wide range of food safety topics

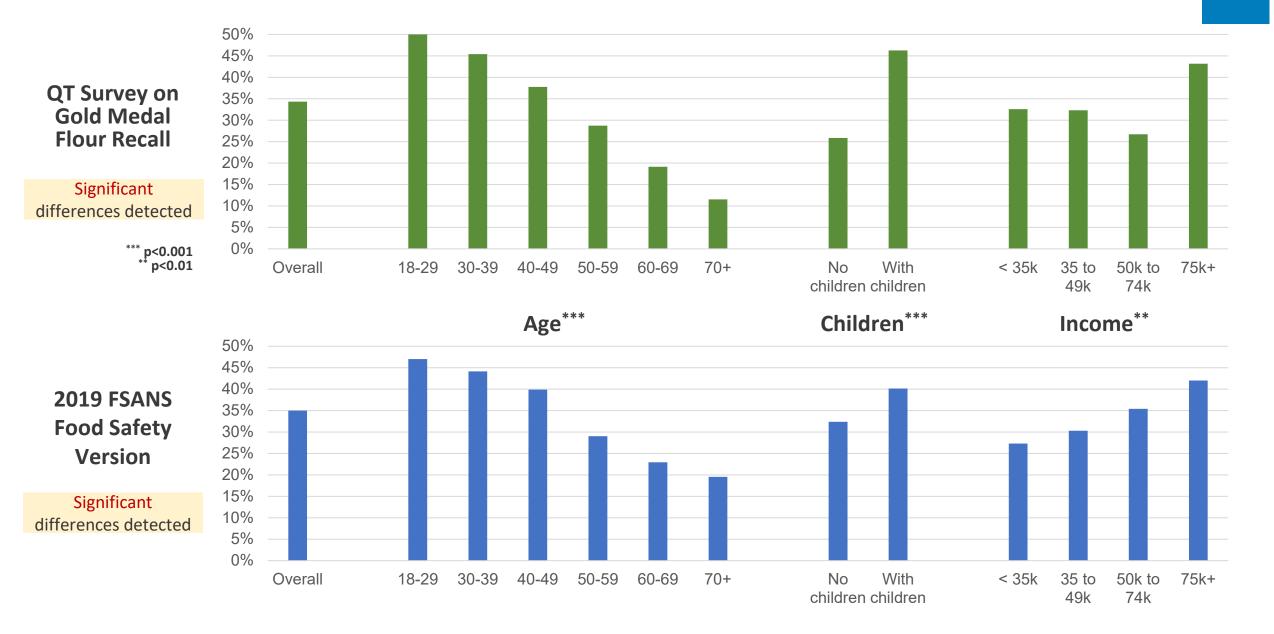
FDA

Have you tasted or eaten something with uncooked flour in it, such as raw dough or raw cake mix ...? (N = 1,208)

2019 FSANS (Food Safety Version) In the past 12 months have you ever tasted or eaten something with uncooked flour in it, such as raw cake batter or raw, homemade cookie dough? (N = 2,218)

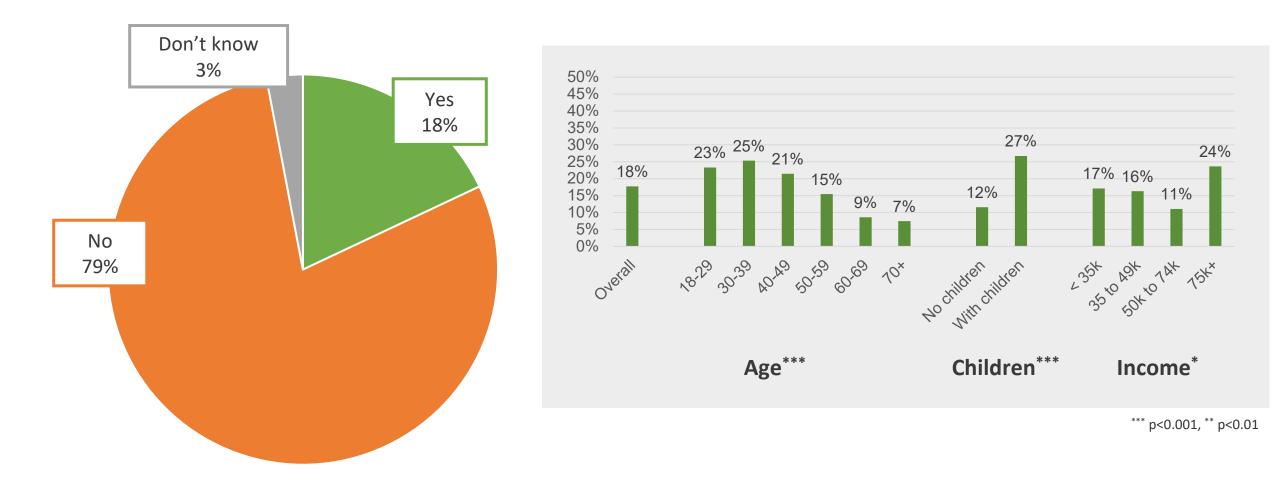


Uncooked flour consumption in the past 12 months, by demographic variables



FDA

Would you say that tasting or eating something with uncooked flour in it, such as raw dough or raw cake mix, is something you do regularly? (N = 1,208)



FDA



Consumption of Flour

- 83% of consumers reported eating or using flour in the past 12 months
- 58% reported eating or using flour regularly

Consumption of Uncooked Flour

- 34% of consumers reported tasting or eating uncooked flour in the past 12 months
- 18% of consumers reported tasting or eating uncooked flour regularly

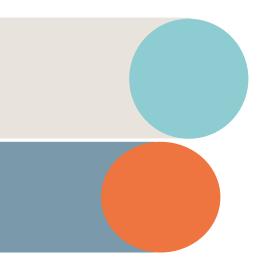
Consumers who are younger, have children in their households, and have higher income:

- Are more likely to report consuming uncooked flour
- Are more likely to report consuming uncooked flour regularly

Findings from this survey are mostly consistent with findings from the 2019 FSANS

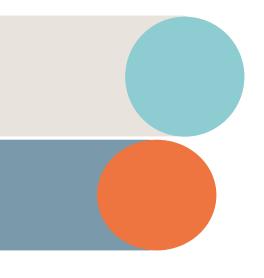
SUMMARY

2019 FSANS Links



- Summary report: <u>https://www.fda.gov/food/science-</u> research-food/2019-food-safety-and-nutrition-surveyreport
- FSANS data explorer: <u>https://fsans-explorer.fda.gov/</u>
- Verrill, L., Lando, A., Wu, F., Tatavarthy, A., Obenhuber, D. Consumption of Raw Flour in the United States: Results from the 2019 FDA Food Safety and Nutrition Survey. *Journal of Food Protection*. 2021;85(1), 31-35. <u>https://doi.org/10.4315/JFP-21-256</u>

Implications for Consumer Messaging

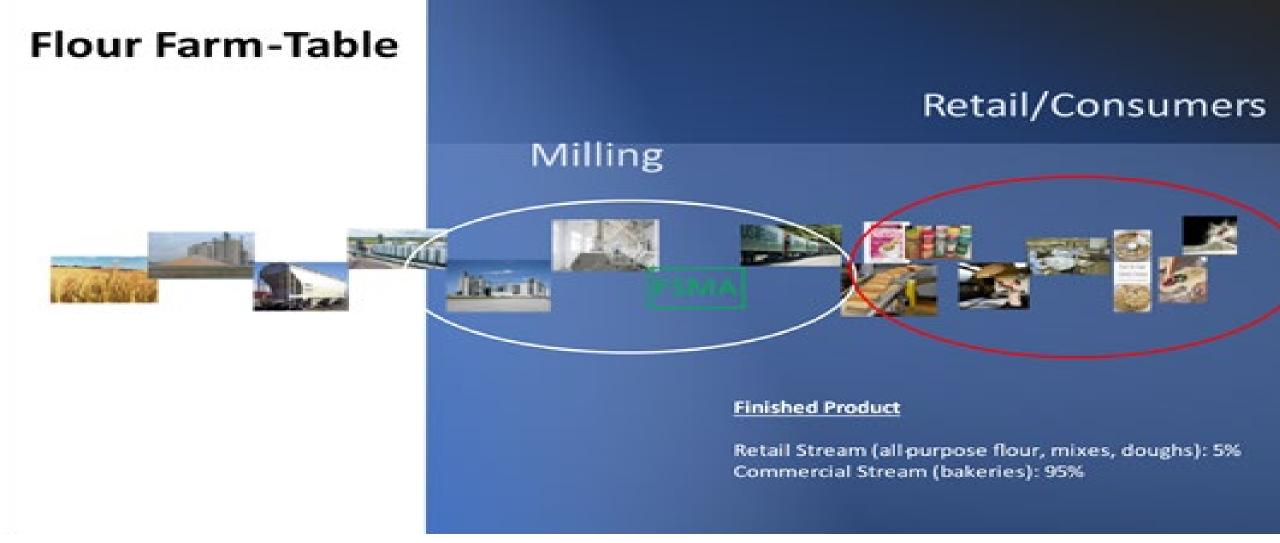


Focus consumer messaging on those:

- Who are younger, have children in their households, and have higher income
- Who are females and higher educated

Additionally:

- Unaware of the risks
- Like tasting raw dough/cookie dough



Flour: Farm To Table

While only about 5% of domestically produced flour is sold directly to consumers; this small percentage of flour in the retail stream is often the flour implicated in foodborne outbreaks.





FDA's Resources on Flour Safety

Content current as (

Food & Beverages

05/05/2022 Regulated Product

Handling Flour Safely: What You Need to Know

Raw Dough's a Raw Deal and Could Make You Sick

Raw Dough's a Raw Deal and Could Make You FDA U.S. FOOD & DRUG Never Devour Raw Flour! Subscribe to Small Updates 🕴 Share 🔰 Tweet 🛛 In Linkedin 🖉 Small 🕀 Print DON'T DO Don't eat, taste, or allow Do follow package directions on Content current as of baking mixes and other flourchildren to eat or play with raw 12/04/2017 containing products for correct dough products or baking mix Regulated Product(s cooking temperatures and before cooking. Food & Beverages specified times. DON'T DO 💋 Don't let children use raw dough Do keep all raw foods like flour for crafts/play clay. and eggs separate from ready-toeat foods. Remember, flour is a powder and spreads easily. DON'T -DO Don't use products that contain raw flour, like cake mix, to make Do refrigerate cookie and pastry ready-to-eat products dough according to package like milkshakes. directions. Use a refrigerator ermometer to be sure you DON'T efrigerator is at a safe 40°F. Don't try to heat treat flour DO in your own home. Home B Do clean up carefully after treatments of flour may not Ê working with flour or raw effectively kill all bacteria and do not make it safe to eat raw. dough and eggs: · Wash hands thoroughly with soap and DON'T running water, and, Wash utensils, bowls, baking pans, Don't use raw cookie dough in cutting boards, and countertops wit ready-to-eat ice cream warm, soapy water. And, if you have any recalled flour at home, throw it away! For more information and resources about handling flour safely, please visit

Never Devour Raw Flour!

Infographic

Handling Flour Safely: What You Need to Know

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Learn safety tips to protect you and your family when preparing foods that contain flour.

Flour is a raw food. It may not look like a raw food, but it usually is, just like fresh tomatoes or carrots. The grains from which flour is ground are grown in fields and, like all foods grown outdoors, they may be exposed to a variety of harmful bacteria like Salmonella and pathogenic Escherichia coli (E. coli).

 5 Important Things to Know About Flour Dos and Don'ts of Handling Flour

5 Important Things to Know About Flour

1. Flours most commonly used in home baking and cooking are made directly from raw grains. 2. Processing raw grains into flour does not kill harmful bacteria. 3. Many foods made with flour also contain raw eggs, which may contain harmful bacteria. 4. Cooking is the only way to be sure that foods made with flour and raw eggs are safe. 5. Never eat or taste raw flour, dough, or batter.



OUTBREAK

Since 2009 there have been several outbreaks of foodborne illness involving raw flour or raw flour-containing products like cake mixes and cookie dough. These have resulted in 168 known illnesses and 20 hospitalizations.



family restaurants that give kids raw dough to play with while you're waiting for the food?

Sick

If your answer to any of those questions is yes, that could be a problem. Eating raw dough or batter-whether it's for bread, cookies, pizza or tortillas-could make you. and your kids, sick, says Jenny Scott, a senior advisor in FDA's Center for Food Safety and Applied Nutrition

According to Scott, the bottom line for you and your kids is don't eat raw dough. And even though there are websites devoted to "flour crafts," don't give your kids raw dough or baking mixes that contain flour to play with.

Why? Flour, regardless of the brand, can contain bacteria that cause disease. In 2016, the U.S. Food and Drug Administration (FDA), along with the Centers for Disease Control and Prevention (CDC) and state and local officials, investigated an outbreak of infections that illustrated the dangers of eating raw dough. Dozens of people across the country were sickened by a strain of bacteria called Shiga toxin-producing E, coli O121.

The investigation found that raw dough eaten or handled by some of the patients was made with flour found in subsequent tests by the FDA to have the same bacterium that was making people sick. Ten million pounds of flour were recalled, including unbleached, all-purpose, and self-rising varieties.

Some of the recalled flours had been sold to restaurants that allow children to play with dough made from the raw flour while waiting for their meals. CDC advises restaurants not to give customers raw dough.

Why Flour?

Español

People often understand the dangers of eating raw dough due to the presence of raw eggs and the associated risk with Salmonella. However, consumers should be aware that there









Consumer Education Plans



- Finalize messages and resources
- Promotion through stakeholders, conferences, and social media

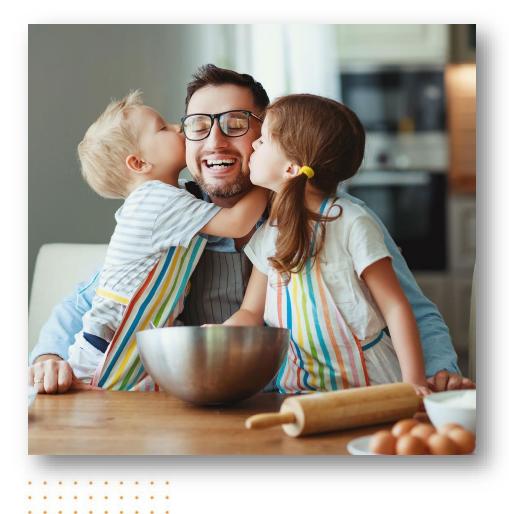




In the past year, how often have you received questions about flour as part of your work?

- 1. Once a week or more.
- 2. A few times a month.
- 3. Only a few times.
- 4. I'm not sure.
- 5. Never.





Shareable Resources Available for Educators

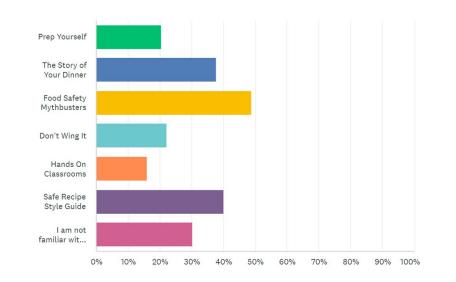
Katie Weston Program Manager Partnership for Food Safety Education



Most Popular Resources: Mythbusters

Which of the following Partnership/Fight BAC resources are you familiar with? (check all that apply)

Answered: 570 Skipped: 0



AN	ISWER CHOICES	RESPONSES	•
-	Prep Yourself	20.53%	117
-	The Story of Your Dinner	37.72%	215
•	Food Safety Mythbusters	<mark>48.77%</mark>	278
•	Don't Wing It	22.28%	127
-	Hands On Classrooms	15.96%	91
-	Safe Recipe Style Guide	40.18%	229
-	I am not familiar with any of these resources	30.18%	172
Total Respondents: 570			



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Main points:

- Flour is a raw ingredient.
- Wash your hands, utensils, bowls, and countertops with soap and water after handling raw flour.





fightbac.org/mythbusters

Main points:

- Flour is a raw ingredient.
- Do not heat treat flour at home.
- Proper baking kills harmful germs.





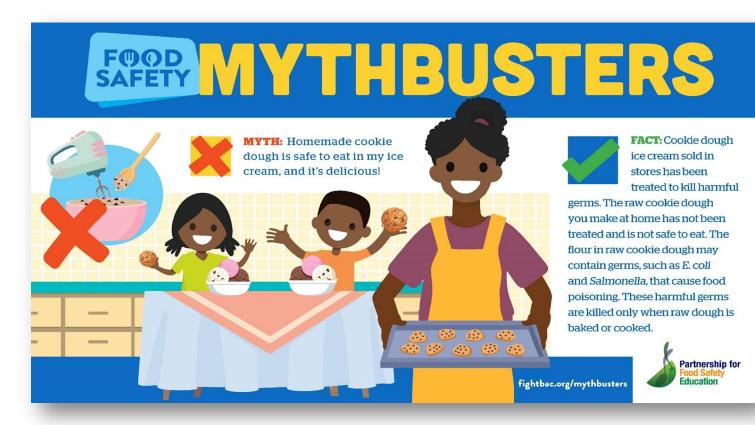
Main points:

- Flour is a raw ingredient.
- Harmful germs like
 E. coli and *Salmonella* could be deadly to
 young children.
- Bake raw dough and batter before eating it.



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Main points:

- Flour is a raw ingredient.
- Homemade cookie dough is not safe to eat.
- Bake raw dough before eating it.



fightbac.org/mythbusters

Spanish Language Available



CAZADORES DE MITOS SOBRE SEGURIDAD ALIMENTICIA



fightbac.org/mythbusters



saferecipeguide.org | fightbac.org

Education

fightbac.org/mythbu

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Partnership for Food Safety Education

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NEW! Holiday Baking Tips Video



Also available in Spanish language!



Additional Baking & Flour Resources



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SAY NO TO RAW DOUGH



www.fightbac.org/kids



Download here:

- storyofyourdinner.org
- fightbac.org/flour-safety
- fightbac.org/kids
- fightbac.org/mythbusters







Milling Process & Why Flour Is Considered Raw



Jane DeMarchi

President North American Millers Association

Recent FDA Research Findings on Flour & FDA Tools



Fanfan Wu, Ph.D.

Social Scientist FDA

Partnership for Food Safety Education



Sharmi Das

Director, Division of Education, Outreach and Information FDA

Flour & Baking Educational Resources



Katie Weston

Program Manager Partnership for Food Safety Education

Q&A Session Moderator



Britanny Saunier

Executive Director Partnership for Food Safety Education

Coming Up!

- The Story of Your Dinner
- **November:** Turkey Handling Tips
- **December:** Buffets & Holiday Parties









Thank You, Community Connectors!















Food Safety and Inspection Service



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PFSE Contributing Partners

Academy of Nutrition and Dietetics American Beverage American Frozen Food Institute Ardent Mills Association of Food and Drug Officials Big Y Foods, Inc. Boar's Head Provisions Co Conagra Brands **Consumer Federation of America** Consumer Reports, Inc. Costco Wholesale Corporation **FMI** Foundation HelloFresh Instacart Institute of Food Technologists

Federal Liaisons

Centers for Disease Control and Prevention U.S. Food and Drug Administration, CFSAN U.S. Department of Agriculture, FSIS / NIFA

International Association for Food Protection International Food Information Council Foundation International Fresh Produce Association Kroger Company McDonald's Corp. Meijer, Inc. MilliporeSigma National Association of Convenience Stores National Chicken Council National Chicken Council National Consumers League National Frozen & Refrigerated Foods Association National Grocers Association National Pork Board National Turkey Federation North American Millers' Association

NSF International Publix Super Markets Charities, Inc. Refrigerated Foods Association Southeast Produce Council Sysco Corporation Tyson Foods, Inc. Uber Eats USPOULTRY Wakefern Food Corp. Walmart Wayne Farms Wegmans Whole Foods Market



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Stay Involved with Us!

- Pay it forward make a \$10 charitable gift
- Work with PFSE as a Contributing Partner
- Follow us on <u>Facebook</u>, <u>Twitter/X</u> and <u>LinkedIn</u> to share our food safety messages
- <u>Sign up</u> for our biweekly e-card and monthly Cooking Times and Lasting Lessons



fightbac.org/get-involved/



Continuing Education Units

****FINAL REMINDER****

One-hour CEU available from ANFP, CDR, NCHEC & NEHA

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Thank You for Joining Us!

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