tracey ([00:00](https://www.rev.com/transcript-editor/Edit?token=I-H27lM5I3Khrd6DcvT2CHxwL0eMp2UGuqMEvv8wgToTBEOBH9QlZfL52-89l-Y8OWmyek7PTjHQTXxvSjJwkC3oAGk&loadFrom=DocumentDeeplink&ts=0.45)):

Hello, and welcome to NC State's Audio Abstract. I'm your host, Tracey Peak. You may have heard about the recent peanut butter recall issued by the CDC in response to an outbreak of salmonella. And this is not the first time that delicious snack has suffered a recall. We're speaking today with Ellen Shumaker, an extension associate and the director of outreach for Safe Plates at NC State about what's up with our peanut butter? Welcome, Ellen.

Ellen ([00:27](https://www.rev.com/transcript-editor/Edit?token=ywXqJyf-D8x-j97-ygpAaKAK5IvNTqbqG-vgXcnQqY22CJR2OL8CqEaNNUbOKAeMFpT3foUoGPGgpw35MOaBVOun-4w&loadFrom=DocumentDeeplink&ts=27.76)):

Thank you.

tracey ([00:29](https://www.rev.com/transcript-editor/Edit?token=1rsW4IDMfMIkIYxgCREZUSBCXXN7ogu2dU9yV8dQEckot5e-edOGpP1bRSp742vD9yLcI5TuoCpCQle_03-Zq_iPwKg&loadFrom=DocumentDeeplink&ts=29.64)):

Let's talk about whether peanut butter gets contaminated or recalled more often than other foods, or whether that's a misconception. I did a really non-scientific Google search because it just seems like I hear about peanut butter a lot, and I found recall stories almost yearly going back to 2007. So is this a thing, that peanut butter tends to get, I guess contaminated easily?

Ellen ([00:56](https://www.rev.com/transcript-editor/Edit?token=O61NDkMobGYjR9GkzX0dKL8m55yhJVjjyKy5Ipch5sCBAaXEnUTCDlw4Qvz119gn2wTQnCMtN_EhKRaNGFuV69cpKkU&loadFrom=DocumentDeeplink&ts=56.22)):

Yeah. So we can maybe talk about recalls a little broadly here first. So recalls happen for a few reasons. And the first and probably the most common reason is misbranding of allergens, mislabeling of a product. Second is physical contamination. So that's something like glass, plastic, particles actually getting into a food. And then the third, which is what we're going to focus on today, is micro biological contamination. And so we've known there's been a risk of salmonella in peanut butter for a long time, but in 2007 it really served as a wake up call for the industry. So there were two back to back outbreaks that occurred really close together. So there was one in 2007 with Peter Pan, and then followed by pretty closely afterwards in 2009 with PCA products. And that really was a wake up call for the industry. And before that, there really wasn't very much focus related to risk reduction.

Ellen ([01:52](https://www.rev.com/transcript-editor/Edit?token=6NLm5OhkfzdGW2vGicYv6PBxSRd5MlTB8UKex2Ls5cy3oQg6XhFGZf6fY9Ql4S4BmAZW5erGqbxbteUdt2hgfrlH0-s&loadFrom=DocumentDeeplink&ts=112.94)):

So thinking about risks on the farm, as well as in the manufacturing facility. But as a result of those outbreaks, there became much more focus on validating the roasting process, on the sanitation process, trying to pinpoint where salmonella was getting contaminated, both on the farm and in the facilities, and trying to control for those occurrences. And after those outbreaks, the FDA came out and issued guidance to facilities to really, to provide recommendations to them. So some of those included really trying to validate their suppliers to make sure that their suppliers are doing as much validation as they can, and then looking at their own manufacturing processes to make sure that they're doing as much risk reduction as they can.

tracey ([02:41](https://www.rev.com/transcript-editor/Edit?token=BnFXVW_S8RD97WpXxqhxk5usP4bwVDPgq_Mr6D0RI-4riNCI2aM7tOATTjY3F7kc_OiehvkNW6LVWCIS_lrtCK587zc&loadFrom=DocumentDeeplink&ts=161.13)):

And that brings to mind sort of a separate question. So salmonella contamination can happen at any point during the process of production. For some reason, and maybe this is just because of the way the news is presented, I always assume that it's something with the factory, but it could be coming in from the farm as well?

Ellen ([03:04](https://www.rev.com/transcript-editor/Edit?token=X3nqalVH2oHlm27OSbiACILopYRRaFq8RqnC2mbEO5kcJrBuI-F2ELt6EPcXl3zDG3nYRwFc3-XvWM9A5k19FfUiEjE&loadFrom=DocumentDeeplink&ts=184.33)):

Yeah. So contamination could happen a few ways here, and it'll be really interesting in this outbreak to see what FDA ultimately reveals in their investigation report, because they're currently trying to look into what could be the source right now. So it's possible that peanuts could get contaminated before they come to the facility, so on the farm. And it could also be happening in the facility itself through cross contamination, through equipment if the facility is not being well maintained. So that's actually something that we saw in the past, that there was environmental contamination in the plant and that was actually migrating to the product through cross contamination, leaks, movement through the plant, and then just poor cleaning and sanitizing procedures.

tracey ([03:51](https://www.rev.com/transcript-editor/Edit?token=eV-EJ-aZPky2T-0o0U8HNwYlKBA-YJmeia_-CY3IBczrQTVXywgutoOp3AffWgOb6CUsRQmY0XqoTR5gEt0Hgt6fWRc&loadFrom=DocumentDeeplink&ts=231.82)):

In situations with peanut butter specifically, and for a micro biological recall, what is the most likely contaminant to happen? Is it always salmonella? Is salmonella just suspect number one in all of these all the time?

Ellen ([04:08](https://www.rev.com/transcript-editor/Edit?token=_ZX2kb1OHqkLDFgx9d4anl8wqjsGOqNC00pupfkH5hRb82t5PUpIaEbj5WGpHNH8sHHVpiOV7axhy5C4H0X_j_z_bgc&loadFrom=DocumentDeeplink&ts=248)):

Yeah. So salmonella is the main pathogen we're concerned about here, and that's for a few reasons. So because it can be in the field or the processing environment, you're really having to watch that whole farm to fork continuum. And it has the ability to survive in very low moisture environments, like peanut butter. And it also, because peanut butter in itself is a fatty food, that acts as a protective agent for the salmonella. And then when we think about peanut butter as well and why this recall has been expanding a bit is that peanut butter is contained in a lot of foods. And so in this case, it started with just the peanut butter being recalled, but then as we started to see more food products were being recalled that contained that peanut butter.

Ellen ([04:52](https://www.rev.com/transcript-editor/Edit?token=Wsu5REZQAHs_cfmDo4BoW3HGqe0Sz_vQN_3knHkJTqdWSRsh56EVPWwGCNO9rxYxLBrKXWtk5uSnAqEAJHGf0HaoE2Y&loadFrom=DocumentDeeplink&ts=292.26)):

Something else you have to think about with peanut butter is that it has such a long shelf life. And so health officials are really trying to get the word out about this peanut butter because it could be sitting on someone's shelf for a long time. So it's not something like a fresh produce or a fresh item that might go bad after a few weeks and it's moving through a household quickly.

tracey ([05:12](https://www.rev.com/transcript-editor/Edit?token=FLmvZIkOv4PvXmTMbE-cdSce1CRhn3_aUZh--HMBxUNQhL5KgqwdxabMiWIJSBiBQBhzwiV3FjssD5O7VDB1LXQ24Mw&loadFrom=DocumentDeeplink&ts=312.41)):

Right. And I didn't even think about the peanut butter that would be in all the other foods. I rushed to grab my little jar of Jiff and it was fine. But oh wow. Yeah. Peanut butter is everywhere.

Ellen ([05:24](https://www.rev.com/transcript-editor/Edit?token=f_8D5P9X4wQr21NaLKtZNHFrmJ9W0jXz-LYRqF_KEUQj3vqwOeTyzMoVYL49iu1yMyZb6LGwIZcnR1vb4VjQZnKUwB4&loadFrom=DocumentDeeplink&ts=324.02)):

Yes.

tracey ([05:24](https://www.rev.com/transcript-editor/Edit?token=OIvAIDPEqMGXbiB1VC__y27-ZMA-vKcKzrtstLM_fPITRZ_MLsV-xhw-rS_ZiwNvpnkQRSXJVZvcbOLnrWX2SkgUuWA&loadFrom=DocumentDeeplink&ts=324.13)):

It is ubiquitous.

Ellen ([05:25](https://www.rev.com/transcript-editor/Edit?token=2A_MEia9jBQs1Uiet11kxNx1V3A0F0QzSRuI2cGHRM8rdIaGiB6lMZcF7WqLMB0-WZu9rIzddkY73Iq9urFFSVLWfms&loadFrom=DocumentDeeplink&ts=325.25)):

Yes.

tracey ([05:25](https://www.rev.com/transcript-editor/Edit?token=hNMx34SfJ2uF50UCbSGirJrXdCvu6WqERk0nMIsApnDXQRyfDZ4EeQB1grLbDfGvMMxy9XNAZdXzaMKXfZoXsC40xno&loadFrom=DocumentDeeplink&ts=325.65)):

It is important that our peanut butter is clean. So can you walk us through a little bit about how this kind of contamination can happen? Or where is the salmonella coming from? How does it get introduced into the process?

Ellen ([05:41](https://www.rev.com/transcript-editor/Edit?token=JUgexyj2KtfVeFr5VrfLpVOuORc87Ar8vZPgfX9ToR75WX6k9GqoqGN70ByEfjUIRsMpLX161_ZCPbos1Q42gD2Pzgg&loadFrom=DocumentDeeplink&ts=341.45)):

Yeah. So there are a few different ways that really it could happen here. And that's why FDA recommended so many measures to really try to keep an eye on it from the farm all the way to the facility. And so it's possible that the peanuts are getting contaminated themselves in the field. And something to keep in mind is that if peanuts are contaminated before they're roasting on the farm, roasting can actually create heat tolerant salmonella. So that's a concern there. But if contamination's not happening on the farm, it could also be happening in the facility itself through equipment, through a leak, like we've talked about a little bit already. And so that's what we've seen in the past. And so that's why cleaning and sanitizing of the equipment and making sure that the facility itself is well maintained, frequent inspections, all those types of things are controlled for.

tracey ([06:35](https://www.rev.com/transcript-editor/Edit?token=slOuVSg2_yxES6IVdFDfmiUZHOU_mPTICrsjAtFLN0J-y_7ufTbWZ9cXQEBBZ30OHA3oOZEro8X9SFQYVlbir8fPh1Q&loadFrom=DocumentDeeplink&ts=395.02)):

~~D~~oes salmonella like peanut plants? How is it getting onto or into the peanut? Is it from little critters running through the farm? Is it fecal matter? How is that transmitted?

Ellen ([06:51](https://www.rev.com/transcript-editor/Edit?token=1RccjxhCuN7o30g-U9a-H5qHjmt0oAFW0TkPWAmpjM64-xkyv8yYVsgx0mVeuiBTdUNkAUNgMsaSINBNetv-b2IGNDA&loadFrom=DocumentDeeplink&ts=411.98)):

It could be all of those ways. So it's, yeah. I mean, it could be transmitted through a variety of methods, and it's on the field and just gets to the peanut. And then because it likes that low moisture environment, it can really survive for a long period of time.

tracey ([07:07](https://www.rev.com/transcript-editor/Edit?token=Ux6Q78jT4bj2HyMFBE07sJwVtuVT_MVBNxZzn9gPkm-lb-IjzXB1nhmPWNrVe2kaxU-RB_cqVDoB_fviN3fcb1EAITk&loadFrom=DocumentDeeplink&ts=427.74)):

The heat tolerant salmonella, is this a real thing? Have we encountered the heat resistant or the heat tolerant salmonella in the past?

Ellen ([07:18](https://www.rev.com/transcript-editor/Edit?token=yLnlQj67GuvCFpDYGGK5XzaSX-aR8lxdw9NTyucTqTITclSzagGwE1Fe8GiAE7jdarouCQm6LOY_1w7iue4ty8dbMec&loadFrom=DocumentDeeplink&ts=438.13)):

I believe so. I think that's where they have kind of came into the realization that they've done studies where if salmonella was present on the peanut itself after roasting, there were some salmonella that remained that then demonstrated that heat tolerance.

tracey ([07:36](https://www.rev.com/transcript-editor/Edit?token=NMZfn9CSTo0Ul7agOgJKWfAbd5gceI7xBi5fy8ibp1txC1mjR2uTNzTDjaH1bCL0Mho8EUOAd5SHvubBlBLZGbj92v0&loadFrom=DocumentDeeplink&ts=456.32)):

Okay. So when we're cleaning the equipment, do they use high temperatures sometimes to sterilize? So would that create a problem?

Ellen ([07:43](https://www.rev.com/transcript-editor/Edit?token=cOd_ew0NgWQWRQIXLzEXVXLKqRsfFPPL1uUGPBV6sYvlsiWH2NLFsaPvIDZJMAk-uqPF4MCWseO0Y4jLOO4BZ_3FVZ0&loadFrom=DocumentDeeplink&ts=463.86)):

So, yeah. And that's where they really started to explore a lot of different ways to clean and sanitize. Yeah. That's where they were really trying to look for a variety of methods to avoid that.

tracey ([07:54](https://www.rev.com/transcript-editor/Edit?token=qfFPE-k7tJRcxeMI1zNHGxYXsofmOxy8wcgY4LSsl7blNKl7sY66zFxPYxJk0FjxiOY2DSlMQhwtG-9WPJhjv6rCjyQ&loadFrom=DocumentDeeplink&ts=474.04)):

Yeah. I don't want my peanut butter to inadvertently create super salmonella that no one can eradicate. That would be terrible. How much salmonella would have to be present in say a jar of peanut butter to make somebody sick?

Ellen ([08:08](https://www.rev.com/transcript-editor/Edit?token=g0EibblCfvoew4bK4DhDylO6vSCyYm3m65HF7tZgL6R5QsvRfF_dMI1PfaILE4Y-dOyekDWq9w77gdJdoADiqrb8zCg&loadFrom=DocumentDeeplink&ts=488.49)):

So really, as little as a few cells is enough to make someone sick. And when I think about peanut butter, especially too, I think about the people who are eating peanut butter the most, and a lot of times that's young kids under the age of five. And they are also at higher risk for foodborne illness. And so that's something we're also concerned about is just the fact that there are certain groups of people who are at higher risk for foodborne illness. And so when you have even a small number of cells, that's enough to make them sick. So we think about young kids, elderly populations, pregnant women and other folks who may be immunocompromised.

tracey ([08:41](https://www.rev.com/transcript-editor/Edit?token=EnlZJTWlHQw1CglFvYvH_gG6YfsBfepBcP9R4npxLcE-Nqszrk0Mb8UDR2diax0R81BzoV1bD09jpnXPP3i9CN3rx9c&loadFrom=DocumentDeeplink&ts=521.53)):

Right. And once the salmonella is in the peanut butter, let's say it managed to elude everything and it's just in there, is it dormant? Does it continue to reproduce? Is the peanut butter a happy place for the salmonella to be?

Ellen ([08:56](https://www.rev.com/transcript-editor/Edit?token=XzDNXuTvleBMSywJCdmQNlZ9HuEWSeqNSftGf8E1GoNC6c2sHqYkMoBMvnNpDszocDlo-sbEsaxskW4iJ3zUABiQs_0&loadFrom=DocumentDeeplink&ts=536.7)):

So it's happy enough where it's surviving and it can survive for long periods of time. And that in of itself is enough to make someone sick. So it's not necessarily growing, but it is surviving.

tracey ([09:06](https://www.rev.com/transcript-editor/Edit?token=Zpnqw0IBsrrO3gSEKQtu719px060fpNGGBAcLguCmkd-0w41e6TicVZQX8l6YNB8_DE2JR8fOwrHB4EC6Np14U8RyRA&loadFrom=DocumentDeeplink&ts=546.88)):

I was going to ask if it could continue to grow even in sealed jars, but it doesn't have to. If just what got in there can live right, that's enough to make people sick.

Ellen ([09:22](https://www.rev.com/transcript-editor/Edit?token=AbLgD-cSm8Pzdkl-AJqMiLSoDD_OAonDKD4vRmRcSaXxmpddUhOkRJ54AHMB8fpxDTV9-j1simfrw9asxrStN-UjLO4&loadFrom=DocumentDeeplink&ts=562.37)):

Right. And that's all it takes.

tracey ([09:26](https://www.rev.com/transcript-editor/Edit?token=JOZd5x3CuH_Cfzo2PafDIBCWPDVTmtPmLfyjqYu_xKZBOEcFOxR7H9ti--QfhV-zJeZ1iKKXaRVxL7QJJ_Kd1uP2JvI&loadFrom=DocumentDeeplink&ts=566.2)):

I know this cannot be a surprise to manufacturers, like you said, since the 2007 Peter Pan outbreak. And that's the one I was thinking about, because unfortunately my uncle had a jar of the peanut butter, didn't hear the thing about the recall, got sick. Didn't realize it was salmonella. And then the only thing he could tolerate to eat when he started feeling better was peanut butter.

Ellen ([09:51](https://www.rev.com/transcript-editor/Edit?token=-nrvv3LD8zqQjzGdNUDYhvybpxsmshzMPWe8hvpAISKf4z0EZHmeE13bt1bzKJqA4vv8jo71I0yzQjIVsF-PEPqzupk&loadFrom=DocumentDeeplink&ts=591.07)):

Oh no.

tracey ([09:51](https://www.rev.com/transcript-editor/Edit?token=Xz69kIHWDU1Wcps3QxoE-9L8fE6dX-5ejsyBOhzGK3CS6spINCwCV1Ju1r3vMz6Dchjq206tnkR063P7Zagj-L-o4g4&loadFrom=DocumentDeeplink&ts=591.89)):

Yeah. So he had back to back illness. But I know this can't be a surprise to manufacturers. So what do they do on their end to try to prevent contamination like this?

Ellen ([10:11](https://www.rev.com/transcript-editor/Edit?token=4dHImCTfffov5d7RK0vXau_vsnumM_WUhCS74RV-T7YvH0AJ-UZqBM1orbkmw6e4noeq5Z9M6rtossG2fuHkIhaR-gY&loadFrom=DocumentDeeplink&ts=611.39)):

Yeah. So it goes back to those best practices that FDA recommended and that the industry realized that they really need to incorporate for themselves. And so really going back to looking at their suppliers and the suppliers that source their ingredients to make sure that those validated procedures are in place to reduce contamination, making sure that their own manufacturing processes are effective at reducing contamination. There's testing that they can do, but really making sure that they're not just relying on negative tests to validate those procedures. So it's really examining the whole process from what the ingredients might be experiencing or the condition that they're in before they arrive at their facility through the whole process of their production until the product leaves their facility.

tracey ([11:04](https://www.rev.com/transcript-editor/Edit?token=AEHjBXxPlhJB1DJECWx_m-VBJL-Mt_TSfBXb2gJqwTADuf5bT2aasB3bw7AzVy4WwqBOHbdhmuUlfqI_gUl7uV2cMMo&loadFrom=DocumentDeeplink&ts=664.87)):

And finally, as a consumer, what can we do to make sure that we are alerted to these things? Because usually the information will come out, but I don't always watch the local news.

Ellen ([11:32](https://www.rev.com/transcript-editor/Edit?token=GYWU72yGKhvLstUW3yJ8OZnv2THGpmscupZlU9Yc7TrPx6VqkaeecLccJ4nBSBoEwtqOzvpzPqx9QPGo_18kGBNJpWI&loadFrom=DocumentDeeplink&ts=692.76)):

Yeah. So in some cases, I know there were folks who were contacted from the grocery store that they might have bought the peanut butter from. So I had contaminated peanut butter on my shelve and I wasn't contacted. So I'm not which sure which retailers were doing that. There are other recalls alerts that you can sign up for through USDA and other consumer food agencies to get alerted. And then just kind of trying to keep an eye out for those things, especially for the products that you know you have on your shelves.

tracey ([12:02](https://www.rev.com/transcript-editor/Edit?token=cdDxCL_zJMwnh736R0Eh_5QUlh7GOmYhr-OidWfLp6ga43PaIJcoWkNiyb90Jm20cImIbcmgyuoPqIyzj_2jWG5EKNc&loadFrom=DocumentDeeplink&ts=722.65)):

Is there anything else that we didn't cover that you wanted to add about this particular situation?

Ellen ([12:11](https://www.rev.com/transcript-editor/Edit?token=-kRY6HcVGpunEtH7KW64JoRJ9YsRaspKUVp3Q19ecVFTT5l_6zFM3ZXbfiUsOM1Jt6TL7Dq7j6I7GVMQHHOjqy-KHAg&loadFrom=DocumentDeeplink&ts=731.41)):

No. I mean, I think we covered it all. Just knowing that it is complicated and it could have been introduced in a lot of different ways. So it'll be really interesting to see what FDA finds in their investigation.

tracey ([12:23](https://www.rev.com/transcript-editor/Edit?token=imKSLIkNQRipackYRghy93rKI9Z9bVDmXfVvPzO-q7B9u6Eth-gtm-BMOmk1A-idp6Kx1vCxG7mITo7Uz0C72-hfJvA&loadFrom=DocumentDeeplink&ts=743.59)):

Yeah. I will definitely stay tuned for that. Peanut butter is near and dear to my heart, even though I'm not a child under five.

tracey ([12:31](https://www.rev.com/transcript-editor/Edit?token=QbSAurqi1PwiQWc_cRxuHpCOZjAKM16e4i-q9vRo0bPS4AUVe88TnzBd4j1XjS60x1uVfNfjLcXZgIwU5X7QsB7X2Ug&loadFrom=DocumentDeeplink&ts=751.62)):

We have been speaking today with Ellen Shumaker, an extension associate and the director of outreach for Safe Plates at NC State. This has been Audio Abstract. I'm your host, Tracey Peak. Thank you so much for listening.