Theme:
Physiology of Taste

Food & Culinary Professionals

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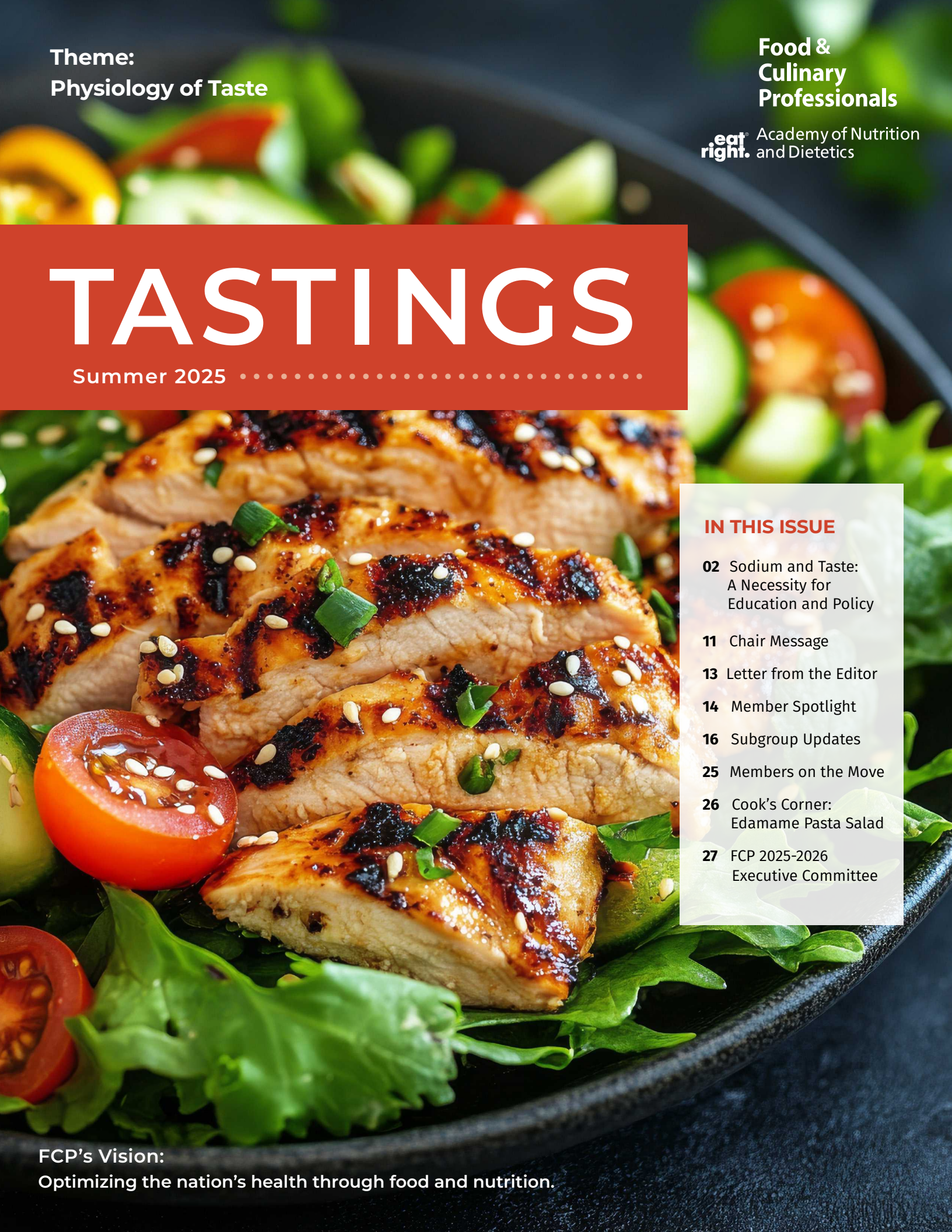
TASTINGS

Summer 2025



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FCP's Vision:
Optimizing the nation's health through food and nutrition.

Summer 2025

Sodium and Taste: A Necessity for Education and Policy

CPEU Article

By: Alissa Nolden, PhD, Department of Food Science, University of Massachusetts Amherst, Amherst, MA

Learning Objectives

At the conclusion of reading this article, participants will be able to:

- List and describe the physiology of taste and its role in food choices.
- Evaluate the impact of sodium on taste and flavor perception.
- Discuss the public health implications of sodium consumption and reduction.
- Develop strategies for reducing sodium while maintaining palatability.
- Apply knowledge to recipe development, counseling, and providing food industry guidance.

Summary:

This article serves as a platform to highlight the critical role of sensory evaluation when considering food health initiatives and introduces the importance of sodium in foods and the potential challenges in meeting new FDA voluntary sodium reductions in foods.

Introduction: "We Eat What We Like"

The taste and flavor perceived when consuming foods and beverages are critical to forming dietary preferences and habits. Therefore, taste research is an important area of study to examine how sensory attributes and taste perception shape food consumption behaviors. Sensory evaluation is a scientific discipline that measures how people taste and differentiate between ingredients, foods, and beverages. Studies investigating taste perception have found links between response to ingredients and foods and their liking and intake.[1, 2, 3]

Even though studies have repeatedly demonstrated the profound impact of taste perception on food choices, taste itself is often absent from public health guidance. However, agencies frequently scrutinize ingredients that evoke palatable taste sensations, like sweet and salty. Due to health concerns, lowering the intake of sweet and salty foods, as well as food and beverages containing sucrose and sodium,[4,5] has been a primary focus of national nutritional guidelines as well as Food and Drug Administration (FDA) recommendations.

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As a result of these dietary recommendations, including reduced sodium intake, dietitians face the challenge of providing consumers and patients with dietary intake recommendations that meet these new guidelines. However, this is not an easy task, as sugar and sodium impact the desire and overall flavor profile of a variety of foods. Such changes can negatively affect preferences, leading to rejection and poor compliance. These guidelines can also be challenging to navigate due to conflicting information between sugar and sodium content and foods that often provide health benefits. For example, some foods and beverages that have health benefits—such as kombucha, yogurt, canned vegetables, cottage cheese, nuts, and seeds—may contain high amounts of added sugar or sodium. Helping consumers navigate and balance reduction goals while supporting the intake of nutritious foods remains a challenge for dietitians. Having a better understanding of taste and flavor perception can help to improve communication between patients and healthcare providers to support dietary modification to improve human health.

The Science of Taste Perception

As consumers, we often use the word taste to refer to how good something is —for example, "This brownie tastes good." When we talk about how a food or beverage "tastes," we are referring to flavor, which is the integration of taste, smell, texture, and other senses, such as temperature and pain.

When we consume popcorn, multiple senses contribute to the experience. The popcorn is salty due to the added salt, but it also has a distinct aroma and crunchy texture, which makes it "taste" like popcorn. Without any one of these attributes, we may not enjoy it as much. These combined attributes provide sensory cues that create the perception of the familiar popcorn flavor.

Taste, in the classical sense, is specific to five sensations: sweet, sour, bitter, salty, and umami. Compounds from our foods and beverages interact with taste receptors, which are housed in taste buds located in the fungiform papillae on our tongue. These taste buds are constantly regenerated, producing new taste cells approximately every 8-10 days.

This taste pathway is distinct from smell, also known as olfaction, where volatile compounds are released during chewing and travel up the back of the nasal passageway to our olfactory bulb and bind to olfactory receptors. This is why, when you have a cold, you are not getting the typical airflow required to transport the volatile compounds from the oral cavity to the nose.

In summary, flavor is a multisensory experience that combines taste, smell, texture, and other sensory cues. This is important as each cue can impact the total overall flavor. Additionally, modification to taste can impact perceived texture, and vice versa. Changes to the sodium

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or sugar content not only influence the saltiness or sweetness, respectively, but can also influence other sensory cues, imparting a change in the overall flavor. These changes can be due to interactions between sensory pathways, can be psychological (e.g., not what was expected), but can also lead to physical changes in the product. Thus, changes to the product formulation require additional considerations beyond specific taste or sensory attributes.

Sodium: A Flavor Enhancer

Sodium plays a crucial role in taste perception, and is primarily known for influencing the perception of saltiness. Beyond its sensory role, sodium is essential to human health, as it helps maintain electrolyte balance and proper physiological function. Sodium is detected by at least two different ion channels, including epithelial sodium channels (ENaCs), which contribute to our perception of saltiness. Other receptors have been implicated, and their involvement appears to be dependent on concentration and may differ across compounds that evoke a salty taste.[6]

Beyond sodium's fundamental role in salty taste, it can enhance the overall flavor of foods. One way this occurs is through suppressing aversive sensations, such as bitterness or metallic. Conversely, it can also enhance taste sensations when added to savory foods by enhancing umami and savory attributes. For example, coffee experts know that adding salt to coffee helps to reduce undesirable bitter notes produced during roasting.

Differences in Salt Perception

Consumer responses to sodium reduction are far from uniform.[7] While some individuals easily adapt to lower-sodium foods, others perceive them as bland or unpalatable. These divergent reactions can be partly explained by biological and genetic differences in saltiness perception.[8] Understanding these individual differences is critical for developing sodium reduction strategies that are both effective and broadly acceptable. Like other taste sensations, saltiness perception is linked with the amount ingested. A concept known as taste plasticity, individuals can experience physiological adaptation to salt when consuming a diet high in sodium.[9] This means that individuals who consume high-sodium diets become desensitized to salt, requiring higher concentrations to perceive the same level of saltiness. In contrast, those on low-sodium diets experience heightened sensitivity, making even small amounts of salt taste more intense. This adaptation is reversible, and undergoing dietary changes can improve taste perception.[10] Others note that liking sodium or saltiness is a better predictor of dietary intake, whereas intake may not predict intensity perception.[11] Thus, considering a change in preference along with dietary modifications may be more important than changes in intensity.

Research has identified genetic variation in the genes encoding channels involved in salt taste perception, which may explain differences in perceived salt intensity or preference.[8] For instance, some individuals possess heightened sensitivity to salt, enabling them to perceive saltiness at lower concentrations, while others require higher sodium levels to detect the same intensity. These genetic differences help explain why a product reformulated to contain less sodium may be acceptable to some consumers but rejected by others.

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Age is another critical factor influencing salt taste. At birth and in early development, humans are neutral to salty taste, but preferences develop rapidly through early exposure. By adolescence, habitual intake of salty foods can lead to strong preferences, driving higher sodium intake. In older adults, taste responses–including those to salt–often decline.[12] Thus, the ability to taste salt is part of a general decline in taste perception, which can be due to changes in salivary production, medication use, or changes in the regeneration of taste buds. This decline can lead to compensatory behavior, such as over-salting food or favoring high-sodium products. Currently, there is minimal evidence that sensitivity to sodium is associated with blood pressure, as this relationship has been attributed to dietary consumption. Higher sodium consumption is associated with poor sensitivity and higher blood pressure.[13] Various factors shape cultural and individual preferences for sodium and salty foods. In addition to dietary exposure, salt perception varies due to genetics and environmental influences. Some cultures, particularly those that rely on preserved or fermented foods, have a higher tolerance for saltiness, while others with diets rich in fresh produce may prefer lower sodium levels. Understanding sodium's role in taste perception and adaptation can help guide strategies for reducing sodium intake while maintaining flavor in food formulations.

Public Health Perspective on Sodium Reduction

The voluntary sodium reduction released by the FDA was originally published in 2021 and updated in 2024. This guidance sets targets and upper limits in processed, packaged, and prepared foods. The goal of these recommendations is to support a reduction in sodium intake. There are a variety of health concerns associated with high sodium consumption. This includes elevated blood pressure, leading to an increased risk of cardiovascular diseases, including heart attack and stroke, and other health issues such as kidney disease and osteoporosis.

According to FDA data, the average sodium intake among U.S. adults is 3,400 mg/day—significantly higher than the Dietary Guidelines for Americans (2020-2025) recommendation of 2,300 mg/day. This excess sodium is equivalent to consuming an extra three-fourths of a teaspoon of salt daily. In food terms, this equates to approximately 1 tablespoon of soy sauce, 2 ounces of deli meat, or 1 cup of tomato sauce.

The new guidelines are voluntary, providing recommended sodium levels for various products (measured in mg sodium/100g). For example, in 2010, American cheese contained 1,351 mg sodium/100g, whereas the new target reduces this to 1,280 mg/100g, a reduction of 71 mg. For these guidelines

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to be successful, many products containing sodium will need to adopt reductions voluntarily. Since sodium consumption comes from a variety of foods rather than a single source, broad-based sodium reduction strategies are necessary. This approach is distinct from consumers making dietary changes to reduce sodium consumption, such as switching to low-sodium products and avoiding adding salt at the table, the latter being one of the highest contributors to salt intake.

How well is this strategy working so far? A new study investigating the FDA's publicly available data suggests not well. According to Musicus and colleagues (2025), the sodium content in food categories have only decreased by an average of 3%, and shockingly, 11 food categories have increased the sodium content by 25%, with few categories reporting even higher increases. Interestingly, the food categories seeing more significant increases in sodium content are within restaurant categories.[14] This report concluded that the data do not provide evidence of a reduction in the sodium content in the food supply. Considering the short timeframe since the voluntary recommendations have been reported; there has not been much time for the industry to achieve a reduction. Nonetheless, rather than minimal changes or stagnant amounts, these early results indicate that companies may not be willing to reduce sodium due to potential concerns with consumer palatability. Looking forward, it will be important to track food labels and new foods to determine if voluntary sodium reductions motivate companies to reformulate their products. Setting lower sodium targets for the food industry has been an approach applied in several countries to help reduce the intake of macronutrients that can be harmful in excessive amounts. Countries such as Finland, Canada, Japan, and the U.S. consume sodium above the recommended WHO amount of 2,000 mg/day (5 grams of salt) and have implemented strategies to reduce the consumption of sodium. In addition to setting voluntary reductions, other strategies include consumer education. However, there is little data to suggest these have been effective at reducing dietary sodium consumption. Further, there is a lack

of information available on which consumer groups observed reductions. For example, it is unclear if this strategy is effective at reducing intake among those with the highest amount of sodium intake or helping moderate users reduce sodium intake.

Practical Considerations for Sodium Reduction in Food Products

The food industry has extensive experience with sodium reduction strategies, recognizing the critical role sodium plays in both quality and sensory attributes.[15] Reducing sodium can negatively affect consumer liking and lead to decreased consumption. Additionally, sodium can be added to foods for other reasons than imparting saltiness and overall flavor. These include reducing microbial growth and extending the shelf life.[16] Salt is a natural preservative, reducing the amount of water available to microorganisms, slowing down food spoilage, and extending the shelf life. Salt is also used to control microbial activity in fermented foods, such as sauerkraut, cheese and pickles. Therefore, sodium reduction in some foods may not be feasible or may negatively impact food safety or shelf-life.[17]

For foods where sodium has minimal impact on safety and quality, there may be an interest in reducing sodium content. To achieve this, it is recommended to follow a gradual reduction to

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maintain consumer acceptance. Scientific evidence and industry experience suggest that when sodium intake is gradually reduced, salt intensity perception shifts, reducing the concentration of the preferred sodium levels over time.[18,19] This strategy is particularly effective when consumers adapt to small changes rather than experiencing an abrupt loss of saltiness. This gradual reduction over time has proven to be a practical approach for lowering sodium intake without compromising taste.[18]

Many consumers may not realize that their favorite and familiar food products have gradually reduced sodium content. A company may decide not to promote their product as having reduced or lower sodium content other than reporting the lower sodium content on the nutrition facts label. This approach needs thoughtful consideration, as it is understood that when products are labeled as "reduced sodium," consumers associate low and no-sodium products with poor flavor attributes, further complicating the adoption of these products.[20] As a result, companies have developed methods to lower sodium content while maintaining consumer acceptance and must make strategic efforts to market the product.

Several large companies in the U.S. have publicly committed to reducing sodium in their product portfolios, aiming to support a reduction in sodium consumption nationwide.

Consumers are encouraged to look for and choose products with reduced sodium content to contribute to their overall health.

Novel Strategies for Boosting Saltiness in Food

Alternative approaches to maintaining consumer acceptance in reduced-sodium products include using novel technologies or incorporating familiar ingredients to preserve saltiness or enhance the overall flavor of food products.

- **Salt replacers:** Potassium chloride (KCl) also known as potassium salt can provide saltiness at certain concentrations. However, it also introduces bitterness and other unpleasant sensory effects, limiting its widespread use.[21]
- **Umami:** Ingredients like monosodium glutamate (MSG) and similar compounds can enhance salt perception in lower-sodium foods.
- **Aromatics:** Savory aromas, such as those associated with roasted or fermented foods, may subtly enhance saltiness perception, though their impact can be less pronounced.
- **Herbs and spices:** Increasing the taste and flavors of familiar ingredients can increase the flavor complexity in reduced-sodium foods. Consumers can achieve this in the kitchen or in prepared foods.[22]
- **Peptides:** Recent studies note novel enhancement of salty taste in combination with peptides.[23]
- **Nanotechnology:** A newer approach involves using nano-salt particles, which are suggested to more efficiently stimulate taste receptors, allowing for similar saltiness intensity with lower sodium content. While scientific evidence is still emerging, this technology holds promise for future sodium reduction efforts.[24]

The food industry has multiple strategies available to help reduce sodium content of foods while

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maintaining taste and consumer acceptance. However, gradual reduction remains the most effective approach. Large, sudden decreases in sodium content can result in immediate rejection, whereas incremental reductions allow consumers to adjust over time, increasing the likelihood of successful long-term adoption.

Recommendations for Dietitians and Nutritionists

The latest voluntary guidance acknowledges sodium's important role in taste, but does not fully address consumer preferences for sodium or salty taste. However, it does highlight the relevance of sensory psychophysics in helping the industry meet sodium reduction targets.

As described above, the best approach is to slowly reduce sodium consumption due to the plasticity of the taste system. A stepwise reduction approach is also a practical recommendation for individuals making dietary changes—completely removing salt from the diet can be difficult and potentially dangerous but gradually decreasing sodium intake week by week can support long-term reductions. Thus, dietary recommendations can guide consumers towards a gradual reduction in sodium intake to support a long-term reduction in dietary sodium. Over time, small reductions will help to adjust salt taste responsiveness so that products lower in sodium produce enjoyable saltiness and overall product palatability.

Voluntary sodium reduction needs to be accompanied with education to have long-term effects. Consumer awareness about the importance of reducing sodium in the diet is crucial to effectively reducing sodium intake. Additionally, a widespread reduction in sodium content across most foods is necessary to achieve a stable impact on dietary sodium consumption, especially for those unaware of the changes. In contrast, low-sodium or salt-free versions often highlight their reduced sodium content on labels, but consumers may avoid these products due to concerns about taste. In addition, consumers must have knowledge of the high sodium content of foods, such as bread and pizza crust, which are not generally thought to be in this category.

Future Directions

To date, sodium reduction strategies and recommended sodium intake levels have not considered individual differences in saltiness preference or perception. These individual differences present both challenges and opportunities. On one hand, they complicate the development of universal sodium targets and highlight the need for flexible product portfolios that cater to varying taste sensitivities. On the other hand, they suggest that personalized nutrition strategies—informed by genetic testing or taste phenotype assessment—may offer a promising path forward. For example, individuals with higher salt sensitivity may benefit from

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tailored education and gradual reduction plans, while others might require more aggressive flavor compensation strategies to maintain acceptance. More work is needed to identify how to exploit these differences to improve guided recommendations to achieve sodium reduction for all consumers. As sodium reduction efforts continue, integrating knowledge of biological variability in taste perception can help move the food industry and public health stakeholders toward more nuanced and effective interventions.

A novel area of study to investigate is cravings for salty food.[25] Palatability and avoidance of taste sensations have been linked to survival. For example, sodium and sugar are critical for survival and, therefore, are hedonically pleasing to promote their intake. This is distinct from bitterness, which is thought to indicate potential toxins in plants to promote avoidance. However, our responses to these taste sensations have not evolved as a result of the modern food supply, where we no longer rely on our sense of taste for survival. Likewise, our cravings for these sensations have not adapted to the abundance of ingredients and foods that evoke these sensations. A better understanding of the development and adaptation of cravings for salty foods is essential to identify individuals at greater risk for potentially overconsuming sodium. These individuals may have preferences for salty taste and may consume higher amounts of sodium. Other factors may influence cravings for salty foods, such as dehydration and sleep quality.[26]

Lastly, there may be a need to identify compounds that mimic the characteristics of sodium beyond the salt taste in food. Sodium has essential functions in foods and beverages. It may be necessary to identify the lowest amount that can deliver the same functional properties or source novel ingredients that can replace the properties of sodium in foods. Several of these include quality attributes, such as shelf-life, color, and safe production of fermented foods (e.g. cheese and sauerkraut). The ability to remove and reduce sodium in some foods may not be possible without identifying an appropriate alternative that provides more than just the well-known salty taste.

Conclusion

Despite the significant impact of taste on food choices, the importance of taste in the context of the hedonic drivers is not directly reflected in public health guidelines. Highly palatable sensations, such as sweetness and saltiness, are evoked by sucrose and sodium and have been highly scrutinized. Dietitians are left to connect the dots for consumers, linking the missing piece between guidelines and positive changes in food and beverage consumption. Making dietary changes to lower sodium intake may feel daunting for both consumers and healthcare professionals. Many consumers eat food to feel satisfied and experience reward, going beyond the nutrients and calories consumed. Therefore, voluntary sodium reduction has the intention of removing the consumer from the equation and intentionally making the change for them. However, it is anticipated that this approach can provide a long-term reduction of sodium intake.

When consumers talk to healthcare providers or dietitians, they may face challenges in communicating their dislike of foods with reduced sodium, as reducing the amount of salt in foods can lead to unpalatable taste and overall flavor. This barrier in terminology can increase the complexity of identifying effective strategies that

References

Link Here

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CPEU Coordinator:
Milton Stokes PhD, MPH, RD, FAND

Reviewer:

Fergus M. Clydesdale, PhD

After reading this article, you can link to the quiz here to complete the assessment for the CPEU credit.

Approved for 1 hour CPEU.

Expires 2/18/2028

About the Author

Dr. Alissa Nolden is an Assistant Professor in the Department of Food Science at The University of Massachusetts Amherst.

Her research focuses on chemosensory perception in humans, with specific areas of interest including individual differences, sustainable food products, and taste loss.

These areas bring together sensory science and human health. Her work has supported a new understanding of the factors influencing sensory perception and taste preferences, which are crucial in increasing consumption and creating delicious, healthful, and sustainable foods.

Chair Message

Laura Ali, MS, RD, LDN
2025-2026 FCP Chair

Hello FCP Members!

I'm thrilled and honored to step into the role of Chair of FCP for the 2025-26 membership year. It is such a privilege to be a part of and to help lead this vibrant, passionate group of nutrition professionals who truly understand the power of food in promoting health and also the joy that comes from sharing delicious meals together.

A big thank you to Sarah Hendren, our 2024–2025 Chair, for her outstanding leadership and mentorship over the past year. And to all of our dedicated FCP volunteers—thank you for making this one of the most engaging and dynamic DPGs in the Academy.

The past few months have brought significant changes and challenges across the food and nutrition landscape. While challenging, and often frustrating, I believe this just emphasizes how much our skills as science-based culinary nutrition professionals are needed. FCP's vision is "to optimize the nation's health through food and nutrition." To help meet this vision, our goal is to equip you with practical tools, current research, and innovative strategies to help your patients and consumers optimize their health —without sacrificing flavor or enjoyment.

This issue of *Tastings*, hits one of these challenges head on as we dive into the fascinating topic of physiology of taste. Our CPEU article author, Alissa Nolden, PhD, takes a deep dive into the physiology of taste, an overview of how FDA's sodium reduction efforts are going and new technologies that may help boost flavor. Our subgroup chairs take it another step and explore ways we can guide consumers in different settings as the industry gradually moves toward meeting the FDA's voluntary sodium reduction targets. Whether in home kitchens, retail spaces, or restaurant environments, this is an area where our culinary nutrition expertise truly shines. Having worked in both clinical and food industry settings, I understand the complexities of shifting taste preferences—and the powerful impact we can make by combining science with flavor. I hope you spend some time diving into this issue and exploring the physiology of taste!

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Chair Message

Looking ahead, we have an exciting year planned for FCP members! Here's just a taste of what's coming:

- **Webinars and virtual events:** Stay tuned for a series of timely, practical sessions covering a wide range of topics. Watch our discussion board for details and registration links.
- ***Tastings* Newsletter:** Our editorial team has an incredible lineup of trend-forward themes planned. Don't forget to take the quiz (now easily accessible on our website) to get your CPEU certificate!
- **FNCE®2025 – Mark Your Calendar!**
  - **Spotlight Session (Sunday Morning):** "New Consumer Research on Food As Medicine: The Power of RDNs in Driving Healthful Changes"—We'll explore what consumers really think about Food As Medicine and how we can more effectively communicate our messages.
  - **FCP Networking Event (Saturday Evening):** Join us at Peg Leg Porker for award-winning Nashville BBQ, bourbon, and a special guest appearance! Register when you sign up for FNCE® (Link) and grab your ticket before we sell out!
  - **Member Showcase** – Stop by late Monday afternoon and say hi! You'll have a chance to chat with some of our EC members and pick up a special gift for FCP members!
- **A number of new activities and tools are also in the works – stay tuned!**

Whether you're renewing your membership or joining us for the first time—welcome! We're thrilled to have you as part FCP and can't wait to connect with you in the year ahead.

Laura

Feast your eyes on our Instagram feed

Did you know that FCP is on Instagram? Be sure to follow us @fcpdpg, where we are serving up healthy recipe inspiration, along with the latest FCP news and events. Tag your favorite food photos with #fcpdpg so we can share your culinary creations!

Our LinkedIn feed

FCP is also on LinkedIn. Follow us here to find the latest FCP news and events, and get connected with other FCP members.

Not seeing FCP emails in your inbox? Be sure to add FCP to your safe senders list or add to your contacts.

Editor's Letter

Amy Childress MA, RDN
2025-2026 *Tastings* Editor

Greeting's FCP members and welcome to the first edition of *Tastings* in the 2025-26 Academy year! I do hope that you all have been enjoying your summer. Reflecting on the primary theme for this issue, although it wasn't planned this way, it is a great topic for the season. What better time than the summer to talk about taste, because in my opinion, food tastes better in the summer! Specifically, the peak fresh seasonal offerings that may either be limited in our supermarkets, or not available in fresh form during the colder months. If there is any time of year that I look forward to fruits and vegetables, it is in the summer months. The variety, the accessibility, and the refreshing feeling of eating cool fruit on a hot day.

In this issue, you'll notice that the focus is on sodium reduction - the FDA sodium reduction goals, consumer education, alternatives in flavoring, and gradual reduction. Salt has many historical purposes in the food industry, and speaking for myself - it was only one of two seasoning options in my household growing up (the other being pepper).

What this theme and the CEU article really has me thinking about is the consideration of taste in dietary recommendations, and how important it is to understand what is palatable to our patients, clients, and consumers.

This Academy year has just begun, and the *Tastings* team has an exciting year of topics in store for all of you. We are continually brainstorming to bring forth relevant and cutting-edge information. We also greatly appreciate the contributions that all of you make to our "Members on the Move" and "Cooks Corner" segments. Maybe this is the year that you will contribute a recipe, start a new job, or make a change that you'd like to share with us. It is always such a pleasure when we are presented with opportunities to engage with you!

I hope everyone enjoys the rest of the summer!

Amy

Membership Spotlight Article

By Shelley Johnson MJ, RD
FCP Membership Chair

Leah Sarris,
MBA, RD, LDN, CCMS
Founder & Principal, Culinary Medicine Consulting

1) Briefly describe your position/business and how it relates to culinary nutrition.

As a chef and registered dietitian, my work has always lived at the intersection of food, nutrition, and education. Through Culinary Medicine Consulting, I help organizations integrate practical, culturally relevant food and nutrition education into healthcare, education, and foodservice. I've spent the last 20 years building and scaling culinary medicine and culinary nutrition programs, and I believe food literacy—particularly cooking confidence—is a critical but often overlooked piece of improving health outcomes. In addition to developing nutrition-aligned programming, I also consult with restaurants and food companies to create healthier, scalable menu items—applying nutrition principles in ways that are operationally feasible and still flavor-forward.

2) What do you wish your fellow nutrition professionals knew about flavor and taste?

Taste is one of the most important drivers of food choice, yet it's often left out of nutrition conversations. Blanket statements like "eat more vegetables" fall flat if people don't know how to make them delicious. Understanding how to balance flavors—sweet, sour, salty, bitter, umami—is fundamental to creating dishes people want to return to. I'll be speaking more about flavor building at FNCE this October for anyone who wants to dive deeper into the subject!

3) What experience has made the greatest impact on your career as a culinary nutrition expert?

I've had the privilege of working across a wide range of roles—teaching children and improving school food, educating culinary students at Johnson & Wales, instructing medical professionals and community members at Tulane's Goldring Center for Culinary

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Leah Sarris, MBA, RD, LDN, CCMS • Founder & Principal, Culinary Medicine Consulting

Medicine, and now, consulting nationally. These diverse experiences taught me how to meet people where they are, how to make food meaningful, and communicate in a way that sticks. Farming helped me appreciate how hard it is to grow good food; restaurant consulting taught me how to scale recipes and systems. Leading NOCHI, a nonprofit culinary school and hospitality institute in New Orleans, gave me the operational skills to run a mission-driven organization in complex conditions, including during COVID and Hurricane Ida. Each role added a layer of perspective I draw on every day.

4) What skills are necessary to be successful in your area of practice?

A strong culinary foundation is key—but just as important is the ability to communicate food and nutrition concepts in a way that resonates with diverse audiences. Whether I'm working with chefs, healthcare professionals, or community members, I strive to translate evidence-based guidance into something useful and usable. Business acumen has also been essential to sustaining and scaling impact.

6) What do you think is the most valuable benefit of being a member of FCP?

FCP has been such a valuable community—especially for networking with peers who "get" the blend of culinary and nutrition. I've appreciate the continuing education opportunities and always look forward to the Tastings newsletter.

Leah Sarris, MBA, RD, LDN, CCMS, is a chef, registered dietitian, and nationally recognized leader in culinary medicine. She is the Founder & Principal of Culinary Medicine Consulting, where she helps organizations integrate food and nutrition education into healthcare, education, and foodservice. Leah has over 20 years of experience building culinary medicine programs, leading nonprofit and academic initiatives, and consulting on healthy menu development for restaurants, food companies, and institutional partners.

FCP is seeking leader candidates for the 2026 FCP Executive Committee ballot.

This is a great opportunity to make a difference - and also earn CPEU!

Supermarket/Retail Subgroup

FDA Sodium Reduction Policy – Thinking About Taste in a Grocery Retail Setting

By Yvette Waters, MS, RDN, CISSN, RYT
FCP Supermarket/Retail Subgroup Chair, 2024-2025

The FDA's voluntary sodium reduction policy is more than a public health directive—it's attempting to be a call to action for the food industry to rethink how they create, present, market, and support healthier food choices. With most Americans consuming more sodium than recommended—largely from processed and prepared foods—retailers can play a central role in shaping the food environment and influencing consumer behavior. As sodium levels gradually decline in the food supply, taste remains a critical factor for shopper satisfaction and product success.

Understanding Taste in the Retail Landscape

Taste is the leading driver of food purchases in grocery. Shoppers often equate strong, familiar flavors with satisfaction and value, which presents a challenge when reducing sodium. Salt enhances taste by amplifying other flavors and masking bitterness, making it a key ingredient in many top-selling products. Yet, excessive sodium intake is linked to hypertension and cardiovascular disease, making its reduction a public health imperative.

Retailers have an opportunity to help consumers transition to lower-sodium options by emphasizing the role of taste in healthier eating. Understanding the physiology of taste and the process of taste adaptation is essential. When consumers reduce sodium gradually, their taste buds become more sensitive to salty flavors, allowing them to enjoy foods with less sodium over time. Educating shoppers on this natural adjustment can help ease concerns about losing flavor.

Retail Strategies for Promoting Reduced-Sodium Products

Retailers can support the sodium reduction goals while maintaining consumer satisfaction through strategic merchandising, marketing, and product assortment.

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News from FCP Subgroups

Supermarket/Retail Subgroup

- **Product Placement and Labeling:** Highlighting lower-sodium products with clear shelf tags, signage, or icons helps consumers make informed choices. Grouping these items in "better for you" sections or including them in weekly promotions can increase visibility.
- **Sampling and Education:** Offering in-store or digital taste tests of reduced-sodium products allows shoppers to try before they buy. Use this opportunity to educate customers about flavor-enhancing ingredients like herbs, spices, citrus, or umami-rich foods that compensate for reduced salt.
- **Private Label Innovation:** Grocery chains with private label lines can lead by example, reformulating popular items to meet sodium reduction targets without compromising taste. Gradual changes, made quietly over time, are often more acceptable to consumers than sudden shifts.
- **Culinary Guidance:** Offering recipes, cooking classes, and meal planning tips that focus on flavor without excess salt empowers shoppers to prepare satisfying meals at home. Collaborating with dietitians and chefs can add credibility and inspiration.

Collaborating for Healthier Outcomes

Retailers are key partners in public health. By aligning with sodium reduction targets and focusing on taste-forward solutions, grocery stores can drive meaningful dietary change. This collaboration benefits both consumer health and business outcomes, as shoppers increasingly look for products that support wellness without sacrificing flavor.

Let's lead with taste—to show that lower sodium doesn't mean lower satisfaction. In today's competitive grocery environment, that's not just good health policy—it's smart retail strategy.

Join Our Supermarket/Retail Subgroup Today!

Restaurant & Hospitality Subgroup

Less Salt, More Strategy: The Triumphs and Challenges of Sodium Reduction

Emily Bowman, MJ, MBA, RDN
Restaurant & Hospitality Subgroup Chair 2024-2025

Dining out offers a fast, convenient, and flavorful experience. However, much of the appeal of restaurant cuisine comes from the generous use of salt, enhancing taste and making many beloved dishes irresistible. Although sodium is naturally present in various foods, research suggests that over 70% of dietary sodium intake comes from packaged and restaurant meals, and consumers are grossly underestimating the amount of salt in their food when dining out.[1] With taste remaining the top driver of consumer purchasing decisions, food service operators may be reluctant to make changes to customers favorite menu items.[2]

With growing awareness of the health risks associated with excessive sodium intake, regulatory agencies and consumers have advocated for change. Raising awareness of high-sodium foods is one approach implemented by both New York City and Philadelphia, requiring a sodium warning icon on restaurant menus for items containing 2,300mg or more, but warning labels have not yet been adopted by other parts of the country.[3]

Although local guidelines may influence menu decisions, many food service operators point to the difficulties of reducing sodium, including the increased cost of alternative ingredients and operational hurdles.[4] Additionally, salt plays a vital role in food preservation, structure, and ensuring both safety and quality. Despite these hurdles, a number of successful strategies have been found to reduce the sodium content in food away from home while maintaining flavor.[4]

The stealth approach, gradually reducing the amount of sodium chloride used in recipes without letting consumers know, has been implemented successfully by various dining outlets. This approach relies on sensory research demonstrating that most consumers cannot detect a 10-20% reduction in sodium in familiar foods when compared to the standard version.[5] Furthermore, modifying the shape, density and size of salt crystals is another technique used to reduce the amount of salt used food preparations.[5] A focus on sodium content in new product development,

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instead of reformulating current items provides a way to maintain the taste and expectation of menu favorites while still making impactful reductions.

As dining out continues to make up a significant portion of consumer consumption, continuing to find successful strategies to reduce sodium could have a profound impact on public health. Striking the right balance between flavor, sodium reduction, and customer satisfaction demands creative solutions.[4] Prioritizing both taste and nutritional quality presents a valuable opportunity for dietitians to play a key role in shaping the conversation.

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Food Safety - Science - Regulatory Subgroup

The Salty Truth: Rethinking Flavor and Function

By Sabrina Hafner MS, RD, LDN
Food Safety-Science-Regulatory Subgroup Chair, 2024-2025

Dietitians know that nutrition science isn't just about nutrients. It's about behavior, biology, and yes, taste. And when it comes to taste, few elements are as powerful--or as problematic-- as sodium.

Salt has long held two major roles in food: it acts as a preservative and a flavor cornerstone. It's one of the few ingredients that can enhance sweetness, soften bitterness, and intensify umami flavors. This makes salt invaluable in food production and irreplaceable in the culinary arts. But with 90% of Americans exceeding daily sodium recommendations,[1] we find ourselves at the intersection of public health urgency and entrenched taste preferences.

Lowering salt without compromising flavor isn't just a regulatory aim; it's both a clinical responsibility and a culinary challenge. This offers dietitians an opportunity to expand our role as leaders in flavor-conscious, health-driven nutrition guidance. Traditionally, sodium reduction conversations focus on disease prevention such as cardiovascular risk, hypertension or stroke. These are critical goals, but not always motivating ones. Patients may aim to lower their blood pressure, but they crave food that tastes good. Our goal is to bridge the gap between clinical outcomes and culinary satisfaction.

The key lies in reframing sodium reduction as a process of retraining the palate. Gradual adaptation leads to lasting preference change. This shift is something we can nurture through hands-on guidance: label reading, home cooking with herbs and acids, and recommending high-impact flavor swaps (like using roasted garlic, citrus zest, or umami-rich mushrooms). A pilot study[2] using a gradual taste adaptation program among adults with hypertension demonstrated a 30% reduction in sodium intake over 16 weeks, along with increased enjoyment of a sodium-restricted diet, despite no significant change in preference for salty foods. These findings underscore the power of gradual,

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sensory-based strategies in making lower-sodium diets more sustainable and enjoyable.

But dietitians can't—and shouldn't—guide people alone. The most effective sodium reduction strategies are collaborative. Chefs, food scientists, and manufacturers are developing innovative ways to maintain palatability while cutting sodium. New techniques in flavor layering, microencapsulation,[3] and potassium-based salt substitutes are giving food products a taste profile that supports health without sacrificing flavor.

Dietitians also play a critical role in product development, institutional food service, and policy shaping. Many are contributing to reformulation projects, guiding menu changes, and working with advocacy groups to support smarter food labeling and sodium targets. The FDA's voluntary sodium reduction goals are a step in the right direction, but their success hinges on widespread support from professionals like dietitians who understand both the science of sodium and psychology of taste.

Ultimately, sodium reduction is more than a target on a nutrition label, it's a catalyst for innovation in how we think about taste, health, and food culture. Dietitians are uniquely positioned to lead this evolution, blending evidence-based guidance with culinary creativity. By partnering across disciplines and championing smarter flavor strategies, we can help create a food landscape that supports long-term health and celebrate the joy of eating, one delicious lower-sodium bite at a time.

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Agriculture Subgroup Chair

Power of Plant Breeding: Food should taste good...that includes fruits and vegetables.

By Kelly Bristow MS, RD
Agriculture Subgroup Chair, 2024-2026

When most people think of fruits and vegetables, flavor isn't typically the first aspect that comes to mind. This is evident in the statistics: according to the Centers for Disease Control and Prevention, only 12% of Americans consume the recommended amount of fruit, and a mere 9% meet the guideline of two to three cups of vegetables each day.[1] As dietitians, we are well aware of this issue and encounter it regularly in our practice.

Several factors contribute to the low consumption of produce, and flavor is just one of them. Access to fruits and vegetables cannot be overlooked, especially in communities where financial and physical barriers limit availability. While just one factor cannot solve for the gaps in consumption, innovations in plant breeding and agriculture can play a vital role in improving both access to and appeal of fruits and vegetables.

Selective Breeding

The practice of selective breeding has been around for more than 10,000 years and has seen significant refinement over the past century.[2] With summer upon us and watermelon being a popular choice during this season, let's take a closer look at this beloved fruit.

Historically, wild watermelon looked quite different from the varieties we enjoy today. A painting by Giovanni Stanchi, dated between 1645 and 1672, illustrates this difference.[3] The cross-section of the watermelon in the painting reveals swirly shapes embedded in six triangular, pie-shaped pieces, leaving very little edible flesh. Over time, humans have selectively bred watermelons to feature a red, fleshy interior with a larger edible portion.

Photo credit: Giovanni Stanchi (Rome c. 1645-1672) , Watermelons, peaches, pears and other fruit in a landscape; and Chrysanthemums, tulips, irises and other flowers and fruit in a landscape | Christie's

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You might wonder about seedless watermelons. According to the National Watermelon Board, seedless watermelons were developed by plant geneticist O.J. Eigsti in the 1940s. However, they didn't gain popularity until they were reintroduced to grocery stores about 40 years later, quickly capturing the palates of consumers.[4] Seedless watermelons contain few or no mature black seeds. If you've ever enjoyed a seedless watermelon, you may have noticed small white seed coats where seeds did not fully mature. These seed coats are safe to consume and are often mistaken for seeds.[4]

Many people assume that seedless watermelons are genetically modified organisms (GMOs), but the truth is that there are no GMO watermelons on the market; only ten crops in the U.S. are commercially available as GMOs.[5]

So, how did we arrive at the seedless watermelons we know and love today?

Plant breeding! Watermelon breeders discovered that crossing a diploid plant (which has two sets of chromosomes) with a tetraploid plant (which has four sets) results in a triploid seed, leading to the creation of seedless watermelons.[4]

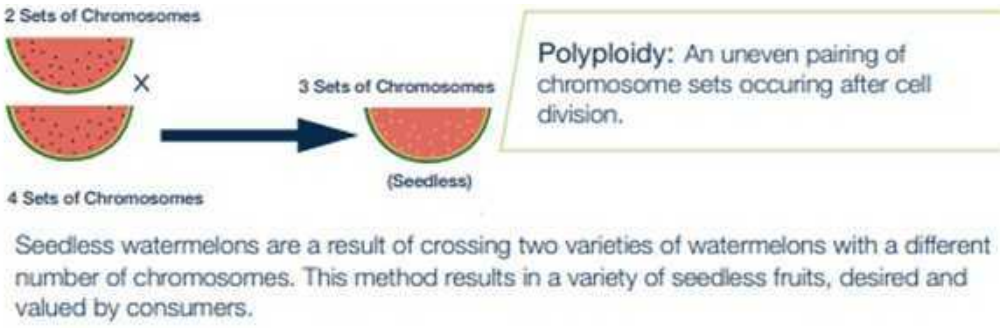

Photo credit: Resource Library | Bayer Global

Seedless watermelons still require pollination from seeded parent plants. As a result, growers often plant both seeded and seedless varieties in their fields. Despite this, seeded watermelons account for only about 8% of commercial harvests, while seedless varieties make up a staggering 92% of watermelon sales in the United States.[4]

Can seedless watermelons be organic? Yes, they can be organic, depending on the farming practices used.

Today's plant breeders are increasingly focused on enhancing the consumer experience (after all, it is not nutrition until it is eaten). They prioritize flavor, access, appeal, and sustainability in their work. Faced with changing climates, pest pressures, and rising costs, plant breeders strive to develop the best traits for farmers, ensuring that high-quality produce reaches your plate.

So, how can you pick the best watermelon without cutting into it? According to the National Watermelon Board[6], here are some tips:

1. **Inspect the watermelon:** Look for a firm fruit that is free from bruises, cuts, or dents.
2. **Lift it up:** Watermelons are made up of about 92% water, so they should feel heavy for their size.
3. **Turn it over:** Check for a creamy yellow spot on the underside, known as the "ground spot." This indicates where the watermelon rested on the ground and ripened in the sun.

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Agriculture Subgroup -

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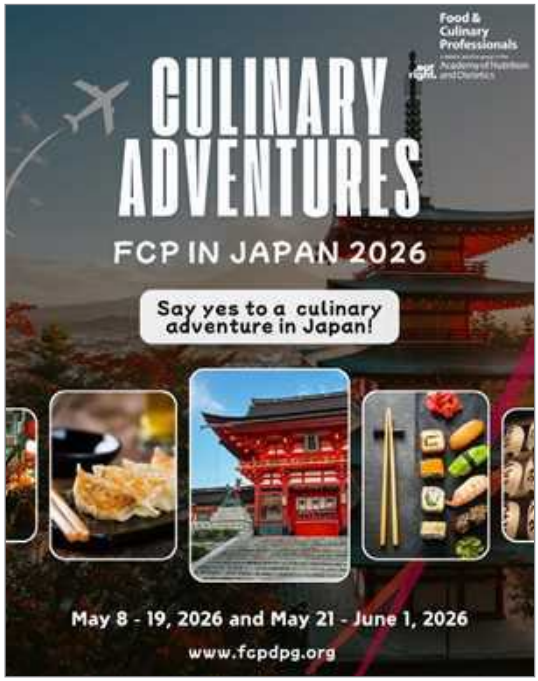


2026 Trip to Japan - FCP

Members on the Move

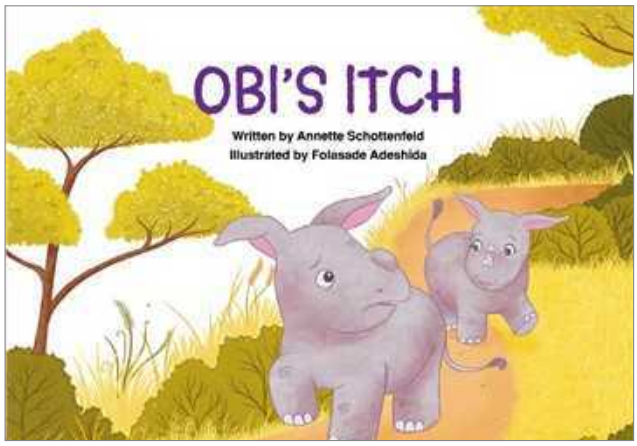
Compiled by Gabriella Balla RD,
Tastings Assistant Editor

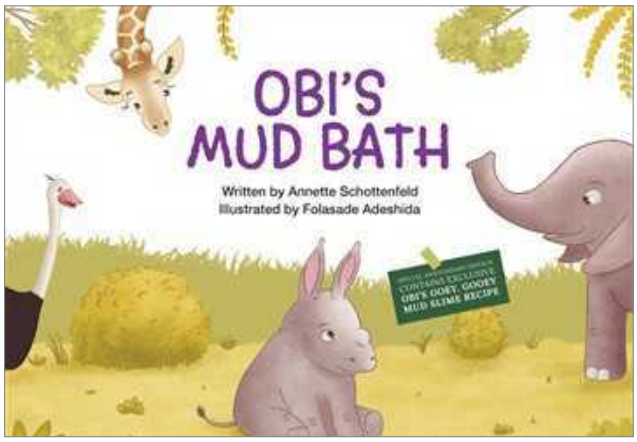
Photo by Andrew Werner

Annette Schottenfeld, MBA, RDN, CDN

Annette celebrated the release of two picture books, OBI'S ITCH and OBI'S MUD BATH ANNIVERSARY EDITION (2025 Clear Fork Publishing). The series, which supports worldwide water efforts through Water.org, features a little rhino who lives in Africa. Annette has also written NOT SO FAST, MAX: A Rosh Hashanah Visit with Grandma (Kalaniot Books). She regularly speaks to groups of children and other authors and was recently interviewed on KidLit TV.

Find Annette at: Instagram, Twitter, Facebook, or annetteschottenfeld.com





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Edamame Pasta Salad

Recipe by Kim Beavers, MS, RDN, LD, CDCES

Light, fresh, and packed with protein, this edamame pasta salad is the perfect dish to bring to a celebration or enjoy as a vibrant summer side. Loaded with crisp veggies and bold flavors from herbs, lemon juice, and balsamic vinegar, it's as satisfying as it is simple!

Yield: 10 servings (1 cup)

Ingredients:

1 ½ cups (6 ounces) say gemelli (twisted) or penne pasta

16 ounces (3 cups) shelled edamame

2/3 cup red onion, chopped

1 small zucchini, chopped

1 small yellow squash, chopped

½ medium red bell pepper, chopped

2 medium tomatoes, chopped

3 tablespoons balsamic vinegar

2 teaspoons lemon juice

2 tablespoons extra virgin olive oil

¾ teaspoon dried dill weed

½ teaspoon oregano leaves

1 teaspoon Greek seasoning, such as Cavender's all-purpose or Greek seasoning of choice
Black pepper, to taste

Garnish with chopped parsley

Directions:

1. Cook the pasta according to package directions (omitting any salt and oil). During the last 5 minutes of cooking, add the shelled edamame to the pasta water and return to a boil for 5 minutes. Drain pasta mixture and rinse with cool water.
2. Combine pasta in a large bowl with remaining vegetables (red onion through tomatoes).
3. In a separate bowl, whisk together dressing ingredients (balsamic vinegar through black pepper). Pour dressing over pasta mixture and toss to coat. Sprinkle with parsley as a garnish. Chill for 1 to 2 hours before serving.

Recipe Notes:

As desired, use elbow macaroni in place of gemelli pasta.

Nutrition Information (per serving/portion):

Calories: 170 / **Protein:** 8g / **Carbohydrate:** 22g / **Fiber:** 4g / **Saturated fat:** 0g / **Sodium:** 260mg / **Potassium:** 460mg

Kim Beavers is a Registered Dietitian Nutritionist and Diabetes Educator. She has been writing and talking about food for over 25-years and embraces a flavor-forward approach. She currently works in diabetes prevention. Previously Kim worked in diabetes education and as the producer and co-host of a culinary nutrition segment.

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