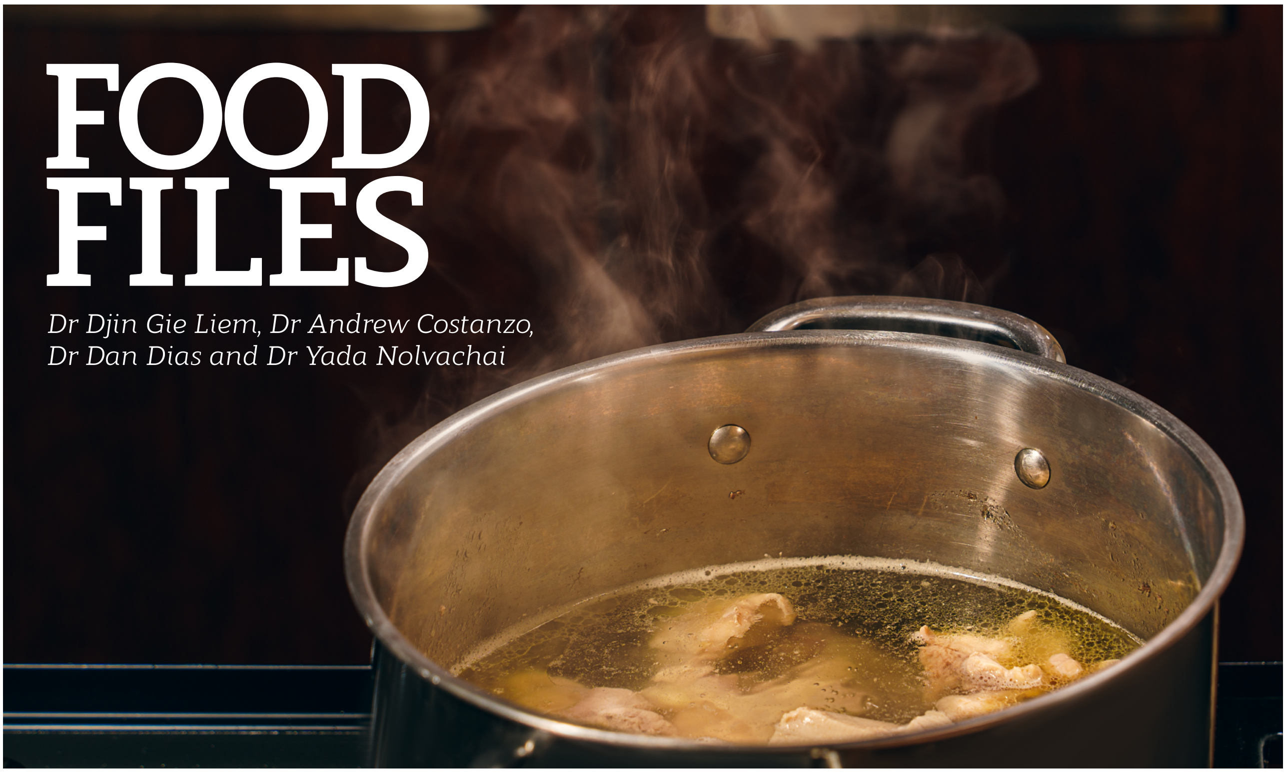

The role of emotions in shaping texture preference

New research reveals that our emotional states don't just influence what we eat – they can shape the textures we prefer. The researchers explored whether anger and anxiety push people toward foods that feel different in the mouth, and they tested this idea across two studies. In the first study, participants were asked to recall a personal experience that made them feel either angry or anxious, writing about it in detail to re-immerse themselves in the emotion. After this emotional "activation," they rated how appealing different mouth behaviours felt at that moment, such as crunching with their teeth or squashing soft foods with their tongue. The results showed an interesting pattern: people in an angry state preferred foods they could crunch, while anxious participants leaned toward foods that were soft, smooth, and easy to squash. These findings suggested that emotions might temporarily shift our texture preferences in ways that mirror our emotional action tendencies. Forceful when angry, comfort-seeking when anxious.

To move beyond self-reports, the researchers conducted a second study using EEG brain-wave measurements to see whether these emotional states influenced how people attended to different food textures. Once again, participants were guided to relive an angry or anxious moment. They then viewed images of crunchy foods such as nuts or wafers and mushy foods like yogurt or mashed potatoes while their brain activity was recorded. The researchers focused on a specific brain response called the P300, which increases when the brain pays more attention to something. The findings were again interesting: angry participants showed stronger P300 responses to crunchy foods, while anxious participants showed stronger responses to mushy foods. This suggests that emotions don't just change what people say they want, they actually bias their neural attention toward texture-congruent foods.

Together, the two studies provide foundational evidence that emotions guide us toward specific textures that symbolically "fit" how we feel. For marketers, this opens up new possibilities. Instead of focusing solely on flavour or aroma, brands could lean into emotional texture cues – promoting creamy, soothing foods during stressful times, or crisp, crunchy products in high-energy or frustration-filled contexts. Packaging, advertising language, and even product innovation could be informed by the simple idea that how food feels in the mouth helps consumers cope with their emotions.

For everyday consumers, these findings offer a window into our emotional eating habits. Craving a loud crunch when furious or a soft, calming texture when anxious may simply be the body's way of managing stress. Understanding this pattern can help people make more conscious, balanced eating choices, reminding us that texture is more than a sensory detail – it's part of our emotional toolkit.

S.Sinem Atakan, Hazal Duman Alptekin. (2026). Crunch your anger, squash your anxiety: impact of negative emotions on food texture preferences, *Appetite*, 108467, https://doi.org/10.1016/j.appet.2026.108467

Food variety influences intake when foods differ in energy density and sensory characteristics

Liking for single foods declines as they are consumed, which is known as sensory-specific satiety (SSS). Food variety can increase how much is eaten by reducing SSS and retaining interest in the foods. While SSS is well established in adults, evidence in school-aged children is limited. A study at Pennsylvania State University examined whether children experience SSS during snacking, and how food variety influences intake when foods differ in energy density and sensory characteristics.

Thirty-one children aged 6–12 years attending summer camps in the United States participated in a cluster-randomised crossover study. On two separate days, children consumed a two-course snack with low variety (same food served twice) or high variety (a different food served in the second course). The snacks were red grapes (low energy density, juicy, sweet) and pretzels (higher energy density, dry, salty). Before and after the first course, children rated their liking and wanting of grapes, pretzels, and several other comparison foods to assess SSS. Intake of each course was measured by weight, volume, and energy, and children also rated their fullness throughout the session.

Children showed clear evidence of SSS. Liking and wanting of the food eaten in the first course declined more than the other foods. Increasing snack variety significantly increased total intake. When a different food was offered in the second course, children consumed a greater proportion of the snack by volume, weight, and energy compared with when the same food was served again. Notably, SSS was modified by which food was served first. When pretzels were served first, intake of grapes in the second course substantially increased. In contrast, when grapes were served first, the effect of adding pretzels in the second course was smaller and not statistically significant. These differences were not explained by changes in reported fullness, suggesting that food properties such as energy density, moisture content, and sensory profile may moderate how variety influences intake.

These findings confirm that school-aged children experience SSS, and that food variety can meaningfully increase snack intake. Importantly, the study suggests that the quality and order that foods are offered influences intake. From a practical perspective, this work highlights opportunities to strategically use food variety to support different goals. For example, offering fruit or vegetables as an initial course may help increase intake of nutrient-dense foods without excessively increasing total energy intake. Conversely, combining variety with energy-dense snack foods may unintentionally promote overconsumption.

Cunningham PM, Meehan CT, Keller KL, Rolls BJ. (2026). Sensory-specific satiety and the influence of variety on snack intake in school-aged children. *Appetite*. Jan 6:108451. https://doi.org/10.1016/j.appet.2026.108451

The science of simmering: nutrients, flavour dissipation and antioxidant activity in marinades

Marinating, a fundamental element of Chinese culinary practice, reflects the depth and richness of traditional food culture through its distinctive flavour characteristics. It is produced by gently simmering a combination of aromatic spices, seasonings and water or stock, forming a complex and well-balanced flavour system marked by intense aroma and layered taste. The characteristic flavour of marinated foods arises primarily from two sources: the release of flavour compounds from spices during cooking, and thermally induced reactions occurring throughout the heating process. These compounds interact with volatile components, collectively shaping the unique sensory profile of marinated products.

Nie and co-authors examined the influence of cooking time on the quality and flavour attributes of a marinade prepared using a defined spice formulation. The results showed that free amino acids (FAA) and free fatty acids (FFA) reached comparatively high levels after 40 minutes of cooking. Gas chromatography–mass spectrometry (GC–MS) analysis identified 246 volatile compounds, of which 29 were determined to be key contributors to flavour. The concentrations of most flavour compounds exhibited a general declining trend during prolonged cooking, with pronounced flavour loss occurring between 60 and 80 minutes. In the 40–60 min cooking interval, the marinade was characterised predominantly by balsamic and spicy aroma notes.

In addition to this, correlation analysis demonstrated that FAA and FFA were significantly and positively associated with most of the key flavour compounds. These findings elucidate the effect of cooking time on flavour development and overall marinade quality, providing a scientific basis for optimising cooking parameters and offering practical guidance for enhancing flavour stability and quality control. Under the specific spice formulation the authors investigated, a stewing time of 40 minutes emerged as a potential optimum for achieving balanced flavour. However, it was noted that variations in spice composition may result in different dissolution behaviours and interactions among flavour compounds, leading to alternative optimal stewing times.

The underlying mechanism suggested by this study was that cooking duration modulates overall flavour by influencing the dynamic changes of key flavour precursors, such as FAA and FFA, thereby offering an analytical framework and methodological reference for optimizing stewing processes in broader culinary applications.

Nie S, Ding Q, Hong H, Liu R, Tian M, Tu, Z, Tan Z and Zhang L (2025). Exploring dynamic changes in nutritional profile, flavor dissipation, and antioxidant activity during the cooking process of marinade. *Current Research in Food Science* 11 101228. https://doi.org/10.1016/j.crfs.2025.101228

Dr Djin Gie Liem is Associate Professor, Dr Andrew Costanzo is Senior Lecturer and Dr Yada Nolvachai is Postdoctoral Research Fellow.

All are at Deakin Centre for Advanced Food Sciences (DeCAFs), School of Exercise and Nutrition Sciences, Deakin University.

Dr Dan Dias is Senior Lecturer at DeCAFs and Academic Investigator at the ARC Training Centre for Hyphenated Analytical Separation Technologies (HyTECH).