

## How Food Temperature Affects Mood Temperature

Have you ever had one of those on then off again relationships- where one minute you're in love and things seem to be "heating up" and the next minute things are "ice cold" and you're just not feeling it? Those can be draining, because we can't figure out what is supposed to be and what isn't.

Food

Well, our relationships with food can be confusing at times too! Here's a good example. When you swing by your local coffee shop and get a piping hot cup of coffee- you know... the one you're in love with- and then take a couple sips, all just feels right. However, by the time you get to work, and your coffee has cooled off, suddenly you might not be so in love with that "Joe". Truly, your emotional heart isn't the only thing that's been affected. Your gustatory system has as well, and your coffee seems different... because it is different.

The point is food temperature plays a role in how your food tastes. This is a somewhat subjective thing, not everyone is affected by temperature changes to the same degree (pun intended). The coffee example above is a good one and especially noticeable since craft roasters have started selecting specific beans and roasting them for specific flavor profiles. Even teas suggest a steep temperature to extract the most flavor. In coffee, meant to be drunk hot, you might notice some sweetness or bitterness but over time give way to something saltier and sourer. This is because at higher temperatures sodium chloride is not affected at the same rates caffeine is. Sodium chloride has a stronger flavor profile than caffeine does. The stronger a flavor profile it is the less it's affected by temperature.

This means that temperatures can "unlock" or mask certain things. Therefore, serving meals at the right temperature has all kinds of implications. Our lifestyles and habits create all kinds of cravings. Our brains and bodies eventually become wired to crave certain foods at certain times, like that bowl of cereal you've become accustomed to every night before bed. It is conceivable that serving food at the ideal temperature, we can use healthier options to satisfy cravings. One such combination could include a cool healthy fruit with a cup of calming tea. When on restricted diets, mixing up hot food and cold foods can help bring pleasure and stop things like overeating. This matters because satisfaction affects the way we behave. We are pleasure seeking creatures, and therefore food greatly affects our mood, and in turn, our behavior.

One food that is heavily affected by this phenomenon is cheese. Although more than just taste is intensified, the aromas of foods are too (Asmita Singh and Han-Seok Seo, citing (Drake, Yates, & Gerard, 2005). Cheese is well known for this, Isn't this why people go for fondue? It tastes different than taking a bite off a block. When serving cheese at higher temperatures though only certain parts of it change. One study found, "[the] perception of sour taste intensity increased with serving temperature... Other flavors and basic tastes did not exhibit a temperature effect or temperature by cheese interaction..." (Drake, Yates, Gerard 2005).

Another example of this was observed in a study by Asmita Singh and Han-Seok Seo titled, *Sample Temperatures Can Modulate Both Emotional Responses to and Sensory Attributes of Tomato Soup Samples*. In this study, more flavors were detected when soup was served a 50-

70 degrees C than at 25 degrees C. They've found that this has a great impact on emotions. It doesn't take a rocket scientist to tell someone that warm soup is better than cold soup. However, the emotions evoked seem to matter, especially in hospital, behavioral health and LTC environments where people are healing. There was little difference in how people felt about the soup between 55 and 70 degrees. Most of the distinction fell between 25 and 55 degrees.

“In general, while soup samples served at higher temperatures (55 and 75 °C) were associated with positive emotions (e.g., “glad,” “good,” “happy,” “pleased,” “satisfied,” and “warm”), those served at lower temperatures (25 °C) were more associated with negative emotions (e.g., “disgusted”, “worried”, and “bored”).”

The word “satisfied”, among others, was consistently used to describe the emotion in all three of the higher soup temperatures which were 40, 55, and 70 degrees Celsius. The word “disgusted” was only associated with soup served at 25 degrees Celsius. However, at different temperatures different emotions were associated, respectively. At 55 degrees C, words like “enthusiastic” and “energetic” were used to describe emotion. Soup at 75 degrees C stirred emotions like, “Happy” and “Adventurous.” Their conclusion said this,

“Product developers, marketers, and business owners seeking to effectively market products should be concerned not only with sensory changes caused by temperature variations, but also with how such temperature variation makes people feel.”

The point to all this is that serving food at the right temperature has implications beyond just food safety. The temperature of food affects the way we feel as we're eating it. Again, you don't have to have a degree in Sensory Studies to know that we want hot food hot and cold food cold. However, it is good to remember the role temperature plays when we're trying to encourage residents, patients, or guests to eat the food that's been prepared for them. It's not unfair for people to have expectations of their food. After all, everyone is in a long-term relationship with food. It's no wonder that if it doesn't meet those expectations, it can break our hearts.

If your organization or agency is struggling to maintain serving temperatures of food, let us know. We have many ways to help achieve temperature maintenance.