# Apple or Ice Cream? The Mechanics of a Healthy Choice

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You've been trying to lose some weight, but you also get hungry for a snack in the evening. So imagine you go to the kitchen to check out your options, and you find apples and pears. You may have a slight preference one way or the other, but you are not going to agonize too much over this decision. Both are tasty, and even relatively healthful.

But what if your options are a pear and a bowl of chocolate ice cream? Now you've got a real choice to make, because you're no longer comparing, well, apples and pears. The pear is clearly better for you than ice cream, no doubt of that, but the taste and richness of that ice cream is pulling you. You're contemplating different attributes for each snack choice, and for an instant, or two or three, you are on the fence, unable to make a choice.

Far too many dieters end up choosing the ice cream in this situation. That's one reason we have an obesity crisis in this country. But why? Why is dietary self-control so difficult, even when we know full well what's at stake and what's right? And why do some people show more self-control than others?

It's not helpful at all to say simply that some people have more willpower. Exactly why do they exercise better judgment? What's going on, at the most fundamental cognitive level, that leads to good and bad dietary decisions?

A team of psychological scientists at Caltech—Nicolette Sullivan, Cendri Hutcherson, Alison Harris and Antonio Rangel—have been trying to answer these basic questions, by drilling down to the cognitive mechanisms underlying choice. They thought that perhaps the brain's decision making circuitry is processing different attributes of foods differently. More specifically, they speculated that attributes like taste may be processed more rapidly than abstract attributes like healthfulness. Could something as basic as processing speed explain the difficulty of dietary self-control—and individual differences in willpower?

The scientists decided to test this idea in the laboratory using an unusual technology. They asked subjects to make a series of tough food choices—fruit vs sweets—while using a computer mouse to track the trajectory of each decision. This allowed them to pinpoint precisely when taste and health considerations came into the decision making process. They measured, in milliseconds, any differences in the timing of these considerations, to see if earlier processing might explain why taste often trumps health in making choices.

And it does, as described in a forthcoming article in the journal *Psychological Science*. The scientists found that, on average during a typical choice, basic attributes like taste are processed about 195 milliseconds earlier than health attributes. That may sound like nothing, but it's actually a big chunk of an instantaneous decision. Indeed, the lag could mean that some choices are finalized before health concerns even enter the debate. The scientists also found that individual differences in self-control are related to this difference in relative speed with which taste and health considerations are processed. That is, the further health considerations lag behind taste considerations in a choice trajectory, the less self-control people exhibit.

If failures in dieting can be traced back to miniscule timing differences in the brain's basic decision-making circuitry, what are the implications for dieters? Well in general, it would follow that slowing down dietary decisions—and reducing the fraction of time devoted to assessing taste alone—should lead to better decisions. Self-control might be improved with interventions that speed up the processing of health information. For example, prominently displaying health information—such as calorie counts—might lead to more rapid processing of this abstract information, so that it competes more effectively with the powerful and early allure of taste.

Obesity may appear most prominently in those extra inches of waistline, but the dieting solution may lie in milliseconds of decision making.

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