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Chocolate

comes out smelling of roses

The aroma of chocolate improves your mood, and lemon in your car can make you a better driver, says a new study

BY LUCY TOBIN
THE GUARDIAN, LONDON



Just before you rip open your next chocolate bar and gobble it up, take a moment to have a good sniff of the unwrapped bounty. Just hold the chocolate up to your nose and breathe in its scent, because latest research suggests "odour du chocolat" improves your mood.

This happy news comes straight from the Human Olfaction Laboratory at Middlesex University, England, where Neil Martin, a reader in psychology, investigates the effects of room smells on human behavior. In his laboratory, Martin has a square box called an AromaCube, which heats up "odorants" contained in tiny glass bottles and then percolates the smell around the room. From that box, he discovered the power of chocolate in an experiment where he filled rooms with three smells, one of chocolate, a "malodor" of machine oil, which most people find unpleasant, and a lemony, pleasant-but-alerting odor, then monitored testers' moods.

"The aim was to compare the effects of pleasant and unpleasant ambient odors on stress, anxiety, depression and mood," Martin explains. "And whilst we're still continuing the experiment, so far it seems that the smell of chocolate really does make people less stressed and anxious, and more relaxed."

Chocoholics will also be pleased to hear about some of Martin's earlier research. "In another study, we looked at the effect of chocolate on brain activity," he says. "We presented people with a range of smells, some artificial food odors and some real food odors, with both samples including chocolate." Martin used EEG (electroencephalography) technology to record his participants' brain waves as they sniffed the air, and found that in both experiments, the chocolate smell consistently led to a reduction in a particular type of brain activity called theta, which is thought to be an index of attentiveness. "Theta levels dropped significantly across both indexes when testers smelled chocolate."

The experiment also showed there's no need for chocolate snobbery. "I know connoisseurs say posh chocolate, with a higher cocoa content, is better for your health, and it might be in some ways, but when it comes to the smell of chocolate and its resultant relaxing effect, we found it was the same however much milk the bar contains," Martin says.

But some of his other scent findings provide more significant practical effects. "Scent can affect employment," he says.

One study found that a combination of perfume and formal dress worn by applicants led interviewers to rate them as less warm and more manipulative. And Martin has shown that people perform less well on cognitive tasks and report more symptoms of ill health when smelling a "bad" smell.

As a result, Martin says people should be aware of their "olfactory environment" to control their feelings. "People can use scents to improve alertness, well-being and anxiety," he says. "For example, another study showed that women in a dentist's waiting room that had been scented with orange reported less anxiety than those in an unscented counterpart."

A separate piece of research saw Martin and his team set up PlayStations loaded with Colin McRae's *Rally* game, to test the impact of a lemony smell on driving ability. Martin invited men and women to play the game on three different levels and in three different environments, one in a room without any odor, one smelling of lemon, and one of machine oil.

"We found that participants were consistently able to brake more safely and appropriately in the presence of the lemon scent," Martin reports. "It's perhaps because the smell is citrus-y and alerting, and suggests that dangling a lemon-smelling air freshener in the car could make you a better driver."

But as Martin's use of words such as "citrus-y" shows, the psychology of smells is hard to pin down because they are so tough to describe. "The problem is, science doesn't really understand smells. We have vague terms for them, and say things like it smells like this or that, but we don't have chemical terms for most odors. I think all the answers to the effects of smell will come down to chemistry one day, but we haven't yet got to that level," he said. "Scent is described as the Cinderella of the senses because a considerable amount of nonsense is written and talked about it. Our research tries to test the effects of scent on behavior in a scientifically sound, methodical way."

One thing is for sure, however: The effects of smell tend to be short-lived. "We get used to odors very quickly," Martin explains. "Imagine waking into a strange environment — it will smell strange, but after a while the odor disappears because we become habituated to it. For our experiments, that means odor needs to be delivered in short bursts."

For chocolate munchers, that means that you'll have to be quick when smelling chocolate as you unwrap. "It's definitely worth having a sniff ... for a minute or two for chocolate's mood-enhancing qualities," Martin says. "But don't hang around too long, or the stress of not being able to eat it immediately might wipe out the effects completely."

Even better news: chocolate is good for you (in moderation)

BY DENIS CAMPBELL
THE GUARDIAN, LONDON

CHOCOLATE lovers rejoice. Your indulgence means you are less likely to have a stroke or heart attack, especially if dark chocolate is your thing.

Research shows regularly consuming as little as a square of chocolate a day helps to reduce your blood pressure and thus your chance of succumbing to cardiovascular disease (CVD). Scientists have found that people eating just 7.5g of chocolate daily were at a 39 percent lower risk of having a heart attack or stroke compared with those who ate just 1.7g.

The study, published in the *European Heart Journal*, found that modest chocolate intake had a significant effect on people's blood pressure. The benefits were more pronounced for a reduced risk of a stroke, but also brought less chance of a heart attack too.

Researchers led by Brian Buijsse, a nutritional epidemiologist at the German Institute of Human Nutrition, made the link after studying the health of 19,357 Germans aged 35 to 65 for at least 10 years. They believe that flavanols, substances in cocoa that boost the body's supply of nitric oxide, contribute to the chocolate eaters' lowered blood pressure.

The research confirms an association that other studies have made. The lower likelihood of stroke may be due to cocoa increasing the flow of blood around the brain, the authors say. Among 1,568 participants whose chocolate intake was tracked 57 percent ate milk chocolate, 24 percent preferred dark and 2 percent ate white chocolate. The dark variety contains more flavanols, and so is thought to have a greater effect.

However, these findings should not lead to chocolate gluttony, said the authors. "Given these and other promising health effects of cocoa, it is tempting to indulge more in chocolate" — but further research was needed before small amounts of chocolate could be prescribed to prevent CVD.

"The amount consumed on average by even the highest consumer was about one square of chocolate a day or half a small chocolate Easter egg in a week, so the benefits were associated with a fairly small amount of chocolate," said Victoria Taylor, the British Heart Foundation's senior heart health nurse.

Those tempted to indulge should remember that chocolate contains large amounts of calories and saturated fats, which are related to weight gain and high cholesterol — two risk factors for heart disease. And people should also eat fruit, vegetables and oily fish and be active for at least half an hour daily, Taylor said.



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