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[American Chemical Society](#)

Study finds that people are programmed to love chocolate

WASHINGTON, Oct. 12, 2007 For the first time, scientists have linked the all-too-human preference for a food — chocolate — to a specific, chemical signature that may be programmed into the metabolic system and is detectable by laboratory tests. The signature reads chocolate lover — in some people and indifference to the popular sweet in others, the researchers say.

The study by Swiss and British scientists breaks new ground in a rapidly emerging field that may eventually classify individuals on the basis of their metabolic type, or metabotype, which can ultimately be used to design healthier diets that are customized to an individual's needs. The study is scheduled for publication in the Nov. 2 issue of American Chemical Society's Journal of Proteome Research, a monthly publication.

Sunil Kochhar and colleagues studied 11 volunteers who classified themselves as chocolate desiring and 11 volunteers who were chocolate indifferent. In a controlled clinical study, each subject — all men — ate chocolate or placebo over a five day period while their blood and urine samples were analyzed. The chocolate lovers had a hallmark metabolic profile that involved low levels of LDL-cholesterol (so-called bad cholesterol) and marginally elevated levels of albumin, a beneficial protein, the scientists say.

The chocolate lovers expressed this profile even when they ate no chocolate, the researchers note. The activity of the gut microbes in the chocolate lovers was also distinctively different from the other subjects, they add.

Our study shows that food preferences, including chocolate, might be programmed or imprinted into our metabolic system in such a way that the body becomes attuned to a particular diet, — says Kochhar, a scientist with Nestle Research Center in Switzerland.

We know that some people can eat a diet that is high in steak and carbs and generally remain healthy, while the same food in others is unhealthy, he explains. Knowing one's metabolic

profile could open-the-door to dietary or nutritional interventions that are customized to your type so that your metabolism can be nudged to a healthier status.

Researchers have known for some time that metabolic status and food preferences can vary from person to person and even between different cultures. The recent growth of the new field of proteome research, which focuses on characterizing the structure and function of the complete set of proteins produced by our genes, has allowed scientists to gain a deeper understanding of the metabolic changes that occur when foods are digested, Kochhar says.

There's a lot of information in metabolism that can be used to improve health and this information is just now being explored and tapped," the researcher says.

In the future, a test for determining one's metabolic type could be performed as part of a blood or urine test during a regular visit to the doctor, Kochhar predicts. But a reliable test to measure one's metabolic type may be five years away, as more research is still needed in this area, he notes.

Women were not included in the current study in order to avoid any metabolic variations linked to the menstrual cycle, which has been shown in studies by others to influence metabolic differences, Kochhar says. But the researchers plan to include women in future clinical trials on metabolic responses to chocolate to determine if there is a gender-specific response to the treat.

In addition to providing a better understanding of individual metabolic types, the current study could also lead to the discovery of additional biomarkers that can identify new health benefits linked to chocolate and other foods, says Kochhar, whose research was funded by Nestle

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