

Misled by macronutrients? Researchers suggest alternative diet design

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The search for the perfect diet—one that promotes weight loss and optimal health—has left many people empty handed. A Perspectives article written by University of Cincinnati (UC) researchers and appearing in the Feb. 22, 2013, edition of *Science* suggests that a broad focus on the negative effects of high-fat or processed carbohydrate-rich diets could be misplaced.

Authors Randy Seeley, PhD, and Karen Ryan, PhD, say that rather than focusing on macronutrients that make up food (fats, proteins and sugars), it might be better to focus at an even deeper level—the micronutrients derived from certain foods that act at the [cellular level](#).

They suggest that food should be viewed and studied as if it is a cocktail of "hormones" because of the way its derivatives act on cells within the body.

For example, the authors cite the amino acid leucine—which isn't made in the body and must be ingested. Leucine has been found to trigger brain pathways that reduces [food intake](#) and body weight. Leucine micronutrient of many foods including soybeans, some cuts of beef, [brown rice](#), [chicken egg](#) yolks and cow's milk.

"What we eat is not just made up of various amounts of fat, protein and sugar," says Seeley, professor of medicine at UC and director of the Cincinnati Diabetes and Obesity Center.

"As food is broken down, its micronutrient components circulate in the blood and act on cell-surface receptors on multiple organs to change the activities of those cells in the same way that hormones made in our body do. In this way our bodies can 'listen' and respond to what foods we are eating."

Seeley says that just as different levels of various hormones can influence our health, so can the "hormones" that come from our food. By viewing food as hormones, Seeley adds, diets could be designed in a "bottom-up" fashion to reduce disease and promote wellness.

"Designing a diet based on how its various [micronutrients](#) turn on or off certain receptors in different tissues is a 'bottom-up' way to design diets. Just as different levels of various hormones can influence our health, so can the 'hormones' that come in from our food."

Provided by University of Cincinnati Academic Health Center

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