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A Question Saturated with Implications

Recently I was sitting at an industry lunch next to my good friend, Dr. Greg Miller, of the National Dairy Council. Greg is one of the most visible, effective and articulate nutrition spokespeople our industry has on board so when he speaks, I give a good listen. Eventually during lunch the discussion turned to dietary fat. Everyone at our table agreed with a concept promoted by our colleague Dr. Bruce German of UC Davis, that milk was designed by nature to deliver nutrition and health. The implication is that all components of milk were put there by nature for a good reason — including saturated fat. This prompted a great question from Greg: "What is the role of saturated fat in the diet?" This is not an insignificant question, particularly as it pertains to milk.

First off, let's tackle the saturated fat bugaboo. Saturated fat is a daunting name, one that brings up all kinds of negative connotations. Many decades ago (even before I was born!), scientists working in the newly created field of nutrition began looking at the physiological effects of various kinds of fat. Their research uncovered that certain fats were essential nutrients — nutrients required in the diet. These fats were labeled polyunsaturated fatty acids (PUFA) — a chemical term because our early nutritionists were basically chemists. The PUFA's they identified were largely found in plant oils rather than animal fat. The general conclusion became that any fat that was not a PUFA was not essential to the diet. Most of these non-essential fats were labeled monounsaturated or saturated — chemical terms with no physiological meaning. What came to be regarded as true, therefore, was that the only fat we really needed in order to be healthy was of vegetable origin.

Around the same time the chemists were identifying the different types of fats, they figured out how to use chemical hydrogenation to convert vegetable oils into solid fats in order to mimic the functionality of saturated animal fats. The irony is inescapable. The resulting process yielded a fat that was neither saturated nor an essential PUFA. In fact, these fats — called trans fat — were not to be found in any abundance in nature. As the margarine/shortening industry latched on to the process to create products in competition with butter, they were happy to encourage the continued use of chemical definitions of fats because it kept them out of the saturated fat debate. It wasn't until the early 1990s that consumers began to be aware of the negative physiological effects these trans fats promoted … but I digress.

Getting back to Greg's question about saturated fat, one must understand the basics of milkfat. After all, milkfat is unique and by far the most complicated of all fats. The saturated fat category alone, especially as it pertains to milkfat, contains fats short in length that follow a metabolic pathway highly distinct from any other fats — saturated or unsaturated. On a food label, these special fats only found in milk are lumped into the general saturated fat number, a practice that deceives the consumer since again the physiological effect of the different saturated fats varies tremendously. One size does not fit all. Just because a specific fat such as "butyrate" falls into the chemical definition of saturated does not mean it acts like the other saturated fats. Just because a house is blue does not mean that it is the same as all blue houses.

Scientists today realize that the old saturated fat and cholesterol relationships are not what they once seemed. Nature put those saturated fats into milk for a reason — one we have yet to discover. We believe that, while these saturated fats might not be essential for life, they may be essential for good health.

These answers will soon be revealed as we gain a better understanding of the genetics of milk composition. An international research program headed by Dr. German is looking at the human genome in order to understand the role that each component of milk plays in the delivery of nutrition. This research should drive a new understanding of components like saturated fat. Who knows, it may even clear saturated fat's bad name.

Research like this is important in understanding the conundrum of dairy products. After all, they contain saturated fat but are becoming well known as a major contributor to weight loss and/or weight management. There's something about dairy that settles the appetite and the science points to more than calcium. For me, there's nothing like a scoop of ice cream to settle my appetite — after all it's a great source of calcium, milk proteins and all natural saturated fat. This could be a very interesting — and tasty — line of research. The Ice Cream Diet — you heard it here first, folks! **CMN**

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