

Symposium: Contemporary and Emerging Issues: Healthfulness of Dairy and Meat Products

638 The current nutrition environment: Beef lipids in perspective. S. McNeill*, *National Cattlemen's Beef Association, Centennial, CO.*

Consumer beliefs about nutrition, health and wellness “that have for decades underpinned their decisions about what to eat” are rapidly evolving. Obesity is driving a number of trends, including food labeling, nutrition profiling and food bans. Today, pressure to define and promote healthier diets is coming from multiple angles. This presentation will explore this new nutrition environment and identify both the opportunities and potential challenges it presents for beef. Nearly sixty-five percent (65%) of all whole muscle cuts sold at retail and 15 of the top 20 most popular retail whole muscle cuts are “lean.” Additionally, beef is among the top four food sources of 10 essential nutrients in the American diet. Despite these positive nutrition contributions, health professionals and consumers still hold misperceptions about beef’s role in a healthy diet. Research on beef’s role in a healthy diet will be reviewed with a focus on research demonstrating the effects of lean beef on established and emerging cardiovascular disease risk factors.

Key Words: Beef, Nutrition Environment, Heart Health

639 Role of animal protein in optimal health. N. Rodriguez*, *University of Connecticut, Storrs.*

Research over the last decade suggests that higher protein intakes may impart some benefits with specific regard to various health outcomes such as weight management, diabetes, and cardiovascular disease. Further, emerging science based on newer, more sensitive methodologies, indicates that high quality, animal protein may convey particular benefits. This presentation will consider the scientific evidence for the role of animal protein in optimizing human health and identify areas of scientific consensus regarding the health benefits of high quality protein. Potential areas for future research to further delineate the importance of animal protein in optimal health will be highlighted. Special consideration will be given to recommending protein intake at levels approaching the higher end of the Dietary Reference Intakes (DRI) for the purpose of reducing the risk of certain diseases (i.e., obesity, diabetes) and delaying the onset or progression of muscle loss with aging (i.e., sarcopenia).

Key Words: Protein, Health, Nutrition

640 Milk fat and risk of cardiovascular disease. D. E. Bauman*¹ and A. L. Lock², ¹*Cornell University, Ithaca, NY,* ²*University of Vermont, Burlington.*

The last quarter-century has seen increased consumer interest in the link between diet and health. A major focus of this interest has been the effect of dietary fats and recognition that certain dietary fatty acids can impact human health. Both saturated (SFA) and *trans* (TFA) fatty acids in dairy products are significant challenges because of their perceived negative effects on human health, particularly in relation to cardiovascular disease (CVD) risk. This has led to the concept of eating healthy becoming synonymous with avoiding dietary fat, especially saturated

fat, with a low saturated fat diet at the heart of nutritional advice for lowering plasma cholesterol and reducing CVD risk. Furthermore, clinical and epidemiological studies have consistently demonstrated that diets containing TFA from partially-hydrogenated vegetable oils result in an increased risk of CVD. These results have been broadly extrapolated to imply that consumption of any and all TFA isomers is associated with an increased risk of CVD. Individuals do not consume fatty acids as a dietary entity, but rather as fats in foods. Investigations of the relationship of dairy product consumption to cholesterol and CVD in both children and adults challenge the appropriateness of these recommendations. In addition, a number of epidemiological studies have found no association or a slight beneficial association between intake of milk and dairy products with variables related to CVD risk. Likewise, recent animal model and human clinical studies indicate that milk fat-derived TFA show no pattern of negative effects on CVD risk. Overall, the available evidence does not provide support for the concept that consumption of dairy products adversely affects the risk of CVD. The growing body of scientific evidence that some of the fatty acids uniquely present in milk fat may have beneficial effects on human health and disease prevention (e.g. conjugated linoleic acid), and the recognition that not all SFA and TFA have the same biological effects, may ultimately challenge the recommendations and current public perception of dairy fats in human diets.

Key Words: Milk Fat, *Trans* Fatty Acids, Saturated Fatty Acids

641 Milk fat globule membrane components and their interactions with lactic acid bacteria. R. Jimenez-Flores*, *California Polytechnic State University, San Luis Obispo.*

Milk and dairy products are in a constant transition that obeys two forces. On the one hand the traditional view of the healthfulness of milk and its wholesome image, on the other the different nutritional trends of sectors of the population. Examples of the latter are obesity and saturated fats, lactose intolerance, preference for organic or raw milk and other emerging consumer issues. In addition, milk and dairy products as a business is subject to the added dimension of a highly political arena. However, this has been the case through most of the history of industrialized civilization. A big driver for innovation in dairy products has always been the ease in which products can address health issues and how technology has made possible production of valuable commodities. In this talk we will exemplify this trend by focusing on the underutilized milk fat globule membrane (MFGM), which is a component in milk with great health and value potential, and the rapidly growing pre- and pre-biotic arena. Several factors are of importance in this presentation: the biological origin of the membrane, the voluminous literature on its individual components and their relationship with health and wellness, the biological role of milk in nutrition to mammals (and their digestive flora) and the innovations in scientific tools being applied in many fields of chemistry and biology. Finally we will analyze the basic scientific information available or lacking for the judicious development of technology and products that fulfill the requirements of biological activity, flavor, and price.

Key Words: Milk Fat Globule Membrane, Lactic Acid Bacteria, Value Added