



The Significance of Dairy Fat

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The common belief is that excess dairy fat can lead to increased cholesterol, obesity, and coronary heart disease, and the removal of dairy fat from the diet can provide a healthier profile and be the reason to jump into other kinds of fat without actually knowing the consequences of those artificial fats. People have misconceptions about fat and are confused with its varieties. The golden rule of good nutrition continues to be variety, moderation, and balance. The well-known Nutritionists, Rujuta Diweka, and, Shikha Sharma asserts that a dairy fat-rich product, ghee is a more healthful option as it is closest to a natural source and does not undergo chemical processing.

The butter-like substance Crisco (Crystalized Cotton Seed Oil) is a shortening made out of vegetable oil and its production started in the year 1911 by Procter and Gamble, an American multinational consumer goods corporation headquartered in Cincinnati, Ohio. Crisco was initially promoted as a less expensive substitute for lard and butter for frying, home cooking, and the production of processed foods. Any fat that is solid at normal room temperature is a shortening.

It has more longevity and stability when compared to dairy fat but does not have any nutritional qualities of the latter. Since the introduction of shortenings made of vegetable oil, especially, canola and sunflower oil, the fats and oils business has undergone a great deal of change. The changes have involved new manufacturing techniques and facilities and the number of products produced (R.D. O'Brien, Practical Handbook of Soybean Processing and Utilization, 1995) however the nutritional qualities are many times impaired. The nutritional quality of dairy fat is always superior to such shortenings. The stigma associated with dairy fat is that it has a high cholesterol content, but it has been proven that the dairy fat in its matrix does not cause any harmful effects. Although sev-

eral other research has failed to support this association, a number of human and animal experiments from the late 1950s indicated that vegetable oils high in polyunsaturated fat lost their capacity to lower cholesterol levels when they were hydrogenated. In this context, it is also to be noted that Western countries have displayed an increase in the intake of ghee (the fat-rich product which has 99.5% of fat. (Antony, et al. Study of Fourier transform near-infrared (FT-NIR) spectra of ghee (anhydrous milk fat) 2018.) This may be due to the unveiling of the unhealthy industrial trans fatty acids (iTFA) due to the consumption of margarine. Milk fat is a combination of around 400 different fatty acids and each contributes to its typical qualities. The saturated fatty acids present in milk account for approximately 70% by weight. From a quantitative perspective, palmitic acid (16:0), which makes up around 30% of the total fatty acids by weight, is the most significant fatty acid. The other major ones are Myristic acid (14:0) and stearic acid (18:0). Additionally, the lipid component of milk contains mono- and polyunsaturated fatty acids with significant health advantages, such as oleic acid (C18:1 cis-9), linoleic acid, and certain fatty acids with the trans configuration. The typical flavour contributor of dairy fat, butyric acid is the major short-chain fatty acid in milk.

Another important component of milk fat is the presence of Natural Trans Fats such as Conjugated Linoleic Acid (CLA) which has many beneficial effects including anticarcinogenic, antiatherogenic, and antidiabetic effects (Jayaprakasha, et al. 2021, CLA: The Natural Trans-fat 2021). These trans fats are naturally present in milk. Above all, dairy/milk/butter fat is the most common and naturally available product and the best option to suffice the nutritional requirement.