an over emphasis on saturated fatty acids

Milk and other dairy products can be eaten daily without increased risk of cardiovascular disease and may even have a cardio-protective effect. Analytical epidemiological studies suggest that the different saturated fatty acids (SFAs) found in dairy have different effects on serum lipid fractions. Furthermore, several recent systematic reviews and meta-analyses failed to support previous studies that showed dairy to be associated with cardiovascular disease.

Introduction

Many South Africans follow diets high in fat and SFAs and tend to exclude milk and dairy products in pursuit of lower fat choices. Dairy consumption is further compromised by the perception that regular consumption of these products is unhealthy, particularly owing to its saturated fat content. In contrast, some recent studies report beneficial effects of milk and dairy products with regard to cardiovascular health.

Different SFAs, different effects

The main SFAs implicated in cardiovascular disease, namely stearic, palmitic, myristic and lauric acid, differ in their effects on serum lipid profiles. Stearic acid, for example, has a neutral effect on total, low-density lipoprotein (LDL-C) and high-density lipoprotein (HDL-C) cholesterol, while lauric acid and myristic acid can cause a greater total cholesterol increase than palmitic acid would. Lauric acid has a beneficial effect on plasma lipids by decreasing the total-to-HDL cholesterol ratio because of an increase in HDL-C. (Also see table below.)

Table: Effect of individual SFAs on lipid profiles\(^*\) and contribution of these fatty acids to total SFA content of milk

<table>
<thead>
<tr>
<th>SFA</th>
<th>Total cholesterol</th>
<th>LDL-C</th>
<th>HDL-C</th>
<th>Triglycerides</th>
<th>Total-to-HDL ratio</th>
<th>Milk</th>
<th>Fresh full-cream (g/100 ml)</th>
<th>Fresh low-fat (2%)(g/100 ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stearic (18 : 0) Neutral Neutral Neutral Neutral 0.4 (21%) 0.28 (22%)</td>
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<tr>
<td>Palmitic (16 : 0) 0 0 0 0 0.8 (42%) 0.53 (41%)</td>
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<td>Myristic (14 : 0) 0 0 0 0 0.3 (16%) 0.21 (16%)</td>
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<td>Lauric (12 : 0) 0 0 0 0 0.09 (5%) 0.07 (5%)</td>
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*Isoprentolic replacement of 1% dietary energy from carbohydrates with SFA.

The total SFA content of fresh full-cream milk is 1.93 g and of low-fat milk (2%) 1.30 g per 100 ml. Dairy products contribute relatively little to the SFA composition of the diet compared to other products of animal origin.

REFERENCES


CONCLUSION

Recent literature show no conclusive evidence for milk and other dairy as a food group being associated with increased risk for coronary heart disease. Dairy products in general, as well as their specific components, have furthermore been shown to have a positive effect on non-lipid cardiovascular disease risk factors such as blood pressure, inflammation, insulin resistance and type 2 diabetes, obesity and the metabolic syndrome. These findings suggest cardiovascular benefits of dairy foods that go beyond blood lipids.\(^{2,5,13}\) Milk and other dairy products can therefore be eaten every day as recommended by the South African Food-Based Dietary Guidelines, with increased risk of cardiovascular disease and possibly even fulfilling a cardio-protective role.

Milk and other dairy product consumption and cardiovascular health

Milk and other dairy have been linked to cardiovascular disease risk by increasing SFA intake and serum cholesterol levels. This association is now being increasingly recognized as follows.

- **Dairy intake does not conclusively lead to coronary heart disease.** A systematic review of prospective cohort studies found no consistent support for the notion that dairy consumption is associated with a higher risk of coronary heart disease.\(^{8}\) Mente et al. (2009) also reported that insufficient evidence exist for an association between milk consumption and coronary heart disease after a systematic review of evidence that suggest a causal link between various dietary factors and coronary heart disease. Similar findings were reported by German et al. (2009), whose review on prospective cohort studies showed no association between dairy intake and cardiovascular disease in seven of the twelve cohorts. Three of the studies even reported positive relationships between dairy foods and cardiovascular disease.

- **Dairy consumption may reduce the risk of ischaemic heart disease and stroke.** Two meta-analyses of prospective studies on the consumption of milk and dairy foods and the incidence of cardiovascular disease indicated an estimated 8% and 16% reduction in ischaemic heart disease and a 21% reduction in stroke events in subjects reported to consume the most milk, relative to those drinking the least milk within each cohort.\(^{5}\)

- **Milk fat is associated with a lower risk of first myocardial infarction (MI) and stroke.** Warensjo et al. (2009, 2010) investigated the association between serum milk fat biomarkers and a first MI and stroke. Milk fats were estimated by using plasma milk fat results. Shows results that milk fat biomarkers were associated with a lower risk of developing a first MI and stroke, especially in women.