



DBN Review N° 2

A resource about dairy-based nutrition
A product of the Consumer Education Project of Milk SA
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This review describes the role of milk and other dairy products as part of a healthy diet aimed at combatting lifestyle diseases.

A publication for health professionals

Have milk, maas or yoghurt every day



Daily intake of milk, *maas* or yoghurt can reduce current nutrient gaps in the diets of most South Africans and help to protect consumers against chronic diseases in future.

The problem

The influential National Food Consumption Survey¹ in 1999 showed inadequate intake of vitamin A, thiamine, niacin, riboflavin, vitamins B₆, B₁₂ and C, calcium, iron and zinc among a large part of the population. These dietary deficiencies are linked to a lack in dietary variety and low intakes of vegetables and fruit, legumes and animal-derived foods such as dairy and meat.

In contrast, high rates of the so-called chronic diseases of lifestyle – non-communicable diseases (NCDs) related to dietary factors – are also seen in the South African (SA) population.² These include heart disease, high blood pressure and type 2 diabetes, which are all associated with overweight and obesity. The South African National Health and Nutrition Examination Survey (SANHANES-1)³ revealed critical information on the emerging epidemic of NCDs in the country, highlighting overweight and obesity levels of 16.5% and 7.1%, respectively, in girls and 11.5% and 4.7%, respectively, in boys aged 2–14 years. The results showed that although iron-deficiency anaemia and vitamin A deficiency among children had decreased compared with the earlier National Food Consumption Survey, 43.6% of children still suffered from vitamin A deficiency. The most recent South African Demographic and Health Survey⁴ indicated that 50% and 82% of SA women were overweight or obese by the age of 20 and 45, respectively.

The SA population is, therefore, burdened by both under- and overnutrition, which puts great strain on national nutrition and health resources and hampers nutritional growth and prosperity.

A large body of research has shown that the unique composition of dairy products can help to address both current nutrient deficiencies and the risks of developing chronic diseases. However, dairy intake of South Africans is

generally well below the recommended daily intake of about 500 ml (2 measuring cups) of milk a day. To promote improved nutrient intake among South Africans, the Department of Health included a guideline recommending daily intake of milk, *maas* or yoghurt when the SA food-based dietary guidelines were revised in 2013. It states that consumers should 'have milk, *maas* or yoghurt every day'.

The scientific evidence

Milk is a source of high-quality protein, supplying the amino acids that the body needs to build muscles and other tissues. Dairy consumption can furthermore contribute notably to children's intake of vitamin A, riboflavin, zinc and vitamin B₁₂. The mineral content of dairy has an important role in optimal health. The potassium content of milk is particularly important for people who do not meet the recommended intake of 400 g vegetables and fruit per day.

Without sufficient dairy intake, it is also highly unlikely that consumers will meet their calcium requirements.

Calcium is well known for its role in bone health, which emphasises the importance of dairy for optimal growth in children and adolescents.⁵ However, owing to a lack of protein and energy in the diet, many SA children are stunted (i.e. short for their age). As dairy is a rich source of high-quality protein and calcium, adequate milk intake in this group of children helps to reduce the stunting problem.⁶

Research also shows that calcium, and specifically the calcium from dairy, is important in the prevention of NCDs.⁷ About 50% of the beneficial effect of the well-known DASH diet,⁸ which is recommended for lowering blood pressure, is attributed to the dairy component of the diet. The calcium in dairy offers credible explanations for the observed effect and hence a food-based approach rather than supplementation (tablets) is recommended.

Calcium also appears to have a role in regulating body weight, body fatness and the development of metabolic syndrome.⁹ Given the alarmingly high incidences of high blood pressure (hypertension) and obesity reported in both the SANHANES-1³ and the SA Demographic and Health Survey,⁴ dietary calcium is clearly important for the SA population.

Fat in dairy

The fat in dairy products is complex. Milk fat consists of more than 400 different fatty acids, each with different effects.¹⁰ As a healthy diet is one in which the energy (i.e. kilojoules) from fat does not exceed 30% of the total energy intake, the emphasis should remain on consumption of low-fat dairy. However, scientific evidence increasingly suggests that the quality (type) and source of fat may be as important as the total amount of fat.

The type of fat in milk, and in particular the matrix in which it occurs, appears to be a critical factor. For example, while industrially produced *trans*-fats are detrimental to health, it appears not to be the case for vaccenic acid, which occurs

naturally in dairy.^{11,12} Similarly, conjugated linoleic acids have remarkable biological properties. In addition, studies have shown that milk intake may, in fact, reduce the effect of saturated fats on blood fat levels.¹³

Fermented milk

Milk in fermented form (as in *maas* or yoghurt) may have additional health effects. This may be related to the lower pH (acidity) of these products, which affects the rate at which the stomach is emptied and so reduces the glycaemic response.¹⁴ Alternatively, the beneficial effects may be due to bioactive peptides present in fermented dairy. These substances have been linked to improvement of cardiovascular symptoms (e.g. high blood pressure) and low-grade inflammation (evident in obesity).¹⁵

Solutions

- Encourage the optimal use of milk, *maas* and yoghurt among consumers so that they achieve an intake of at least 2 cups of dairy a day.
- Consistently offer milk as a beverage to children (2 years and older and weaned from breast milk), which will ensure that drinking milk becomes a lifelong habit.
- The addition of milk, *maas* or yoghurt to cereals and porridge, and milk to coffee and tea, adds up and can also boost dairy intake.
- Do not forget milk in cooking, and yoghurt or flavoured milk in lunch boxes!
- Help consumers with lactose intolerance to overcome their fear of dairy by explaining that they should be able to have at least 1 cup of milk during the day without undesirable effects and that fermented milk products such as *maas* and yoghurt are generally well tolerated. The intake of hard cheeses such as Cheddar and Gouda, which contain no or only trace amounts of lactose (milk sugar), is also an option to still enjoy the benefit of the nutrients in dairy.
- Help consumers differentiate between lactose intolerance and milk (protein) allergy.
- Encourage consumers to include low-fat milk products in slimming diets to boost weight loss.
- Introduce consumers to the DASH diet⁸ to lower high blood pressure and help with weight control.
- Use milk and flavoured milk as a sports drink to boost protein, calcium and potassium intake during training and to assist with recovery.
- Encourage senior citizens to use low-fat dairy to improve their nutrient intake and combat loss of lean muscle tissue (sarcopenia).



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