PRIMARY CARE DIABETES

Use of Dairy Products in people living with diabetes

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Abstract

Dairy products are a good source of protein, energy and calcium. Unfortunately, because of various misconceptions, they are often avoided by people living with diabetes. This article enumerates the wide variety of dairy products available in the South Asian cuisine, explores their nutritional characteristics, and explains how to consume them in a healthy manner. Furthermore, this manuscript also highlights the utility of dairy products in people living with diabetes and its impact on improving glycemic control.

Keywords: Cheese, Curd, Dairy, Ghee, Medical Nutritional Therapy, Yoghurt

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Introduction

A balanced diet is essential for management of health. This is especially true in people with diabetes, whose efforts at dietary discipline put them at risk of malnutrition.[1]

An ideal diet is that which is not only accurate and acceptable, but also available, accessible and assimilable, i.e., it should be easy to chew, digest and absorb. Dairy products, or milk products, represent an important part of a balanced diet, especially in South Asian cuisine.[2]

Classification

Dairy products can be classified according to the source of milk. While cow milk and buffalo milk are used to manufacture most dairy products, camel, goat and yak milk is also used in some parts of the subcontinent. Vegetarian "milks" such as soya milk and almond milk do not classify as dairy products.

Another way of classifying dairy products is according to their perishability or shelf life. Milk, curd and yoghurt, have a short shelf life, for example, while butter and cheese can be stored for longer periods. The method of preparation can also be the presence, or otherwise, of additives or fortified nutrients.

Table-1: Classification of dairy products (approximate values in 100 grams of food product).

Preparation	Calories /100g	Protein (gms)/100g	Fat (gms)/100g
Milk			
Cow	62	3.2	3.3
Buffalo	99	3.8	7.1
High protein			
Curd	62	3.5	3.3
Greek yoghurt	119	6.2	3.5
Cottage cheese	143	10	9.8
Processed cheese	271	16	23
Buttermilk	50	3.8	1.5
High fat			
Cream	340	2.8	36
Butter	717	0.9	81
Clarified butter (ghee)	876	0.3	99

For the purpose of medical nutrition therapy (MNT), however, we propose a pragmatic classification based on nutrient composition. (Table 1) This self-explanatory list allows us to choose appropriate quantities of various foodstuffs for consumption in both adults and children with diabetes.[3]

Multiple means of cooking can be used to prepare dairy based foodstuffs. Our comments are not exhaustive, and are meant to stimulate culinary use of these foods in a person- friendly manner. Milk products can be used as a starter (paneer tikka, dahi bhalla, dahi pakora), as part of a soup (cream soup) or as an appetizer (raita). It can be a stand-alone main course (a paneer dish), a part of the main course (paired with cereal, e.g., paneer pulao, paneer paratha) vegetable, e.g., paneer capsicum or paneer spinach; non vegetarian food, e.g., butter chicken; or fruit, e.g.; fruit raita). Dairy products can be served as desserts, cooked with sugar (rasgulla, rasmalai, burfi), frozen (ice cream) or added to fruit (fruit cream) or cereal (phirni, kheer). Ghee, of course, is ubiquitous in South Asian cuisine, and is the building block of halwa.

Pragmatic Suggestions

Most dairy products are an important source of protein and calcium, and their use should be encouraged. People with

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Table-2: Pragmatic suggestion for consumption of dairy foods

Consumption
● Encourage use of toned milk to optimize calorie: protein balance
● Encourage use of curd for its prebiotic and probiotic benefits, as well as high protein and calcium content
● Hung curd, which can be prepared by letting curd sieve through a muslin cloth, increases protein concentration of curd
● Encourage use of buttermilk for satiety and nutritional benefits
Preparation
● Avoid addition of sugar or jaggery
● If non-caloric sweeteners are to be used, add them after boiling/heating the milk
● Consider adding spices such as cinnamon or garlic to provide extra zest and flavour
● Avoid addition of extra salt
● Note that kheer is milk based, and is protein-dense, while halwa is ghee based, and is rich in fat. However, the amount of sugar added in them should be in moderation.

diabetes should note that not all dairy products are same. While high fat foods (butter, ghee, cream) must be avoided, other milk products actually contribute to protein sufficiency and healthy. Table 2 lists some pragmatic pointer that can be used for MNT counselling.[4]

Dairy intake also helps in improving the calcium intake and this is important in people with diabetes who are at a high risk of developing osteoporosis and fragility fracture.[5] An average south Asian postmenopausal woman is recommended a daily calcium intake of about 1000-1200 grams per day, which would be achieved by intake of about 1 liter of milk or equivalent dairy products per day.[6] Enhancing the protein intake through dairy products in a diabetic meal, reduces the post prandial glycaemic surge and is therefore helpful in improving the glycaemic control and indirectly also help in mitigating the cardiometabolic risk. More recent, south Asian guidelines have also highlighted the importance of dairy intake to improve the protein content in patients with diabetes to prevent sarcopenia and related complications.

Summary

This brief manuscript highlights the importance of incorporating dairy products in a south Asian diabetic diet. In addition to being a rich source of calcium, in patients with diabetes it may help to improve glycaemic control, prevent sarcopenia and also reduce the risk of a diabetes related osteoporotic fracture.

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