



Review Article

## ROLE OF DAIRY PRODUCTS (CURD, CHEESE & PANEER) IN PATHOGENESIS OF MEDOROGA: A CRITICAL REVIEW

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### ABSTRACT

In Ayurveda, it is said that our body as well as diseases are made of foods that we intake. Food has the main impact on our body. Our body is the end product of food that we intake. The wholesome foods build us likewise the unwholesome food impacts that lead to adverse effects in our body. Hence, treatment of the diseases also needs to be planned accordingly. For the same reason, *Ahara* must have been described as '*Maha Bhaisajya*' in *Kashyap Samhita*. Dairy products specially curd, cheese and paneer are becoming part of life as these are easily accessible now. They have become an essential ingredient of junk foods like pizza, burger, pasta etc. People are taking them frequently without any rules and regulations. Some people are compelled to take them due to their busy schedule as they are the packed, ready to eat and easily available food. This type of food impairs *Agni* (digestive power) of the body, produces *Ama* and ultimately results into production of *Medoroga*. **Objectives:** Since the impact of dairy products on our body is not clearly defined in Ayurveda. So this article attempts to study the role of dairy products mainly curd, cheese & paneer in pathogenesis of *Medoroga*. **Material & Methods:** *Charak samhita*, *Sushruta samhita*, *Kashyap samhita*, modern medical textbooks, journals and online data bases were reviewed thoroughly for the study material. The matter was collected and analyzed critically to clear the concept. **Results:** Curd, cheese and paneer are not recommended to consume regularly because they are heavy to digest and vitiates *Vata*, *Pitta*, *Kapha* and *Rakta*. **Conclusion:** The study concludes that regular and unscheduled consumption of dairy products specially curd, cheese and paneer leads to *Medoroga*.

### INTRODUCTION

Ayurveda provides extensive knowledge about each and every aspect of life. In Ayurveda, it is believed that our body as well as the diseases are made of foods that we intake. Importance of *Ahara* has been given in healthy as well as in diseased state. This statement is strengthened by the fact that *Ahara* is described as '*Maha Bhaisajya*' in *Kashyap samhita*.<sup>[1]</sup> Food has the main impact on our body. Our body is the end product of food that we intake.

The wholesome foods build us likewise the unwholesome food impacts adverse effects on our body.<sup>[2]</sup> Improvement in health sectors such as nutritional supplements, reduced risk exposures, treatment availability and prevention of infectious diseases are largely responsible for the increase in life expectancy of people. Still, modern man is living in the perpetual state of ever increasing stressful situations arising from the development of science and technology. Dairy products specially curd, cheese & paneer are becoming part of life as these are easily accessible now. They have become an essential ingredient of junk foods like pizza, burger, pasta etc. People are taking them frequently without any rules and regulations. Some people are compelled to take them due to their busy schedule as they are the packed, ready to eat and easily available food. This type of food impairs *Agni* (digestive power) of the body, produces

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*Ama* and ultimately results into production of *Medoroga*. In the present era, *Medoroga* seems to be very common in general population irrespective of age. This might be due to easy availability of dairy products. *Medoroga* is caused mainly due to *Kapha dosha* along with *Pitta and Vata dosha samghra*.

At the present time, conditions like highly ambitious goals, competitive as well as sedentary lifestyle increases the risk of various diseases like obesity, hypertension, diabetes mellitus, atherosclerosis, dyslipidemia etc. These are the metabolic diseases resulting from impaired metabolism due *Agni dushti* (disturbed digestive fire). Various etiological factors like excessive food intake, day sleep, sedentary lifestyle, excessive happy state of mind and hereditary predisposition play important role in this. These factors are mainly to the comfort side of a person which makes him less active in both perspectives, physically as well as mentally, and hence eventually hampers the metabolism of the body giving rise to various diseases. These all metabolic disorders can be correlated with *Santarpan janya vikaras* in Ayurveda. This results in abnormal *Medodhatu (Medodhatu dushti)* of the person which can be related to the adiposopathy which ultimately results into *Medoroga*. Adiposopathy is a disorder that consequences in pathogenic metabolic and immune adipose tissue responses that promote metabolic diseases (adipose tissue dysfunction).

### Alarming data on Overweight and Obesity (*Medoroga*)

According to a study published in the noted journal Lancet, India is just behind US and China in this global hazard list of top 10 countries with highest number of obese people. The study titled 'Global, regional and national prevalence of overweight and obesity in children and adults during 1980-2013: A systematic analysis for the Global Burden of Disease Study 2013' used data collected by international bodies and organizations in various countries like India over three decades. The US topped the list with 13 percent of the obese people worldwide in 2013 whereas China and India together accounted for 15 percent of the world's obese population with 46 million and 30 million obese people, respectively. According to the study, number of overweight and obese people globally increased from 857 million in 1980 to 2.1 billion in 2013.<sup>[8]</sup> This is one third of the world's population.

According to WHO, worldwide obesity has nearly tripled since 1975. In 2016, more than 1.9 billion adults, 39% of adults aged 18 years and older were overweight and 13% were obese. Most of the world's population lives in countries where overweight and obesity kills more people than underweight.<sup>[9]</sup>

Increasing obesity and dyslipidemia in South Asians is primarily driven by nutrition, lifestyle and demographic transitions, increasingly faulty diets and physical inactivity in the background of genetic predisposition. It is becoming one of the major problems leading to metabolic syndrome.

### MATERIAL AND METHODS

*Charak samhita, Sushruta samhita, Kashyap samhita*, modern medical textbooks, journals and online data bases were reviewed thoroughly for the study material. The matter was collected and analyzed critically to clear the concept.

### Brief Review of Dairy Products Specially Curd, Cheese and Paneer

#### Curd

Today, curd is one of the common food content of Indian diet. It is rich source of milk protein and calcium. Nutritional value of curd is given in table no. 1. It can be correlated with *Dadhi* in Ayurveda. *Acharya Shushruta* has mentioned that *Dadhi* is *Madhura, Amla, Atyamla, Kashaya, Snigdha, Ushna*. Therapeutic efficacy of *Dadhi* has been mentioned in *Peenasa*, (coryza), *Vishama jwara* (irregular fever), *Atisara* (diarrhoea), *Aruchi* (tasteless), *Mootrakrucha* (dysurea), *Karshya* (cachexia). It is said to be *Rushya* (spermatogenic), *Pranakaram* (life giving) and *Mangalakara* (auspicious). On the other hand *Dadhi* is also said to be heavy to digest, increases moisture content in body, vitiates *Kapha, Vata* and *Pitta*. It is also responsible for vitiation of blood and causes blood disorders. It has been enlisted in *Nitya asevaniya ahara dravya* in *Charaka Samhita*.<sup>[11]</sup> *Ashtanga Hridaya*,<sup>[12]</sup> *Ashtanga Samgraha*<sup>[13]</sup> and *Kaiyyadeva Nighantu*.<sup>[14]</sup> Keeping all these properties in mind, it is advised to avoid intake of curd in hot climate and at night. It is also advised in Ayurveda that one should not be eating yogurt every day because that may cause blockage of circulatory channels. But now a day, it comes into routine that curd is taken daily irrespective of its combination and timing.

A report finds that the market exhibited double-digit growth during 2015-2020. The curd market in India is expected to grow at CAGR of 15.3% during the forecast period (2021-2026).<sup>[2]</sup>

**Table 1: Nutritional value of Curd (per 100gm)**

S. No.	Content	Amount
1.	Calories	98
2.	Fat	4.3 g
3.	Carbohydrate	3.4 g
4.	Protein	11 g
5.	Cholesterol	17 mg
6.	Sodium	364 mg
7.	Potassium	104 mg

## Paneer

Paneer is made by curdling heated milk with lemon juice, vinegar or any other food acids. It is power pack with nutrients and minerals to offer numerous benefits to the health. Paneer is a rich source of protein and is a powerhouse of all the essential amino acids required by the body. Nutritional value of Paneer as per 100gm as mentioned in Table 2. Paneer can be correlated with *Takrapinda* or *Kilat* in Ayurveda. According to *Acharyas*, *Takrapinda/ Kilat* is *Vishada*, *Guru*, *Ruksha*, *Malabandhaka* and *Grahi* in nature. It is heavy to digest and vitiates all the three *Doshas*. It also causes vitiation of blood.

The paneer market in India reached a value of INR 365.5 billion in 2020. Looking forward, IMARC Group expects the market to grow at a CAGR of 15% during 2021-2026. [3]

**Table 2: Nutritional value of Paneer (Per 100gm)**

S. No.	Content	Amount
1.	Total Fat	26.9 g
2.	Saturated Fat	18.1 g
3.	Trans fatty acid	< 0.1 g
4.	Cholesterol	56.2 mg
5.	Sodium	22.1 mg
6.	Carbohydrates	6.1 g
7.	Protein	19.1 g
8.	Vitamin-A	210 meq
9.	Calcium	420 meq
10.	Iron	2.16 meq

## Cheese

Cheese is prepared from fermentation of curd. Cheese is a nutrient-dense dairy food providing protein, fats and minerals as mentioned in Table 3. Cheese can be correlated with *Kurchika* in Ayurveda. It is *Grahi*, *Vishada*, *Ruksha*, and *Dhurjara* (not easily digestive). *Kurchika* is heavy to digest and causes vitiation of three *Doshas* and blood.

The cheese market in India reached a value of INR 44.8 Billion in 2020. Looking forward, IMARC Group expects the market to grow at a CAGR of 24.80% during 2021-2026. [4]

**Table 3: Nutritional value of Swiss cheese per 100gm**

S. No.	Content	Amount
1.	Calories	350 g
2.	Fat	26.9 g
3.	Carbohydrate	4.71 g
4.	Protein	22.2 g

This surge in the market of these dairy products is explaining itself that these products are reaching to a wider range of population. Scenario has been changed now. Today, dairy products especially curd, cheese & paneer are easily accessible to common man. These products have become a regular part of every meal in one form or another. They have become an essential ingredient of junk foods like pizza, burger, pasta etc. People are taking them frequently without any rules and regulations. So, people are continuously taking them without giving a second thought about their impacts on one's health. They are being consumed irrespective of right time of intake. According to our ancient *Acharyas* these are not supposed to be taken in night and in hot seasons as they are heavy to digest and vitiates all the three *Dosha*. They also cause vitiation of blood.

Because of advanced technology and busy schedule, today's life has become more sedentary and varieties of junk foods add extra calories. This leads to *Medodusti* which results into *Medoroga* with the passage of time. With advancement of technology, life is becoming more and more easy and sedentary now-a-days. On the other hand, it is becoming very difficult to follow proper diet and dietary pattern due to various kinds of pressure, responsibilities and busy schedule. Easy availability of junk foods is adding extra calories to the body. All these factors are eventually initiating *Medo dhatu dushti* and hence contributing in *Medoroga*.

## Probable *Samprapti* (Pathogenesis) of *Medoroga* by dairy Products

In all the *Medo roga*, there occurs *Medo dushti* first. All the metabolic disorders are directly or indirectly related with *Medo roga*. Regarding the *Samprapti* of *Medoroga*, both *Acharya Charaka* [5] and *Acharya Susruta* have different views. *Acharya Charaka* [6] has accepted *Ahara* as most common pathogenic factor whereas *Acharya Sushruta* [7] has accepted *Ama* as that factor. *Nidana* mentioned in the pathogenesis of *Medo dushti* are *Snigdha*, *Madhura*, *Guru*, *Kapha vardhaka*. Since dairy products specially curd, cheese, paneer are having the same properties and their intake has also increased irrespective of their rules and regulations regarding their consumption. They all cause *Kapha dushti*. By keeping all these facts in mind, pathogenesis of *Medoroga* by dairy products can be illustrated as follows:

### Some Researches on Dairy Products say that:

1. Saturated fat in dairy products leads to increase LDL level which is a risk factor for cardio vascular diseases. [16]
2. Cheese has the potential for promoting the growth of *Listeria* bacteria. *Listeriamonocytogenes* can also cause serious infection in an infant and pregnant

woman and can be transmitted to her infant in utero or after birth. [17]

3. Research has linked the high fat content and hormones in cheese and other dairy products to breast cancer. According to a study published in the "Journal of the National Cancer Institute," cheese and other dairy products may actually raise the risk of breast cancer. [18]
4. As it has been seen that all the three items i.e., curd, cheese and paneer are high in fat. It has been found that diet high in fat, saturated fat and cholesterol increase the risk of heart disease. [19]
5. A study published in 'Nutrition and Cancer' also came to the same conclusion. Other studies link cheese to lymphoid cancers and lung cancer. [20]
6. The Physicians Committee on Responsible Medicine warned in The New York Times that cheese can contribute to the development of colic, allergies and digestive problems due to intestinal colonization of *Listeria* or *E.Coli*. [21]
7. Lactose intolerance is another issue that may result excess consumption of dairy products. Symptoms are upset stomach, diarrhea and gas. [22]

## CONCLUSION

It can be concluded that despite the fact that curd, paneer and cheese are high protein, high fat diets, still they are not recommended for daily consumption. All the three are heavy to digest and vitiates *Vata*, *Pitta*, *Kapha* & *Rakta*. They cause obstruction of *Srotas* and *Medodushti*. *Kapha dosha* and *Meda dhatu* are the main factors vitiates in the pathogenesis of *Meda dhatu dushti* and which ultimately leads to *Medoroga*. Their frequent and increased consumption without following the dietary habits and dietary rules and regulations increases the risk factor for cardiovascular diseases, digestive problems and cancer.

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