

# Traditional foods of Indian origin in pregnancy

## Abstract

**Background:** In India, pregnancy is usually viewed as a normal physiologic phenomenon that does not require any intervention by health care professionals. Pregnant women have an unusual craving for variety of foods. This review reveals there are several traditional health foods available across various regions of India that helps in the health benefits of pregnant women. Relevant papers were identified from Science Direct, Google Scholar and Pub Med by using all combinations of the search terms related to traditional foods consumed in pregnancy.

**Keywords:** pregnancy, traditional foods, ghee, digestible, chutney, nutritional factors, fermentation

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## Introduction

India is known for its traditional foods. As in all cultures, certain beliefs and practices exist, which assist a good pregnancy and its outcome. Most food practices and traditions of India have stemmed from deeply rooted traditions and customs.<sup>1</sup> Nutrition-related practices during pregnancy are based on a belief that 'hot' foods are harmful and 'cold' foods are beneficial. Pregnant women are advised to attain balance by eating cold foods and avoid hot foods as pregnancy generates a hot state. Cold foods are recommended in early pregnancy to avoid miscarriage. Hot foods are encouraged during the last stages of pregnancy to facilitate labour.<sup>2</sup>

An appreciation of these foods helps in formulating balanced diet modules for a pregnant woman. Some of these foods of Indian origin are listed here.

### Soft diet in pregnancy

Idli is a popular traditional fermented food consumed throughout India, particularly in southern parts of India. Idli is prepared with 2:1 proportion of rice to black gram dhal and 12–15hrs of fermentation (lactic acid bacterium) depicted in Figure 1. Kancheepuram idli is a type of popular idli among Tamil indigenous people. During its cooking, cashew nuts, ghee, salt, pepper, ginger, and cumin are added to enhance taste. This traditional food is a good source of protein and calorie. Idli is easily digestible and often used as food for pregnant women, infants and invalids.

Dosa is similar to idli but the batter is thinner. After fermentation, the leavened dosa batter is baked on hot pan as thin, crisp pancake and eaten with chutney and sambar.<sup>3</sup> The three traditional pulses used as grain legumes are urad dhal, mung dal, and masoor dal. Traditional processing techniques such as fermentation, soaking, and cooking help to remove these ant nutritional factors and improve enzymatic activity.

Porridge (Ambali/Koozh) is a finger millet-based fermented semi-liquid product of south Indian states, Karnataka and Tamil Nadu. Preparation method includes mixing of finger millet flour with water to make a thick batter and followed by cooking and fermentation depicted in Figure 1. The fermentation process decreases the leucine to lysine ratio (from 3.6 to 4.1) and increases the concentration of thiamin, riboflavin, and tryptophan and bioavailability of minerals. Ambali is a food for pregnant women because of the presence of high calcium and low resistant starch in finger millet. Ambali is consumed

as such, or with buttermilk for taste.<sup>4</sup>

Ragi malt is the flour of popped finger millet, rich in dietary fibers and nutrients. Ragi huri hittu is old Mysore delicacy (Karnataka–South India). Huri is roast, and hittu is flour hence the name. Popping is a simple processing technique done by severe heat treatment. It improves the aroma and taste and decreases antinutritional factors and increases the digestibility and solubility of starch because of gelatinization. To enhance the nutritional value of hurihittu, finger millet is germinated, which improves the bioavailability of iron and zinc. It can be used for the preparation of dietetic foods for anemia, pregnancy and geriatric food formulation.<sup>5</sup>

Enduri pitha is a light snack, native to Odisha state, prepared during the prathamastami festival. It is a flavoured cake and has laxative effect because of the turmeric leaves that are used to wrap the pitha. It is prepared by steaming the fermented batter of parboiled rice and black gram in a turmeric leaf and folding the leaf through the mid-vein depicted in Figure 1. The batter-filled folded leaves are then cooked over steam. Black gram proteins are deficient in Methionine and Cysteine amino acid, this lowers the biological value of proteins and fermentation seems to enhance the nutritional quality of the blend of black gram and rice. Other ingredients such as coconut, curd, and sugars are added. It is recommended to all age groups. The extracts of turmeric leaves through this traditional food in winter season increase the immune system of the body.<sup>6</sup>



Figure 1 Traditional health foods.

Dhokla is important probiotic breakfast food of Gujarat state. Dhokla is prepared from the fermentation of bengal gram and rice. The method of preparation is the same as idli, but it is steamed openly rather than covered as is done in idli preparation. During fermentation, lactic acid bacteria contribute to the acidity of the product and make it sour in taste and improve the flavor. The antioxidant property of fermented batter helps in preventing oxidative stress-induced degenerative diseases. Hence dhokla can be a good food item in the menu of diabetic pregnant women.

Hawaijar is an indigenous fermented soybean product of Manipur, India. It has been consumed in every household directly or used as an ingredient in several signature dishes. It is unsalted and has a characteristic flavor and stickiness. The organism mainly involved in the fermentation of this product is *Bacillus* spp. Preparation of hawaijar, requires bamboo baskets, banana leaves, or healthy fig leaves to help fermentation and to aid in better quality product. Hawaijar consists of soluble proteins ranging from 26% to 27%. Presence of *Bacillus* spp. gives high fibrinolytic activity to the product. Since hawaijar is rich in proteins, it is recommended for pregnant women and children older than 10 years.<sup>7</sup>

A fermented product of north east similar to idli of south is Selroti. It is a rice-based fermented product, spongy and ring shaped depicted in Figure 1. It is consumed in Sikkim and Darjeeling. A local variety of rice is used for its preparation. Rice or rice flour is soaked overnight in cold water and then water is decanted. Soaked rice is pounded into small powder using wooden mortar and pestle. Then the rice is mixed with wheat flour, sugar, butter, and condiments such as cloves, cardamom, coconut, nutmeg and cinnamon. Milk or water is used for kneading the powder into soft dough for easy flow. The batter is left to ferment for 2–4 hours followed by molding into a ring and fried. It is served as a confectionary product. selroti has good amount of digestible proteins. Lactobacilli is the principal microorganisms present in selroti.<sup>8</sup>

### Vegetable based health foods

Plantain flower (Vazhai poo–Tamil) pugath/ poriyal is a dish made from the flower of banana plant. The floret is separated followed by removal of non-edible parts such as pistil, sepal and calyx. Then the florets are cut into small pieces soaked in sour buttermilk overnight. It is seasoned with green chili, mustard, and onion and cooked in water with pulses. Later it is garnished with coconut gratings. It is rich in iron and fibre and good for pregnant women.

Jackfruit seed chutney is prepared by pounding boiled jackfruit seeds and mixing with chili, onion, garlic, and grated coconut. Salt and lemon juice is added for taste and is served with roti. Jackfruit seed consists of good amount of phenolic compounds and prebiotics. Prebiotics are carbohydrates that help in intestinal microbial balance.<sup>9</sup>

Mango pachadi is a special traditional dish of Tamil Nadu prepared during Tamil New Year. It consists of mixture of various tastes such as sweet, salty, bitter, hot and astringent along with the tangy sourness of green mangoes, neem flower and jaggery. For preparation of mango pachadi, peeled green mangoes are sliced into thin flat pieces. The sliced mangoes are added to jaggery water. Chili, turmeric, and mustard is used for seasoning. Cooking is done for 15 minutes.

Spinach is packed with iron, Spinach (Palak) roti is very common in north India. Method of preparation includes boiling the spinach in water (devine) followed by kneading dough with boiled spinach. Small

balls of dough are made into roti. Spinach is a good source of protein and iron. It is called pasalai keerai in Tamilnadu. It is recommended for girls during menstruation and for lactating women.<sup>10</sup>

Amaranth or Mulai keerai masiyal/kadaya is native of Tamilnadu state of India. In Andhra Pradesh it is known as thotakura pappu, in Kerala it is named cheera thoran. Amaranth leaves are good sources of oxalic acid, hence it should be avoided by patients suffering from kidney stones. The leaves are simmered and ground with seasoned spices. Legumes can also be used during preparation, which enhances the nutritive value. This goes along with chapatti and roti.<sup>11</sup>

### Conclusion

An Indian diet for pregnancy is rich in all nutrients required for both the mother and the growing foetus required during the pregnancy months. It helps to attain the right amount of weight gain and required energy to help support the growing foetus. The diet keeps the pregnant women healthy, fit and in good shape for the delivery.

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### Conflict of interest

Authors declare that there is no conflict of interest.

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