

# THOUGHT FOR FOOD

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*Indian cuisine: is it as good as it looks? Or is it a lethal mixture of saturated fats, cholesterol and carcinogens?*

If you're hungry, try this from the scientists at the isotope division of the Madras Cancer Institute: "Potent and proven carcinogens have been identified and quantified in several of the commonly-consumed south Indian food dishes and food components."

This statement is from a report which appeared in the *Indian Journal of Experimental Biology* some time ago. It says that deep-frying increases the chances of "nitrosation reactions". During these disturbances in the acidic conditions of the stomach, nitrites used as preservatives in meat and fish are converted into cancer-causing nitroso compounds.

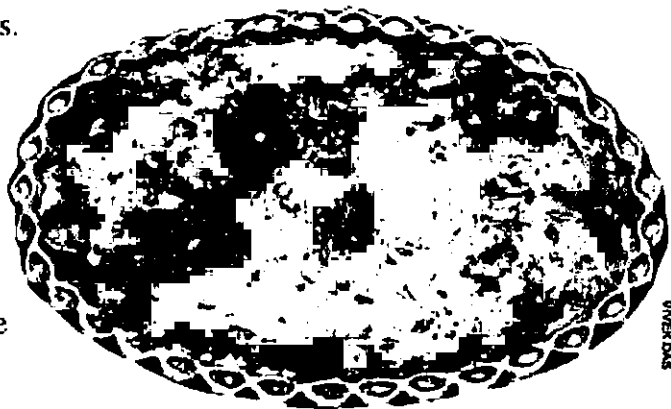
Here's another bite:

Several deep-fried south Indian dishes, the scientists tested, contained a class of chemicals known as polycyclic aromatic hydrocarbons (PAHS), found to be related to cancers detected in Asian and western countries. Deep-frying was seen to increase the content of a PAHS called dibenzathracene in some foods nearly twenty-fold.

Some staples used in Indian homes even cause disability. The neurotoxin-laden *kesari dal*, which causes paralysis, has been banned in this country, but is still eaten in rural homes. So is a variety of pulse called *lithairus sitaivus*, common in Madhya Pradesh, which causes paralysis of the lower limbs, if eaten over a couple of years.

If deep-fried stuff from the south and pulses in Madhya Pradesh are unsafe, so is the high consumption of beef, lamb, pork, chicken and certain kinds of fish, such as sardines, tuna, crab and oysters.

"Meat in diet should be restricted because it contains saturated fat, which



Indian food, on the whole, involves an excessive use of oil. And over-frying, along with the use of colouring agents, results in an unhealthy mush landing on your dinner table

increases the risk of heart, kidney and liver diseases," warns Ira Ghosh of the Calcutta University College of Home Science and Nutrition. Meat, she says, also increases the secretion of uric acid, the cause of gout.

For those who like pigging out on junk food, *gol-gappas* (*puchkas*, as some call them), *bhel puri* and *chola-baturas* soaked in oil, are either bereft of food value or downright injurious. Deleterious for diabetics are Bengal's syrupy *rasogollas* and *sandeshes* which have attained national fame, in addition to the *jalebis* and *gulabjamuns*, that sweet shops in northern India dish out.

Chewing cardamom and cloves can be good for digestion, and these spices are said to possess therapeutic properties. But consumed with a *paan* (betel) leaf, lime, *kattha*, and *supari*, the mush is a powerful carcinogen. *Paan* erodes the palate and insides of the cheek, leading to oral cancer, one of the most common diseases in India.

Also harmful are generous quantities of cream, egg yolk, milk, chocolate, yoghurt, butter, vegetable oils, coconut, cashewnuts, roasted and salted peanuts and potato chips, which produce dangerous levels of a common killer — cholesterol.

Millions can't stir out of bed each mor-

ning without a cup of tea, hot enough to damage their food pipes. This causes acidity and ulcers. At work, as people drink the beverage brewed with the same leaves, it gives them a progressively stronger kick, bombarding them with larger doses of cancer-causing nicotine.

Coffee-drinkers are equally cancer-prone, thanks to their intake of caffeine. Often one kind of hazard is traded for another to produce a supposedly healthy substitute. "More people now tend to replace sugar with saccharin, which is carcinogenic," says Meena Chatterjee, a dietician with the B.M. Birla Heart Research Centre in Calcutta.

So is *ajinomoto*, an ingredient banned in other countries, without which restaurants in India refuse to make Chinese food.

**W**hat makes Indian cooking harmful?

Overcooking, overfrying and reusing oil for frying. Also, frying spices like cinnamon, cardamom, pepper and cloves, which add to the carbon content of food. All these are common kitchen crimes in middle-class homes.

Overcooking reduces vegetables to pulp, robbing them of their vitamins and minerals. Reusing oil for frying, breaks down its glycerol into carcinogenic acrolein.



Drinking a glass of fruit juice isn't more beneficial than having whole fruits. Juice doesn't contain fibre, which is essential for your body

Deep-frying, probably the most serious drawback of various Indian cuisines, causes an excess of oil in food, adding to the fat content. It also increases

## MYTH AND REALITY Fiction and fact about some common food

**MYTH:** *Desi ghee* (buffalo or cow fat) is more nutritious than *Vanaspatti*.

**REALITY:** Both *desi ghee* and *Vanaspatti* have the same amount of fat and calories. A hundred grams (gm) of each has 100 gm of fat, giving an energy of 900 kilocalories.

**MYTH:** Goat's milk has a higher protein content than cow or buffalo milk.

**REALITY:** Buffalo milk has the highest protein content (4.3 gm per 100 gm), followed by goat's milk (3.5 gm per 100 gm), and finally by cow's milk (3.2 gm per 100 gm).



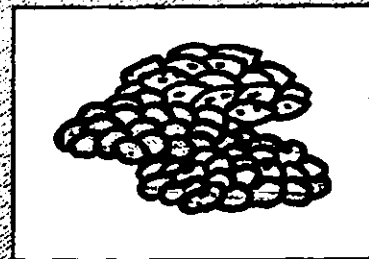
**MYTH:** Almonds have a higher protein content than groundnuts and are hence more nutritious.

**REALITY:** Groundnuts and soya beans have a higher protein content than almonds. While 100 gm of almonds have 20.8 gm of protein, 100 gm of

groundnuts have 25.3 gm, and 100 gm of soya beans have 43.2 gm of protein.

**MYTH:** Drinking orange juice is better for one's health than having an orange.

**REALITY:** Drinking orange juice is less beneficial than having an orange. When juice is taken out of the orange it



exposed to rodents in godowns.

One of the reasons for the easy availability of these adulterants in the market is that food authorities have their hands full. According to the Prevention of Food Adulteration Act, all colourants used in edible items have to be certified by the Bureau of Indian Standards (BIS). But with packaged foods having flooded the market, it has become difficult for government laboratories to test all the commodities sold in retail stores.



There is another problem. A number of consumer protection laws apply only to products which have been cleared by the BIS — and are stamped with the ISI mark. Manufacturers of those commodities that don't have this mark cannot be dragged to court under the consumer protection laws.

It is another matter altogether that they cannot be legally sold, either. But shopkeepers in a seller's market have a way of getting around that.

**From Indian/Now Delhi**

indigestion during pregnancy. As Dr Madan says, "Fat-rich food is in no way beneficial for the child."

"What a pregnant woman needs is a diet rich in protein, vitamins, calcium and minerals, with less calories." This means a higher consumption of milk and milk products, raw green vegetables, salads, fruits and boiled vegetables with a low salt content, to avoid acidity.

Every person's diet is determined by his physical and biological needs. As with the sexes, so with social classes. If butter, chocolates and sweets are harmful for the well-fed rich, they're not so for the calorie-starved poor. This is why

**Adulteration is common in such foods as cereals, spices and vegetables. And even sweets are suspect if they have been made with impure ingredients**



the high-calorie foods that better-off Americans shy away from when they step into department stores — the fat-rich chicken, red meats, butter, cheese and cokes — are considered less dangerous for blue-collar workers.

This might also explain why the sales of Diet Coke and Diet Pepsi are lower than their original high-calorie versions in South-East Asian and Latin American countries. Taking into account their total population, Third World countries hardly have a cholesterol problem, compared to the West. And it is mostly an urban complaint.

But the poor have their own health

hazards. If calorie intake is what the upper classes should control, acidity and ulcer-causing spices are what the poor should eat less of, cautions Dr Mona Desai Mucadam, chief dietician of Bombay's Hinduja Hospital. The poor are also frequent victims of diseases related to nutritional deficiencies.

In essence, Indian food is nutritious. But it is a question of what one eats, and how much of it, over a period of time. Doctors are wont to advise a larger intake of fruits and vegetables. Consumed in modest quantities, home-made ghee can be wholesome, according to Dr Urmila Thatte, associate professor of pharmacology in King Edward Medical College, Bombay. "It lubricates the blood vessels and delays aging," she says.

Says Dr Mucadam, "In south India, they eat a lot of sprouts, in Gujarat they have fermented sprouts as *dhoklas*, in the north they have dal and chappatis. This is an ideal combination." And much better than the white bread and meat commonly eaten in the West.

"But in certain conditions," adds Dr Mucadam, "Indian food becomes bad — as it is for sedentary city-dwellers who do little exercise, and yet gorge themselves on samosas and packed nuts."

Another negative aspect is the unnecessary variety of an Indian meal. What is usually a cause for complimenting a host — the presence of *papad*, rice, dal, vegetables, pickles and sweets in a *thali* — is something many doctors complain about. The vitamins in the vegetables are killed by overcooking. They are reduced to an oily mush. Since the variety entices one to overeat, all one consumes is oil, spices and carbohydrates.

the growth of a child, both in height and weight. Until the age of four, a child usually survives on a diet rich in cereals, its major source of protein. A child needs a daily intake of 300 gm of cereals. But since its stomach is too small and cannot always digest that amount, the shortage can be made up with egg, soya bean and buffalo milk.

A common problem among children is the deficiency of Vitamin A. This occurs due to the low intake of green vegetables, milk, cheese, butter and eggs. The result is diseases like measles, which severely deplete the reserves of Vitamin A in the body, leaving the child susceptible to pneumonia and diarrhoea.

Half of all childhood deaths in India occur due to diarrhoea. Vitamin A deficiency also leads to the drying of the cornea, and hazy vision. Gradually, the cornea is totally destroyed, causing night-blindness and then, total blindness.

Indian cuisine is, perhaps, most deficient in iron. Although a vegetarian diet is rich in iron, the presence of chemicals in it prevent the iron from being absorbed by the body. Statistics illustrate the extent of the problem. Fifty per cent of the country's children, 30 per cent men, 50 per cent of non-pregnant women, and 80-85 per cent of pregnant women suffer from iron deficiency anaemia.

Since what pregnant women consume determines the health of the nation, their bad food habits have the most devastating effect. And homegrown dietary myths revolving around pregnant women hardly help.

It is generally recognised that a pregnant woman needs to eat twice her normal quantity of food to nourish herself and the child in her womb. But often it is the wrong kind of food that she eats. As Dr K. Madan, head of the gynaecology and obstetrics department at Delhi's Ram Manohar Lohia Hospital, testifies: "It is pregnant women who ignore the right kind of diet the most."

Among the most outrageous beliefs is the alleged need for pregnant women to have dollops of *desi* ghee, butter and other fat-rich foods to nourish the mother, make the child healthy, and lubricate the insides of the mother for easy delivery.

Quite the opposite of this is true. Fat-rich foods lead to deposits of fat in the mother's blood and an accumulation of adipose tissue, which makes delivery more difficult. Besides obesity, a fat-rich diet causes nausea, retching and

## Stones, dyes and mineral oil

### Adulteration of food items is a common practice in India

The most insidious health hazard in Indian food, one that has little to do with cooking or eating habits, is adulteration—the wholesaler's practice of mixing his wares with substances that look alike, even if it costs the consumer his life.

Almost all common food products available in India are mixed with inedible items, to add to their weight, says Dr K.V. Nagaraja, head of the Analytical and Quality Control Laboratory, Bangalore. They are also the cause of various health problems.

While it is common knowledge that brick powder is often mixed with red chilli powder and black pepper powder may also have a fair amount of ground rock mixed into it, even cereals like rice and wheat are adulterated with inorganic matter which has a high toxic level.

"This is what we term economic adulteration," says Dr Nagaraja. According to him *kesari dal*, which leads to paralysis of the limbs because of its high toxic amino acid content, is often mixed with the more expensive *tur dal*.

Spices like cinnamon and cloves have their essence removed and mere chaff is then sold in the market. Saffron, which is very expensive, is mixed with foreign vegetable matter which makes it harmful for consumption.

Groundnut oil and coconut oil are mixed with castor oil. Sometimes mineral oil is also added to edible oils. Consumption of these adulterated oils leads to epidemic dropsy—the waterlogging of the upper portion of the legs, causing paralysis of the limbs. Besides, mineral oil is also carcinogenic. So are oil-soluble colours which are often put in edible oils to make them look clear.

Even more dangerous is the use of dyes to colour food matter. Most of these are adulterated with toxic elements which lead to a number of ailments ranging from indigestion and anaemia to pathological lesions in

vital organs, paralysis and even cancer. A ten-year-old study by the Toxicological Research Centre, Lucknow, revealed that 70 per cent of the 13,000 samples of edible items examined, contained harmful colouring, which is permitted only for



industrial use.

Even in the United States, of the approximately 200 colour additives listed, only 90 were found to be safe for consumption.

The most commonly used dye is metanil yellow. Its carcinogenic properties were exposed as early as the 1970s in India but it continues to be used for colouring sweets like *jalebis* and *laddoos* and even in biryani.

Metanil yellow is also used to conceal the damage done to pulses like *tur* and black gram, which have been



the chances of carcinogenic elements entering food which has been kept over heat for too long. "Deep-frying also increases the presence of free radicals in

the body, which accumulate, leading to heart attacks," says Dr K.K. Aggarwal of the Heart Care Foundation of India in Delhi.

Equally lethal are gastronomical delights such as grilled and tandoori food, rich in oil and carbon. Toxic carbon from hot plates (*tawas*) also rubs on to chapattis and *parathas*, adding to the carcinogen hazard.

Several palatable recipes begin with a dangerous practice: frying spices. "The most obvious result is acidity," says Dr Geeta Kapoor, a private nutritionist. "Extra spices corrode the inside of the intestines, hampering digestion and increasing the presence of acid in the body."

Guess what this ordinary cooking habit can lead to over a stretch of time? Cancer of the intestines.

Acidity is a frequent complaint in India. One reason is that people like their meals piping hot, and hot food can cause acidity. Dr Aggarwal suggests a simple test. "If the temperature of your food doesn't feel bearable on the palm of your hand, it won't in your intestines," he says. And if it doesn't, it will lead to acidity.

Acidity also results from long spells of inactivity after a meal, like going to bed too soon after dinner — doctors recommend a gap of at least two hours, with some physical activity thrown in.

**O**ther chronic food-related problems are obesity and high blood pressure.

loses fibre which is very essential for the body.

**MYTH:** Yoghurt is good for health as it has a high protein content.



**REALITY:** Yoghurt is not as healthy as it is assumed to be. One cup of whole milk yoghurt is concentrated cholesterol.

**MYTH:** Bananas, grapes and cherries are more nutritious than dates.

**REALITY:** Of all these fruits, dates have the highest content of protein and iron. Dates are also high in fibre content.

While approximately 100 gm of bananas have 1.2 gm of protein and 0.9 milligrams (mg) of iron, 100 gm of cherries have 1.1 gm of protein and 1.3 mg of iron, and 100 gm of grapes have 0.5 gm of protein and 0.5 mg of iron. A hundred gm of dried dates, on the other hand, have 2.5 gm of protein and 7.3 mg of iron.



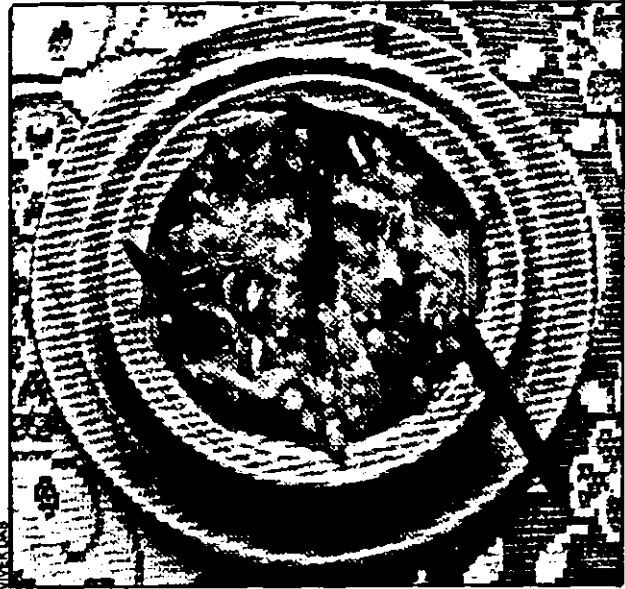
**MYTH:** Apples and grapes have more nutritional value than other fruits.

**REALITY:** Apples and grapes have no special nutritional value. •

Punam Thakar/New Delhi



**If you are a non-vegetarian, you should restrict yourself to such lean meats as chicken and fish. And try baking instead of deep-frying**



**If you don't go easy on the spices — especially chilli peppers — you are likely to develop acidity, or even worse, ulcers**

re. Serious ailments on their own, they also cause heart attacks. And the villain is: a calorie-rich diet.

A calorie is the measure of the energy generated when the food we consume is broken down into more digestible forms. This heat, or energy, comes from carbohydrates, which are found in all plants and their preparations. Calories also come from fat, which is consumed in the form of oil, meat, egg yolk and even milk.

The body needs the right amount of this energy to fuel the day's activities — no more and no less. The Recommended Dietary Allowance (RDA) is 2,400 calories a day for an adult male and 1,800 calories a day for an adult female. The requisite diet is worked out by calculating the calorie levels of food eaten each day.

Some of the food we eat can have a devastating effect on our system. Sample this:

A samosa contains 200 to 300 calories. So does a *kachori*. A *burfi* has some 300 calories. And an oil-soaked *paratha*, a common snack in north India, has 300 calories. Just one of these calorie bombs lapped up each week, let alone daily, is enough to pack a lethal punch.

When the energy derived from a samosa or a *paratha* is not burnt out by physical activity it starts accumulating in the arteries leading to the heart. This first leads to an increase in weight, dispropor-

tionate to a person's height and build. Then follows obesity and high blood pressure. And finally, comes a heart attack.

The trick is to watch averages. "It is important to measure the calorie intake not on a daily, but on a monthly basis," says Dr. Aggarwal. "Patients invariably protest that they do not consume calorie-rich food every day," he adds. "But if you examine their diet over a month you realise that half of what they have eaten is rich in calories."

Like any machine, the digestive system is allergic to overuse. Doctors say it is advisable not to gorge oneself on any one meal to enable the digestive

tract to work efficiently. For the same reason, sweets eaten on a full stomach do incalculable harm. This means an intake of excess calories after the digestive system is already strained.

Says Dr Aggarwal: "I don't think even one per cent of people know that it is best to eat slightly less than what you think you can — keeping your hunger levels in mind — if the food is to be fully digested."

If overeating is a common dinner-table vice, so is the notion that eating "on time" is a ticket to good health. Most people have been reared on a regimen of breakfast at 8 am, lunch at 1 pm, and din-



**Kavita Mukhi, who runs a health food store in Bombay, says that people should avoid eating such foods as polished rice and refined flour**

Simple food, consisting of dal, chapatis, rice and vegetables — the staple of rural homes — is more healthy, doctors say.

Dieticians point out that urban families should learn the virtues of traditional Indian food, which includes most of these ingredients. "In the past, people had brown rice and ghee," recalls Dr Kavita Mukhi, who owns a health food store in Bombay. "All this has been substituted today by refined food — polished rice and white bread — which are bad." It is not as though spices are harmful, she says. In moderate quantities, they have medicinal value. Spices also act as preservatives in hot weather.

Here's what nutritionists have to say about some common Indian foods:

ne and chlorine. A regular intake of it helps lower blood pressure and regulates one's heart beat.

- Onions, especially raw, have great medicinal value. They help in thinning the blood, which in turn reduces chances of heart attacks.
- Beetroot, which contains sodium, calcium, chlorine, iodine and even a few vitamins, is excellent for anaemic patients and those with gall-bladder and kidney problems. Also, a combination of carrots and spinach in salads is good for eyesight and is a cure for constipation.
- The oil of sunflower seeds helps in reducing the level of cholesterol. The oil

Most nutritionists recommend a diet which has a combination of skimmed milk or milk products — specially curd — meat, fish or pulse preparations, green vegetables and salad, eggs (in moderation), and citrus fruits. Here are some tips that can make a meal healthier than it usually is:

- Substitute oil or mayonnaise with natural yoghurt.
- Use vegetable puree for thickening soups.
- Serve fresh salad or boiled vegetables with a single dish.
- Use natural herbs for flavouring food.
- Remove extra fat from meat before cooking.
- Use lean meats like fish and chicken.
- Use restricted methods of cooking like steaming and boiling.
- Serve light desserts like fruit salads instead of traditional sweets.

Eventually, people will start eating better when their attitudes towards health and environment improve. If thousands of Indians who can afford a better diet are still pouring into streets, restaurants and hotels to eat junk food — made with dirty hands in unclean utensils — it is because of a callous unconcern for hygiene.

Experience has shown that education and literacy are not enough to change this. The gastronomical orgies at birthday parties, weddings and anniversaries in India's metros are proof of this. The compulsion to violate elementary principles of nutrition — without regard to the harmful effects of proven toxic items — is part of work-a-day culture. Compounded by a lack of physical exercise, it is what keeps doctors and clinics in business.

But with health foods becoming fashionable in cities — particularly because they are being marketed by famous persons, hotels and high-profile companies — one hopes the awareness will trickle down. After all, it doesn't cost much to eat well — in the true sense of the term.

*Mirnal Mitra and Punam Thakur/Now Delhi with Gauri Lankesh/Bangalore, Anupama Chandra/Bombay and Niranjan Dutta/Calcutta.*



RASHMI CHAKRAVARTY

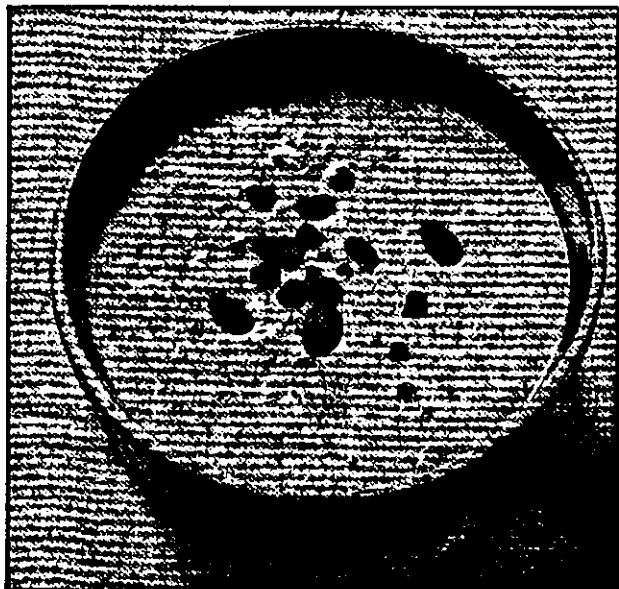


IRYAMAL CHAKRAVARTY

With *thali* meals, there is always a risk of over-eating. And eating too much meat, warns Professor Ira Ghosh, can increase the risk of heart, liver and kidney diseases

- *Jalebis* are unhealthy because they consist of *urad dal* fried in sugar syrup, and contain only calories.
- *Pau bhaji* is an unhealthy mush of overcooked potatoes and peas, devoid of any nutrients.
- *Parathas* are fine if they are not made in too much oil, and better still, with some *besan*.
- Rice lacks in proteins and roughage, and if had in large quantities can lead to obesity. So can sugar and potatoes.
- Garlic is good for you because it has a high percentage of vitamins and minerals and also has small quantities of iodi-

- of safflower seeds and *methi* seeds also help in reducing cholesterol and glucose.
- The juice of *karela* is good for diabetic patients and helps in reducing the glucose content of blood.
- Among fruits, *jamuns* are good for diabetics because they help in checking the conversion of starch into sugar, in case there is an excess production of glucose in the body.
- Soya bean is not only an important source of vitamins and minerals but also has little or no starch, which is of immense value to diabetics. Soya bean is also a rich source of lecithin, which melts fat and hence helps in reducing cholesterol.



Eating sweets after having a full meal is the worst thing you can do. Instead of *kheer*, try a fruit salad for dessert



*Parathas* aren't really unhealthy if made with minimum oil — not *desi* ghee. But try and use *besan* and avoid eating butter with them

ner at 8 pm. But what this leads to is overeating.

Explains Dr Kapoor, "If you are not hungry it means that the body has a reserve of energy and doesn't require any more." He adds: "Food should be eaten as and when you feel hungry."

Are mothers of "problem-eaters" listening?

**A**dd to this indulgence, ignorance. Most people remain unaware of what constitutes a balanced meal, specific to one's social conditions and physical requirements. Most of us, however, wouldn't have difficulty understanding

it if we remembered our elementary lessons in food and nutrition learnt in school.

But to go over it again, all the food that we consume contains five basic nutrients, which perform specific functions.

Carbohydrates and fats are the principal sources of energy for the body. Proteins are the building blocks which help in tissue maintenance. Vitamins regulate metabolism and other important functions. And minerals maintain fluid balance and the activity of the nervous system. Water, another kind of nutrient, is also required in adequate quantities.

Another important component, which can't be called a nutrient because it is not absorbed by the body, is fibre, which helps in cleansing the body of toxic elements and hastens the elimination of waste products.

Ideally, solid food consumed daily should consist of about 50-60 per cent carbohydrates, 25 per cent fat, 15-20 per cent protein, about five per cent minerals and vitamins and five per cent fibre.

But that is rarely the case. "The problem is not so much one of overeating but of not eating the right kind of food in the right quantity," says Dr Umesh Kapil, of the department of nutrition at Delhi's All India Institute of Medical Sciences (AIIMS).

The result is a variety of diseases. Goitre, a common affliction among children, occurs due to iodine deficiency, which can be prevented by having iodised salt. Weak teeth and bones result from a deficiency of minerals and calcium, abundant in carrots, drumstick, radish, buffalo milk and black gram. And a diet deficient in Vitamin C, of which there are plentiful supplies in citrus fruits, green mango and guava, leads to a weakening of connecting tissues.

**C**hildren are most prone to the effects of deficiencies. The most common nutritional disorder is Protein Energy Malnutrition (PEM), which can retard

Dr Umesh Kapil, of the nutrition department at AIIMS, Delhi, maintains that it is not the quantity of food eaten that counts, but the quality

