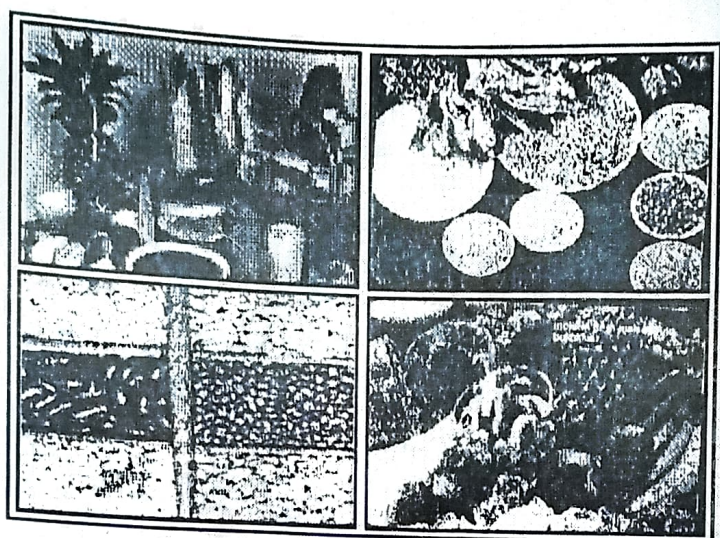


Fiber for Fitness



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The incidence of diseases viz. Constipation, cardiovascular diseases and diabetes are on rise in population in recent years. The underlying cause for the same can be attributed to change in dietary habits. With the modernization the trend of food consumption has changed and the traditional foods have gained secondary place while processed foods viz. Bread, biscuits, pastries, cakes and pizza etc. made from refined foods are given first preference. The consumption of leafy vegetables and other vegetables are reduced while root vegetables are consumed more in the form of chips, french fries, patties or in the form of snacks such as *samosa* and *alu bonda*. Even the fruits and fruit juices were replaced by carbonic beverages. All these modified dietary habits are resulting in low consumption of **dietary fiber** giving room to the settlement of the above referred diseases.

What is dietary fiber ?

Dietary fiber is the substance present in plant cells that is resistant to digestive enzymes in human gastrointestinal tract. It is a polysaccharide with immense therapeutic value. To describe in simple terms it is the "roughage" or "bulk" or "bran" that we find in foods. It is present in almost all plant foods but in more concentration in vegetables, fruits and grains. Animal products such as milk, meat, egg, poultry and fish do not contain any dietary fiber.

What are the different types of fiber ?

The dietary fiber does not represent just one component in plants. It includes different

chemical substances which are described as different types of fibers.

Crude fiber : It is commonly used bio-chemical terminology by biochemists. It is mostly present in outer skin of vegetables, fruits and cereal grains and also in woody parts of plants.

Soluble fiber : It is that component of plant fiber which is soluble in water and forms a soft gel like material during digestion process. The major components of soluble fiber include hemicellulose, β -glucans and mucilaginous matter. It is found in fruits vegetables and beans.

Insoluble fiber : Insoluble fiber does not dissolve in water but retains it to soften and build up stool. It includes mostly cellulose and hemicellulose. It is found in leafy vegetables, whole grains, husk and bran.

Added fiber : This is the isolated non digestible carbohydrate that has beneficial therapeutic value. These are available commercially.

How much fiber do you need to consume?

A recommendation of 25 to 35 g / day after the age of 20 years is advised. Children above 2 years need to consume dietary fiber equal to amount of their age plus 5 g/day. Some times the recommendation is considered based on calorie requirement. It is recommended to consume 10 to 13 g of fiber per 1000 K cal/day or 25 g /2000 K cal or 30 g / 2500 K cal/day.

Where do you get fiber ?

Fiber is available from different plant or vegetarian foods. However the available can be increased if one consumes food in raw

form and in natural state. i.e. before peeling of juicing. Cooking vegetables does not change the fiber content but the pre processes of cooking such as peeling and removal of seeds reduce the fiber content.

Whole cereals and millets viz. sorghum, wheat, corn, *bajra* etc. and cereal products such as *poha* (pressed rice), *rawa* and unrefined flours are good sources of fiber. Even pulses are good sources if consumed as whole or sprouted.

Snack items such as popcorn, salted whole grams, germinated grains are also good sources.

The recipes made using different green leafy vegetables and other vegetables such as bitter gourd, ridge gourd, bottle gourd, ladies finger, cucumber, drumstick, cluster beans etc. are very good sources of dietary fiber. Among roots and tubers carrots and radish are very good sources of fiber.

All citruc fruits, mango, banana, pineapple, papaya, apple, pomegranate, jack fruit, amla, dates, guava etc. are good sources.

What are the health benefits of fiber ?

The dietary fiber has several health benefits

- The insoluble fiber increases stool weight and enables normal laxation .
- Dietary fiber provides satiety. The fiber rich food remains for a greater period in the stomach and thus provides satiety.
- Dietary fiber is digested slowly and therefore improves glucose tolerance.
- Dietary fiber enables free movement of doudenal contents and thus protects against duodenal ulcers.

- Due to its ability to bind bile acids, dietary fiber helps in prevention of cardiovascular diseases
- Adequate fiber in the diet prevents formation of diverticulosis by providing bulk and easy movement of contents of the gastrointestinal tract.
- The dietary fiber either binds or absorbs cancer causing substances and thus prevents cancer.
- The insoluble fiber enables free movement of residues in the large intestines and thus prevents accumulation and infection of contents in appendix.
- The fiber rich foods often contain several antioxidants which help in active living and maintenance of health.
- The fiber rich foods are also good sources of other important nutrients such as vitamins and minerals.
- The fiber rich foods such as vegetable grains and legumes contain phytoestrogens which balance the hormonal action especially in women.
- Dietary fiber provides no calories and thus acts as a low calorie diet.

There are many advantages in consuming dietary fiber. Not only that the vegetarian foods which are rich in dietary fiber are of low cost and easily available. Further, they can be grown in kitchen gardens without much investment. However to ensure proper and required consumption of dietary fiber it is beneficial to follow the below given tips.

- a) Grow kitchen gardens and encourage people around you for the same.

- b) Consume fruits and vegetables every day.
- c) Consume fruits and vegetables as whole food rather than as juices.
- d) Utilize skin and peels of fruits and vegetables in day to day meals.
- e) Include dishes such as *usal* (made from sprouted grams) in the diet frequently.
- f) Choose whole gram cereals, cereal products, pulses, bran and unrefined flours for consumption.
- g) Eat more salads along with meal.
- h) Avoid excessive processing of food.
- i) Avoid addition of commercial fiber to the products as far as possible.

Fiber content of some commonly consumed Vegetables and fruits.

Vegetables and Fruits	Fiber content per 100 g	Vegetables and Fruits	Fiber content per 100 g
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Vegetables

Spinach	2.5	Cabbage	2.8
Chukka	3.2	Coriander	4.3
Fenugreek	4.7	Colocasia	6.6
Tamarind leaves	10.6	Curry leaves	16.3

Fruits

Banana	1.8	Orange	1.1
Grapes	1.2	Guava	8.5
Mango	2.0	Papaya	2.6
Sapota	10.9	Sweet lime	2.7
Pomegranate	2.8	Pine apple	2.8
Apple	3.2	Jack fruit	3.5
Seethaphal	5.5	Amla	7.3
Dates	7.7		