



# Camellia Newsletter

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## Dietary fiber contributes to preventing weight gain

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**D**ietary fiber is commonly known to be effective against constipation. Recent scientific studies have unveiled other important roles that dietary fiber plays for our health. Nowadays, dietary fiber is considered as the sixth major nutrient after carbohydrates, fat, proteins, vitamins and minerals. This issue will include explanations with practical examples of dietary fiber in common foods.

### ◆◇ It is recommended to have both soluble and insoluble dietary fiber

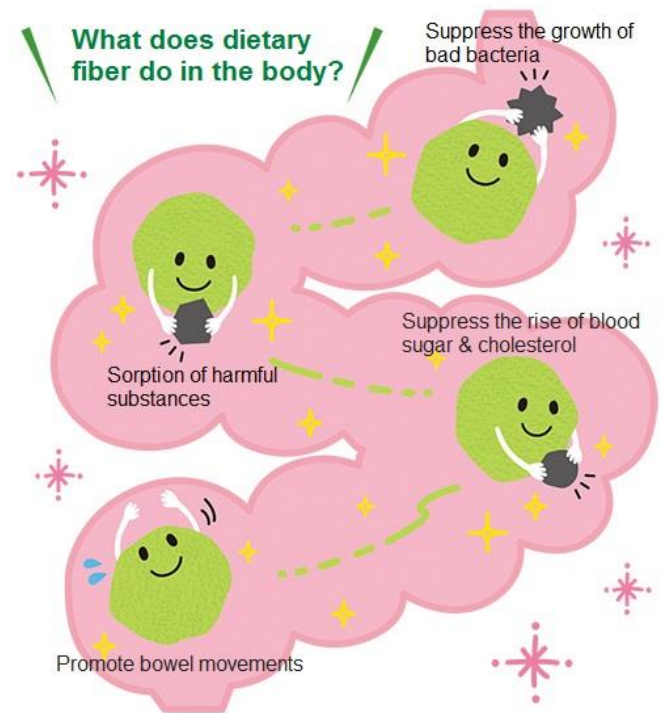
Dietary fiber has two main components: soluble dietary fiber and insoluble dietary fiber. Soluble dietary fiber dissolves in water and its viscosity increases after its dissolution in water. Pectine, glucomannan,  $\beta$ -glucan and indigestible dextrin are classified into this group. Soluble dietary fiber slows the rates of digestion and absorption of carbohydrates in diets which lets our body suppress the sudden rise in the blood sugar after the meal. It also sorbs extra fats like cholesterol and eliminates them from the body. Soluble dietary fiber protects bowel mucosa and facilitates to increase good bacteria in the intestines. It is abundant in fruits like apples and oranges, vegetables like cabbages, radish, avocado and potatoes, and seaweeds including kelp and brown seaweed.

On the other hand, insoluble dietary fiber, which tends to contain water, does not dissolve in water. Cellulose and lignin are classified into this group. Insoluble dietary fiber moderates the speed of digestion and absorption of carbohydrates in a diet, but also becomes bloated several times of its original volume in the stomach and intestines once it contains water which in turn increases the volume of feces. The increased feces stimulate the inside of intestines and intestinal peristalsis becomes active which will ease defecation. Insoluble dietary fiber also sorbs harmful substances such as hazardous metal and dioxin and eliminates them from the body. It is abundant in soy, burdock roots, mushrooms, peas and grain.

The intestinal bacteria metabolically ferment these dietary fibers and synthesize short-chain fatty acids which activate bowel motility and alkalify the intestinal pH value. The alkaline intestinal environment can suppress multiplication of bad bacteria and the development of hazardous substances. Many science studies have shown that having a large amount of dietary fiber can contribute to suppress inflammation, allergic symptoms and colitis.

### ◆◇ What does dietary fiber do in the body?

The food that includes abundant dietary fiber requires to take a time to chew a lot which will improve mastication. It also takes time until swallowing masticated foods which will stimulate the satiety center. Dietary fiber bloats in the digestive system once it contains water which will be able to prevent eating more than we need. It can help to prevent adiposity and diabetes because it slows the speed of digestion and absorption of carbohydrates in diets which makes our body suppress the sudden rise in the blood sugar after the meal. Moreover, dietary fiber suppresses the absorption of cholesterol and salt which will help to prevent developing hyperlipidemia, arteriosclerosis and hypertension.



The daily intake of dietary fiber was about 25g among Japanese people in the late '40s, but it has now been reduced to about 15g due to the westernization of daily meals and their behavior of eating less rice. The Ministry of Health, Labor and Welfare in Japan has set a target of taking 20g of dietary fiber a day. However, the reality is far from achieving the target. As we explained in the previous chapter, there are different types of dietary fiber and those contribute differently for our bodies. We should have both types in the right balance from many different foods.

<b>What are the benefits of having a lot of dietary fiber?</b>	
❖	Suppress a rapid increase in postprandial glucose
❖	Promote bowel movements
❖	Support the growth of good bacteria
❖	Prevent overeating
❖	Prevent the development of diabetes, obesity, dyslipidemia, atherosclerosis and hypertension
❖	Discharge hazardous substances and toxic metals
❖	Suppress allergic symptoms and colitis

### ◆◇ What foods are abundant in dietary fiber?

Vegetables, seaweeds, mushrooms, potatoes and beans include a lot of dietary fiber. The following chart introduces common foods that contain a good amount of dietary fiber in descending order.

Rank	Names of food	per food	Dietary fiber contained (g)	Classified in soluble & insoluble dietary fiber (g)
1	Okara *	Per 50g	5.8	Soluble: 0.2 Insoluble: 5.6
2	broccoli	Per 130g (1/3 bunch)	5.7	Soluble: 0.9 Insoluble: 4.8
3	Dry soy	Per 30g	5.4	Soluble: 0.5 Insoluble: 4.9
4	Pumpkin	Per 150g	5.3	Soluble: 1.4 Insoluble: 3.9
5	Sweet potato	Per 125g (1/2 pieces)	3.5	Soluble: 1.2 Insoluble: 3.9
6	Natto	Per 50g (1 pack)	3.4	Soluble: 1.2 Insoluble: 2.2
7	Avocado	Per 60g (1/2 pieces)	3.2	Soluble: 1.0 Insoluble: 2.3
8	Tossa jute (Corchorus olitorius)	Per 50g (1/3 pieces)	3.0	Soluble: 0.7 Insoluble: 2.3
9	Burdock root	Per 50g (1/3 pieces)	2.9	Soluble: 1.2 Insoluble: 1.7
10	Spinach	Per 100g	2.8	Soluble: 0.7 Insoluble: 2.1
	Carrot	Per 100g (1/2 pieces)	2.8	Soluble: 0.7 Insoluble: 2.1
Rice	Brown rice	Per 140g	2.0	Soluble: 0.3 Insoluble: 1.7
	White rice	Per 140g	0.4	Soluble: 0.0 Insoluble: 0.4

\* A pulp consisting of insoluble parts of the soybean which remains after pureed soybeans are filtered in the production of soy milk and tofu.

We are able to increase the daily amount of dietary fiber without any pressure or stress by just adding natto to your daily meal or changing white rice/white bread to brown rice/bread.

### ◆◇ The entitled dietary fiber to the Food for Specified Health Uses (FOSHU)

Recently, the word of “Tokuho”, the Food for Specified Health Uses (FOSHU), is very often found on product labels in Japan. This means a product which can be sold with a claim of a particular effect from the food contained in it. Normally, the claim like saying “to suppress the rise of postprandial blood glucose level” is written beside the logo of FOSHU. Each product intended to be sold with a particular health claim has to obtain the approval from the Japanese government.

The approved product carries the mark shown the right on its label.



One type of dietary fiber which is entitled to FOSHU is indigestible dextrin. It is created from a starch and classified in soluble dietary fiber. The Consumer Affairs Agency in Japan accepted indigestible dextrin as a FOSHU with the following three effects: to regulate the functions of the intestines, to suppress the rise of postprandial blood glucose level and to suppress the rise of postprandial neutral fat level. We see green tea and pops that carry the mark of FOSHU and those products became familiar items for our life. However, the excess intake of indigestible dextrin may cause soft stool. We should keep in mind how much indigestible dextrin we are taking in a day. The ideal way of having dietary fiber is little by little but continuously from our meals every day. The product with a FOSHU mark should be a supplemental way to have dietary fiber.



Dietary fiber is not degraded by human's digestive enzymes but plays various roles in the body. The constant ingestion of dietary fiber provides benefits not only for beauty care and weight control but, also for a long-term health maintenance.