



ROLE OF FIBRE IN DIET

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BIOCHEMISTRY



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INTRODUCTION

Food sources of dietary fibre have traditionally been divided according to whether they provide soluble or insoluble fibre. Plant foods contain both types of fibre in varying amounts, according to the plants characteristics of viscosity and fermentability. Advantages of consuming fibre depend upon which type of fibre is consumed and which benefits may result in the gastrointestinal system.



DEFINITION

- Dietary fibre is defined to be plant components that are not broken down by humans digestive enzymes. In the late 20th century only lignin and some polysaccharides were known to satisfy this definition, but in the early 21st century, resistant starch and oligosaccharides were included as dietary fibre components.

FACTS

- Fibre rich foods help prevent diverticulosis. They help prevent the formation of intestinal pouches (diverticula) by contributing bulk in the colon, so that less forceful contractions are needed to move things along.
- Fibre can reduce your risk of colorectal cancer. If people who normally get little fibre suddenly doubled their intake through wiser food choices, they could lower their risk of colon cancer by 40%, according to research involving data collected from 10 European countries.

EFFECTS OF FIBRE IN DIET

- Increases food volume without increasing caloric content to the same extent as digestible carbohydrates, providing satiety which may reduce appetite.
- Attracts water and forms a viscous gel during digestion, slowing the emptying of the stomach and intestinal transit, shielding carbohydrates from enzymes and delaying absorption of glucose which lowers variance in blood sugar levels.
- Lowers total and LDL cholesterol which may reduce the risk of cardiovascular disease.
- Regulates blood sugar which may reduce glucose and insulin levels in diabetic patients and may lower risk of diabetes.

BENEFITS OF FIBRE

- While too much fibre can have negative effects a proper amount of fibre is important for your health. Fibre is essential for regular bowel movements, cholesterol and blood sugar management, healthy gut bacteria and preventing chronic disease among other functions.
- In people with diabetes fibre particularly soluble fibre can slow the absorption of sugar and help improve blood sugar levels. A healthy diet that includes insoluble fibre may also reduce the risk of developing type 2 diabetes.

CAUSES AND PREVENTION

- **Weight Gain:** "Fiber contributes to satiety," says Kathleen Zelman, MPH, RD, director of nutrition for WebMD. Satiety is that feeling of comfortable fullness you get after a meal. If you're not experiencing that feeling, Zelman says you may be eating more than your body needs.
Prevention: Try meeting the recommended goal of 25 to 35 grams of fiber daily by enjoying fiber-filled foods like fresh fruit, whole grains, and seasonal vegetables. Choose the fiber-rich foods you like best; you're more likely to eat favorites often.
- **Blood Sugar Fluctuations:** If you have diabetes and find controlling your blood sugar difficult, talk to your doctor: you may not be getting enough fiber.
Prevention: Because fiber delays the absorption of sugar, helping you control blood sugar levels, try adding more fresh produce, beans and peas, brown rice, and other high-fiber foods to your diet. Remember to discuss any change in your diabetes management plan with your doctor

OPTIMAL AMOUNT OF FIBRE TO HAVE PER DAY

- Child and adolescent fibre intake

	Daily fibre intake
Children 1 to 3 yrs	19 g
Children 4 to 8 yrs	25 g
Children 9 to 13 yrs	26 g(female),31 g(male)
Adolescents 14 to 18 yrs	26 g(female),38 g(male)

FIBRE CONTENTS IN FOOD

Food group	Serving mean	Fibre mass per serving
Fruit	120 ml	1.1 g
Dark green vegetables	120 ml	6.4 g
Orange vegetables	120 ml	2.1 g
Cooked dry beans (legumes)	120 ml	8.0 g
Starchy vegetables	120 ml	1.7 g
Other vegetables	120 ml	1.1 g
Whole grains	28 g	2.4 g
Meat	28 g	0.1 g

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