

CONSUMPTION PATTERN OF PREBIOTIC AND PROBIOTIC FOODS AND DETERMINING THE GUT HEALTH OF YOUNG ADULT FEMALES (18-25 YRS)

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ABSTRACT

Probiotics and prebiotics have recently been recognized as important functional foods that enhance the establishment of beneficial bacteria in the human gut which helps in the prevention of life threatening diseases. In view of this, the present study was undertaken to study the consumption pattern of prebiotic and probiotic foods and determining the gut health of young adult females (18-25 yrs) of urban Vadodara. The consumption pattern of prebiotic and probiotic foods were studied using food frequency questionnaire and seven day estimated record method. Subjects were identified with frequent and least frequent intakes of these foods and their stool samples were analyzed and enumerated for beneficial micro organisms i.e. *Bifidobacterium* and Lactic acid bacteria and pathogenic micro organisms i.e. *E. coli* and *Bacteriodes* (Salminen *et al.*, 1996). Young adult females were found to have a frequent consumption of prebiotic and probiotic foods. Subjects taking curd more frequently reported lower occurrence of constipation and higher occurrence of flatulence. High consumption of dietary fibre also significantly increased the occurrence of flatulence. Results revealed that high consumption of onion and garlic did not significantly affect the occurrence of constipation and flatulence. Subjects consuming prebiotic and probiotic foods frequently showed higher counts of beneficial micro organisms and less of the pathogenic micro organisms. Consumption of more than 10 prebiotic and probiotic foods at least weekly helps to establish significantly higher number of beneficial micro organisms and decreased colonization of pathogenic micro organisms.

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Due to increasing urbanization globally, there has been an alarming “nutrition transition” with an increasing consumption of processed and refined foods and a clear shift from a diet rich in fiber, minerals and vitamins towards one rich in energy, saturated fats and cholesterol (Bland Ford, 1984). This has lead to an increase in the incidence of various chronic diseases of middle and later adult life.

The gastrointestinal microbiota is made up of a very complex consortium of microorganisms of more than 400 different bacterial species. Some of these are beneficial and others are potentially harmful. So, a balance between the two is vital for health and well-being. Factors such as diet, climate, aging, medication (especially antibiotics), illness, stress, pH, infection, geographic location, race, socioeconomic circumstances and lifestyle can upset this balance, the consequences of which may be a reduction in the beneficial micro flora, proliferation of pathogenic bacteria and reduction in the defense mechanism. Also

approximately 70% of the immune system is localized in the gastrointestinal tract (Bengmark, 2002). So the importance of good gut health cannot be underestimated. To assure the presence of the beneficial bacteria in the intestinal microbiota, much interest has been focused on probiotics and prebiotics, which can be introduced into the digestive system through food. Probiotic is a live microbial feed supplement which beneficially affects the host animal by improving its intestinal microbial balance (Fuller, 1992). The two main groups of micro-organism which have been shown to be therapeutically beneficial as probiotics are the lactobacilli and the bifidobacteria. A Prebiotic is a non digestible food ingredient that beneficially affects the host by selectively stimulating the growth and/or activity of one or a limited number of bacteria in the colon, which can improve the host health. Several health benefits of prebiotics and probiotics have been documented in the literature such as improved lactose tolerance, supply of SCFA as energy substrates for the host, antitumor properties, neutralization of certain toxins, stimulation of the intestinal immune system and reduction of blood lipid levels (Sanders, 1994). Thus probiotics and