

INTRODUCTION

Since 1965 more than a million Indians have immigrated to the United States from the Asian sub-continent of India. Recent census report that their numbers have increased from 815,447 in 1980 to 1.6 million in 2000. Currently the community is ranked the third largest Asian American group in the United States after the Chinese and Filipinos. Thirty-five percent of the community lives in the North Eastern United States followed by 24% in the South, 23.1% in the West and 17.9% in the Mid-West. Indians make up approximately 2% of the population individually in the states of New Jersey, New York, California and Illinois. The community consists of academic and technical professionals, individuals who own and/or work in commercial establishments and dependents (spouses, children, siblings and elderly parents who visit from India for extended periods of time).

The Indian community is diverse with regard to the region of origin in India and the religions they practice. India can be divided into four major regions-North, South, East and West. Each region has its distinctive language, dialects, customs and food practices. Hinduism is the predominant religion practiced by Indians followed by Islam, Buddhism, Jainism, Sikhism, Zoroastrianism, Christianity and Judaism. The followers of these different religions observe different dietary laws and codes for fasting, and feasting thereby influencing their eating patterns. Throughout history, the culture and cuisines of India have been influenced by other civilizations such as the Moghuls, the British and now the Americans. The neighboring nations of Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka on all four frontiers share many common features with regard to dietary habits and food practices despite their unique food specialities.

Health problems and nutritional status of Indians in the US

Some of the important health problems faced by Indian immigrants include chronic degenerative diseases such as diabetes, hypertension, cardio-vascular disease and complications arising from any of these conditions. In fact, Indian immigrants have a significantly higher risk of cardiovascular disease with heart disease rates estimated to be one and one half to four times greater than Whites. Research has shown that there is a susceptibility among us towards developing non-insulin dependent Type 2 diabetes. There are several reasons for this. Hereditary differences in lipid metabolism, excessive insulin resistance, increased glucose tolerance, increased abdominal fat, lifestyle changes such as lowered physical activity coupled with increasing stress are thought to enhance the risks for such diseases. Concerns also center around nutrition problems stemming from dietary changes such as altered vegetarian status, meal patterns, increased usage of fast and convenience foods, changes in the frequency of use of traditional Indian foods and the inclusion of other ethnic and American foods as substitutes for traditional foods. This results in the abandonment of a diet traditionally high in complex carbohydrates and low in fat to a diet that is high in saturated fat and animal protein and low in fiber.

What can you do?

Your nourishment does not depend on the selection of any one food. Instead it depends on the consistent and continuous selection of many different foods on a day to day basis. **There is a section in this book in the Summary that gives you suggestions on how to plan your eating and what to avoid.**

Purpose and organization of this booklet

In this book we have tried to present some practical guidelines for health professionals working with Indian clients and the clients themselves who wish to understand how to manage chronic disease conditions such as diabetes and cardiovascular disease.

In the first section we offer a primer on chronic degenerative diseases - their definitions, types and treatment modes.

In this booklet, we focus on the different regional cuisines of India. Within each region we provide background information to illuminate the cultural context from which the ethnic foods and food habits have evolved, popular dishes, meal patterns highlighting typical and modified meal patterns for clients with diabetes, tips for changes and suggestions for weekend and party planning and tips on how to modify a high-fat recipe into a more heart-healthy one. Every chapter talks about weekend eating as the two days of feasting and partying can undo many of the benefits of eating healthy throughout the week.

The section on food exchanges give you an idea of how much of a food item (like for example, a chapati) makes up a food exchange. The Glossary gives a list of some of the common foods and food items mentioned in the book as well as some of the more ingredients in this cuisine with its English equivalent.

Each section has been authored by a qualified professional in the field of nutrition (you will find a brief write-up of the writer at the end of each chapter) and has been further reviewed by qualified nutrition and medical professionals (listed on the inside of the cover page).

SECTION 1

Diabetes

Diabetes is a disease characterized by high blood glucose and either insufficient or ineffective insulin, depending on the type of diabetes.

Type 1 diabetes also known as insulin dependent diabetes or juvenile onset diabetes, occurs around the ages of 8 to 12 years but can occur at any age. The disease has a strong genetic link. The pancreas cannot synthesize insulin thereby altering the body's metabolism. The person must be injected with insulin to assist the cells in taking up the needed fuels from the blood.

Certain parameters like body measurements (BMI or Body Mass Index >25) can put a person at risk for developing diabetes if there is a genetic predisposition. Formula to calculate BMI: wt. in kg divided by (ht. in meters)² BMI reference table has been included here for your use. Another guide is the waist-to-hip ratio:

Waist divided by Hip = should not be > 1 in men

Waist divided by Hip = should not be > .8 in women

Type 2 diabetes is characterized by high blood glucose and insulin resistance. This disease usually begins after age 20. However the widespread incidence of inactivity and obesity in our population is being shown to precipitate this condition even earlier. The mean age of diagnosis in children and adolescents is approximately 13.5 years with a majority diagnosed in mid puberty. Youths with Type 2 diabetes have a BMI of 25 Kg/m. In the initial stages the pancreas produces insulin. The person may actually have higher than average insulin levels but the cells respond less sensitively to it either because they have diminished in number or in function thus making the individual insulin resistant. Consequently the blood glucose levels rise stimulating the pancreas to produce insulin, exhausting the cells and reducing their ability to function. In

obesity, the higher body fat necessitates higher insulin production; however, insulin receptors are reduced in number and function resulting in insulin resistance. Age, diet, lifestyle and genetic factors have been implicated in the development of the disease.

Symptoms of Diabetes include frequent urination, excessive thirst, extreme hunger, unusual weight loss, increased fatigue, irritability and blurred vision.

Criteria for diagnosis

- Symptoms of diabetes together with casual (any time of day) plasma glucose concentrations of > 200 mg/dl.
- Fasting plasma glucose (At least 8 hours following no caloric intake) > 126 /dl.
- Two hour plasma glucose > 200 mg/dl during an oral glucose tolerance test.

Criteria for Impaired Glucose levels

- **Fasting plasma glucose levels of < 126 mg/dl can be considered to be in the Impaired blood glucose range.**

Complications of diabetes

The accumulation of glucose in the blood leads to acute and chronic complications. Therefore early, aggressive treatment to control blood glucose significantly reduces the risk of long term diabetes related complications. Diabetes related complications include:

- diseases of large blood vessels such as atherosclerosis
- diseases of the small blood vessels resulting in loss of kidney function and retinal degeneration and blindness.
- diseases of the nerves resulting in loss of sensation, increased infections stemming from unnoticed injuries, and gastrointestinal problems.

Recommendations for Type1

Nutrition is an important part of the treatment regimen. Nutritional therapy focuses on maintaining optimal nutrition, educating clients about portion sizes, modifying recipes, controlling blood glucose and preventing and treating related complications. Focus is on meal intake patterns, consistency in carbohydrate intake to minimize glucose fluctuations.

Recommendations for Type 2

- Calories should be prescribed to maintain a reasonable body weight.
- Protein intake is recommended at 10-20% of caloric intake with a focus on lean meats, poultry, fish and the use of beans and cereal lentil combinations.
- Total fat and cholesterol intakes have to be tailored to meet individual requirements based on lipid profiles.
- Diet is designed to maintain consistent and evenly spaced carbohydrate intake throughout the day. In this respect carbohydrate counting and exchange lists as well the use of complex carbohydrates will help.
- Salt intake should be reduced in clients with hypertension.
- Persons with diabetes with elevated lipid levels need to monitor their fat intake as well.

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