Section 19  Nutrition

Chapter 138

Diet as Medicine

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Over the past decade, rapid changes in diets and lifestyles have occurred with industrialization, urbanization, economic development and market globalization in developing countries, leading to a significant impact on the health and nutritional status of populations. Diet and nutrition is coming to the fore as a major modifiable determinant of chronic disease, with scientific evidence increasingly supporting the view that alterations in diet have strong effects, both positive and negative, on health throughout life. Therefore, diet and nutrition occupy a prominent position in disease prevention activities. But in many developing countries, these concepts have not led to a change in policies or in practice, and food policies remain focused only on undernutrition and are not addressing the prevention of acute or chronic disease.

Diet as Medicine: An Overview

Food and nutrients are the original medicine and the shoulders on which modern medicine stands. Under the hypnotizing influence of profit-oriented market economy, food and medicine have taken divergent paths and the natural healing properties of food have been diminished in the wake of modern technical progress. But now globally, the role of diet and nutrition is increasingly becoming an important public health issue, receiving increased emphasis in all recent major health-promotion and risk-reduction initiatives taking the center stage in health promotion, disease prevention and management. That is why there is growing thought in reviving rather ancient concept of “diet as medicine”. The idea of “diet as medicine” goes back to at least more than 2,000 years ago when father of modern medicine, Hippocrates said “Let medicine be your food and food be your medicine”. Hippocrates is said to have started his textbook of Medicine with the words “You are what you eat”, which is increasingly becoming a catch phrase in modern era also. Unfortunately, his present day successors in modern western medicine have forgotten his wise words and have concentrated on drug therapy, neglecting the safe, time tested and effective treatment method of dietary regulation. While we still take the “Hippocratic Oath”, much of Hippocrates centuries’ old wisdom, which is still relevant today, has been forgotten in the last century due to the excitement of new scientific discoveries. Ancient systems of medicine believe that many diseases and health problems result from an incorrect diet, hence placed a lot of emphasis on analyzing the constitution of the individual and prescribing an individualized diet. Good nutrition not only adds years to life, but life to years. Thus, the timing is ripe for positioning diet and nutrition more broadly in health promotion, risk reduction, disease prevention and treatment.

The 20th century has witnessed noticeable shifts in the direction of nutrition programs, policy and research in developed and developing nations from identification and prevention of nutrient deficiency diseases to investigating the role of diet in the maintenance of health and the reduction of risk of entire spectrum of chronic diseases — atherosclerotic cardiovascular diseases, cancer, diabetes, obesity, osteoporosis, dental caries, and chronic liver and kidney diseases. Subsequently, extensive epidemiologic, clinical and experimental research has shown that diet is an important factor in the etiology and pathogenesis of major chronic diseases.

“Diet as Medicine” Goes Far Beyond Eating Well to Stay Healthy

Diet and nutrition remain important factor throughout life and the mechanisms by which diet influences health are complex. They relate to physiological mechanisms in multiple organs and are linked to regulation at the level of genes, gene expression, proteins and metabolites. Overall, the interaction between nutrients and genes is considered to have a central impact on lifespan and disease development.

Therapeutic Foods: Let Your Diet Be Your Medicine

Knowledge of the therapeutic indications and contraindications of various foods was an important part of ancient medicine and is picking up in the modern era. Foods have their own inherent nature and temperament, or make-up of qualities influencing the physiological functions of the body. That is why the physician and diet therapist not only needs to know which foods are therapeutic and indicated in a particular condition but also which foods are harmful and therefore contraindicated.

Lots of foods have specific healing properties. This ranges from the traditional—garlic or onions for colds, shiitake mushrooms boost immune system, increases resistance to infection, for instance, to the modern discoveries, such as lycopene from tomatoes being helpful in some cases of cancer (particularly prostate cancer). Herbalists use many plants in herbal medications, but a lot of medicinal plants can also be used as food. Most of the culinary herbs and spices are good for your digestion as well as tasting nice. Some, such as turmeric, are among the strongest antioxidants. This kind of therapeutic knowledge of the indications and contraindications of various foods is a common feature and legacy of traditional medicine derived from centuries of practical and clinical but empirical knowledge.
In general, fruits tend to be sedating and cooling, and have a diuretic effect. Apples generally tones up the liver, stomach and bowels. Plums and peaches are useful laxative fruits. Pears protect the lungs against the dry autumn weather. Cherries are beneficial in arthritis and rheumatism. Oranges are considered quite cooling and febrifugal. Lemons stimulate bile and gastric juices, and aids in the expectoration of phlegm. Various kinds of citrus peels, like those of lemon, lime and orange are used to stimulate and harmonize the stomach and digestion. Pomegranate stimulates and moves a sluggish stomach and bowels. Melons, as a whole, are very cooling, sedating and diuretic. Watermelon can be therapeutic as a diuretic for those with urinary sand, gravel or obstructions.

Vegetables, like fruits, alkalize the blood. Fruits are more eliminative; vegetables are more building. Of all vegetables, root vegetables are the most nourishing and highest in caloric value. Tuberous or starchy root vegetables, potatoes, yams and sweet potatoes are rich and moist in nature. The best of these are the turnip and rutabaga.stomach and digestion, acts as first aid for colds when boiled in tea, increases resistance of the organism to colds and flu when cooked into one's food. Onions also stimulate the immune system to throw off colds and flu, and expel phlegm from the body. Garlic not only stimulates the immune system against infection, but also normalizes blood pressure and kills off pathogenic bacteria in the intestines, while encouraging the growth of friendly bacteria. Radishes are the spicy vegetables that stimulate the stomach and digestion, eliminates excess phlegm, and stimulates the flow of bile. Beans often produce gas, distension and bloating. The easier ones to digest are mung beans, lentils and black beans. Black beans are beneficial to kidneys. Tamarind is used to make a cooling summer drink; it also has mild laxative properties.

Nuts and seeds are a good source of protein. Almonds are rendered much more digestible if they are soaked, and their skin is removed before eating. Perhaps the best nut or seed to eat is the sesame seed, which is highly nutritious and easy to digest. A sesame paste called Tahini is also widely used to make desserts and confections like halvah. Sesame seeds are also laxative, as their high oil content lubricates the bowels and softens the stool. Pumpkin seeds are eaten by older men to eliminate intestinal worms or parasites, and to improve the health of the prostate. Wheat is considered to be high in bodybuilding nutrients; however, in those so predisposed, it may cause allergies like gluten intolerance. Rice and corn are easy to digest. Oats have high mucilage content, soothing to the stomach and intestines, and also have the reputation of being a restorative for the nerves and beautifying to the skin. Buckwheat is the most heating grain; so it is best to eat in winter. Millet is light and easy to digest, yet very high in protein. The favorite grain of Hippocrates and classical Greek physicians was barley. Milk is very concentrated nourishment given by a mother to her offspring. Dairy products, especially milk, being so rich and moist in nature, are most suited to children and youths, so are the dairy products, like yogurt, fresh cheeses. In general, meat is hardest to digest. Red meat is the heaviest and can easily aggravate bilious problems. Fish like tuna and mackerel are heavier and more difficult to digest, but cod are lighter and easier to digest. To aid in digestion, fish is commonly sprinkled with lemon juice. Shellfish, lobster and shrimp pose a particular problem, as they tend to aggravate eczema, pustules, rashes, acne and various skin conditions. Oysters and shrimp have the reputation for being sexual tonics and aphrodisiacs.

**Diet and Nutrients in Disease Management**

In ancient medicine, managing the patient’s diet was an essential part of disease treatment. Most conventional doctors practicing modern medicine are not very particular when it comes to diet, and do not give their patients much dietary advice, if any. The reasons for this, are two-fold:

1. Most people’s dietary habits are so poor, irregular or unhealthy that the doctor cynically feels that any dietary advice, if given, would simply be ignored. Moreover, doctors do not give dietary advice partly because of their own ignorance and because they do not spend that much of time with their patients. The busy schedule and demands of modern life also interfere with the proper and healthy regulation of diet.

2. The powerful pharmaceutical drugs given usually produce the desired effect regardless of what the patient eats. Therefore, patients just want to pop a pill and forget the diet.

3. Diet and dietary therapy are divided into two basic parts: (1) A diet undertaken to maintain overall health and well-being on a regular basis over the long-term, (2) A diet undertaken over the short-term or for a limited time period, designed to achieve certain specific therapeutic goals and objectives.

**Dietary Therapy in Acute Diseases**

Dietary therapy is very important in the proper management of acute diseases. Particularly important is what Hippocrates called the acute crisis, which is the acme, or climax, of an acute illness. At this stage of the acute disease process, the body is in a catharsis of elimination, so the worst thing to do is to burden it with digesting a lot of heavy foods. When going through the acute crisis, Hippocrates would feed his patients with a liquid diet. This can consist of herbal teas or decoctions; broths made from green root or sea vegetables; or fruit or vegetable juices diluted at least 50/50 with water. This will keep the patient well hydrated with fluids while providing a basic amount of easily assailable vitamins, minerals and carbohydrates for basic energy and metabolic needs. Hippocrates states that more severe and acute the symptoms, the more slender and restricted must be the diet; conversely, milder the symptoms, the more generous a diet should be.

**Restriction versus Generosity in Diet**

Hippocrates cautions us against excessive restriction in diet and advocates for sensibility and moderation in diet, avoiding extremes of excess or restriction.

**Dietary Therapy in Chronic Diseases**

Generally, chronic diseases require a well balanced and nutritious diet to build strength and vitality. It is here that food can truly be our best medicine. The physician must carefully design therapeutic strategies, incorporating diet for rebuilding organ systems, identifying and eliminating problematic foods that aggravate or contribute to the patient’s chronic condition.

**Diet as Medicine: Beyond the Appropriate Pharmacological Management**

The second half of the 20th century has witnessed major shifts in the pattern of disease in addition to marked improvements in life expectancy. This period is characterized by profound changes in diet and lifestyles, which in turn have contributed to an epidemic of noncommunicable diseases (NCD). During the past decade, nutritional therapy has moved from the kitchen to the pharmacy. Surgeons, gastroenterologists, pharmacists and other health care workers have added nutrition to their area of interest, skill and hospital privileges. Once diagnosed, diet and nutrition are integral components of management for almost all acute and chronic diseases. The 2005 dietary guidelines focus on diet and nutrition as primary components of health promotion and disease prevention.
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It has been projected that, by 2020, chronic diseases will account for almost three quarters of all deaths worldwide, and that 71% of deaths due to ischemic heart disease, 75% of deaths due to stroke and 70% of deaths due to diabetes will occur in developing countries. The number of people in the developing world with diabetes will increase by more than 2.5 fold, from 84 million in 1995 to 228 million in 2025. On a global basis, 60% of the burden of chronic diseases will occur in developing countries. A comprehensive review of the epidemiologic, clinical and laboratory evidence indicates that diet influences the risk of several major chronic diseases and help in prevention and treatment of the leading causes of death including food allergies, nutritional deficiencies, obesity, diabetes, cardiovascular diseases and stroke, hypertension, dental diseases, osteoporosis, chronic kidney disease, gastrointestinal disease, chronic obstructive pulmonary disease, arthritis, breast cancer, prostate cancer, cancers, skin diseases and to enhance immunity. Space constrains curtails our efforts to discuss the role of diet as medicine in detail.

RECOMMENDATIONS OF “DIET AS MEDICINE” FOR INDIVIDUALS AS OPPOSED TO POPULATIONS

There are two complementary dietary approaches for the prevention and management of diseases along with reducing risk factors in the target population.

The public health or population-based approach: Major chronic disease burden falls on the general population; therefore, most benefit is likely to be achieved by a public health prevention and treatment strategy of dietary recommendations to the general population.

The high-risk or individual-based approach: The high-risk or individual-based approach includes identification of high-risk persons and special individual dietary attention.

Dietary recommendations should be directed toward overall dietary patterns because it addresses the total diet and is more easily interpreted by the general public. Moreover, because many studies on diet and chronic diseases in humans have focused on foods rather than on single nutrients, food-based recommendations may more accurately reflect current understanding about the relationship between chronic diseases and diet.

CONCLUSION

With the increasing prevalence rates of acute as well as chronic diseases, comes a more sophisticated view of food and nutrition. This sees food as a biological system in itself comprising sets of bioactive components that interact with human biology in ways that can only at times be imagined. One of the primary platforms for nutrition today and tomorrow will be the nutrition in chronic disease prevention through an understanding of the interactions between genes and nutritional environment. In addition to aforementioned health promotion and disease prevention and intervention areas, there is an increasing need for nutrition research relative to dietetics and health care practice. Advanced level and specialty practice in dietetics is growing; there is a clear need for research exploring levels of practice in dietetics. Nutrition education of health professionals as well as nutrition screening is increasingly becoming important. We should not forget the wise words of Hippocrates and concentrate on drug therapy as well as the safe, time tested and effective treatment method of dietary regulation.

“Will now dietary advice be integral part of your prescriptions?”

REFERENCES


