

Introduction

Over the last 50,000 years, humans have obtained a survival benefit from an ability to store fat through the actions of so-called thrifty genes (1). Over the last 200 years changes in the human diet and lifestyle have outstripped the ability of the genome to adjust to a changing environment, and billions of people around the world are now overfat as a result (2–8).

Although studies show that hunter-gatherers ate some 800 different varieties of plant foods (9), today in many countries the average intake is only about three servings of fruit and vegetables per day, which fails to provide enough of the naturally occurring antioxidants, phytochemicals, vitamins, and minerals, that are essential to good health. Highly processed foods with refined starches, sugars, fats and oils often fail to contain the essential nutrients that are found in nutrient-rich foods, such as fruits and vegetables, but have many more calories per bite (10).

At the same time, labor-saving devices of all kinds and advances in transportation have made a highly sedentary lifestyle possible over the last 30 years (11). A global epidemic of obesity and chronic disease, which is underestimated if one uses the body mass index (BMI) alone, is sweeping the globe as industrialization and improved standards of living are spreading to urban centers.

Certain ethnic groups, including Asians, Asian Indians, Latinos, and Native Americans, are genetically susceptible to metabolic syndrome – due to the accumulation of visceral fat that results in inflammation in the absence of marked increases in BMI (12). It is estimated that within the next 10 years, the majority of all heart disease will be associated with type 2 diabetes, with significant increases in incidence projected in China, India, Southeast Asia, Mexico and Latin America (13).

Potential solutions that emphasize social support networks and innovative methods of integrating a balanced diet and healthy, active lifestyle, in ways that are personally rewarding, based on financial or social incentives, are urgently needed (14)

The Herbalife Nutrition Institute (HNI) has brought together some of the finest minds in nutrition science in the world today for this educational project that offers you not only the latest information available but an integration of this information into materials you can use in personalizing your nutrition and lifestyle. Information on nutrition science is complemented by a separate set of chapters on fitness science. There has never been a time when understanding nutrition science has been more important than today as the world's population is facing a global nutrition transition.

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