

## Roles of Genetics and Age in Diet Patterns

**Abdulatef M Ahhmed\***

*Department of Nutritional Therapy, Graduate School of Medical Science, Libyan Academy for Graduate Studies, Tripoli, Libya*

**\*Corresponding Author:** Abdulatef M Ahhmed, Department of Nutritional Therapy, Graduate School of Medical Science, Libyan Academy for Graduate Studies, Tripoli, Libya.

**Received:** December 22, 2023; **Published:** January 23, 2024

### Food changes genes

Globally, many studies are being conducted on foods, especially processed items, which actually play a role in changing the genetic characteristics of humans due to the genetic changes caused by these foods.

Clear efforts are being made to use food as a treatment for many diseases by giving specific nutritional advice to specific people based on their genes and how they are affected by particular foods. Among these non-communicable diseases are obesity, diabetes, hypertension, and many lifestyle-related diseases. On the personal level, we are working on disseminating a diet system known as The ancestral diet (A-diet), which is a dietary modification plan that focuses on simplicity, traditions, and plant-based nutrients, inspired by ancient nutrition. The aim of this article was to focus on the importance of age and genetics in dealing with the change in foods intake behaviors and nutritional patterns that each individual consumes based on his/her genes and desires, the latter of which are linked to the lifestyle of each person's age group. An example of this is the tendency of people to become obese, diabetic, or hypertensive as a result of a certain food. Some sort of food that makes people sick, while it does not effect on other people's health, and the explanation for this is the difference in genes. While the change and diversity in eating patterns, especially among children and young people have become greatly influenced by the environment, friends, schoolmates, and social media.

### Genes and diet

There has been a great focus on research and studying the possibility of controlling non-communicable diseases related to lifestyle, such as diabetes, high blood pressure, and diseases of the intestinal system. Ordinary food, which we consider to be food that has been used since the ancestral period, cannot change our genes or their composition. Simply because they did not have many types of pesticides, chemical fertilizers, additive agents, etc. But wrongly processed food and fast food have become influential and play a major role in changing genes. There is nothing wrong with processed and fast foods, only we need to take care of the course of processing and lessen the use of preservatives and any added chemicals. The changes in genes due to new food patterns are called "genetic pollution due to preservatives," and therefore they must be monitored and approved by supervisory and regulatory bodies. Diet is considered one of the factors that most affect human health and has long-term effects, some of them positive while there are many negative consequences. One of the relatively new sciences is called nutrigenetics and nutrigenomics.

**Nutrigenetics:** This science currently provides information about how a person's genome is affected by eating certain foods in a certain amount to achieve maximum health, and in general, genes affect the beginning of a certain type of food and a specific amount. This science explains how personal genes can affect the interactions between diet and body health, preparing the body for sensitivity

and acceptance of a particular diet. But the question remains: Does the opposite happen, and does the quality of food change the genes? Perhaps, the opposite happens, and another science called Nutrigenomics.

**Nutrigenomics:** The branch of science focuses and evaluates the food itself can influence the change in the genes themselves. In fact, science focuses on how the foods we choose changes the expression of our genes.

Foods play a major role in changing genetic mutations that affect the body's physiology and the response of certain genes to those physiological changes. The interaction between the two branches of science is mainly related to five factors: the genetic code, the structure of proteins, metabolic resections, the response of cells to physiological influences, age, and finally, the food environment and its quality. If we consider the apparent difference in humans, we would find that it is linked to genetic codes, which necessarily reflect an internal genetic difference, especially in dealing with metabolic reactions, sensitivity to food and palatability or acceptability.

Many studies have shown that humans differ in a wide and large range from a biological standpoint. The diversity in chromosomes that determines the palatability of food varies with factors such as age, race, and gender, which in turn affects the health of the person himself.

### Food and age group

Genetics alone do not determine your future health. The age difference affects our eating habits and can determine the effect of food on our body health and change our responses to the components of each diet, which vary according to the age stage, lifestyle, and individual condition including daily activity and the surrounding environment. Variation in response to nutrients has been observed in many studies, what is good for oneself diet is not necessarily good for another. So many factors do affect on your nutrition, includes lifestyle, social environment, pharmaceuticals, food types, methods of consumption, etc.

Training children in the correct habits in various fields of life including food intake is one of the most important functions of the family, and the more these habits are correct, the child will grow up healthy physically and psychologically. This is because physical health depends to a large extent on mental health and on the food habits that the individual has become accustomed to since childhood. However, teaching children such habits, especially regarding nutrition, is not easy.

The most important nutritional problems in children are summarized by parents' neglect of raising their children with healthy nutritional habits or excessive concern about their nutrition, and both tendencies lead to behavioral disorders during childhood. These disorders may extend to later developmental stages and have a harmful effect on the individual's adaptation and physical or psychological health. Perhaps problems related to eating arise as a result of wrong attitudes in dealing with children. It is possible to identify some of the mistakes that parents repeatedly show in their attitude towards feeding their children and in their attitudes towards dealing with them regarding feeding behavior. The age factor affects lifestyle consequences, so the most sensitive aspect that affects individuals' environment and nutritional profiles is the environmental diversity of food choices. For example, there are diverse and increasing choices for a group of young consumers, as it became clear that the diversity leads to eating a large amount of fast food and being careless to consume small amounts of healthy food.

Many young people today want to lose weight and stay away from carbohydrates. In fact, weight loss is related to the quantity of food, not its quality and variety. Everything that youth people ingest would be used, burned by the muscles, or stored. Ironically, carbohydrates affect obesity, but the main factor is still the quantity. Therefore, children and young people must be dealt with regarding this issue in a professional manner and with flexibility in order to convince them of the facts. People of young age are trying to stay away from the food that was consumed by the first ancestors, and they now want to avoid wheat because it is unhealthy (misconception). Young people have adopted strange diets, including reducing the consumption of fruits and vegetables, especially types of tubers such as sugar beets and red

beets, white, and golden beets. They also reduce the consumption of leafy vegetables, such as spinach, celery, arugula, chives, cabbage, and others, due to their strange taste and unacceptable smell.

Many nutrients are necessary for the health and development of adolescents, young people and children, which help them in their growth and development. These groups require increasingly beneficial intakes of nutrients, such as lean protein, as some sources such as chicken, turkey, fish, and legumes to provide the necessary lean protein. In clinical nutrition, we believe that proteins produce many peptides that lower blood pressure, suppress inflammation that are necessary for bone growth, etc. Additionally, consuming healthy fats is necessary for heart health, lowering cholesterol, and better regulating blood sugar levels. In other words, food bioactive compounds promote growth and improve health. Moreover, many dairy products and secondary foods, such as whole grain bread, brown rice, oats, and fiber, are very important in terms of providing nutraceuticals that are necessary for health. The digestive system needs many vitamins and minerals that are generally derived from fruits and vegetables. Dark colored fruits are rich in nutrients and packed with vitamins, minerals, and antioxidants. To provide a variety of nutrients, young people should eat vegetables and fruits rich in color, such as berries, spinach, carrots and oranges. Moreover, it would be quite beneficial if they included foods rich in iron, potassium and fibers like nuts and seeds.

Nutrigenetics and nutrigenomics have become the scientific basis upon which an understanding of human variation in nutritional priorities and requirements and response to diet is built. However, currently available food products determine the nutritional desires of consumers on the basis of practical experience and personal opinions; do not rely on these two branches of science. The involvement of nutrigenetics and nutrigenomics in determining the nutritional needs of consumers stimulates obtaining personal nutritional advice to maintain health and prevent disease. The term personalized nutrition has become a concept completely synonymous with personal demand.

Recently, the increase in the number of people reaching the stage of advanced middle age or the elderly (including geriatrics) has become highly evident. Therefore, it is necessary to note their unique condition from a physiological, metabolic and mental standpoint, and therefore their actual need for a specific diet should be highlighted. The pattern of initiation into healthy eating changes and develops with progression of human age, however this awareness is usually delayed (what improves health comes late). In the end, it must be noticed that scientists in nutrition, medicine, genetics, and anthropology are constantly trying to provide more clear evidence about the reasons why a diet is appropriate for one individual and not for another and also study the maneuver of healthy food intake along the age progression.

**Volume 19 Issue 2 February 2024**

**©All rights reserved by Abdulatef M Ahhmed.**