



The Study of the Occurrence of Food Allergy in Students and its Prevention with the Help of Health Physical Training

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Abstract. During the last decades there has been a constant increase in a number of allergic diseases all over the world. The high urgency of the problem of allergy prevention is due to the fact that the frequency of occurrence of allergies, especially among young people, is rapidly increasing year by year.

This research paper is devoted to one of the most urgent and actual problems of our time – the problem of preventing the appearance of food allergies among young people.

As part of the study, the authors consider the concept and essence of food allergy, the main causes and factors that provoke its occurrence in the student age category, and offer the main methods of preventing this disease using recreational physical education.

The research paper presents the results of a sociological study conducted along with the students of the Medical Faculty of the Gulistan State University of the Republic of Uzbekistan.

Key words: allergy, food allergy, food allergy prevention, food allergy prevention methods, allergens, type of allergy, rational nutrition.

Relevance

The issue of allergy is one of the main and most important problems of our time. This is a well-known fact not only for specialists, but also for the general public.

The choice of this issue is not accidental. These diseases are common and tend to increase by time. It is believed that up to 12-15% of the world's population suffers from allergies.

An alarming signal is the increase in the number of cases of this disease with the most severe clinical result, that is often ending in death.

Today, one of the urgent issues of pediatrics and pediatric allergology is the problem of the increase in the number of allergic diseases in children all over the world [1].

According to international statistics, during the last two decades, the number of incidences of allergies has increased everywhere by 3-4 times, and there has also been a tendency towards the formation of more severe forms of the disease [2].

Allergic diseases are undoubtedly one of the leading medical and social problems of our time due to their high prevalence, the nature of the year student, and the impact on the quality of life of a sick child and his family.

At the same time, along with the increase in the prevalence of allergic diseases themselves, more and more allergic reactions fall out in patients with other somatic pathologies.



As the result, there is a constant increase in the number of cases of food and drug allergies, acute toxic-allergic reactions, anaphylactic shock, angioedema, etc. [1,2]

Currently, the allergic diseases are not a problem of an individual, but reflect the health of an entire nation. A significant prevalence among the population of even the mildest clinical year student of allergic pathologies inevitably leads to high economic losses in society.

According to the statistics, given by the World Health Organization (WHO), allergies are the third most common in the world. This circumstance dictates the need to improve existing and develop new methods for the prevention and treatment of this disease, as well as the development and strengthening of propaganda and preventive measures among students.

In fact, allergy is a typical form of immune-pathological response that occurs in the body to repeated contact with specific allergens and manifests itself in the form of damage to its own tissues.

As a matter of fact, an allergy is a pathological hypersensitivity of the immune system to the penetration of an allergen, which previously had a negative effect on the body. [four]

In 20% of cases, the immunity of the human body cannot neutralize the allergen without any pathological reactions [5].

Basing on the facts given above, the following statement can be pulled out – the body is not able to resist the allergic factor. Allergy manifests itself immediately upon the next contact with the allergen. Often, the year student of immune reactions changes (stronger or weaker), but, as a rule, the body is always sensitive to the action of an allergen [4, 6]. Allergies are often the cause of diseases of the upper respiratory tract and organs of the gastrointestinal tract.

The central nervous system reacts to this with irritability, rapid fatigue, headache, short-term pain in the joints.

As it is known, the food allergies are very common these days.

Food allergy is an increased sensitivity of the body to food products, which develops when the immune system is disturbed. In addition to food allergies, there are also food intolerances and pseudo-allergies, which are much more common than true food allergies and in their manifestations are very similar to that, but fundamentally differ from food allergies in their mechanisms of occurrence.

Food allergies are characterized by the ingestion of allergic substances through the digestive tract, after which an allergic reaction develops within a few minutes to several hours. Sometimes the smell of a food product is enough to trigger an allergic reaction.

Food allergy is an actual problem of pediatrics and allergology. The interest of researchers in food allergy has increased significantly in recent years due to the sharp increase in this pathology among young children.

In recent decades, there has been a sharp increase in the frequency of food allergies and related allergic diseases, especially noticeable in developed countries, in families with a high socioeconomic level.

Food allergy, which is the first sensitization in time of development, plays a huge role in the formation and subsequent development of most skin, gastrointestinal and respiratory manifestations of allergy.

In this case, allergens enter the body with food or a person comes into contact with them during cooking.



The most active allergens are nuts, sesame, fish and seafood, egg white, legumes, cow's milk, cereals, citrus fruits, honey. It can manifest itself in different ways: in the form of nausea, vomiting, abdominal pain, Quincke's edema, urticaria, migraine. The most severe case of allergy is anaphylactic shock. In addition, a hereditary predisposition can be the cause of food allergies.

This type of allergy often appears and develops in people who were treated with antibiotics at an early age, as well as in those suffering from intestinal dysbacteriosis.

With increased allergic sensitivity to food, the body's reactions, as a rule, occur almost immediately after ingestion of products containing the allergen.

In other cases, the reaction may occur after 6, 8, 12 hours, and sometimes even after a day.

Mostly, allergic reactions to food show themselves in different ways. In most cases, the impact falls on the skin: allergic diathesis, atopic dermatitis, urticaria, Quincke's edema, allergic vasculitis [3].

Purpose And Objectives Of The Research

The purpose of the research is to study the occurrence of food allergies in students of the medical faculty of the Gulistan State University of the Republic of Uzbekistan.

Research objectives:

- assess students' knowledge about food allergies;
- identify the most significant food allergens from the point of view of students;
- identify ways to prevent food allergies

Research Methods

The authors of the research used the study of scientific, methodological and special literature, a combination of survey methods, questioning, analysis and generalization. During the analysis, students were divided by gender and year student. If the respondents (students) are allergic to any food product (the answer was "yes" and the product was indicated).

The Faculty of Medicine of the Gulistan State University was chosen as the experimental base for the study.

136 people took part in the sociological survey. Of these people, 68 students of the 1st-year, 37 (54.4%) females, 31 (45.5%) males, 68 students of the 2nd-year, 41 (60%) females and 27 (39.7%) males.

Results And Discussion

Table 1

The results of the survey among students about the presence of food allergies

Gender	1 st -year students	2 nd -year students	3 rd -year students
Male	10 (15%)	5 (8%)	15 (22%)
Female	4 (6%)	3 (5%)	7 (10%)
Total	14 (20%)	8 (12%)	22(32%)

Analysis of the results of the study shows that the females of the 1st-year students did not give a clear answer due to ignorance of their allergic status.

The predominance of allergies is observed in males of the 1st, 2nd-year student to a greater extent than in females.

According to the results of the survey, some students have a pseudo-allergic reaction – that is, a reaction that causes the appearance of negative symptoms similar to allergic ones, but does not affect the immune system.

2nd-year female students, answering a question about allergies, spoke about a large number of oranges and the appearance of similar symptoms of an allergic reaction in their body.

Table 2.
Clinical manifestations of food allergy

Level of involvement	Clinical manifestations
Systemic reactions	Anaphylactic and anaphylactoid shock, generalized urticaria and angioedema
Respiratory organs	Rhinitis or rhinoconjunctivitis, sneezing, choking, coughing
Eyes	Lachrymation, redness and itching of the conjunctiva
Organs of the digestive and hepatobiliary system	Oral allergic syndrome, itching, burning in the mouth and throat, sore throat, allergic enterocolitis, anorexia, constipation, diarrhea
Skin	Itching of the skin, urticarial and non-urticarial rashes, angioedema
Central nervous system	Migraine

The frequency of observation (medical examination) by students of the state of their body in case of manifestation of allergic reactions was also studied.

Least of all, such an examination in relation to the prevention of manifestations of food allergies is carried out by females in the 1st-year and young males in the 2nd-year.

This is the minimum figure among respondents in two year students. A very small number of students undergo a digestive system examination.

It can be seen that the number of people who have had at least one examination of the digestive system and the number of people who are allergic to food do not match.

Presumably, those students who have allergies should have undergone regular body examinations to study digestive problems and identify the causes of an allergic reaction. However, not everyone goes to the doctor.

The main directions in the prevention and treatment of allergic reactions are an integrated approach and consistency in the implementation of various therapeutic and preventive measures aimed at both eliminating the symptoms of allergies and preventing exacerbations of its manifestations.

In case of food allergy, the appointment of an adequate balanced diet, corresponding in volume and ratio of food ingredients to the age, weight of the patient, concomitant somatic diseases and other factors, is of paramount importance.

Exclusion from the diet of a causally significant food allergen is one of the main methods of treating food allergies, and in cases where a food allergy develops to rarely consumed foods (for example, strawberries, chocolate, crabs, etc.), it can be recognized as the only effective treatment method.

From a practical standpoint, it is important to know what the allergic potential of certain foodstuffs is.

The table below shows the generally accepted division of various products into conditional groups according to the nature of the degree of sensitization (allergization). [4]

Table 2.
Allergic potential of various foods

High	Medium	Low
Whole milk Eggs Fish, caviar Wheat, rye Carrot, tomato, bell pepper Strawberry Raspberry Citrus Pomegranates, bananas Persimmon, melon Chocolate, nuts, honey	Beef, chicken meat Buckwheat, oats, rice Peas, beans, soy Potatoes, beets Peaches, apricots Dark red cherries, rose hips, bananas	Dairy products Horse meat, rabbit meat, turkey, lamb Barley, millet, corn Cabbage, zucchini, squash, cucumbers Green varieties of apples and pears, cherries, yellow varieties of plums Garden greens (parsley, dill)

In recent years, there has been an increase in pseudo-allergic reactions to impurities with high physical and biological activity (pesticides, fluorine-containing, organochlorine compounds, sulfur compounds, acid aerosols, products of the microbiological industry, etc.) that contaminate food products. Often the reason for the development of pseudo-allergic reactions to food products is not the product itself, but various chemical additives introduced to improve taste, smell, color, which ensure the duration of storage, which we present in Table 3. [4]

Table 3.
Food additives most commonly used in the food industry

Food Additives	Feature	
	Artificial	Natural
Preservatives (antimicrobial, antioxidants, stabilizers)	Nitrates, nitrites (E249 benzoates), (E211, 219), artificial citric acid, antibiotics	Oats (rice, barley), chitins, citric acid, natural salicylates
Dyes	Azo dyes: Tatrtrasil	(E102), non-azo dyes, red



		cochineal (E124), brilliant black BN turmeric, saffron, amaranth, B-carotenes (151)
Thickeners	Modified starch	Gelatin, inulin, gum and locust bean gum
Flavorings (flavor enhancers)	MSG, artificial vanilla	Cinnamon, vanilla, mint, cardamom, ginger, bay leaf, pepper

Prevention and treatment of patients with food allergies is a complex task.

Treatment of food allergies is aimed at both eliminating the symptoms of allergies and preventing exacerbations.

In this case, the appointment of an adequate balanced diet, corresponding to the age of the patient, his weight, energy costs, concomitant somatic diseases and other factors, is of paramount importance.

From the point of view of scientists, there are currently no verified methods that allow obtaining operational information about the adequacy of the chosen diet to the characteristics of the body, taking into account the entire range of conditions of its vital activity, which would be generally acceptable.

Nevertheless, every tenth student believes that the basic principles of a healthy diet include the absence in the diet of such harmful products as smoked, fried, sweets, fatty and other. [9]

Considering diet therapy for allergic diseases, it should be emphasized the need to prescribe a balanced diet to the patient, adequate to his needs in terms of quantity and quality, the nature of the culinary processing of food, and the rhythm of nutrition.

Particular importance in the theory of adequate nutrition is given to the role of dietary fiber as a factor contributing to maintaining the health of the entire ecosystem "macroorganism-microflora".

In case of illness, therapeutic nutrition should be prescribed taking into account the pathogenetic mechanisms of pathology, the state of various organs and systems. [6]

Physical education, taking into account the characteristics of the body, of year student, helps to strengthen it, since it allows you to cope with the stress of everyday life, but physical exercises themselves should not be considered a "medicine", they are designed to support a person, the state of his immune and cardiovascular systems.

In order to choose a favorable environment for conducting classes for people with allergies, we analyzed various sources of literature and compiled a list of recommendations for conducting health-improving physical culture.

First of all, such people need to think over the exercises that are planned to be performed, as well as determine the place and frequency of performing exercises in the daily routine.



Experts come to the conclusion that swimming (with allergic asthma) has the most favorable effect on the body, since it corresponds to a humid and warm environment, which is the best for allergic diseases.

The main recommendations also include the need to avoid allergens, pollutants, both indoors and smoke, exhaust, pungent odors in the open air. It is important to stay hydrated by drinking enough water to reduce the possibility of excess mucus in the lungs. A set of exercises should not lead to any sharp increase in load, and when it is performed, the student should breathe through the nose.

Such breathing not only filters the air, but also warms the air before entering directly.

It is necessary to carry out the initial and final warm-up. In addition, individual sets of exercises can be accompanied by diet therapy.

When considering diet therapy for allergic diseases, one should point out nutrition that is adequate to the needs of the patient, the principles of a balanced diet (balance of substances, compliance with sanitary standards, daily routine, etc.).

During the year student of the disease, therapeutic nutrition should maintain the state of all systems, that is, there should be a systematic approach that implies the interdependence of all organs. [8]

Researchers of this issue V. A. Ado and T. S. Sokolova et al. [3] also recommend physical exercise to prevent the development of allergic diseases, including food allergies.

Conclusion

Great number of studies have confirmed the therapeutic effect of physical training on allergic diseases.

Particularly, it was found that physiotherapy exercises have a non-specific pathogenic effect on patients, contributing to the restoration of impaired functional relationships. In addition, systematic physical education improves the functional parameters of the respiratory system, normalizes the indicators of local cellular and humoral immunity, resulting in the development of resistance of the mucous membranes of the upper respiratory tract to the effects of exogenous allergens, and the process of the disease is facilitated.

Methods of physical therapy in the complex of medical rehabilitation were developed by many authors and are widely used in the complex therapy of patients with bronchial asthma (BA), asthmatic and recurrent obstructive bronchitis. It was revealed that for a pronounced therapeutic effect, physical exercises should be used for a long time, with an individual approach to the methodology and dosage of exercises, depending on the characteristics of the disease, the general condition of the body and tolerance to physical activity. In the process of training, the authors recommend giving priority attention to cyclic exercises and outdoor games with elements of running, walking, jumping. For the development of general endurance, it is better to use running at a slow pace, dosed walking alternating with running of moderate intensity and mixed movement (running - walking).

If taken as an example, V. A. Podshivalova [7], based on many years of experience working with patients, came to the conclusion that one of the main factors that increase a person's resistance to diseases, including allergic ones, is proper physical education. She recommends

including daily morning exercises, walks or outdoor exercises for 1.5 hours 2 times a day in the daily routine of the student.

The treatment of food allergies, both in young people and in the more mature population, should be comprehensive.

It necessarily includes a hypoallergenic diet, the duration of which depends on the clinical manifestations of food allergy, the severity of pathological signs, the duration of the disease, the response to the previously used restriction on the use of certain foods. [10]

Regular and moderate physical activity has a fairly beneficial effect on the body, so they can be recommended for the prevention of allergic diseases.

Moderate physical activity should not be used in the stage of exacerbation of allergies, as this can cause the opposite effect.

Each student needs to pay great attention to the qualitative composition of food products, avoiding the use of various chemical additives that provoke various allergic reactions.

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