

Excessive nutrition leads to obesity and accelerated aging. Restriction of food consumption, on the other hand, is one of the most well-known methods used in practical bioheronontology and leads to prolonged life expectancy in many mammals.

Radioactive radiation as a special effect. The higher the total dose of radiation, the more the life expectancy decreases. In some experiments with irradiation in small doses showed an increase in life expectancy. To explain the causes of this phenomenon, the following assumptions were made: irradiation may have a therapeutic effect for already developed diseases, or radiation acts as a prophylactic, preventing new infectious diseases.

**Conclusion.** For functional nutrition a balanced composition of food is required: micro- and macroelement (zinc, selenium, calcium, magnesium, etc.), vitamin (vitamins A, C, E, D, B) and protein composition of products, level of antioxidant content. It is these components that determine the quality of the food. Thus, on the basis of modern ideas about the important physiological role of natural immunity, it can be argued that the normal functioning of the immune system is the most important condition for increasing the life expectancy.

## **HUMAN PAPILLOMA VIRUS AND CERVICAL CANCER: FEATURES OF THE COURSE AND PREVENTION**

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**Introduction.** The papillomavirus infection is highly contagious, it can initiate malignant diseases, which is why it is an actual problem of modern society. This disease is transmitted sexually and therefore, according to the WHO, HPV occurs in every sixth inhabitant of the Earth. Diseases associated with HPV: cervical intraepithelial neoplasia and cervical cancer. In the world of cervical cancer, the fourth most common cancer among women is cancer (it accounts for 7.5% of all deaths from cancer).

**Aim.** Study of the role of human papillomavirus in the pathogenesis of cancer, in particular, cervical cancer. Analysis of methods for the prevention and treatment of human papillomavirus infections in the world and in Ukraine

**Materials and methods.** Analysis of the scientific literature and the results of the advanced research in the field of medicine and pharmacology.

**Results and discussion.** Human papillomavirus belongs to the family Rapillomaviridae, DNA-containing, epithelotropic with pronounced cytopathic effect (destruction of the nucleus and cellular organelles). The genome of double-stranded DNA is divided into three functionally active regions, one of which (LCR) is responsible for transcription of genes, the other (L) encodes the structural proteins of the capsid. The third (E) has a leading role in carcinogenesis. Under the action of proteins E 1,2,6,7, the control of suppressor genes of tumor growth P 53 and P Rb is violated, which leads to the development of neoplasia.

In infected cells, the viral genome can exist in two forms: episomal (more often found in the tissue of flat candida and epithelial dysplasia of low degree) and integrated (manifested in epithelial dysplasia of high degree and cervical cancer), where, in the presence of favorable factors, the implementation of the coding in The genome of the virus program aimed at its reproduction. This, in turn, leads to proliferation and enhanced synthesis of DNA and RNA by the host cell. Due to what it increases the ability to divide. Since the synthesis of own proteins in infected cells is suppressed, their differentiation (maturation) does not occur. Such cells, reaching the 2-3rd row of the intermediate layer of the epithelium of the cervix, are prone to destruction, which violate the dynamics of cellular renewal of the epithelial layer. Dysplasia occurs, which is based on proliferation and structural rearrangement of epithelial cells. The virus is highly contagious. The incubation period lasts from 1 to 20 months. IDPs can stay (persist and multiply) for a long time in the surface layer of the epithelium. In the literature there is evidence that the "entry" of PVI occurs at the level of immature cells of the epithelium of the skin and

mucous membranes (basal layer). The result of this penetration is the proliferation of cells, but without the production of viral particles, since proliferating cells of the epithelium are not capable of supporting the life cycle of the viruses. The most active synthesis of viral DNA occurs in spiky cells of the epithelium. This phase of the HPV life cycle is the second stage of replication dissection. Expression of late genes L1, L2 at this stage is absent. It occurs only at the final stage of differentiation in the surface layer, where there is an active reproduction of viruses. Such parts of the epithelium are infectious in terms of contact infection.

The dynamics of the HPV infection occurs either in its regression, that is, the elimination of the viral cell pool, or in the progression, which is accompanied by the inclusion of HPV DNA in the cellular genome and the appearance of malignant transformation. Today, there are more than 100 different strains of the virus. Usually, HPVs have tissue specificity and, therefore, they are divided into skin and mucous membranes, according to the source of detection. Clinical classification is based on the possibility of causing pre-and cancerous conditions, so the types of HPV are divided into three subgroups: "High" oncogenic risk: 16,18,45,56; "Average": 31,33,35,51,52,58; "Low oncogenic risk": 6,11,40,42,43,44. They lead to the formation of anogenital warts (endodontic candle, papilla). Papillomas occur on the mucous vulva, the vagina, in the perianal region, on the skin of the genital organs. They practically do not degenerate malignantly, but lead to significant cosmetic defects in the genital area. Nevus on other parts of the body can also be caused by these types of the virus. Diseases associated with HPV: cervical intraepithelial neoplasia (CIN) or placectic intraepithelial lesions (SIL) and cervical cancer. The demographic picture of the incidence according to the National Cancer Institute: in the age group of 18-29 years the greatest value: in men – Hodgkin's disease and malignant tumors of the testicle (29.7%); in women – Hodgkin's disease and malignant neoplasms of the cervix (29.7%). According to the official data of the Ministry of Health of Ukraine, cervical cancer takes lives of 6 Ukrainian women every day. In 2008, cervical cancer was diagnosed in 4937 Ukrainian women, with more than 40% of reported cases ended in death. The virus is transmitted, usually by sexual means, including anal and oral sex. Also, infection can occur during childbirth, from mother to child. It is not excluded and the domestic way of transmission of the virus. Suicide is also widespread – the transfer of the virus from one part of the body to another during shaving or epilation.

Sooner or later, almost all women are infected with HPV: up to 90% of sexually active women will be exposed to this infection throughout their lives. However, most infected people will get rid of the virus for two to three years (without any medical interventions). During this time the immune system can completely get rid of the virus. In this case, HPV does not inflict any harm to the body. High level diagnostics of HPV can be achieved only with the interaction of a clinician, a morphologist and an immunologist. The study should be comprehensive and step-by-step in order to identify risk factors, accompanying diseases, aggravating the course of HPI. Screening methods of diagnostics are: visual-colposcopic, cytological, molecular-biological.

Today the Digene Hibrid Capture Sistem P («double gene trap») method has been widely used in the world, which provides diagnosis of 13 genotypes of high-risk IDUs and 5 genotypes of HPV with a low degree of development of oncopathology. Treatment for HPV does not exist. In addition to the obvious recommendations relating to the control of sexual activity, effective prevention of HPV – vaccination and prophylaxis reviews. Now, 2 vaccines have been developed, investigated and widely distributed: Gardasil (protects against 6, 11, 16, 18 HPV types). Cervarix (protects against 16 and 18 HPV types). The US has a vaccine that protects against 9 types of IDPs, but it is not yet available in Ukraine. The basis of both vaccines is the empty shell of the virus. The vaccine does not contain the DNA of the virus, therefore infection during vaccination is impossible. The effectiveness of both vaccines in preventing the precancerous formations on the cervix was proven. Serum Gardasil protects against HPV strains 6 and 11, causing, in most cases, genital Nevus. The vaccine is indicated for girls and women aged 9 to 45 years, and for boys and men from 9 to 26 years. The Cervarix vaccine leads to the formation of «cross-protection» from 31 and 45 HPV types (these types also refer to HPV of high oncogenic risk) for all women without upper age limitations. It is best to vaccinate before the conditions for infection, ie, before the beginning of sexual activity, arise. The vaccine is effective, at least, for 15 years (that is, since

its application has begun). Studies indicate the presence of protective antibodies in women vaccinated 15 years ago. Specialists anticipate that this protection can be maintained throughout life.

**Conclusions.** The value of vaccination against HPV to reduce its spread is evident. When vaccinated against HIV-infected girls, the effectiveness of the vaccine for precancerous and cancerous cancer is 65-100% (100% is obtained for the Cervarix vaccine against cervical cancer caused by any type of virus). When vaccinated by women infected with one type of HPV, the efficacy is, of course, lower, however, reaching 77% (in relation to cervical cancer, with respect to precancerous disease – the effectiveness is lower). Today, the vaccine has been introduced in 45 countries around the world, with ongoing vaccine responses and no serious adverse reactions that would have been associated with the administration of vaccines. HPV vaccination is an effective and safe prevention of cervical cancer.

## TYPES AND FREQUENCY OF FOOD ALLERGIES

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**Introduction.** Food allergies are immunologically mediated adverse reactions to foods. Any food protein can trigger an allergic response, and allergic reactions to a large number of foods have been documented; however, only a small group of foods account for most of these reactions. Eggs, milk, peanuts, soy, fish, shellfish, tree nuts, and wheat are the foods most often implicated. Sesame appears to be an emerging allergen. Laboratory studies that may be helpful include the following: specific immunoglobulin E (IgE) antibody testing: positive results primarily denote sensitization and may not confirm clinical allergy; basophil histamine-release assays. Skin testing includes the following approaches:prick testing: this is the most common screening test for food allergy; negative predictive accuracy exceeds positive predictive accuracy (>90% vs < 50%); intradermal testing; patch testing.

**Aim.** To carry out screening of species and frequency of occurrence of food allergies to the contingent of different ages.

**Materials and methods.** Analysis of the scientific literature and the results of the advanced research in the field of medicine and pharmacology.

**Results and discussion.** Types of food allergies: dermatitis herpetiformis; IgE-mediated gastrointestinal food allergy(these food allergy reactions include immediate hypersensitivity reactions and the pollen-food allergy syndrome (oral allergy syndrome); mixed IgE/non-IgE gastrointestinal food allergy (symptoms vary according to location of the eosinophilia. Typical symptoms include postprandial nausea, abdominal pain, and a sensation of early satiety); non-IgE-mediated gastrointestinal food allergy (food protein-induced enterocolitis syndrome typically manifests in the first few months of life. Cow milk and soy protein formulas are usually responsible for these reactions. When the allergen is removed from the diet, symptoms resolve; pollen-food allergy syndrome (oral allergy syndrome).

Controversy surrounds the role of food allergy in the pathogenesis of atopic dermatitis. Studies show that among patients with moderate chronic atopic dermatitis, 35-40% have IgE-mediated food allergy. Food-specific IgE-mediated and cellular mechanisms appear responsible for chronic eczematous inflammation. In a study of 619 exclusively breastfed infants, those with atopic dermatitis were significantly more likely to be sensitized to foods. In addition, a strong association between the severity of the dermatitis and sensitization was observed, and positive associations between atopic dermatitis and specific foods (egg, cow's milk, and peanut) were found.

Among children, males appear to be more affected; among adults, females are more frequently affected. The prevalence of food allergies has been estimated to be up to 8% in infants and children and 3.7 % in adults.

In a population-based survey study of 40,443 US adults, an estimated 10.8 % were food allergic at the time of the survey, whereas nearly 19% of adults believed that they were food allergic. Studies in the United States and the United Kingdom indicate a rise in peanut allergy among young children in the