Программа вступительного испытания в аспирантуру
Английский язык.

Грамматика.

Порядок слов простого предложения. Сложное предложение: сложносочиненное и сложноподчиненное предложения. Союзы и относительные местоимения. Бессоюзные придаточные. Употребление личных форм глагола в активном залоге. Согласование времен. Пассивные конструкции: с агентивным дополнением, без агентивного дополнения; пассивная конструкция, в которой подлежащее соответствует русскому косвенному или предложному дополнению. Функции инфинитива, оборот «дополнение с инфинитивом» (объектный падеж с инфинитивом); оборот «подлежащее с инфинитивом» (именительный падеж с инфинитивом); инфинитив в функции вводного члена, оборот «for + сущ. + инфинитив». Функции причастия: причастие в функции определения и определительные причастные обороты; независимый причастный оборот (абсолютная причастная конструкция); причастный оборот в функции вводного члена; оборот «дополнение с причастием» (оборот объектный падеж с причастием); предложения с причастием I или II, стоящим на первом месте в предложении и являющимся частью двучленного сказуемого have + существительное + причастие. Функции герундия, герундиальные обороты. Сослагательное наклонение. Модальные глаголы. Модальные глаголы с простым и перфектным инфинитивом; функции глаголов should и would. Условные предложения. Атрибутивные комплексы (цепочки существительных). Инверсия. Многофункциональные строевые элементы: местоимения, слова-заместители (that(of), those(of), this, these do, one, ones). Основные сочинительные и подчини тельные союзы.

Список рекомендуемой литературы.

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Пример билета.

Билет №1

Вопрос 1. Translate the text in written form. You may consult the dictionary.

Obesity and allergic disease: closely related epidemics of the 21st century

I recently attended a very interesting symposium which brought together experts in obesity and allergy. This was a very opportune event because we have been receiving an increasing number of manuscripts presenting investigations of the putative association between obesity and atopic diseases. The modern allergy epidemic has followed a very similar demographic path to that of obesity and its associated metabolic syndrome. There is also a remarkable concordance of the early life influences on each problem suggesting that interventions which might be considered to affect the development of one might also change prevalence of the other.

Like allergic disease, obesity also has its origins in fetal life. Variations in maternal nutrition and fetal growth clearly impact on susceptibility allergy, but also obesity, insulin resistance and other features of the metabolic syndrome. Late intrauterine growth faltering is sometimes associated with rapid postnatal growth which in turn increases the risk of obesity, certainly in murine models. We have shown that rapid neonatal weight gain is also associated with impaired lung function at 4 wk of age and therefore a probable increased risk of wheezing in early life&. One study has shown an association between rapid early postnatal weight gain in low-birth weight infants and both later obesity and asthma.

Most studies have reported associations between current obesity and asthma but there is less consistency about the relationship with other atopic diseases. Thus in Japanese school children high body mass index was positively associated with asthma prevalence (an effect seen most strongly in girls) and atopic eczema severity but negatively related to allergic rhinitis and conjunctivitis. In the last issue of *Pediatric Allergy and Immunology,* a study of Belgian school children reported strong associations between obesity and exercise-induced respiratory symptoms but not allergic sensitization, eczema or rhino-conjunctivitis. There are potential mechanistic explanations for the association in that the peptide regulatory factors associated with obesity often described as adipokines also have a range of effects on inflammatory processes. However, the influences are confusing. Thus serum levels of resistin produced by adipose tissue were negatively associated with asthma and IgE levels but positively associated with bronchial hyperresponsiveness. Serum leptin and adiponectin on the other hand had no apparent effects. This conflicts with other studies showing positive associations between leptin levels and asthma as discussed in a recent review.

There has been an interesting focus on dietary fatty acids in relation to susceptibility to

obesity. A shift in the ratio of intakes of omega-6 to omega-3 polyunsaturated fatty acids has been related to the increase in prevalence of obesity and of course the same associations have been seen in relation to allergy. It will therefore be interesting to elaborate on whether studies of the effects of high fish intake or fish oil supplementation in pregnancy on allergic disease will also have an impact on obesity. Future intervention trials should harness the expertise of allergists, nutritionalists and endocrinologists.

There are clearly great benefits to be derived from bringing together experts investigating common conditions which are afflicting the world's population in the 21st century to pool knowledge and understanding which might in the end lead to the development of strategies which prevent disease and improve overall health.

In the meantime, a review of the state of knowledge would suggest that there are strong associations between obesity and asthma but this would appear to be independent of allergy. Peptide regulatory factors generated by adipose tissue certainly have the capacity to modify airway inflammation and this provides a credible mechanistic explanation for the association based on a common pre-existing cause? A controlled trial of weight reduction in obese asthmatics which benefited asthma control might suggest that obesity and the resulting adipokines aggravate asthma. This would be supported by the association of an increase in wheezing amongst girls who become overweight. However, the common demographics and early life influences of the two epidemics of the 21st century suggest that the relationship is rather more complex.

Вопрос 2. Read and translate the text orally. You mustn't consult the dictionary.

GENETICS

The body's genetic material is contained within the nucleus of each of its cells. The genetic material consists of coils of DNA (deoxyribonucleic acid) arranged in a complex way to form chromosomes. Human cells contain 46 chromosomes in pairs, including one pair of sex chromosomes.

Each DNA molecule is a long double helix that resembles a spiral staircase. The steps of the staircase, which determine a person's genetic code, consist of pairs of four types of molecules called bases. In the steps, adenine is paired with thymine, and guanine is paired with cytosine. The genetic code is written n Triplets, so each group of three steps of the staircase codes the production of one of the amino acids, which are the building blocks of proteins.

When a part of the DNA molecule is actively controlling some function the cell, the DNA helix splits open along its length. One strand of the open helix is inactive; the other strand acts as a template against which a complementary strand of RNA (ribonucleic acid) forms. The RNA bases are arranged in the same sequence as bases of the inactive strand of the DNA, except that RNA contains uracil and DNA contains thymine. The RNA copy, called messenger RNA (mRNA), separates from the DNA, leaves the nucleus, 2nd travels into the cytoplasm of the cell. There, it attaches to ribosomes, the cell's factories for manufacturing proteins. The messenger RNA instructs the ribosome as to the sequence of amino acids for constructing a specific protein. Amino acids are brought to the ribosome by transfer RNA (tRNA), a much smaller type of RNA. Each molecule of transfer RNA brings one amino acid :o be incorporated into the growing chain of protein.

A gene consists of the code required to construct one protein. Genes vary in size, depending on the size of the protein. Genes are arranged in a precise sequence on the chromosomes; the location of a particular gene is called its locus.

The two sex chromosomes determine whether a fetus becomes male or female. Males have one X and one Y sex chromosome; females have two X chromosomes, only one of which is active. The Y chromosome carries relatively few genes, one of which determines sex. In males, virtually all of the

genes on the X chromosome, whether dominant or recessive, are expressed. Genes on the X chromosome are referred to as sex-linked, or X-linked, genes.