



INTRODUCTION

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FINNISH INSPIRATION FOR YOUR HEALTH

Representatives of the clinic recently visited a number of healthcare facilities in the Finnish capital Helsinki. Finland is one of the world's leading countries in the field of eHealth, and boasts an exceptionally high standard of healthcare supported by information technologies. Several interesting and inspirational meetings took place, both in the private sector in the Heltti and Mehiläinen facilities, and also in the state organisation THL. What could be of interest here for our clients?

All Finnish healthcare facilities are completely interconnected on a national level, with the aid of a common information sharing network. This means for example that even a doctor providing assistance in a chance situation has enough information about you in order to provide you with good care. If you have undergone an important examination with a specialist, you will not be resent for the same examination by another specialist, who will instead use the results of his or her colleagues. And if different doctors prescribe you medications, they can check that there is no threat of dangerous contraindications.

In addition to their own treatment, Finnish healthcare facilities also focus on support for well being, and develop care in the field of prevention, so that patients do not need to visit a doctor. And if necessary, they will first of all enable you to speak to a doctor, for example with the aid of a chat or video interview directly from the comfort of your own home, and you needn't make the long trip to the surgery and back.

Does this seem unrealistic or a long way off? Not to us. We are confident that we can bring such services here to the Czech Republic.

Ing. Milan Tomeš

INNOVATIONS IN PREVENTIVE DNA TESTS

Program Health Plus has a long-term focus on "genetic prevention". We offer our clients innovated tests of their genetic make-up, linked to configuring targeted individual prevention.

In recent years there has been an immense advance in the technology of genetic testing, as well as in the interpretation of determined genetic variants. We have witnessed the birth of the new field of "genome medicine", which makes use of genome analysis in healthcare, for example in evaluating the risk of illness, in diagnosis or determining the safety and efficacy of treatment. "The foundation of the genetic code is nucleotides – adenine (A), guanine (G), cytosine (C) and thymine (T), which are linked in DNA (deoxyribonucleic acid) chains. Human DNA is formed by a bond of approximately 3 billion nucleotides, genetic information is coded by their order in the chain," explains Dr. Jan Kábrt, head doctor at Program Health Plus. A complete set of DNA is referred to in professional circles as a genome, but only a small part of this (approximately 3%) has controlling/coding functions within the organism. This is called an exon. "If there is a change in the order of nucleotides in the exon, then a genetic variant will be generated which may result in a disorder of functions within the organism, and therefore the risk of illness," notes Dr. Kábrt.

DETERMINING THE RISKS

DNA tests are focused on determining variants/mutations which represent an increased risk. The clinic uses specially configured tests which mainly examine the risk of illnesses occurring on a mass scale. "This for example concerns cardiovascular diseases, type II diabetes, risks of increased blood coagulation (thromboembolism), disorders with an autoimmune basis or the threat



of osteoporosis. With regard to the ageing population, we also examine the risk of Alzheimer's disease or degenerative disorders of the retina," describes the head doctor. One of the specifics is an analysis of the risk of cystic fibrosis, which has a relatively high incidence in the Czech Republic. Specialists from the clinic's team are also attempting to interpret the risk of occurrence of cancers, above all of the breast and prostate. The selection of the examined genetic variants is constantly being added to according to observations from the GWAS (genome-wide association study), and thanks to this process tests are continuously being innovated. In interpreting the results of the analysis, doctors also take into account other factors. "Since the times of the antique doctor Hippocrates, we have been aware of the great importance of the history of illnesses within the family, and for this reason we devote a large amount of attention to the family medical history. Furthermore, the observed diseases have so-called "polygenic inheritance", and the ex-

ternal environment has a significant influence on their occurrence. As a result, we always evaluate findings in close correlation with the clinical examination of patients," he adds.

TARGETED PREVENTIVE CARE

Specialists at Program Health Plus have now conducted preventive genetic analyses of 271 clients, and interest is growing. "Those interested have a small blood sample taken. We isolate a sample of DNA from white blood cells, and the test to determine the mutations sought takes place by the so-called chip method," states Dr. Kábrt. Before the blood sample clients sign an informed consent form, and after the test has been conducted they are familiarised in detail with the results, as well as with the probability of the risk of developing various hereditary diseases. Personal doctors, together with specialists may then set targeted preventive measures for the client, which will help prevent the onset of the illness, or at least delay it.

NEWS

NEW ENDOCRINOLOGIST FOR CHILDREN AND ADULTS

Our clinic's team of specialists has welcomed into its ranks a distinguished addition of international renown, Dr. Eva El Lababidi, who specialises in the field of paediatric endocrinology and diabetology. For most of her career she has worked as a doctor at the Department of Children and Adolescents at the Third Faculty of Medicine of Charles University and Královské Vinohrady University Hospital in Prague, and as head of the Centre for Growth Hormone Treatment. She also focuses on scientific research and publishing activities both in the Czech Republic and abroad, for which she has won several prestigious awards.



AUTUMN FLU VACCINATION

With the arrival of the autumn, the time always comes to consider a flu jab. In the first months of the year, the Czech Republic is usually hit by a flu epidemic, which affects a considerable proportion of the population and every year claims up to 2000 lives. The best time for vaccination is in October and November. Vaccination is suitable especially for risk patients with chronic illnesses, senior citizens, people of productive age who wish to avoid incapacity to work, and also for children, who in a group environment are more susceptible to infection. With modern vaccines it is also possible to inoculate pregnant women, upon which the antibodies penetrate through the placenta and also protect the child following birth up to 6 months of age.



USEFUL VACCINATION FOR ADULTS

Vaccination is a key component of preventive healthcare, saving lives and protecting health. Despite this, the vaccination rate in the Czech population is low, because people often believe myths and underestimate the risk of infection.

In adulthood, in practical terms the only mandatory vaccination is against tetanus, which requires a booster every 10-15 years. Other mandatory vaccinations relate only to select groups of the population, for example people with severe chronic cardiovascular and pulmonary diseases, patients with impaired kidney and liver functions, people with immune disorders or who use immunosuppressant treatment. However, vaccination is useful for practically everyone. "Personally I am a strong believer in vaccination, which I recommend to my clients as safe and effective prevention against serious infectious diseases that can have severe impacts on health," informs personal doctor and internal medicine specialist Dr. Hana Sýkorová.

RECOMMENDED TYPES OF VACCINATION

Dr. Sýkorová recommends vaccination against tick encephalitis and influenza for clients of all age categories. Although a flu jab may not always entirely prevent infection, the illness has a far milder course, and the risk of serious complications is reduced. "Vaccination against tick encephalitis is effective and safe. Although in the majority of cases, infection in unvaccinated individuals is symptomless or only in the form of a viral infection, we are unable to prevent or treat the progression of the infection to inflammation of the brain and meninges! The only option is vaccination," warns Dr. Sýkorová. The flu vaccine is administered every year, for tick encephalitis at 3-5 year intervals. Patients over the age of 50 should also consider vaccination against shingles, which is often neglected in the Czech Republic. People over 65 years of age should additionally be vaccinated against pneumococcus infections, since vaccination significantly reduces the risk of illness and death from

severe pneumonia. Meningococcus infections are also renowned for their extremely rapid and life-threatening course, and thus in this case also vaccination is highly advisable. "In addition it is possible to recommend vaccination against hepatitis A or a combined vaccine also against hepatitis B. Recently vaccination against measles has also been increasing in importance," she adds. When going for a tetanus booster it is worthwhile considering using a combined vaccine against tetanus and whooping cough.

UNDERESTIMATING THE RISK OF INFECTION

The recommended types of vaccination do not differ greatly for men and women. "Only for women, or more precisely for girls, greater emphasis is placed on vaccination against the human papillomavirus, which reduces the risk of cervical cancer. In addition it is recommended that pregnant women in the 3rd trimester receive a booster vaccination against whooping cough," informs the doctor. Although the options for vaccination are very broad, the vaccination rate of the Czech population is low in comparison with the rest of Europe. "All kinds of exaggerated and nonsensical fears of side effects or myths about the harmfulness of vaccination are circulating. As well as that, people also underestimate the risk of infection and of possible complications of infection, which seem low to them," she notes. Anyone who wishes to take a responsible approach in caring for health should never underestimate the benefit of vaccination. If clients want to broaden their vaccination, they need only contact their personal doctor.

Interview online at www.programhplus.cz.

HOW TO RESOLVE EXCESSIVE HAIR LOSS

Many women as well as men fear hair loss and baldness. The head of the dermatology department at Program Health Plus Dr. Lucia Mansfeldová reveals the causes of excessive hair loss, how to resolve this problem and how to prevent such complaints in future.

A certain degree of hair loss is natural. How are people to recognise that they are losing more hair than is normal?

The figures state that we usually lose approximately 60 to 100 hairs per day. We mostly notice this in the shower plughole after washing our hair. However, if we find hairs all over our home and on our clothes, if we find an increasing amount every time we brush our hair or notice our hair thinning on certain parts of the head, we should seek professional help as soon as possible.

Can you advise us on effective methods of prevention against hair loss?

The best prevention is a balanced diet with sufficient intake of iron, B group vitamins and other important substances, for example the amino acids methionine and cysteine. It is important to avoid drastic hairdressing procedures, poor quality, aggressive hair dyes and unsuitable hairstyles, which place an excessive burden on the hair. A very good effect is produced by stimulating shampoos and tonics with caffeine or panthenol. However, it's true that there are an enormous number of "miracle preparations" on the market, so when choosing it's useful to consult a dermatologist.

Full interview online at www.programhplus.cz.

BLANKET VACCINATION SAVES LIVES

An important perspective on the impact of vaccination against infectious diseases is presented in an analysis by leading expert Dr. Marek Petráš for the specialised website Vakciny.net. This has calculated that blanket vaccination has helped save more than a million human lives in our country.

The analysis was conducted at the time of the 100th anniversary of the founding of the Czechoslovak Republic, and in its investigation covered the period from 1919 to 2017. It was based on data from the Czech Statistical Office, and in order to determine the number of human lives saved it compared the annual number of deaths from a number of selected infectious diseases before and after the introduction of vaccination. The greatest threat was tuberculosis, against which blanket vaccination was introduced in 1953. If there had been no vaccination, more than 900 000 people could have died needlessly. Second place on the ladder of deadly infectious diseases would be occupied by diphtheria, which today is a practically unknown illness, but without vaccination (since 1946) could have claimed the lives of more than 80 000 victims. Many people would also have died of whooping cough (more than 22 000), tetanus (over 15 000) and measles (almost 11 000).

MEASLES RETURN TO THE STAGE

"Without doubt socio-economic factors, as well as the development and advance of medicine, in particular treatment using antibiotics and so on, have been a contributing factor. Nevertheless, if we follow the trend of incidence of selected infectious diseases and the number of deaths, it is clear that the main preventive factor was vaccination," comments the author of the analysis Dr. Marek Petráš. If the rate of vaccination within the Czech population were to decrease in future, infectious diseases could once again become a real threat. An example is provided by the fact that in recent times there has been an increase in cases of measles, which has affected several hundred people over the last 12 months.

OVERVIEW OF ABSOLUTE NUMBERS OF HUMAN LIVES SAVED FOLLOWING THE INTRODUCTION OF VACCINATION

INFECTIOUS DISEASES	NUMBER OF SAVED LIVES	YEAR OF IMPLEMENTATION
Tuberculosis	913 980	1953
Diphtheria	82 777	1946
Whoop. cough	22 135	1958
Tetanus	15 747	1952
Measles	10 950	1969

SOURCE: Vakciny.net, Czech Statistical Office