Test Subject

Nutrigenetic analysis

THE INFLUENCE OF DIET ON BODY WEIGHT

Analysis	Your result	Summary
Risk for being overweight	LOWER RISK	*Your risk is 13% lower than average, which still doesn't mean that you can't put on weight. We advise you to follow detailed report of the analyses.*
Response to saturated fats	NORMAL	*The intake of saturated fats is not additionally unfavourable for you. Despite that, your daily intake should not exceed 10% of caloric intake.*
Response to monounsaturated fats	NORMAL	*Your daily intake of monounsaturated fats should be 10% of caloric intake. We recommend you to prefer olive oil when preparing the food.*
Response to polyunsaturated fats	FAVOURABLE	*We recommend you to consume around 10% of polyunsaturated fats daily. Include, for example sesame or pumpkin seeds, in your meals.*
Response to carbohydrates	UNFAVOURABLE	*Due to your unfavourable response to carbrohydrates, we recommend you to lower their daily intake. Restrict it to 50% of daily caloric intake.*
DIET TYPE	MEDITERRANEAN DIET	*Eat plenty of fish and use fresh Mediterranean spices and olive oil. Control you carbohydrate intake.*

FACTORS INFLUENCING METABOLISM

Analysis	Your result	Summary
HDL (good) cholesterol	LOWER LEVEL	*Your genes determine 14% lower than average HDL cholesterol level. After meal, enjoy blueberries - they contain resveratrol that increases HDL level.*
LDL (bad) cholesterol	LOWER LEVEL	*Your genes determine 11% lower than average LDL level of cholesterol. Consider our recommendations and even further improve the situation.*
Triglycerides	HIGH LEVEL	*Your genes determine 38% higher than average level of triglycerides. You are advised to follow the detailed recommendations, located in the analysis.*
Blood sugar	AVERAGE LEVEL	*Limiting intake of foods sweetened with added sugar (coffee, donuts, cookies), can have big influence on lowering blood sugar level.*

THE REQUIREMENT OF NUTRIENTS

Analysis	Your result	Summary
Vitamin B6	AVERAGE LEVEL	*We recommend you to consume 1600 mcg of vitamin B6. Sufficient amounts can be found from white meat, mackerels, bananas, broccoli and peanuts.*
Vitamin B9	LOWER LEVEL	*For you the daily vitamin B9 intake is 500 mcg. We recommend to you fruits (oranges, dried apricots) and vegetables (leek, broad beans, broccoli).*
Vitamin B12	AVERAGE LEVEL	*You should increase your daily vitamin B12 intake to 4 mcg. To accomplish that, eat recommended amounts of fish, meat and dairy products.*
Vitamin D	HIGH LEVEL	*Consume 20 mcg of vitamin D daily. When consuming dairy products, you should not have problems with the lack of vitamin D.*
Iron	LOWER LEVEL	*We recommend to you seeds (pumpkin, sesame), pistachios, cashews and rice bran, that will take care of the daily intake of 22 mg of iron.*
Sodium (salt)	AVERAGE SENSITIVITY	*Eat food, that is poor in sodium – consume less than 1200 mg of sodium daily. To improve the taste of food, use lemon, garlic or mint.*
Potassium	AVERAGE LEVEL	*We advise you to increase your daily potassium intake to 3150 mg. Especially eat nuts (brazil, cashew) and vegetable (dandelion, kale, beans).*
Bone density	AVERAGE DENSITY	*You can improve your state with regular physical activity and with foods that contain more vitamin C (broccoli, cabbage, black currants).*

EATING HABITS

Analysis	Your result	Summary
Consumption of sweet treats	LOWER TENDENCY	*If you, despite favourable genes, will get an urge to have something sweet, instead of unhealthy snacks, pick rice waffles coated with yogurt.*
Insatiability and hunger	LOWER TENDENCY	*If you, despite favourable genes, will sometimes feel constantly hungry and insatiable, then you should eat more foods rich in fibres.*
Sweet taste perception	MORE INTENSIVE	*Despite the intensive perception of sweet taste, you should decrease the intake. You can lose your sharp perception with excess sweetening.*
Bitter taste perception	MORE INTENSIVE	*You perceive bitter taste more intensively. You can alleviate unpleasant taste of broccoli, radish and spinach by preparing them as soups and sauces.*

METABOLIC PROPERTIES

Analysis	Your result	Summary
Alcohol metabolism	EFFECTIVE METABOLISM	*Your alcohol metabolism is effective, but we recommend that you would consume it in moderation (up to 1 dl wine or 2 dl beer per day).*
Caffeine metabolism	SLOW METABOLISM	*We do not recommend more than one coffee per day, because it increases the risk for problems with blood pressure and cardiovascular diseases.*
Lactose metabolism	EFFECTIVE METABOLISM	*You have an effective lactose metabolism. Consumption of milk and milk products is recommended to you in terms of metabolism of lactose.*

DETOXIFICATION OF YOUR BODY

Analysis	Your result	Summary
Selenium	LOWER LEVEL	*We recommend you to consume 50 mcg selenium daily. Keep your BMI below 30, because its increase will lower levels of selenium even further.*
Vitamin E	HIGHER LEVEL	*Your daily vitamin E intake should be 12 mg. We advise you to use mainly rapeseed oil, pine nuts and Brazil nuts.*
Oxidative stress	LOWER EXPOSURE	*Despite your favourable genes, we discourage you from smoking or drinking, as these activities will expose you to free radicals and oxidative stress.*

SPORTS AND RECREATION

Analysis	Your result	Summary
Muscle structure	GREAT STRENGTH AND EXPLOSIVENESS	*Your muscles are explosive, so you're probably better for example during the short-distance disciplines, gymnastics, badminton and squash.*
Endurance training	NORMAL BENEFIT	*Despite that the endurance training has normal benefit for you, then for overall health it is nevertheless recommended.*
Achilles tendon	HIGHER TENDENCY FOR INJURY	*You are more prone to damage the Achilles tendon, so you should warm up thoroughly before exercise and stop the training gradually.*

GENETICALLY DETERMINED ADDICTIONS AND AGEING

Analysis	Your result	Summary
Nicotine addiction	LOWER RISK FOR ADDICTION	*Cigarette smoke is a cause of many health problems, so despite what your genetic results we discourage you from smoking.*
Alcohol addiction	AVERAGE RISK FOR ADDICTION	*You have higher risk for alcohol addiction, compared to people with most favourable genetic makeup, so you should limit your alcohol consumption.*
Biological ageing	FASTER AGEING	*Your genes determine that you age faster but it depends greatly on your lifestyle.*

For a better understanding of your personal DNA analysis, we would like you to read the following instructions.

Index and an overview of analyses with your advice

A user-friendly index enables you an easy and fast review of all the analyses. In addition, the index itself already contains the results of the analyses, which show the features (nutrients, lifestyle factors) that you have to pay attention to, based on your genes.

The Index is followed by ''An overview of analyses with your advice'', which features the most important findings and key recommendations for each section separately. A comprehensive summary of recommendations enables you to quickly and easily focus only on the factors that are the most important for you.

Sections and analyses

Your personal DNA analysis contains 8 sections which thematically capture the key elements of your diet and lifestyle. Every section starts with a summary of results, which is followed by an introduction to the subject of analyses for enabling us an easy interpretation of results.

An individual analysis contains an explanation of scientific research and the analysed genes with the mutations within these genes. Every analysis contains a genetic result and appropriate nutritional and lifestyle recommendations. More detailed explanations of larger analyses can be found at the end of your personal DNA analysis, in the chapter ''More about analyses''.

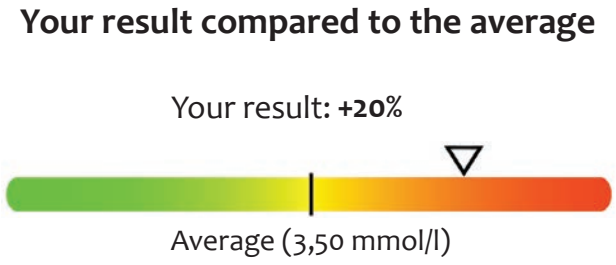
Results of your personal DNA analysis

For a better understanding, your results are presented in a colour scheme, where each colour has a specific meaning:

- Dark green: Your result is the most optimal; the state simply needs to be maintained.
- Light green: Your result is not completely optimal; the state can be improved
- Yellow: Your result is average. If you follow the recommendations, you can do plenty to improve your state.
- Orange: Your result is not favourable. For an optimal state we recommend action.
- Red: Your result is the least favourable; pay close attention to these analyses.
- Grey: Your result is neutral - it defines neither a positive nor a negative status.

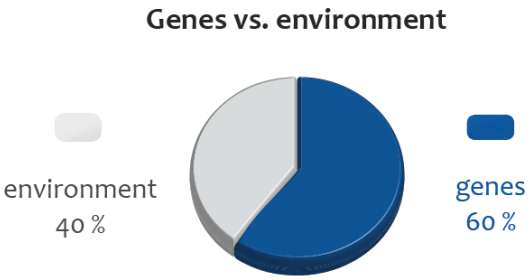
In certain analyses, the result is also presented graphically. The graph shows the value of your genetic result, compared to the average value of the population.

For an easier understanding of the analyses, take a look at the graph on the right for the example of the ''LDL (bad) cholesterol'' analysis (note: this graph is only an example and does not portray your actual genetics in the mentioned analysis). The graph shows an example of a genetic makeup which determines a 20 percent higher LDL cholesterol level in comparison to the average LDL cholesterol level in the population.



Heritability

In all of the analyses where this information is known, "heritability" is shown. It is a measure that we use to determine how much our genes influence the formation of a certain characteristic. The bigger the heritability is, the greater influence our genes have, and the lower influence the environment has. The heritability for the HDL cholesterol is estimated to approximately 60 percent, which means that the influence of genes overpowers the influence of the environment, and this is why information on our genetic makeup is so important here.



The analysed genes

A list of analysed genes is added to each analysis, and each gene has a determined genotype. A genotype or the combination of genotypes within an analysis determines your result. More information on the analysed genes is at the end of your personal DNA analysis, where it is presented in a chart with short descriptions of genes.

Recommendations of your personal DNA analysis

Based on your genetic makeup, we have prepared recommendations, which reveal your daily needs in terms of nutrients and guide you into a lifestyle suitable for you. We advise you to act on them, as they consider the needs of your body which are determined by your genes, and which, therefore, have a large influence on your current state and well-being.

Nutrition charts

The last pages of your DNA analysis consist of nutrition charts, which will help you to follow our recommendations. Information on the caloric value and the amount of vitamins, minerals and macronutrients is presented for every food item. This enables you to optimally plan your meals, because you can comprehensively follow all the nutrients that are present in a specific food item.

Legal liability

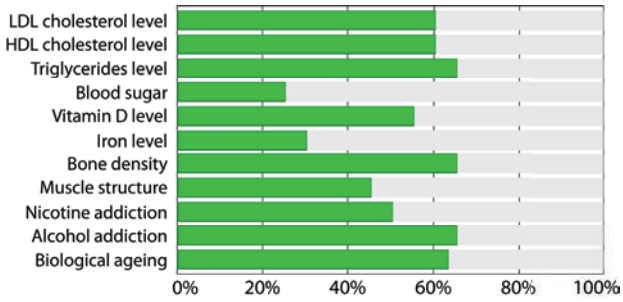
Your personal DNA analysis is predominantly of educational nature. Its purpose is not to give medical advice for determining diagnoses, treatment, alleviation or prevention of illnesses. Therefore, if you have any serious medical problems, we do not recommend any nutritional changes prior to consulting your personal doctor. Under no condition should you change your medications or any other medical care without the permission of your doctor.

Genes and genetic mutations

Genes are areas of the **DNA** chain which carry instructions for the synthesis of proteins. Every gene carries a specific combination of nucleotides marked with letters A, T, C and G, where an individual combination determines a specific protein. Sometimes a mutation (or an error) occurs in the process of DNA replication, and the nucleotide sequence is not adequate (genetic mutation). This results into incorrect functioning of the protein.

When doing a personal DNA analysis we **analyse more than 100 sites (loci) of your DNA** where such mutations can occur. The type of mutation at this locus of DNA is called the genotype. If there is a possibility of substitution at a specific locus of DNA from C to T we have 3 possible genotypes: CC, CT or TT. This happens, because we inherit the DNA from our mother, as well as our father, and we therefore have every gene present in two copies. It is, therefore, possible for a mutation to occur only in one copy of the gene, in both copies, or not to occur at all.

It is clear that various genotypes are one of the most important factors which make people different: we have different eye colour, different skin, talents, we are differently susceptible to illnesses, and we have completely unique eating habits. Just how great influence genes have on various characteristics of an individual is presented in the following graph:



Nutrigenetics - the needs of our body are unique

Nutrigenetics represents a field which focuses on consequences of those genetic mutations that can be regulated with a diet. It is based on vast scientific studies which connect specific genetic mutations of individuals with different eating habits. The objective of nutrigenetics is to recognise **specific characteristics of an individual** based on which the diet can be optimised. Nutrigenetics, of course, is not part of the alternative medicine, and it is not a form of treatment. It is not an approach which would include modifying of the DNA, and it does not determine an optimal diet based on blood type or any other phenotypical characteristics of a person.

Personalised nutrition – the basis for the optimal diet

Although 99 percent of our genetic makeup is completely identical, there are approximately ten million genetic variations among individuals. In accordance to this, the nutritional needs of every individual are very specific. Unique needs of every individual are subject of a new branch of nutrigenetics – personalised nutrition. **A personalised nutritional approach** is essential and absolutely necessary for an optimal diet, in the same way as your personal doctor, who knows you, is necessary for ensuring your health. Diet is also one of the factors that we can use to influence our body and at the same time a factor that can most easily be influenced.

An optimal diet - the key to health and happiness

An optimal diet is an adjusted way of eating which can help us reach an **optimal functioning of our body**, as well as a long and healthy life. When our diet is optimal, we are emotionally more stable, physically active and we have significantly less health problems.

By following our recommendations and with a consistent use of ''Nutrition charts", you now have a unique opportunity to step on a path of an optimal diet. You will see that food items in the charts are organised according to their importance. They, therefore, represent a great resource that enables you to choose a food combination which ensures your body a sufficient amount of nutrients. We recommend that you try to place different food items from different food groups on your menu.

Learn about the main ingredients of diet and the significance of analysed vitamins and minerals

Carbohydrates are the first group of macronutrients which represent the most important role in our diet, regardless the type of diet. According to their chemical structure, we divide them into simple and complex ones. **Simple carbohydrates** are naturally present in fruits, and their main property is that they are digested very quickly. Complex or **compound carbohydrates** are longer chains compounded of simple carbohydrates which have to be broken down during digestion. Only then can our body use them. Because of this quality, they represent a long-term source of energy for the body. The highest amount of complex carbohydrates is present in vegetables, legumes, and cereal products (flakes, bran). These food sources, including fruits, contain extremely beneficial substances for our body, called **fibres**. As a source of energy, they are useless to our body, as it cannot digest them, but they are important for regulating digestion and blood sugar levels, as well as cholesterol levels. Although fruits contain mainly simple carbohydrates, their content is low. Additionally, fibres ensure that fruits would have little impact on blood sugar levels. This is why fruits are much healthier than sweets.

A system called **glycemic index** has been established for evaluating a food item on the basis of its influence on the increase of blood sugar level. This system arranges foods into classes with values from 0 to 100, according to how quickly they increase blood sugar level in comparison to pure glucose. For example, white bread is a food item with a high glycemic index, and it causes a rapid increase of blood sugar. Unrefined cereals have a low glycemic index, the body digests them slower, and they cause a steady increase of blood sugar. But there is a downside to classification of foods according to the glycemic index, because it does not consider the actual amounts of carbohydrates in food. Because of this, a new system has been established, called **the glycemic load**, which enables us to classify food items more realistically, according to the criterion of blood sugar increase. This is why, for example, carrots have a high glycemic index, but a very low glycemic load. The reason for this is that carrots contain simple sugars, which strongly influence the increase of blood sugar. But, if we consider that the percentage of sugars in carrots is very low, we notice that carrots are actually very beneficial to our body and are highly recommended for diabetics.

Fats represent the next group of nutrients, which are known for their high energy content. They are predominantly important for digesting fat-soluble vitamins A, D, E and K, the synthesis of certain hormones, and are the component of cellular membranes. They are essentially divided into **saturated** and **unsaturated fats**. The latter are found in fish, nuts, seeds, and oils extracted from them. They are recognised by the fact that at room temperature, as opposed to saturated fats, they are in liquid state. Unsaturated fats are further divided into **poly-** and **monounsaturated**. Both groups are extremely important for our body. However, polyunsaturated fats are the only ones that our body cannot produce, and it is therefore essential for us to get them from food. This is why they are called **essential fats**. Among these are omega-3 and omega-6 fatty acids.

Learn about the main diet ingredients and the significance of analysed vitamins and minerals

Omega-9 fatty acids are classified under monounsaturated fats, and they are naturally found mostly in olive oil. Despite the fact that monounsaturated fats are extremely beneficial for us (they reduce LDL and increase HDL cholesterol), they have one disadvantage. They are less resistant to high temperatures, and if they are overly reheated, so called **trans saturated fats** are formed, which are even worse for our body than saturated ones. It is better to cook on low temperatures or use coconut and palm oil, which contain mostly saturated fats.

Proteins represent the last group of macronutrients. They are absolutely necessary for our body, since they are the main structural component of our body. There are a lot of them in meat and meat products. This type of food should be in a minority on our plate, in comparison to other macronutrients, and we recommend you to choose very lean meat. There are also a lot of proteins in milk and dairy products, which, in addition, represent a great source of calcium, but we recommend you to opt for those with low fat content. Good substitutes for animal proteins are soy and soy products. These are especially well known among vegetarians. You may not have known this, but a great source of proteins are also nuts, seeds and cereals.

Carbohydrates, fats and proteins, which are macronutrients, represent a major part of our diet. However, vitamins and minerals, also called micronutrients, are also of great importance in our diet. Very small amounts are needed for a normal functioning of our body. Even though they do not have any energy content, they are very important for our body. They participate in antioxidative processes, cell-renewal processes and numerous enzyme reactions. They can be found in various foods, and we recommend you to use the nutrition chart for information on a specific vitamin or mineral. We especially recommend eating diverse food, which would help you to fulfil your requirements for micronutrients and macronutrients.

THE INFLUENCE OF DIET ON BODY WEIGHT

THE WAY TO YOUR IDEAL BODY WEIGHT

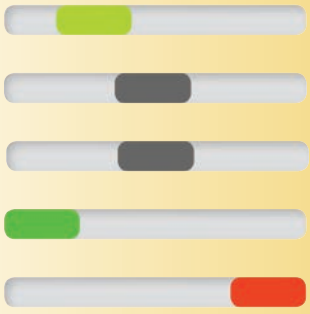
ADJUST YOUR DIET ACCORDING TO YOUR GENES

In this chapter you will learn how your genetic makeup influences the development of overweight, and how your body responds to different types of fats and carbohydrates. At the end of the chapter we reveal ''A diet type'' that according to your genetic makeup suits you the best.

We advise you to follow our recommendations because the balance between the intake and the use of calories, physical activity and genetic background is the key to optimal body weight and well-being. It is generally not recommended to eat more calories than are actually burned. In addition to a controlled calorie intake, the right choice of foods is also crucial, as certain foods can cause even more harm, while other foods can improve your condition.

The fact, that a diet based on genetic analysis is truly effective, has been proven by scientific research performed at Stanford University. The study discovered that people who had been eating according to their genetic makeup had lost 4 kilograms more that those who had been trying to lose weight in no accordance with their genetics.

Chapter contents



Risk for being overweight

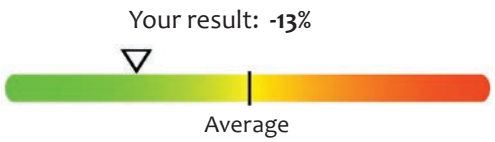
Nowadays, excess body weight is a prevailing problem, experienced by many. The biggest culprits for this are our genes, which determine the tendency for storing energy. Numerous genes can be responsible for becoming overweight. In our analysis however, we have included the most reliable genes with the major influence. Undoubtedly, one of the most important genes is MC4R, which is involved in appetite regulation and in maintaining the ratio of ingested and burned calories.

Scientists have discovered a mutation in the DNA sequence close to above mentioned gene, which protects against becoming overweight. It has been scientifically proven that people with a favourable variant of the gene have a smaller likelihood of becoming overweight. In addition to this, we have also analysed other genes that importantly influence the possibility of becoming overweight. With a combination of these genes and based on your DNA, we have calculated the risk which shows how much, compared to the average population, you are prone to becoming overweight. You can find more information on being overweight in the chapter ''More on analyses", and the list of all analysed genes can be found in the chapter ''Analysed genes".

Your result: LOWER RISK

Compared to the overall population, slightly more favourable variants of genes are present in your DNA, which determines a lower risk for becoming overweight.

Your result compared to the average



Recommendations

- Your risk for becoming overweight is lower, which unfortunately does not mean that you cannot gain weight.
- With overeating and no physical activity you can quickly increase your risk. Therefore, despite the favourable genes, we advise you to follow our recommendations.
- Control the amount of consumed animal fats. Choose leaner meat, because the excess fat can quickly start to accumulate in your subcutaneous tissue.
- After a meal, have some fruits; for example, an apple, a few strawberries or cherries, instead of cakes and other sweets. These foods are just as tasty and, at the same time, extremely healthy.
- Instead of soft drinks or other artificial drinks, which contain a lot of calories, we recommend a glass of water.
- We recommend you to take time for a half-hour walk five times a week, as it will increase your metabolism and calorie consumption.

"Did you know that we face an epidemic of obesity? In Europe, one third of the population is overweight! Experts predict that being overweight will increase medical costs, as it is associated with many cardiovascular diseases as well as psychological problems."

***Gene** - Part of the DNA sequence that carries the information for the formation of protein. Genes are inherited from parents by their descendants, and give information, which is needed for the formation and development of an organism. **DNA** - a molecule, found in the cell nucleus, which carries the instructions for the development of an organism. Human DNA is encoded by three different nucleotides and has the shape of a double coil.*

Response to saturated fats

Saturated fats are found mostly in food of animal origin. Our body uses them as a source of energy, but, unfortunately, in connection to the genetic makeup, they also have the property of increasing the risk for becoming overweight. Scientists have discovered from a 20 yearlong study, a gene that causes some people gain weight quicker due to saturated fats than others. They discovered that the saturated fats have even more negative effect on people with unfavourable variant of gene APOA2. In case of excessive consumption of saturated fats, they have twice as high risk for becoming overweight, compared to carriers of the common variant of the gene. Despite this fact, people with a risk variant of gene APOA2 do not need to worry: by reducing the saturated fat intake, they can lower their BMI by 4kg/m^2. Such differences have occurred between people with an unfavourable variant of the gene who have consumed normal amounts of saturated fats and those who have appropriately limited their intake.

Your result: NORMAL RESPONSE

You are a carrier of two favourable copies of the gene APOA2, and your body responds normally to saturated fats. Approximately 37 percent of people in the population have such an APOA2 gene, as you have.

Recommendations

- Your genetic makeup determines that saturated fats are not additionally unfavourable for you.
- Your daily intake of saturated fats can be slightly higher than for people with an unfavourable variant of the gene; therefore you will follow your daily intake recommendations more easily.
- We recommend that you closely follow your diet recommendations at the end of the chapter, which take into account your response to saturated fats.
- When planning your menu, we suggest you to use the nutrition charts, to make following our recommendations easier.

Useful information

Why we need them	Source of energy for the body
Can our body produce them	Yes
Their influence	Increase LDL, slightly increase HDL
Their advantage	More suitable for preparation of hot meals – do not form trans fats
Where are they found	Animal meat, milk and dairy products, coconut and palm oil

***BMI** - body mass index. The ratio of body mass and square body height (kg/m^2).*

Response to monounsaturated fats

Monounsaturated fats, just like saturated fats, are non-essential – they are not necessary for survival, because our body knows how to produce them. However, they are very beneficial for our organism, because they visibly influence the increase of good HDL cholesterol, and simultaneously reduce the level of triglycerides and LDL, or weaken cholesterol. In addition, it has been proven that they reduce the risk for becoming overweight. Their increased consumption can, therefore, be very beneficial, especially, if we are the carriers of a certain variant of a gene. It has been discovered that people with a favourable variant of the APIPOQ gene can efficiently reduce their body weight with a sufficient intake of these fats. The sufficient intake of monounsaturated fats has enabled the carriers of favourable variant of the APIPOQ gene an approximately 1.5kg/ m^2 lower BMI. Therefore, if you are the carrier of a favourable variant of the APIPOQ gene, a slightly higher intake of monounsaturated fats, which will favourably influence your body weight, is recommended.

Your result: NORMAL RESPONSE

The analysis has shown that you are a carrier of a genetic makeup which determines a normal benefit of monounsaturated fats for your organism.

Recommendations

- Although you respond normally to monounsaturated fats, this does not mean that they are not important for your health.
- Monounsaturated fats, together with polyunsaturated fats, reduce the levels of LDL cholesterol and triglycerides, and increase the level of HDL cholesterol. This is why foods with a higher amount of unsaturated fats are known as generally healthy.
- A great source of monounsaturated fats are olives, avocado, hazelnuts, macadamia nuts and cashews, which can be added to many dishes, or can be used for making delicious spreads.
- You can find detailed advice concerning the recommended daily intake of monounsaturated fats in your diet plan, so we recommend that you follow it.

Useful information

Why we need them	Source of energy, growth, development, functioning of the heart and nervous system
Can our body produce them	Yes
Their influence	Visibly reduce LDL and triglycerides and increase HDL
Their disadvantage	Less suitable for preparing hot meals – form trans fats
Where are they found	Almonds, hazelnuts, walnuts, cashews, seeds, olive oil

"In monounsaturated fats, oleic acid (largely present in olive oil) is particularly beneficial for our health. Olive oil also contains many antioxidants and its use can protect you even against cardiovascular disease."

Monounsaturated fats *- an extremely beneficial type of fatty acids.* ***Triglycerides*** *- a form of fat storage. A high triglyceride level in the blood is not healthy and it is connected to numerous illnesses.* ***A more common (copy) of the gene*** *- DNA gene sequence which, on an analysed site, contains a nucleotide that is the most common in a population, and it, therefore, has a frequency higher than 50 percent.*

Response to polyunsaturated fats

Polyunsaturated fats are, unlike saturated and monounsaturated fats, essential for our body – our body desperately needs to get them from food, as it cannot produce them. They are vital for a healthy heart and brain function, as well as our growth and development. The most important are the groups of omega-3 and omega-6 fatty acids, whose ratio in our diet should be 1:5; but in a modern-day person, the ratio of omega-6 fatty acids is increasing, which is not very healthy. Even though polyunsaturated fats are very beneficial for our body, they have an even more positive effect for some people.

In a research study on which our analysis is based, it has been discovered that a certain variant of the gene PPAR-alpha can determine the relationship between polyunsaturated fats and triglycerides in the blood. It has been proven that people with a risk variant of the gene, and with an inappropriate intake of polyunsaturated fats, have a 20 percent higher triglyceride level compared to other people. And this can have an unfavourable effect on your health. High intake of polyunsaturated fats has completely levelled out these differences, and it is therefore so much more important for people with a risk variant of the gene to adjust their diet and increase the intake of polyunsaturated fats.

"Did you know that with all fat abundance of a typical diet, we are mostly suffering a fat deficiency? We are lacking polyunsaturated fats that are essential for adequate functioning of our cells. A simple way to improve this deficiency is by consuming mustard oil, which has a high content of polyunsaturated fats."

Your result: FAVOURABLE RESPONSE

The analysis of PPAR-alpha has shown that one copy of the gene is present in a rare variant, which causes you to favourably respond to polyunsaturated fats.

Recommendations

- Your body needs more polyunsaturated fats, so make sure that they are largely present on your menu.
- The most important are omega-3 fatty acids, which are many times overshadowed by omega-6 fatty acids. We advise that their ratio should not be higher than 1:5.
- Carefully follow your diet plan we reveal to you at the end of the chapter. In it, you will find many instructions. You will also learn about which daily intake of polyunsaturated fats is most suitable for you.
- When planning your menu, we recommend the use of nutrition charts, which will help you follow our recommendations.
- In case, on a certain day, you cannot consume enough polyunsaturated fats, you can decide for a food supplement.

Useful information

Why we need them	Source of energy, growth, development, the functioning of the heart and nervous system
Can our body produce them	No
Their influence	Visibly reduce LDL and triglycerides and increase HDL
Their disadvantage	Less suitable for preparation of hot meals – non-resistant to heat
Where are they found	Rapeseed oil, corn, flaxseed oil, pumpkin seed oil, fish oil and fish, spinach, peanuts

Polyunsaturated fats *- a very beneficial type of fatty acids. They include omega-3 and omega-6 fatty acids.* ***Essential fats*** *- plant fats, necessary for our body.* ***Rarer form (copy) of a gene*** *- DNA sequence of a gene which, on the analysed site, contains a nucleotide, which is rarer in the population, and it, therefore has a frequency lower than 50 percent.*

Response to carbohydrates

Carbohydrates are the most basic source of energy needed for physical activity of our body. Because of their taste, we sometimes call them sugars. Various diets have a very different attitude towards them: some diets are based on carbohydrates, while other recommend limiting them. Yet other ones recommend that we consume them separate from proteins and fats. Of course, such diets are not successful with all people, because they do not consider your genetic makeup. We, however, have done precisely that.

We have analysed the genes FTO and KCTD10, which determine the influence carbohydrates will have on your body. It has been discovered that people with a risk variant of the FTO gene, in case they do not consume enough carbohydrates, are 3-times more susceptible to becoming overweight, compared to people who are carriers of two common variants of the FTO gene. With an adjusted intake of carbohydrates, they can considerably eliminate this risk. On the other hand, the gene KCTD10 determines the relationship between the intake of carbohydrates and the HDL cholesterol level and with an inappropriate intake and a risk variant of the mentioned gene, the HDL cholesterol level can rapidly decrease.

Your result: UNFAVOURABLE RESPONSE

Your DNA analysis has shown that you are the carrier of two unfavourable copies of the KCTD10 gene, which determines that your body has an unfavourable respond to carbohydrates.

Recommendations

- Despite your unfavourable genetic makeup, there is no need to worry. It is only important that you limit your daily intake of carbohydrates.
- One of the effective ways to reduce your daily intake of carbohydrates is to prepare unseasoned boiled potatoes instead of whole grain rice – potatoes have fewer carbohydrates, which is surprising, but true.
- More detailed information concerning your optimal diet can be found at the end of the chapter, in your diet plan. In it you will also find all the information needed for preparing an optimal menu.
- For an easier and more effective preparation of menus we recommend a consistent use of nutrition charts.

"Apples, oranges and apricots after a meal can be a reason for discomfort. They contain the substance pectin that bounds water and swells. With some people it can lead to feeling bloated or belching."

Useful information

Why we need them	Source of energy, bone- and cartilage-building
Deprivation	Decrease of body and muscle mass, malnourishment, bad mood
Where can they be found	Cereal products (bread, cereals, pasta), vegetables, fruit

Carbohydrates *- apart from proteins and fats, it is the main macronutrient. It is the basic source of energy.* ***Types of fats*** *- in essence, we differentiate animal saturated fats and plant mono- and polyunsaturated fats.* ***HDL cholesterol*** *- good cholesterol. A desired level should be as high as possible.*

DIET TYPE

It is much easier to tell what is unhealthy in general for all of us, than to answer the question about what type of diet is most suitable for an individual. The reason for this is the genetic makeup, which determines the suitability of a specific diet plan for our body. This is precisely why one diet can be very successful for one person, but does not work for someone else, or it can even have a negative effect.

The diet that we recommend is not merely coincidental, but it is based on your genetic makeup. The diet based on your personal DNA analysis considers your individual characteristics and allows you to eat what your body truly needs.

Your diet: MEDITERRANEAN DIET WITH A CONTROLLED INTAKE OF CARBOHYDRATES

Considering the results of your analysis, it is evident that the most appropriate diet for you is the Mediterranean diet. The most characteristic of Mediterranean menus are fish, other seafood, nuts, seeds and olive oil, which all contain incredibly beneficial unsaturated fats, and the use of fresh Mediterranean herbs. Conversely, avoid industrial foods, prepared with plenty of preservatives, additives and trans fats. Also, pay attention not to put too much emphasis on carbohydrates, because an excessive consumption of them can have a negative impact on your health.

An optimal daily calorie intake

Your daily caloric intake, which is in accordance with your genetic profile, is presented in the chart below. Genes, namely, regulate the amount of energy that your body uses in resting, and this is why we were able to adapt our recommendations according to your genetic makeup. Do not forget to consider your daily physical activities, as the calorie consumption increases with physical activity, and it decreases on your less active days.

Age	Exclusively sitting activity with little activity in free time	An occasionally higher use of energy for walking and standing activities	Regular moderate physical activity	Intensive physical activity
	kcal/day	kcal/day	kcal/day	kcal/day
1 to 4	1000 *			
5 to 7	1400 *			
8 to 10	1700 *			
11 to 13	2000 *			
14 to 19	2030	2499	2967	3279
20 to 25	1997	2457	2918	3225
26 to 51	1896	2334	2772	3063
52 to 65	1775	2184	2594	2867
over 65	1705	2098	2492	2754

*** Independent of physical activity**

With the help of genetic analysis, we have also determined the percentage of daily calorie intake represented by saturated, monounsaturated and polyunsaturated fats, carbohydrates and proteins. The calories can be easily transformed into grams by using the following method:

- 1 gram of protein or carbohydrates is 4 kcal
- 1 gram of fat is 9 kcal

Example: 10 percent of monounsaturated fats in a daily intake of 2000 kcal is 200 kcal, which is approximately 22 grams (200/9) of monounsaturated fats.

YOUR RECOMMENDED DAILY PERCENTAGES OF BASIC NUTRIENTS		
Nutrient	*Your response*	*Daily intake %*
Saturated fats	NORMAL	10
Polyunsaturated fats	FAVOURABLE	10
Monounsaturated fats	NORMAL	10
Carbohydrates	UNFAVOURABLE	45-50
Proteins		20-25

"Did you know that there are more than 50 different diets? Annually, 25% of adults use one of these diets to loose ther excess weight, but the lost weight is most often quickly regained. The real solution lies in a permanent change in eating habits and lifestyle, which can be reached through our advice based on your genetic code."

Your recommendations

MEAT AND FISH

Eat fish three times a week. Quality canned tuna can be included. Occasionally, instead of fish, you can opt for scampi or mussels (clams).

You can get most of proteins, needed by your body, by eating fish and legumes, and it will, therefore, be enough to eat meat only once a week.

From meat we recommend lean meat, mostly poultry prepared on a grill, or various stews with vegetables and additionally enriched with herbs.

MILK AND DAIRY PRODUCTS

Milk is an important source of calcium, but you already consume enough of it with fish. It is especially recommended to consume dairy products when there are no fish on your menu.

On those days, you can have some yoghurt, refreshing sour milk, kefir or whey.

You can eat them separately, or combine them with fruit.

OILS, NUTS AND SEEDS

For preparing food use virgin olive oil or rape oil, since they contain a lot of unsaturated fats.

Combine your meals with nuts, and simultaneously reduce the portion of the main meal. This way, you will consume the required nutrients without increasing the calorie intake.

We recommend peanuts, pistachios, almonds, pine nuts, which will, undoubtedly, give your dishes a new flavour. These foods are a great source of energy, and two spoonfuls of specific seeds, or their mixture, a day will suffice.

LEGUMES, VEGETABLES AND STARCHY FOODS

Despite a greater emphasis on fish and other seafood, also various pasta (spaghetti, tortellini, ravioli) should often be present on your plate. More appropriate are those made of dark or whole wheat flour.

Often prepare yourself a salad with different vegetables, as, for example, tomatoes, peppers, cucumbers zucchinis, and eggplants.

These foods contain complex carbohydrates which give you an early feeling of satiety. This is favourable for your diet type because, this way, you will consume fewer carbohydrates.

Avoid bread with your main course – this way, you will additionally limit the intake of carbohydrates.

From this food group we recommend also broccoli, artichokes, white asparagus, fennel and olives.

FRUITS

We recommend plenty of fresh fruits, because they contain numerous vitamins and minerals that are essential for your body.

Every day, opt for an avocado, grapefruits, grapes, khaki, lemons, oranges, gooseberries, melons, apricots, peaches or have some watermelon.

These fruits contain a high percentage of water, and there is, therefore, no need to worry about consuming too many carbohydrates.

GENERAL RECOMMENDATIONS

If you wish, you can have 1 dl of red wine with your lunch or dinner. Wine contains resveratrol, an antioxidant important for our health.

Use natural spices. We recommend garlic, onion, basil, thyme, oregano, capers or green olives.

Add olive oil when the dish is almost finished, because, this way, it will retain the most of its beneficial substances.

Your meals should be moderate, and it is important that you do not overeat.

Instead of sweetened drinks or artificial juices, drink water or diluted fresh squeezed fruit juice, because, this way, you will limit the use of sugar.

Limit the use of white flour for thickening sauces. Also, replace the use of white bread with dark or whole wheat bread.

Prepare your food on a grill, where the use of oil is not needed.

Regarding the consumption of milk and dairy products, consider the results and recommendations of the Lactose Metabolism analysis on page 52.

FACTORS INFLUENCING METABOLISM

HOW MUCH DO GENES INFLUENCE YOUR METABOLISM AND HEALTH

WITH AN APPROPRIATE DIET YOU CAN PREVENT NUMEROUS HEALTH COMPLICATIONS

Cholesterol is a substance which is normally produced by our body, and additionally it is also found in food. We differentiate good HDL cholesterol and bad LDL cholesterol. In addition to cholesterol, our health is also influenced by blood sugar level, which has to be as low as possible, and triglycerides, which, if increased, have the same effect as bad LDL cholesterol. Inappropriate levels of any of these components can quickly cause cardiovascular complications, increased blood pressure, obesity and diabetes. This is, in a way, prevented by complex body mechanisms which are fighting against the external influences (the influence of diet, smoking, alcohol, etc.) and are trying to maintain their optimal level. How good they are at this, mostly depends on our genes. Therefore, people with unfavourable genes have to be so much more careful about their diet and lifestyle.

In this chapter, you will learn what levels of LDL and HDL cholesterol, triglycerides and blood sugar are determined by your genes. In case of unfavourable genes, it is really important to appropriately adjust your diet and achieve a better health.

Chapter contents

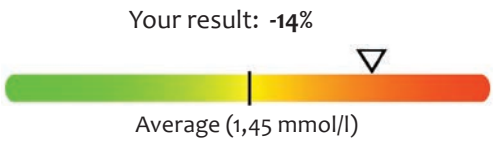
HDL (good) cholesterol

HDL cholesterol, also known as good cholesterol, is beneficial because it reduces the levels of LDL cholesterol and protects against cardiovascular disease. The HDL particles carry cholesterol from the veins towards the liver, where it is excreted from the body. This is the reason why high levels of HDL cholesterol are an important health factor. While it is true that we risk cardiovascular disease, if our HDL cholesterol level drops below 1mmol/l, the HDL level between 1 and 1,5 mmol/l is determined as average (normal). However, a level, higher than 1,5 mmol/l, already protects us from cardiovascular disease. Therefore, the more HDL cholesterol we have, the better it is for our health. In addition to diet and lifestyle, HDL cholesterol level is influenced also by our genes. We analysed the genes with the greatest impact on HDL cholesterol. In this way we can effectively determine the level of HDL cholesterol that is determined by your genes.

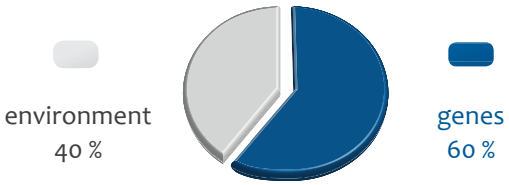
Your result: LOWER LEVEL

You have a genetically determined lower level of HDL cholesterol. We have analysed several genes and discovered that you have variants of genes, which reduce the HDL cholesterol level.

Your result compared to the average



Genes vs. environment



Recommendations

- You are the carrier of almost the most unfavourable genetic makeup but, regardless of this, you can, by conscientiously following our recommendations, contribute significantly to the increase of the HDL cholesterol level, or make sure that it does not drop below 1 mmol/l.
- We recommend that you eat more fibre rich food. Fibres bind cholesterol and prevent its absorption into the blood stream, consequently improving the ratio of HDL and LDL cholesterol. Good sources for fibre are predominantly legumes (beans, peas, broad beans), bananas, whole wheat cereal, hazelnuts and almonds.
- Have some blueberries or blueberry juice after a meal. Blueberries contain a substance called resveratrol, which is an antioxidant that increases the level of good HDL cholesterol.
- If you are a smoker, give up this habit! If you do not smoke, avoid passive smoking, as it also reduces the HDL cholesterol level.

Useful information

Lay term	Good or beneficial cholesterol
Optimal state	As high as possible (above 1 mmol/l)
Why it decreases	Genetic tendency, consumption of trans fats, not enough exercise, stress, smoking,
Why is it beneficial	Inhibits LDL oxidation and eliminates it from arteries

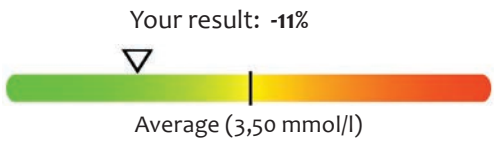
HDL cholesterol *- good cholesterol. A desired level should be as high as possible.* ***Gene*** *- Part of the DNA sequence that carries the information for the formation of protein. Genes are inherited from parents by their descendants, and give information, which is needed for the formation and development of an organism.*

LDL (bad) cholesterol

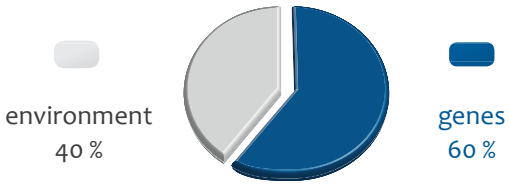
LDL cholesterol, also known as bad cholesterol, is one of the two best-known cholesterol types. It is called the bad cholesterol because of the fact that too much LDL cholesterol is harmful for our health. It slowly accumulates in the inner walls of the arteries, which supply the heart and the brain, and forms thickenings which narrow the arteries and make them less flexible. This phenomenon is called atherosclerosis. When the state does not improve for a longer time, a clot forms and prevents the blood flow in the artery, which can lead to a heart attack or a stroke.

An optimal LDL cholesterol level is below the value 3 mmol/l, which can be measured with a blood analysis. In addition to diet and lifestyle, also your genetic makeup importantly influences the LDL cholesterol level. In our analysis, we have included genes which are the most closely connected to the regulation of LDL cholesterol and have a great influence on it. The combination of all the analysed genes gives reliable information about the level of LDL cholesterol determined by your genes.

Your result compared to the average



Genes vs. environment



"Our level of LDL cholesterol is significantly affected by the hormone melatonin, produced in the skin. It is formed exclusively at night; therefore sufficient sleep can help reduce your LDL cholesterol. Some melatonin is present also in mustard seeds, almonds and sunflower seeds."

Your result: LOWER LEVEL

The genetic analysis has revealed that on the majority of relevant DNA sites you have genes, which reduce the LDL cholesterol level. Such variants of genes determine a lower LDL cholesterol level.

Recommendations

- Despite a favourable genetic makeup, we recommend that you follow our recommendations, which will help you maintain a suitable LDL cholesterol level below 3 mmol/l. Genes, however, only determine your predispositions. The actual state of LDL cholesterol depends mostly on you.
- Pay attention to food which contains cholesterol. Limit it to 300 mg per day, which adds up to, approximately, one egg and a half. It is good to remove the yolk (egg white does not contain cholesterol), and eat lean meat.
- Try to limit the intake of margarines, fast food and fried food, because such food increases the LDL cholesterol level.
- We recommend that you include foods such as blueberries, raspberries, cranberries or black currant into your diet. These foods contain ellagic acid, which favourably influences the LDL cholesterol.
- Carefully follow our recommendations considering saturated fats, since an inappropriate intake of these fats can influence the increase of LDL cholesterol level.

Useful information

Lay term	Bad cholesterol
Optimal state	As low as possible (below 3 mmol/l)
Why it increases	Fatty foods, high calorie intake, diabetes, genetic tendency, too little exercise, stress, smoking, alcohol
Why is it harmful	Hardening of the arteries, interrupted blood flow, clogging of the arteries, heart attack, stroke

LDL cholesterol *- harmful for our health and this is why its level should be as low as possible.* ***Artery*** *- a blood vessel that carries blood away from the heart. The main artery is the aorta.*

Triglycerides

Triglycerides are actually a type of fat where our body stores energy. They are the most common fats in our body, and their level can quickly become too high. An acceptable level of triglycerides in the blood is less that 1.7 mmol/l, but it is often exceeded. The most common cause for this is a combination of unfavourable genes, an unhealthy diet, and an inappropriate lifestyle. People with a high triglyceride level (this condition is called hypertriglyceridemia) have an increased risk of a heart attack, and this is why it is crucial for our health to keep the triglyceride level as low as possible.

In the following analysis you will learn the level of triglycerides determined by your genes. The most favourable genes encode a 70 percent lower triglyceride level, whereas the least favourable genes determine a 60 percent higher triglyceride level. It is crucial for carriers of less favourable genes to try to follow our recommendations.

Your result: HIGH LEVEL

The analysis has shown the presence of genes which determine a high triglyceride level, and this is unfavourable.

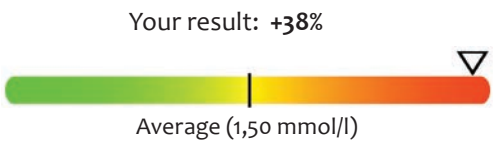
Recommendations

- Your genes determine a high triglyceride level, and we advise that you try to follow our recommendations to ensure that the level of triglycerides in your blood is lower than 1.7 mmol/l.
- We do not recommend the use of fat spreads such as butter, cheese spreads and patés. They contain saturated fats, which increase the triglyceride level.
- Try to limit the intake of sugar, desserts and artificially sweetened beverages. Foods that increase the blood sugar also potentially increase the triglyceride level.
- We also do not advise starving, which even further facilitates the increase of triglyceride level.
- Avoid stressful situations because stress is one of the main factors influencing the increase of triglyceride level.
- We recommend the use of unrefined, wholegrain flour as it contains fibre, which binds the excess fat.
- Consider soy products, which have an effect against triglycerides (at the same time, they reduce the LDL cholesterol). We recommend soy proteins, soy milk, tofu or miso.
- We recommend regular physical exercise, which represents a powerful factor in helping to reduce the triglyceride level.

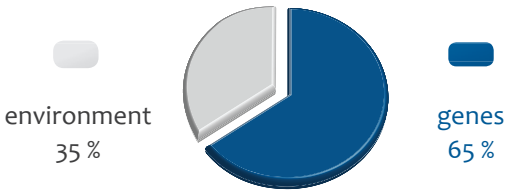
Useful information

Optimal state	As low as possible
Why they increase	Genetic predisposition, diabetes, fatty foods, lack of exercise, stress, smoking, alcohol, added sugars
Why are they dangerous	Atherosclerosis, a heart attack, a stroke
Where are they found	Margarine, butter, lard, meat, salamis, whole milk and fatty cheese

Your result compared to the average



Genes vs. environment



"Why is it harder to lose fat stores than muscle mass? Proteins that make up our muscles have a fifty percent lower energy level than triglycerides. Practically speaking, this means that triglycerides are twice as light. Therefore, more effort is needed to lower triglyceride levels and lose weight at the expense of excess fat tissue."

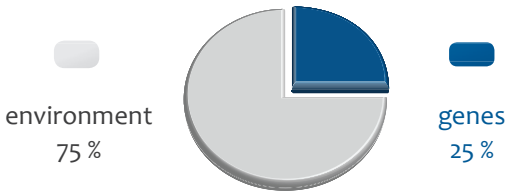
Triglycerides *- a form of fat storage. A high triglyceride level in the blood is not healthy and it is connected to numerous illnesses.* ***Fats*** *- important constituents and an energy source, which contains twice the amount of energy of carbohydrates or proteins.*

Blood sugar

After we consume carbohydrates, which are the most important source of energy, our body breaks them down into simple sugars, which are then absorbed into the blood stream. The blood sugar level rises and special mechanisms have to make sure that it quickly drops to a basic level. In some people, this regulation in not adequate, and the blood sugar level drops to a basic level much slower, or it stays permanently increased. A certain influence, apart from diet, is also assigned to our genetic makeup. In various studies scientists have identified the responsible genes, and now, with their analysis, we can determine whether you have to pay more attention to your diet because of the unfavourable variants of these genes. Certain mutations can occur in these genes, which influence the processes of blood sugar regulation, and these deficiencies can lead to a permanent increase of blood sugar. In our analysis, we have included the most reliable genes which have a great influence, and which represent an efficient tool for predicting your blood sugar level, determined by your genes.

Your result compared to the average

Genes vs. environment



Your result: AVERAGE LEVEL

Your genes determine an average blood sugar level, which is on the verge between favourable and unfavourable. You have variants of genes present which determine an increase of blood sugar, as well as those that reduce blood sugar.

Recommendations

- Your genetic makeup is not the most favourable one, but your diet is crucial for regulating blood sugar, thus with it you can ensure an optimal blood sugar level, which is below 5.5 mmol/L.
- We recommend that you put foods on your menu which contain more zinc, since it helps to regulate blood sugar. We recommend, for example, tuna, low-fat cheese, whole wheat bread or unmilled rice.
- Try preparing tea out of bean husks, because it has antidiabetic properties (it protects against the increase of blood sugar).
- You can also reduce your blood sugar by adding less sugar to your food (coffee, doughnuts, and biscuits). It is even better to stop adding sugar altogether.
- Use lemon juice regularly, because citric acid in lemons reduces blood sugar level.

Useful information

Why the increase	Genetic tendency, obesity, added sugars, too little exercise, stress, high blood pressure
Why is it dangerous	Atherosclerosis, heart attack, stroke, weakened immune system
How to reduce it	Dieting, regular physical activity, food with low glycaemic load

Absorption *- taking in, ingestion.* ***Carbohydrates*** *- apart from proteins and fats, it is the main macronutrient. It is the basic source of energy.*

THE REQUIREMENT OF NUTRIENTS

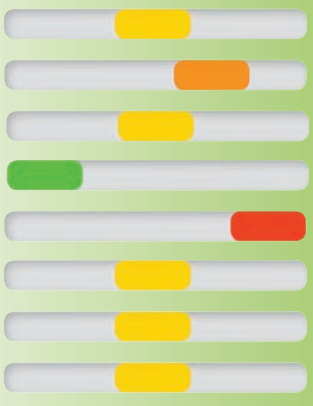
WHICH VITAMINS AND MINERALS DOES YOUR BODY NEED

MICRONUTRIENTS PLAY AN IMPORTANT PART IN YOUR HEALTH

Micronutrients, which include vitamins and minerals, are vital for our health. They are essential for the functioning of our organism; they improve our well-being and prevent many diseases. Their daily requirements are determined by numerous factors, and among them is also our genetic makeup. It determines which vitamins and minerals we have to consume in an increased amount, or vice versa, and which of them we have in sufficient amounts and we simply have to maintain their levels. We can get almost all of the vitamins and minerals with regular food. However, this can be slightly more difficult in case we are prone to the lack of them. In such cases, food supplements are a good option.

In this chapter, we will reveal to you what levels of vitamin B complex, vitamin D and minerals, such as iron and potassium, are determined by your genes. In addition, you will learn how sensitive you are to kitchen salt or sodium, and what bone density is determined by your genes. The latter can be specifically adjusted with an appropriate intake of vitamins and minerals.

Chapter contents



Vitamin B6

Vitamin B6, also known as pyridoxine, has numerous functions which are extremely important for our health. More than 100 enzymes, involved in the metabolism of fats, need it for their function, and it is crucial for red blood cell metabolism and for the functioning of the nervous and immune system. All of this confirms its key role in achieving optimal health. Some people are genetically prone to having a lower level of vitamin B6 in their body, which also, among other things, depends on the variant of the ALPL gene. In the study, on which this analysis is based, people with an unfavourable copy of the ALPL gene had an approximately 20 percent lower level of vitamin B6. People with two unfavourable copies of the gene ALPL gene had, in comparison to people with two copies of favourable genes, up to a 40 percent lower level of vitamin B6. The reason for such differences is less effective absorption of vitamin B6 in people with an unfavourable variant of the ALPL gene. As a result they have a higher requirement of vitamin B6.

Your result: AVERAGE LEVEL

You have one favourable and one unfavourable copy of the ALPL gene. Compared to people with two favourable copies, you have a 20 percent lower level of vitamin B6. Approximately 50 percent of people have such a genetic makeup.

Recommendations

- Your genotype is not optimal and we recommend that you increase the intake of vitamin B6.
- Make sure that you consume 1600 mcg of vitamin B6 daily.
- Slightly more vitamin B6 can be found in lamb, turkey meat, mackerels, bananas, broccoli, spinach, buckwheat bread and peanuts.
- Use nutrition charts to follow our recommendations, and you will see that vitamin B6 is widely represented in different foods. Choose food which suits you the most, and is also in accordance with the recommendations of your diet plan.

Useful information

Why we need it	Fat metabolism, appropriate functioning of the nervous system, a healthy skin
Effects of the lack	Muscle cramps, disruption in the functioning of the nervous system, skin changes
Where is it found	Yeast, liver, legumes, fish, whole wheat cereal

Enzyme *- a protein involved in chemical processes in the body. Its purpose is to reduce the activation energy required for chemical reactions and thus facilitating their course. This enables faster conversion of substrate to product, for example, conversion of starch into glucose.* ***Metabolism*** *- process of the breakdown, or formation of new substances in the body.*

Vitamin B9

Vitamin B9, also known as folate, or folic acid, is a water-soluble vitamin, which is crucial for an adequate metabolism (an essential component of enzymes), healthy blood, DNA synthesis, and it is also an important factor which reduces the risk of cardiovascular disease.

One of the best-known and most important enzymes, which ensure an appropriate B9 vitamin level, is MTHFR. A mutation can occur within the gene that determines this enzyme. This can greatly influence the vitamin B9 level, which has been confirmed by many studies. MTHFR enzyme is sensitive to temperature and thus less active in people who are carriers of an unfavourable variant of the gene, resulting in lower vitamin B9 level. It has been discovered that every unfavourable copy of the MTHFR gene markedly reduces the vitamin B9 level. In case you are the carrier of one of the unfavourable copies of the gene, it is highly recommended that you adjust your diet to achieve optimal health.

"Vitamin B9 is called also folic acid. The name is a derivative of the Latin word folium, meaning leaf. No wonder, since most Vitamin B9 is also in leafy vegetables. Because our body cannot produce folic acid, the consumption of leafy vegetables is highly advisable."

Your result: LOWER LEVEL

You are the carrier of one favourable and one unfavourable copy of the MTHFR gene, and your enzyme activity is, consequently, 40 percent lower, which determines a lower vitamin B9 level. Approximately 43 percent of people have such a genetic makeup.

Recommendations

- You have a less favourable genetic makeup which determines a lower vitamin B9 level. However, there is no need for worry, because you can significantly contribute to your final state by choosing foods which contain slightly higher amounts of vitamin B9.
- We recommend that, with the help of nutrition charts, you prepare meals which will enable you to consume 500 mcg of vitamin B9 per day.
- High amounts of vitamin B9 can be found in fruits (dried apricots, apples, oranges, melons, kiwi) and vegetables (lentils, carrots, sauerkraut, leek, broad beans, broccoli).
- For example, have some fresh orange juice in the morning, and include leek soup in your lunch.

Useful information

Why we need it	Red blood cell maturation, DNA and RNA synthesis
The effects of the lack	The reduction in number of blood cells
Where is it found	Green leafy vegetables, fruit, beer yeast

DNA *- a molecule, found in the cell nucleus, which carries the instructions for the development of an organism. Human DNA is encoded by three different nucleotides and has the shape of a double coil. This means that two chains of DNA, which are anti-parallel and coil around one another.*

Vitamin B12

Vitamin B12, also known as cobalamin, has a central role in the functioning of the entire nervous system, which is important especially for cognitive abilities. Vitamin B12 is involved in the synthesis of DNA and red blood cells, as well as the synthesis of fatty acids. Vitamin B12 blood level below 200pg/ml indicates its lack. A healthy diet gives the body sufficient amounts of vitamin B12. The lack of it, however, is common in vegetarians, vegans, older people and people who are genetically prone to the lack of vitamin B12.

Numerous studies have confirmed the influence of gene FUT2 and its mutation on vitamin B12 level. The research that we rely on has proven that every unfavourable copy of the FUT2 gene reduces the level of vitamin B12 level by 10 percent. As a consequence, people with the least favourable genetic makeup have a 20 percent lower vitamin B12 level.

Your result: AVERAGE LEVEL

You have one favourable and one unfavourable copy of the FUT2 gene. Approximately 49 percent of people have such a makeup, and it determines that you have 10 per cent less vitamin B12 compared to people with two favourable copies and 10 per cent more compared to people with two unfavourable copies of the FUT2 gene.

Recommendations

- You can improve the level of vitamin B12 with an appropriate diet. You should slightly increase its intake by choosing foods with more vitamin B12.
- We recommend that you consume 4 mcg of vitamin B12 per day.
- Plant foods do not contain vitamin B12 and we, therefore, recommend all kinds of fish, clams, lamb, milk and dairy products.
- To additionally diversify your food, you can include seaweed, which is also a good source of vitamin B12.
- If you are a vegetarian, we recommend taking vitamin B12 food supplements.

Useful information

Why we need it	Red blood cell maturation, the functioning of the nervous system, DNA synthesis
The effects of the lack	Anaemia, psychological disorders, bad eye sight
Where is it found	Beef, pork, offal, eggs, milk and dairy products

"Did you know that the elderly have lower levels of vitamin B12? And this is supposed to be one of the reasons, why our memory fades with increasing age. It is very likely also that vitamin B12 deficiency plays an important role in the development of Alzheimer's disease, therefore intensive research is on-going in this field."

Mutation *- a random change in the genetic code material. Deletions are mutations where nucleotides on a part of genetic material are erased (deleted), insertions, where there is an insertion of nucleotides on a part of genetic material, and substitution, where nucleotides are replaced with other nucleotides.*

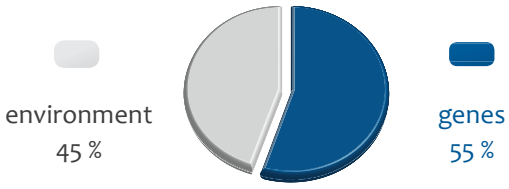
Vitamin D

Vitamin D is an important vitamin, which enables the absorption of calcium from the intestines into the blood – vitamin D, allows the calcium to be incorporated into our bones, and is therefore an important factor which enables healthy bones. The level of vitamin D depends on our diet and the exposure to sun, as well as on our genetic makeup.

In a study, started in 2010, vitamin D levels were measured for 33 000 people and several genes were analysed for their influence on vitamin D uptake. Three genes, that slightly varied between people and influence vitamin D levels, were identified. The mutation in the gene GC had the greatest influence, and people with two unfavourable copies of the gene had a 20 percent lower vitamin D level. Genes DHCR7 and CYP2R1 have also been analysed in addition to GC, and they had an equally important influence on the vitamin D level. The three genes mentioned have been included in our analysis and, based on this analysis, we can effectively predict the level of vitamin D determined by your genes.

"Wondering why the analysis of vitamin D mentions magnesium? Sufficient levels of magnesium in the blood are essential to convert vitamin D into its active form. Magnesium also plays an important role in the influence of vitamin D on the immune system."

Genes vs. environment



Your result: HIGH LEVEL

You are the carrier of a favourable DNA sequence, which determines a high vitamin D level.

Recommendations

- Your genetic makeup protects you from the lack of vitamin D. To maintain this state, we suggest that you follow our recommendations and maintain its intake.
- We recommend that you consume 20 mcg of vitamin D with food per day.
- Enough vitamin D can be found in milk and dairy products, for example, yoghurt and cottage cheese.
- Apart from diet, the exposure to sunlight also significantly influences the vitamin D level. However, you should not exaggerate with sunbathing, as short walks will be completely sufficient.
- We suggest you to use nutrition charts for making it easier to follow our recommendations on daily vitamin D intake.

Useful information

Why we need it	Calcium absorption from intestines into the blood, the formation and regeneration of bones
The effects of the lack	Incorrect growth and healing of bones, rickets, occasional muscle cramps
Where is it found	Milk, beer yeast, fish oil, sardines, salmon, tuna, liver

Absorption *- taking in, ingestion.* ***Gene*** *- Part of the DNA sequence that carries the information for the formation of protein. Genes are inherited from parents by their descendants, and give information, which is needed for the formation and development of an organism.*

Iron

Iron is a mineral which is needed for a healthy blood and an adequate functioning of numerous enzymes. Although the problem is mainly its lack, some people actually have an excess of iron. In order for our organism to avoid the two extremes, the iron level in our body is carefully regulated.

One of the genes that are in charge of the appropriate iron level in our body is the gene HFE. In some people it is dysfunctional, and this results in a too high iron level. According to scientific articles, 80 percent of people that have a too high iron level have an unfavourable variant of the HFE gene present on both of their chromosomes. However, among these, only 28 percent of men and 1 percent of women actually developed signs of excess iron accumulation in the body. This information proves that apart from the high importance of genes, our diet also plays a vital role, since it determines 70 percent of the final iron level.

Your result: LOWER LEVEL

Our analysis has shown that you have unfavourable copies of the analysed genes present, which determines a genetic tendency for a lower iron level.

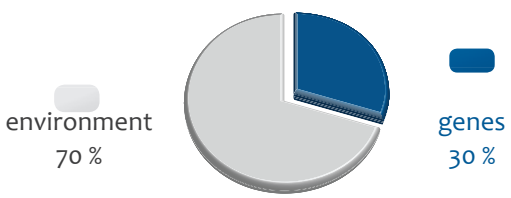
Recommendations

- Your genotype determines a lower iron level, which is unfavourable, and we advise you to increase your daily iron level to 22 mg.
- We recommend pumpkin seeds, pistachios, cashews, poppy and sesame seeds, rice bran and clams, where the biggest amount of iron is found.
- In order to accurately follow your daily requirements, we recommend a regular use of nutrition charts, in which you should check which foods contain plenty of iron.
- In addition, we recommend eating carrots, apricots, grapes and tomatoes, which contain beta-carotene and vitamin C. The latter actually increases the absorption of iron into the body.
- You should also consider food supplements, which contain iron in many forms.

Useful information

Why we need it	Oxygen supply to the body, enzyme function
The effects of the lack	Anaemia, fatigue, weakened immune system
Where is it found	Pork, beef, liver, red meat, mussels, egg yolk, nuts, beans, oatmeal

Genes vs. environment



Chromosome *- a stick-like form of DNA molecule, where there are present hundreds or thousands of genes. In the nucleus, there are 22 autosomal chromosome pairs, and 2 sexual chromosomes. In addition to the molecules of DNA, there are also proteins (mostly histones) present, around which the DNA is coiled. Such coiling and further formation results in a tightly formed chromosome, which takes up less space than an uncoiled molecule.*

Sodium (salt)

Sodium is the main ingredient of kitchen salt, and it is also present in many other foods – predominantly those of animal origin. It is responsible for a normal functioning of the nervous system and the muscles, as well as for maintaining the osmotic pressure and the regulation of the amount of water in the body. Our body usually does not have problems with the lack of sodium, and food with less sodium is therefore considered the healthiest. It has been proven in many studies that an excessive intake of sodium (salt) is an important health risk factor. Sodium actually increases blood pressure, and this leads to other medical conditions. In the studies, where they attempted to gradually decrease salt intake, the systolic blood pressure (the pressure when the heart pushes the blood through arteries) in adult population dropped by 5 percent in average, which reduced the occurrence of stroke and cardiovascular disease by 24 percent and 18 percent, respectively. It is, therefore, recommended to limit salt intake. This is much more important for people whose blood pressure is even more sensitive to sodium or kitchen salt due to their genetic makeup.

"Throughout history salt has been of great importance, since it was more important than gold for survival. It was a privilege of kings and the upper strata of society. It even was even used in prophecies and foretelling destiny. Metaphorically it symbolizes devotion and loyalty, so even today in many places hospitality to the guests is shown by sharing bread and salt."

Your result: AVERAGE SENSITIVITY

Your sensitivity to sodium is average; however, you are more sensitive compared to people with the most favourable genetic makeup.

Recommendations

- We recommend low sodium foods, which means that you should try to limit your daily sodium intake to not more than 1200 mg.
- Pay attention to food labels: choose foods that do not have added salt.
- Instead of improving the taste of food with salt, use different herbs and spices. We recommend lemon, bay leaf, nutmeg, coriander, dill, garlic or mint.
- It is also important that you drink 2 litres of fluid daily. This way the excess salt will pass out of your body.
- Consider also the recommendations from the "Potassium" analysis, because its lack also influences the increase of blood pressure.

Useful information

Why we need it	Normal functioning of the nerves and muscles, influence on the blood pressure, carbohydrate digestion
The effects of the lack	Dehydration, disrupted digestion of carbohydrates, muscle cramps
Where is it found	Salt, mineral water, cheese, mussels, red beet, meat

Osmotic pressure *- pressure needed for the cell to get water.*

Potassium

Potassium is, right after calcium and phosphorus, the most widespread mineral in our body. It is important for maintaining a regular heartbeat, the muscle contraction and water regulation in the body. Although, in principle, it is not difficult to enrich our diet with potassium, its lack in people is very common. This is unfavourable, because the lack of potassium increases blood pressure.

In a scientific research on which our analysis is based it has been shown that a variant of the WNK1 gene influences the potassium level in our body. WNK1 is a gene which regulates the transport of potassium, and its link to the potassium level is, therefore, not surprising. Above mentioned research has shown that each unfavourable variant of the WNK1 gene reduces the potassium level by approximately 5 per cent. People with the least favourable genetic makeup have, therefore, a 10 per cent lower potassium level.

Your result: AVERAGE LEVEL

You have one favourable and one unfavourable copy of the WNK1 gene, which determines an average potassium level. Approximately 45 percent of people have such a genetic makeup.

Recommendations

- Your genes determine an average potassium level and we recommend that you slightly increase its intake.
- We recommend that you consume with food at least 3150 mg of potassium per day.
- Eat mainly nuts (Brazilian cashews, pistachios) and vegetables as for, example, dandelion, lamb's lettuce, kale and beans.
- Potassium is present in foods of all food groups and, you will not find it difficult to fulfil the daily requirements by eating diverse and fresh food.

Useful information

Why we need it	Nervous impulse transfer, muscle contraction, maintaining an appropriate blood pressure
The effects of the lack	Loss of fluid, weak blood flow, fatigue, weakened muscles, disrupted heart rhythm
Where is it found	Oranges, bananas, avocado, melons, broccoli, tomatoes, dried apricots, raisins, fish, carrots

"Potassium is the first item, which was obtained by electrolysis, namely potassium hydroxide. Its name derives from the Arabic word, which means the plant ash. Plant ash includes potassium carbonate, which is also used in the production of soap."

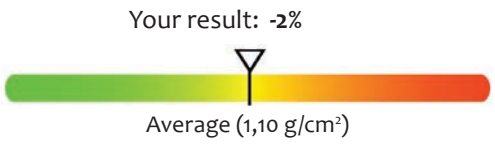
A more common (copy) of the gene *- DNA gene sequence which, on an analysed site, contains a nucleotide that is the most common in a population, and it, therefore, has a frequency higher than 50 percent.* ***Rarer form (copy) of a gene*** *- DNA sequence of a gene which, on the analysed site, contains a nucleotide, which is rarer in the population, and it, therefore has a frequency lower than 50 percent.*

Bone density

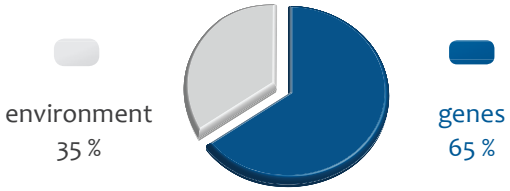
By measuring bone density, we define the vitality of our bones. A decreased bone density is most typical for older people, but also younger people can encounter problems. We know two groups of factors which influence bone health. We have no influence on factors such as age, health condition, medications, health therapies and genetic design, but we can contribute to the health of our bones with regular physical activity and an appropriate diet. An appropriate diet and lifestyle are important already in the early age, because they contribute to maintaining bone density later, at an older age.

To date, many genes that determine bone strength have been discovered, and an understanding of mechanisms with which these genes influence bone structure is improving. You can read more about the genes included in the analysis at the end of your personal DNA analysis in the chapter ''Analysed genes''.

Your result compared to the average



Genes vs. environment



"The most important method for measuring bone density is bone densitometry, which is performed on the basis of X-rays. Measurements are performed on the lumbar spine and one hip, and in people before the age of 50 also on the wrist. The examination is a safe and simple, and it is conducted in only a few minutes."

Your result: AVERAGE BONE DENSITY

The analysis of genes responsible for bone strength has shown that you have favourable as well as unfavourable genes present, which determines an average bone density.

Recommendations

- In addition to your genetic makeup, appropriate physical activity and an appropriate diet influence bone density, and we advise you to follow our recommendations.
- Calcium is most crucial for healthy bones, and we, therefore, recommend that you consume 1100 mg of calcium daily.
- Enough calcium can be found in chicken and turkey liver, dried figs, dandelion and sesame seeds. The latter contain almost 6-times more calcium than can be found in milk.
- Mineral water can also be a source of calcium. If you do not like milk, bear in mind that 1 litre of mineral water contains as much calcium as two glasses of milk.
- We recommend that you follow the instructions from the "Vitamin D" analysis, because vitamin D is crucial for the absorption of calcium from the intestines into the blood.
- We recommend that you eat broccoli, cabbage and black currant. Such foods contain a lot of vitamin C, which is important for collagen synthesis (organic part of bones).

Useful information

An unfavourable influence on bones	Smoking, alcohol, excess weight, soft drinks
A favourable influence on bones	Exercise, a healthy diet, sunbathing, calcium, magnesium, manganese, vitamin K

EATING HABITS

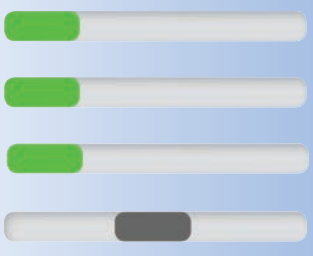
IMPORTANT INFLUENCES ON YOUR EATING HABITS

ALSO UNHEALTHY EATING HABITS CAN BE INHERITED

Our health is directly related to our eating habits. Skipping meals, especially breakfast, eating too much candy, eating oversized meals and excessive sweetening of foods are common phenomena in today's society. On one hand, there is a characteristic excessive calorie intake which results in weight-gain, and on the other, there is unhealthy dieting with crash diets which do not have the right effect.

Undoubtedly, our eating habits are also greatly influenced by the environment that we live in. It is full of stress and haste, and such an environment prevents us from developing healthy eating habits. However, eating habits are not merely the consequence of the environment, nor are they completely an individual's free choice. The truth in the matter is that, apart from the environment, it is also our genetic makeup that influences our eating habits.

Consumption of sweet treats
Insatiability and hunger
Sweet taste perception
Bitter taste perception



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Consumption of sweet treats

Have you ever noticed that some people opt for sweet treats more often than others? Or, perhaps you are asking yourself why it is precisely you who finds it hard to resist sweet treats during the day? Perhaps it is not only your decisions that are to blame, because it has been discovered in a recent study that also one of your genes is responsible for this. Scientists have discovered that a tendency for sweet treats can be predicted from a genetic makeup of an individual. It has been proven that the gene ADRA2A is responsible for this characteristic, as it is involved in the transfer of messages to the brain, where the information from the environment is appropriately processed and interpreted. More than 1 000 people have participated in the research, and they had to record all the food they had consumed over an extended period of time. It has been proven that people with an unfavourable ADRA2A gene variant reach for sweet products much sooner than those who do not have this variant.

Your result: LOWER TENDENCY

You have one favourable and one unfavourable copy of the ADRA2A gene present, determining a lower tendency for sweet treats. Approximately 42 percent of people have such a genetic makeup.

Recommendations

- Your genotype is favourable, as it protects you from too strong desire for sweet treats.
- If there are still days when you cannot resist them, we recommend that you stick to the following recommendations.
- When you are overpowered by the urge to have something sweet and you are at home, clean your teeth immediately. This will discourage you from eating sweet food, and if you eat it anyway, it will have an unpleasant taste.
- Instead of unhealthy vices choose healthy fruits, which also contain a lot of sugars, but your body burns them more slowly.
- Great substitutes for sweet vices are also rice waffles covered with honey or yoghurt.
- If you will successfully fight your sweet cravings for a couple of times, this urge will start to decline.

"Make a simple test. Put a small amount of sugar on your tongue. At first, you'll feel the sweet taste, which, after several repetitions of this test will become less definite. Is not this proof that you can limit your consumption of foods containing white sugar?"

Insatiability and hunger

Satiety can be described as the feeling of a full stomach after a meal, while hunger is the feeling of the need for food. Scientists have discovered the link between the feeling of satiety and the gene FTO. This is a gene known to influence the individual's body weight (possibly through the detection of satiety). It has been proven in the scientific research that the carriers of one unfavourable copy of the FTO gene reach the feeling of satiety two times harder, while the probability of carriers of two unfavourable copies of the gene to reach the feeling of satiety is four times smaller compared to people with two favourable copies. People who find it harder to reach the feeling of satiety usually eat more, than those with a normal feeling of satiety and often without reaching the desired feeling.

Hunger is also a complicated mechanism which is set in motion when there is a lack of food in the body. Namely, it is regulated by a part of the brain, called hypothalamus. In addition to body weight, amount of sleep, food and other environmental factors, also the genetic makeup influences the detection of hunger. It has been discovered in a study that people with an unfavourable NMB gene variant are almost two times more prone to feeling hunger than people who do not have this variant of the gene.

Your result: LOWER TENDENCY FOR INSATIABILITY AND HUNGER

The analysis has shown that you do not have any problems with the feeling of satiety as you are the carrier of two favourable copies of the FTO gene. Your feeling of hunger is also normal, as you have two favourable copies of the NMB present.

Recommendations

- Your genes are favourable, since they determine that you are less insatiable and you feel hunger less intensively compared to the majority of people.
- We advise you to eat foods with more fibres on certain days when you still find yourself constantly hungry and have difficulties becoming full. Fibres are digested longer, and they contribute to the longer feeling of satiety.
- Good source of fibres are, mostly, various vegetables, for example, legumes (beans, peas, broad beans).
- When buying wheat foods, vegetables and packed dried fruits read the food labels and check how many fibres a certain product contains.
- Preparing several smaller meals during the course of the day is a great preventive measure. The period between meals will be shorter, and you will, therefore, decrease the feeling of hunger.

"An uncontrollable desire for food despite a full stomach shows that actually you're not hungry. For many people food represents solace and situations of emotional instability, stress and boredom often trigger the desire for food. It is possible that you are not hungry, but your body is dehydrated! Many people confuse feeling thirsty for hunger, when in fact they could quench their "hunger" with a glass of water."

Hypothalamus *- is cherry-size part in the middle of the brain, and it is the centre off all information concerning endocrine hormones.*

Sweet taste perception

Tasting is a process in which also smell and sight play an important role, but the main organ for tasting is actually the tongue. Tongue is covered with numerous taste buds which contain taste receptors. When they come in contact with a certain substance, a signal is transmitted to the brain, which then tells us what the taste of the substance is. Based on this we differentiate four basic tastes: sweet, salty, sour and bitter.

An important gene which determines the intensity of the perception of sweet taste is the gene SLC2A2. Scientists have discovered its role from a study that observed the relation of SLC2A2 gene variants to food type and, consequently, the sugar amounts that people consume. It has turned out that people with an unfavourable variant of the SLC2A2 gene consume daily many more sugars than people with a favourable variant. The reason for this is a less intensive perception of sweet taste. As a result the carriers of the unfavourable variant of the SLC2A2 gene tend to sweeten their food much more for the same effect.

Your result: MORE INTENSIVE

You are the carrier of a favourable SLC2A2 genetic makeup, and your perception of sweet taste is, therefore, more intensive. 73 percent of people have such a genetic makeup.

Recommendations

- Your genetic makeup determines a more intensive perception of sweet taste, which is, in this case, favourable.
- We recommend that you dilute excessively sweet juices with water or mineral water, because they will still retain enough of their sweetness.
- We do not recommend that you sweeten hot drinks. Your organism will, due to your favourable genetic makeup, quickly adapt to this, and later you will no longer miss sugar at all.
- Your intensive sweet taste perception is an additional reason for limiting the intake and excessive use of white sugar. Such sugar can damage your teeth, and has negative impacts for your whole health and well-being.

"The only mammals that do not taste sweet are the family of cats. On their taste buds, cats do not have receptors to detect sweet taste. According to scientists, one of only two genes that are required for the formation of the sweet receptor became non-functional. Unlike dogs, cats, therefore, simply are not moved by candy."

Bitter taste perception

Bitter taste is one of the four basic tastes that we differentiate. Its perception passes through taste receptors which communicate it to the brain that then tells us which taste is in question. However, the bitter taste perception is not equally effective in all people. The described mechanism can have flaws that are expressed in a less intensive perception of bitter taste.

Scientists have discovered that the TAS2R38 gene is responsible for the different susceptibility for bitter taste. Approximately 80 percent of people in the study, who were carriers of two common copies of TAS2R38 gene, did not detect bitter taste. The ability to taste bitter has been determined by the ability to taste a special substance, called 6-N propylthiouracil (PROP). PROP is, normally, not found in nature, but the ability to taste this substance is closely connected to the ability of tasting other related bitter substances, which can be found in broccoli, cabbage, coffee, tonic and some beers. Are you interested to find out what tastes these foods have for you?

Your result: MORE INTENSIVE

You are the carrier of one common and one rarer copy of the TAS2R38 gene, and you, therefore, perceive bitter taste more intensively.

Recommendations

- Bitter substances, which you most likely can taste, can be found in kale, radicchio, olives, coffee, tonic and some beers.
- These substances play an important role in digestion, therefore do not leave them out of your meals just because of their bitter taste. However, if you truly find them very unpleasant, we recommend the following.
- We recommend the choice of spring vegetables, because of its less bitter taste.
- Sauté the vegetables you find bitter. You will reduce the content of substances which cause bitter taste, as the bitter substances are removed with the drained water.
- You can prepare the mentioned foods in a soup, with pasta or by adding your favourite spices, which will tone down the bitter taste.

"Favourable or unfavourable feelings to taste have evolutionary significance, since they enabled survival. Substances of very sweet taste evoke pleasurable sensations, as opposed to bitter substances, which discourage people from ingestion. This fact has allowed the separation of high-calorie food sources of potentially toxic substances such as certain alkaloids, which have a bitter taste."

METABOLIC PROPERTIES

THE EFFECTIVENESS OF YOUR METABOLISM

GENES HELP YOU LEARN ABOUT YOUR BODY'S METABOLISM

Our body, with the help of specific enzymes, processes or breaks down lactose, caffeine and alcohol after their consumption. This enables them to be used as nutrients, or prevents these substances from becoming harmful. If a certain enzyme does not function optimally, an inappropriate adaptation can lead to certain health problems.

Lactose intolerance is one of the well-known phenomena, where lactase, an enzyme which is responsible for the breaking down of milk sugar lactose, is lacking. In case of lactose intolerance, our organism cannot break down milk sugar, and lactose intolerant people have many problems, such as diarrhoea, bloating and vomiting, when eating dairy products. Among important processes are also the metabolism of alcohol and caffeine. For both of them, a slow and ineffective metabolism is problematic. In this chapter you will find out about your response to those substances and according to you genetic makeup, you will be given the most suitable recommendations.

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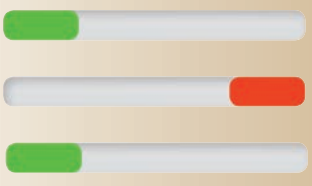

Alcohol metabolism

Have you ever wondered why some people's faces become red and they experience headaches, nausea and increased heart rate after consuming the slightest amount of alcohol? Well, scientists have succeeded in clarifying this phenomenon on a molecular level. Namely, the reason for this is the defect of the gene which codes for the enzyme ALDH2. This enzyme is responsible for the breakdown of acetaldehyde – an intermediate product in ethanol metabolism, which is even more toxic than ethanol itself. In people with a defect of the ALDH2 gene, acetaldehyde accumulates, and this is the reason why they usually avoid drinking. Despite the fact that this defect is more characteristic of Asians, it does occur in other peoples as well.

Also enzyme ADH1 is important for alcohol metabolism as it is responsible for the first stage of the metabolism of ethanol into acetaldehyde. Researchers have discovered that a mutation can occur also in the genes that encode enzyme ADH1 and this influences greatly the efficiency of ethanol conversion. These mutations are actually not as defining as the one in the ALDH2 gene, but they still greatly determine alcohol sensitivity.

Your result: EFFECTIVE METABOLISM

Your genetic makeup determines an effective alcohol metabolism. Namely, you are the carrier of the most favourable genetic combination.

Recommendations

- Your genetic makeup determines that you don't experience any problems related to the accumulation of harmful substances from alcohol metabolism.
- When drinking alcohol in moderation, you do not get any typical signs such as blush redness of the face, headache, nausea or unpleasant itching and increased heart rate.
- We advise you to drink in moderation, because excessive alcohol drinking can have many negative consequences – medical and sociological ones.
- 1 dl of wine or 2 dl of beer per day is still recommendable, as it increases the levels of good (HDL) cholesterol. However, we do advise against higher amounts of alcohol.
- Despite an effective alcohol metabolism, we recommend that you avoid drinking alcohol during and after physical activity.

"It is well known that the French are not stingy when it comes to using fat in preparing their meals. They eat more butter, cheese and pork as Americans, however, their frequency of cardiovascular diseases is lower. Given that the French consume large amounts of red wine, this is believed to be their secret for success. Scientists have named this phenomenon the French paradox."

Mutation *- a random change in the genetic code material. Deletions are mutations where nucleotides on a part of genetic material are erased (deleted), insertions, where there is an insertion of nucleotides on a part of genetic material, and substitution, where nucleotides are replaced with other nucleotides.* ***Enzyme*** *- a protein which is involved in chemical processes in the body.*

Caffeine metabolism

Caffeine is a natural alkaloid, most commonly known as the main ingredient of coffee. It is metabolised in the liver by the enzyme, called CYP1A2. This enzyme is responsible for up to 95 percent of the entire caffeine metabolism, and it is, therefore, not surprising that a mutation in the CYP1A2 gene has an important influence on the enzyme activity and, consequently, the caffeine metabolism. People with one or two mutated copies of the CYP1A2 gene metabolise caffeine more slowly, and as a result, feel a greater effect of coffee. But this is not as favourable as it may seem, because these people have a higher blood pressure after drinking coffee than those with a rapid caffeine metabolism. Researchers have proven in many studies that people with slower caffeine metabolism are more susceptible to medical conditions related to increased blood pressure. We, therefore, recommend them to adjust the daily dose of caffeine accordingly.

"A creeping plant originating in the Amazon, Guarana, contains a substance guaranine, which is almost identical to caffeine. Twice the amount of guaranine is present in Guarana in comparison to caffeine in coffee beans. Guaranine is a caffeine alternative in some carbonated drinks and energy drinks."

Your result: SLOW METABOLISM

Your caffeine metabolism is slow, because you have one favourable and one unfavourable copy of the CYP1A2 gene. Similarly to you, approximately 48 percent of Caucasian people also metabolize caffeine slowly.

Recommendations

- You are the carrier of a genotype that determines that caffeine is slowly removed from your body.
- We recommend that you limit coffee consumption accordingly. By drinking more than one cup of coffee a day you increase the risk for health complications related to increased blood pressure.
- If coffee represents a ritual for you, you can replace it with corresponding coffee substitutes, for example, barley coffee, which does not contain caffeine.
- A good alternative is also black tea. In black tea the stimulating feeling occurs later; it is weaker and it lasts longer than in coffee. In addition, mostly green tea contains more antioxidants and vitamins that regular coffee.

Alkaloid *- a basic unit, from which protein is built. Its formation is encoded in DNA with three sequential nucleotides, which in different combinations give different amino acids: GCU is the code for amino acid alanine, UGU for cysteine…*

Lactose metabolism

Milk provides the first and most important nutritional ingredient for every baby and child. With the exception of lactose intolerant people it retains its nutritional value in the diet of adults as well. Lactose intolerant people, though, do not have the enzyme lactase which is responsible for the breakdown of milk sugar lactose, and this is why they have to limit milk consumption. The reason for the absence of the lactase enzyme is the gene MCM6, which is actually not functionally related to lactose metabolism, but it regulates the activity of the gene LCT (gene which encodes for the lactase enzyme) and it consequently determines whether we will have the lactase enzyme or not.

Lactose intolerant people experience the accumulation of lactose in their colon, where it is decomposed by intestinal bacteria. Various fats are formed, as well as gasses and other molecules. The consequences are diarrhoea, a bloated stomach and stomach cramps. We can also experience nausea or vomiting. These signs occur 15 minutes to 2 hours after the consumption of milk or dairy products, and they depend on the amount of lactose we consume, age and health condition.

Your result: EFFECTIVE METABOLISM

You are the carrier of one favourable and one unfavourable copy of the MCM6 gene. You genetic makeup determines a slightly lower amount of lactase enzyme, but still sufficient for effective metabolism of lactose. Approximately 37 percent of people have such a genetic makeup.

Recommendations

- Considering the results of the analysis, food, containing lactose, should not cause you problems.
- Your version of genes determines that you have enough of the lactase enzyme, and it is, therefore, unlikely that you are lactose intolerant.
- Eating dairy products is, from the point-of-view of the milk sugar metabolism, for you completely recommendable.
- Milk, yoghurt, kefir or whey are already, as such, very healthy, and we, therefore recommend them.

"According to some estimates, as much as 30 to 50 million Americans have lactose intolerance, most Asians, 60-80 percent of African Americans and 50-80 percent of Latinos. Lactose intolerance is the least common in indigenous peoples of northern Europe, where it occurs in around 2 percent of the population."

Lactose *- milk sugar, consisting of glucose and galactose.* ***Types of fats*** *- in essence, we differentiate animal saturated fats and plant mono- and polyunsaturated fats.*

DETOXIFICATION OF YOUR BODY

YOUR GENES, DETOXIFICATION AND ANTIOXIDANTS

GENES CAN ALSO INFLUENCE YOUR PHYSICAL APPEARANCE

In this chapter your will learn about your selenium and vitamin E levels that are determined by your genetic makeup, and how effective the detoxification mechanisms of your body are. Harmful substances enter into our body daily through food, water and air and we desperately need mechanisms that are responsible for detoxification and removal of these substances from our systems. These mechanisms include specific enzymes that detoxify our body, and antioxidants that neutralise free radicals. The formation of free radicals is caused by radiation, cigarette smoke, various pollutants and countless other substances which our body can successfully detoxify with the help of appropriate enzymes. However, a mutation can occur in the genetic makeup of the enzymes, which is then expressed as ineffective detoxification of the above mentioned potentially harmful and toxic substances. In case of an ineffective enzyme function or the lack of a certain enzyme, we are largely exposed to the toxins from the environment, and we have to adapt accordingly.

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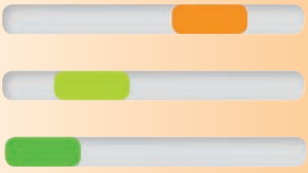

Selenium

Selenium is one of the very important minerals, because it functions as an antioxidant in your body. It forms an uncommon amino acid, selenocysteine that is needed for the functioning of over twenty enzymes. One of the best known of them is selenoprotein P that has antioxidative properties characteristic also of other selenoproteins. Numerous studies show that a high selenium level in our body has a direct anticarcinogenic and overall protective effect on our health.

It has been discovered in a scientific research that two polymorphisms are present in the gene SEPP-1, which is responsible for selenium transport, and they influence the selenium levels in our body. Scientists have additionally discovered that the selenium level is also determined by our BMI. An unfavourable combination of the genetic makeup and the BMI can influence lower selenium level for up to 24 mcg. In this case, an appropriate dietary adaptation is recommended.

Your result: LOWER LEVEL

The genetic analysis has shown that you are the carrier of the variant of the SEPP-1 gene determining a lower selenium level in your body, which is less favourable.

Recommendations

- Your selenium needs are, in addition to your genetic makeup, also determined by your BMI.
- Considering the fact that you are the carrier of a less favourable genetic makeup, and your BMI is below 30, we recommend you to consume more than 50 mcg of selenium daily.
- In case your BMI increases above 30, we recommend that you increase your daily intake by 50 percent.
- We recommend, for example, chicken liver, lamb, tuna, sardines, mackerels and pasta, where there is plenty of selenium.
- Instead of milled rice, often use unmilled rice, because it contains 15-times more selenium.
- There is also as much selenium in two Brazilian nuts as in one egg. You can, therefore get enough selenium, if you are a vegetarian, or, in case you have to avoid eggs because of a diet or an increased cholesterol.

Useful information

Why we need it	An important antioxidant, immune system defence, detoxification
Consequences of its lack	Lack of energy, unhealthy skin, weakened immune system
Where is it found	Seafood, liver, cereal sprouts, bran, tuna, onion, broccoli, garlic, brown rice

"A typical sign of people who consume excessive amounts of selenium is a characteristic smell of garlic, even if the person did not consume any. By taking into account our recommendations this cannot occur, as the person would need to consume 100-times more selenium than the recommended value."

Antioxidants *- substances which protect us from oxidative stress.* ***Alkaloid*** *- a basic unit, from which protein is built. Its formation is encoded in DNA with three sequential nucleotides, which in different combinations give different amino acids: GCU is the code for amino acid alanine, UGU for cysteine…* ***Anticarcinogenic*** *- prevents the development of cancer.*

Vitamin E

Vitamin E, also known as tocopherol, is the most important representative of fat-soluble antioxidants. Its importance is illustrated by the fact that certain people lacking vitamin E, are more prone to chronic diseases, while people with a higher vitamin E level have less health problems and even slightly better physical abilities.

The scientists have started to ask themselves why differences in vitamin E levels among people even occur. They have discovered that the reason is not only food. Scientific research has proven that a favourable mutation can occur in the gene APOA5 increasing the vitamin E level. People with such a genetic makeup have already a higher vitamin E level to start with, and they, as a result, need a lower daily intake of vitamin E for an optimal state. People with a common variant of the APOA5 gene have to include foods with more vitamin E into their menus, in order to ensure an optimal state.

"Vitamin E is present in eight different forms, which differ in biological activity. The most active and also the most common form of vitamin E in the body is alpha-tocopherol. The synthetic form of alpha-tocopherol is only about half as active as the natural, therefore it is needed to consume twice the amount for the same effect."

Your result: HIGHER LEVEL

Your genotype determines a higher vitamin E level in the blood, because one copy of your gene APOA5 is present in a favourable variant. Such a genetic makeup is actually quite rare.

Recommendations

- Your genotype is not the most optimal, but it, nevertheless, determines a higher vitamin E level, which is favourable.
- We recommend you to consume 12 mg of vitamin E daily.
- Good sources of vitamin E are, predominantly, oils (sunflower and rape oil) and nuts (pine nuts and Brazilian nuts).
- When shopping, read the food labels and be sure about the amount of vitamin E that a certain product contains.
- In deep-frozen foods the vitamin E content slowly decreases, therefore, rather eat fresh fish and meat if possible.
- Vitamin E regenerates in the organism with the help of vitamin C, and we recommend the consumption of citruses, forest berries, red and green peppers full of vitamin C.

Useful information

Role	Protects against oxidative stress
Consequences of its lack	The build-up of free radicals
Where is it found	Olive oil, wheat sprouts, cabbage, corn, soy, wheat, rice, avocado, olives, carrots, tomato, almonds

Antioxidants *- substances which protect us from oxidative stress.* ***Gene*** *- Part of the DNA sequence that carries the information for the formation of protein. Genes are inherited from parents by their descendants, and give information, which is needed for the formation and development of an organism.*

Oxidative stress

Oxidative stress occurs as a consequence of an imbalance between the formation of free radicals and the ability of our body to neutralise them on time. Our body actually has many enzymes available for preventing oxidative stress. These enzymes are responsible for the protection against harmful environmental influences such as cigarette smoke, exhausts, smog, radiation, vapour of industrial solvents used for the production of plastic mass, medication etc. Two of the most important enzymes are quinone oxidoreductase and catalase. A mutation of DNA can occur in both genes, and this influences their functioning and our exposure to oxidative stress. We have analysed the sequences of the two mentioned genes, and determined, on the basis of the genetic makeup, to what extent you are exposed to oxidative stress.

Your result: LOWER EXPOSURE

Your genetic makeup determines a normal enzyme quinone oxidoreductase level and a reduced activity of the catalase enzyme, manifesting in lower exposure to oxidative stress.

Recommendations

- Your organism fights oxidative stress optimally, but following our recommendations is not redundant.
- We recommend that you consume at least 100 mg of vitamin C per day. Eat foods such as peppers, broccoli, kiwi, apples and oranges, as they contain enough vitamin C.
- Eat many vegetables that contain coenzyme Q10. Our body produces it, but as years go by, its production decreases. Coenzyme Q10 can be found in broccoli, spinach and nuts.
- Bear in mind that the combination of alcohol and smoking highly increases the formation of free radicals. You will contribute the most to a lower exposure to oxidative stress by limiting alcohol and smoking.
- But mostly try to stick to daily requirements of selenium and vitamin E, because they all belong to the group of antioxidants.

"Did you know that by storing fresh fruit its content of vitamin C is dropping? In cold stores its level drops by 50 percent and by keeping fruit in normal storage its contents in spring are by 2/3 lower than immediately after harvest. Thus it is best to consume raw fruits and vegetables to ensure we take in more of this antioxidant."

Free radicals *- instable chemical substances, which harm the cell.* ***Enzyme*** *- a protein involved in chemical processes in the body. Its purpose is to reduce the activation energy required for chemical reactions and thus facilitating their course. This enables faster conversion of substrate to product, for example, conversion of starch into glucose.*

SPORTS AND RECREATION

SPORTS AND RECREATION IN TUNE WITH YOUR GENES

DISCOVER THE WORKOUT MOST SUITABLE FOR YOU

In this chapter we will reveal to you the sports activities that you can be good at on the basis of your muscle structure. You will learn to what extent you are prone to Achilles tendon injury, and how beneficial a certain type of training is for you. Physical activity affects our health generally positively, but certain sports activities are more beneficial for some than they are for others. Whenever we opt for a certain type of recreation with an intention to lose excess fat, and, therefore, lose weight, this factor becomes even more important. Scientific research has discovered that a certain type of recreation can benefit some people, while the influence of it on others can be less optimal, or can even affect the accumulation of fatty tissue. All this depends on our genetic makeup. And this is precisely why we can, with the help of your DNA analysis, recommend a type of recreation which suits you best, or we can advise you against a certain type of physical activity.

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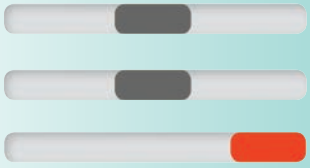


Muscle structure

Humans have two different types of muscles, type I and type II. Sprinters tend to have more type II muscles in their bodies – fast muscle fibres, or more active fibres, and long distance runners tend to have more effective type I muscles – slow muscle fibres.

A study by Australian scientists has included more than 400 top athletes divided into two groups. The first group included athletes from disciplines where mostly strength and speed are needed, and in the other group included those who required endurance. They discovered that, in the first group, people with two copies of a functioning ACTN3 gene prevailed, and, in the second group, people with two copies of a non-functioning ACTN3 gene prevailed. It has been, therefore, proven, that the mentioned gene determines the effectiveness of a specific type of muscle fibre. In addition to this gene, a mutation in the PPAR-alpha gene is also known. PPAR-alpha gene determines the representation of a specific type of muscle fibres in our body. By simultaneously analysing both genes it is possible to predict the activities that you are likely to be the most successful at.

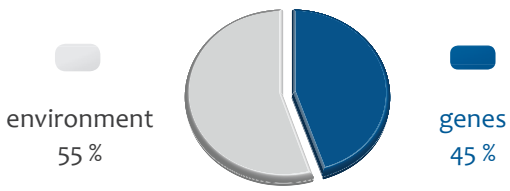
Your result: GREAT STRENGTH AND EXPLOSIVENESS OF MUSCLES

The variants of genes ACTN3 and PPAR-alpha give you an advantage in sprint and other sports where strength and explosiveness are required.

Recommendations

- The genotype present in your case is very common in sprinters, since it determines that your muscles are stronger and more explosive, but have less endurance.
- Physical activities most suitable for your muscle type are short distance running (sprints), high jump and long jump, karate and other martial arts, gymnastics disciplines, powerlifting and "Olympic" weight lifting.
- If you would like to realize your full sport potential, it is important to make appropriate choices that best match your unique genetic makeup.
- In order to achieve full potential of your strength and muscle explosiveness, if you are a beginner, you should first build a firm strength foundation, based on multi-joint functional movements, such as squat, lunge, pushing and pulling patterns.
- Gradually advancing from lighter loads and higher rep's for motor learning to higher intensity maximal strength training protocols, you should give your body enough time to make appropriate adaptations.
- Once you are strong enough to deal with more advanced explosive strength training regiments, you can start incorporating plyometrics and/or Olympic weight lifting into your training sessions.
- At least 2 strength training sessions per week are recommended.
- Also, it is highly beneficial to apply to a certified strength and conditioning expert to maximize your strength potential and to avoid related injuries.
- However, you should know that with different type of training, you can manipulate different type of muscles you want to improve, since genetics contributes only to a certain extent, while the remaining part is the effort you make.

Genes vs. environment



"The human body has approximately 640 skeletal muscle. When walking, we don't even realize that more than 200 muscles are activated. The longest muscle in humans is the tailors muscle (musculus sartorius), which runs across the thigh; the smallest is the stapedius (musculus stapedius), which is located in the eardrum. It is a mere 1.27 millimetres long."

Muscle fibres *- cell that build muscle. Their name is due to their elongated shape.*

Endurance training

Endurance exercises consist of a long-term, moderate muscle resistance, where muscles contract slowly. It is known that it is possible to reduce our fat deposits with the help of physical activity based on endurance, and, at the same time, positively affect our health. However, such activities do not give the same results in all individuals. It has been proven with research that the answers lie mostly in our genetic code. In a research that we are referring to, they have studied how a specific mutation in our genetic code affects the efficiency of weight-loss with endurance training. Experts have prepared a 20-week intensive endurance training program, which has been performed using a stationary bike. They have acquired surprising results after the finished program, because women with a rare form of the gene have lost 2-times more fat deposits that those who did not have this form of the gene.

Your result: NORMAL BENEFIT

Analysis of the LPL gene has shown that you carry two common copies, and thus you benefit normally from endurance training.

Recommendations

- With endurance exercises you lose body fat as the majority population, nevertheless this is less effectively, compared to people with one or two rare copies of LPL gene. You will, therefore, have to run or cycle more intensively in order to equally effectively lose fats.
- Despite the usual benefit of endurance exercises, running and cycling are definitely recommended for you, because it is precisely regular physical activity that is the key to health and well-being.
- In addition, we advise you to practise activities which are in accordance with your muscle structure. Therefore, follow the recommendation of the "Muscle structure" analysis.
- After finishing training, allow your body to rest and regenerate.

"To lose 1 kg of body weight only by physical activity, you would have to burn up to 7,000 calories. In 1 hour of cycling you spend 600-900 calories, which means that in order to reduce your body weight by 1 kg would require 8-12 hours of cycling. Some persistence is definitely necessary, right?"

Achilles tendon

Despite the fact that the Achilles tendon is the strongest tendon in our body, many serious athletes as well as recreationists have quite commonly problems with its overload. Problems occur with excessive and repetitive load which surpasses the tendon's ability of regeneration, and this leads to a state, called Achilles tendinopathy. It causes the Achilles tendon to become sore and swollen, with an accompanying reduced functioning of it. Injuries can occur when walking, running, or doing some other, more burdensome activity. The cause for Achilles tendinopathy is, in addition to training errors, also our genetic makeup, which determines the flexibility of the tendon. One of the genes responsible for the tendency for Achilles tendinopathy is gene MMP3. It has been proven that MMP3 determines a 2.5-times higher risk for Achilles tendon injuries, when represented in an unfavourable variant.

Your result: HIGHER TENDENCY FOR INJURY

You have two unfavourable copies of the MMP3 gene present, which determines a higher risk for Achilles tendinopathy. Approximately 17 percent of people have such a genetic makeup.

Recommendations

- Your genetic makeup determines that you are, compared to other people, more prone to Achilles tendinopathy, but you can greatly contribute against such problems.
- The most important is that before you start an activity, you give your attention to warming up and stretching and to slow increase of the intensity of training.
- It is also of great significance, that you choose sports shoes which are intended for the activity that you practise.
- We recommend exercises that are used for reducing the load on the tendon by lifting the heel.
- In case of a painful tendon, reduce the pain with walking and heat treatment (for example, a warm bath).

"The term Achilles tendon comes from the Greek legend of Achilles. As a baby his mother sank into the river, which would make him invulnerable. Since she held him by his heel, it did not become wet, which left him vulnerable at the spot. In one of the battles of the Trojan War, Paris shot him straight into the heel, and Achilles was defeated."

GENETICALLY DETERMINED ADDICTIONS AND AGEING

YOU CAN INFLUENCE ADDICTION AND AGEING

In this chapter you will learn about how susceptible you are to nicotine and alcohol addiction. We will also reveal your rate of aging in comparison to the average population, and whether your genetic makeup determines that a change of lifestyle is important for you.

What is lifestyle, anyway? Lifestyle is a concept which had been established already in the 1929 by an Austrian psychologist Alfred Adler. With this concept, we describe our way of life, or our habits. It is generally known that smoking, alcohol drinking, inappropriate diet and lack of physical activity point on an unhealthy lifestyle and are the cause for many health problems. In case we are prone to nicotine or alcohol addiction, it is highly recommended to preventively avoid such habits, as the possibility of addiction is higher. Excessive alcohol drinking and cigarette smoke additionally influence our ageing process, and, in case you have unfavourable genes which determine a higher rate of ageing, we recommend limiting alcohol and giving up smoking.

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Nicotine addiction

Smoking is proven to be the cause of countless serious medical conditions, which can also be related to a premature death. It is enough to mention that every tenth person (or half of regular smokers in the world) dies because of consequences of smoking. Despite this fact, smoking remains a habit that very few people give up. World Health Organisation estimates, that a year after having their last cigarette, less than 5 percent of people, who have quit smoking without help, remain non-smokers. Smoking causes psychological addiction, and nicotine is the compound responsible for it. It binds with special receptors in the brain, and it causes a feeling of comfort and pleasure. These receptors slightly differ among people, and the mentioned binding is not the same in all people. This is why some people are more addicted to nicotine and some less. Researchers have discovered that a mutation in the gene CHRNA3 does not influence the beginning of smoking, but it influences the number of smoked cigarettes and causes a greater addiction to nicotine. This is why people with a mutated CHRNA3 gene find it harder to stop smoking.

Your result: LOWER RISK FOR ADDICTION

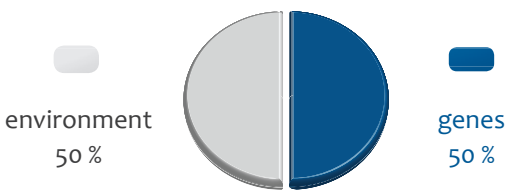
You are the carrier of two favourable copies of the CHRNA3 gene, which determines a lower risk for nicotine addiction. Approximately 38 percent of people have such a genetic makeup.

Recommendations

- If you do not smoke, there is a smaller chance that you become addicted to nicotine, but this is not the reason to experiment with smoking.
- In case you smoke, you can give up smoking much more easily than people with a less favourable genetic makeup. Therefore, do not waste time and start following our recommendations.
- Do not give yourself consolation by telling yourself that one cigarette does no harm. Smoking has, among other things, an unfavourable effect on the HDL cholesterol level and on an increase of the formation of free radicals. When there are too many free radicals in your body, they attack healthy cells and damage them.
- Smoke cigarettes in a way that is unpleasant to you. If you normally drink coffee with smoking, try to leave it out.
- Go out for some fresh air as often as possible, and linger in places where smoking is forbidden.
- Those who have successfully given up this habit should serve you as an example, and give you additional motivation in your own process of giving up smoking.

"Some smokers continue smoking because they are afraid that they will gain weight if they quit smoking. The weight of smokers on average is as much as 4-5 kg lower than of non-smokers. It is true that the majority gains weight in the first year after they quit smoking, but most often only to the averages of non-smokers."

Genes vs. environment



Alcohol addiction

Alcohol addiction is a serious health problem, and, at the same time, a well-studied area for which genetic material is well-known to have an influence on. Alcohol addiction is expressed in behavioural and psychological problems. An individual continues to turn to alcohol, even though it is starting to visibly affect his physical and mental health. On the basis of a lot of research we can say that our genetic makeup determines approximately 65 percent of our tendency for alcohol addiction. This research is based mainly on twin studies and numerous family studies, where it turned out that the tendency for alcohol addiction is passed down from generation to generation. On a molecular level, the basics of alcohol addiction are extremely complicated, because the occurrence is influenced by several genes, where every gene has a slight influence. We have included in your analysis the genes which were proven by many studies to have a strong influence on alcohol addiction.

"In Europe, alcohol is the third leading cause of premature death and overall mortality. According to recent data from the World Health Organization, if we calculate the pure alcohol consumption per person aged over 15 years, Moldovans and Czechs drink the most."

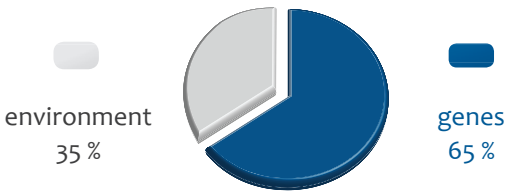
Your result: AVERAGE RISK FOR ADDICTION

You have a combination of analysed genes present, which determines an average risk for alcohol addiction.

Recommendations

- Your risk for alcohol addiction is average, but excessive alcohol drinking is definitely not recommended.
- Alcohol does not quench your thirst, but it dehydrates you. Therefore, do not make thirst an excuse for drinking alcohol.
- The time that you would normally spend for drinking, can be spent for your favourite activity. This way you will effectively redirect your thoughts.
- When you go to social events, order a non-alcoholic beverage or a beverage with low-alcohol content.
- Smaller amounts of alcohol can be beneficial for our health, but be careful, and control the intake.

Genes vs. environment



Genetic code *- is a general term, which is usually a synonym for genotype, or form of the DNA gene sequence. However, the term can refer also to the region of the genome, where the gene is not present.*

Biological ageing

We differentiate two types of ageing, chronological and biological. In chronological sense, we are as old as our years of age, while biological ageing is the ageing of our body. It is about determining if our body looks according to its age. For example, when saying to 70-year old, that we would never think him to be as old, we actually say that, from a biological standpoint, this person looks younger.

The molecular cause for ageing is in the length of structure, called telomeres. They are the endings of our chromosomes consisting of a repetitive DNA sequence (TTAGGG). In the course of our lives, these telomeres become shorter, and this causes us to age. The rate of the shortening of telomeres depends on numerous environmental factors, as well as on the variant of the gene TERC. It has turned out that a mutation in the DNA sequence can occur. This manifests in shorter telomeres and, in average, a 3-4 years higher biological age of an individual with mutated copy of the gene.

Your result: FASTER AGEING

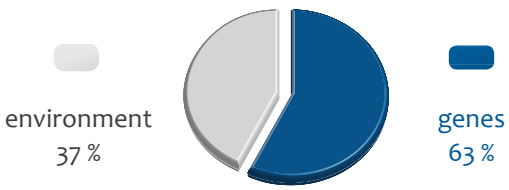
You are the carrier of one favourable and one unfavourable copy of the TERC gene. Such a genetic makeup is related to faster biological ageing and is present in approximately 40 percent of all people in the Caucasian population.

Recommendations

- Compared to people with two unfavourable copies of the TERC gene, you age slightly slower. However, you age slightly faster, compared to people with two favourable copies of the TERC gene.
- It is important to know that the ageing process is not determined only by the genes, as the actual state depends also on various environmental factors and bad habits.
- We recommend that, in summer afternoons, you do not expose yourself to sun, because the radiation that accelerates ageing is the most powerful at that time.
- Try to regularly use sunscreen with a higher SPF.
- Give yourself enough time for sleep, because sleep deprivation leads to a faster ageing.
- Zucchinis contain plenty of beta-carotene, which slows down biological ageing and have anticarcinogenic effects, and they should, therefore, be often on your menu.

"Did you know that on average women live longer than men? Women have an advantage because of the hormone estradiol, which is a physiological antioxidant and acts as natural protection. In men, testosterone does not have this protective function, therefore, they are more susceptible to harmful elements from the environment."

Genes vs. environment



Chromosome *- a stick-like form of DNA molecule, where there are present hundreds or thousands of genes. In the nucleus, there are 22 autosomal chromosome pairs, and 2 sexual chromosomes. In addition to the molecules of DNA, there are also proteins (mostly histones) present, around which the DNA is coiled. Such coiling and further formation results in a tightly formed chromosome, which takes up less space than an uncoiled molecule.*

More on excess weight and body mass index

We define the appropriateness of body weight with the body mass index (BMI), which has been established in the 19th Century by a Belgian statistician Lambert Adolphe Jacques Quételet. It is calculated by dividing a person's body weight in kilograms by the square of the person's height in metres. An optimal BMI of an individual is in the area between 18.5 and 24.9 kg/m^2. People with such a BMI are said to have a healthy body weight. A BMI lower than 18.5 kg/m^2 is an indicator of malnourishment, and obesity is defined with a BMI higher than 30 kg/m^2. The definition of obesity is not appropriate for two groups of people. In the first group, there are those with a high muscle mass, and this is the reason why their BMI is higher than 30 kg/m^2. And in the second group, there are older people, who can have BMI lower than 30 kg/m^2, because of rapid loss of muscle mass which is replaced by fatty tissue, but are still overweight.

According to the data of World Health Organisation (WHO), in 2005, approximately 1.6 billion people were overweight and 400 million were obese. In the USA, 61 percent of people were overweight and 20.9 percent were obese. As a result, WHO has defined obesity already in 1997 as a chronic metabolic disease, and short after named it as an epidemic, that threatens the whole world. The definition is supported by a piece of information which shows that, in western European countries, 2 to 8 percent of all health expenses are dedicated to treating obesity.

The state of being overweight is caused by an imbalance between the intake and the use of energy, lack of physical activity and genetic background. When we consume more calories than we daily expend, the excess generally accumulates in the form of fats. Fats are deposited in our fat cells, which start to grow and multiply. In order to reduce our body mass we, therefore, need to burn more calories than we consume. Energy consumption largely depends on the so-called basal metabolism – basic metabolism. It is the smallest amount of energy, which is daily necessary for a normal upkeep of basic life activities of our organism. People who are overweight have a lower basal metabolism rate and require daily a lower energy intake. Basal metabolism largely depends on our genetic makeup. It has been shown that there is an 80 percent probability that children of obese parents will also become obese. Scientists have discovered that our genetic makeup determines 60 percent of our final body weight, and the rest depends on other factors of life. It is important to bear in mind that environmental factors are mostly the ones that determine whether obesity will develop or not.

Giving up bad eating habits is the first and, at the same time, most crucial measure for reducing excess body weight. Also numerous food supplements, which regulate the processes of lipolysis and thermogenesis, can be of great assistance in achieving the desired results. These food supplements influence the increase of heat processes which need energy – the result is the increased burn of fatty deposits.

More on cholesterol and fat metabolism

Cholesterol is a white-yellowish substance similar to fats. Triglycerides are molecules, built of three fatty acids bound on glycerol. All foods of animal origin contain cholesterol, while there is no cholesterol in foods of plant origin. It is the basic constituent of all the cells in our body, and sexual and adrenal hormones are formed from it, as well as vitamin D and gall acids. Since we usually do not have problems with the lack of it, a lower cholesterol level is generally more favourable. A desired general cholesterol level is less than 5 mmol/L, but even more important is the ratio between the bad LDL and the good HDL cholesterol, which should not be lower than 4:1, or for genetically and environmentally more challenged people, 3:1. It is true that 80 percent of cholesterol is produced by the body, while the cholesterol from food represents 20 percent of the entire amount of cholesterol. In healthy people, with the intake of cholesterol with food, its production in the body usually decreases. In people with an unfavourable genetic makeup this regulation is not optimal, and it can cause an increase of LDL cholesterol as well as the level of triglycerides.

The cholesterol and triglyceride metabolism is quite complicated. They are water insoluble molecules, and, after ingestion, they bind with substances, called lipoproteins, in the intestinal villi, in order to enter the blood stream. In the meantime, cholesterol, which is produced by the body in the liver, binds with particles, known as VLDL, and also enters the blood stream. From the VLDL complexes, free fatty acids start to detach and enter fat cells where they are transformed back into triglycerides. This way, we get particles, known as IDL, which further lose triglycerides and we get LDL. In everyday life, we normally mention only LDL and HDL. LDL particles contain few triglycerides and are rich in esterified cholesterol (cholesterol bound with fatty acids) and they represent a huge container of cholesterol for the synthesis of steroids, membranes and gall acids. LDL particles transport up to two thirds of cholesterol, known also as harmful cholesterol, around the body, even though it is not necessary for the optimal functioning of the body. They transport it from liver to other parts of the body. HDL particles, however, do just the opposite. They transport the cholesterol in the opposite direction; they eliminate it from the blood stream and return it to the liver, where a greater part of it is excreted in the form of gall acids. The majority of it is again absorbed into the liver and then into the blood. This process is called '' enterohepatic circulation". HDL, therefore, protects the cells of the vascular wall, inhibits the oxidation of LDL cholesterol and prevents clumping of blood platelets – thrombocytes, which accumulate at the site of a damaged vascular wall. Because of this function, it has acquired names such as good, beneficial and protective cholesterol. If the LDL cholesterol concentration overly increases or the HDL cholesterol concentration overly decreases, we risk cardiovascular and coronary disease, such as angina pectoris, heart attack, brain stroke, leg artery disease, etc. The problem is also the oxidation of LDL cholesterol which is encouraged by bad habits, which can lead to cardiovascular disease. Hence it is crucial for our health to pay attention to our diet, exercise and do not succumb to bad habits such as alcohol drinking and smoking.

More on blood sugar

Carbohydrates are part of a large group of molecules, which represent the main energy source for our organism. After consumption, our body breaks down complex carbohydrates, or tries to break them down into the simplest ones, the monosaccharides. Our body turns most of sugars into glucose, and our cells can use them as a basic source of energy. Only then are the molecules small enough to enter our blood stream. An exception are fibres, which are built in such a way that our body cannot break them down to monosaccharides, and they, therefore, pass the intestinal tract intact. However, it is generally true, that our body breaks down consumed carbohydrates into glucose, which then enters the bloodstream. The result is the increase of blood sugar, and special cells start to secrete insulin. This is a sign that cells have to accept sugar from the blood, and that blood sugar supplies have to stop entering the blood stream. Slowly, the blood sugar level drops to its initial level. An adequate regulation ensures that the blood sugar level does not increase too much, and that it quickly drops to the basic level, and that it is always available. In some people, this regulation is not adequate. In countless research, scientists have discovered that, due to mutations in the genetic makeup, two types of abnormalities occur:

- The body does not produce enough insulin, and the blood sugar level drops to an appropriate level more slowly.
- Cells are less sensitive to insulin, and liver cells, therefore, despite the fact that glucose and insulin concentration increases sufficiently, does not cease to secrete glucose supplies.

All this can lead to a permanently increased blood sugar level and, consequently, to diabetes. This risk can effectively be reduced with an appropriate diet and lifestyle.

An exception is the metabolism of a monosaccharide fructose, which is carried out differently. Fructose, as opposed to glucose, does not influence the increase of blood sugar level, because it does not need insulin for its metabolism – this is why, in small amounts, it is allowed also for diabetics. However, exaggerating with fructose is far from healthy, because its metabolism is similar to that of fats. Nowadays, in America, fructose is one of the main reasons for increased LDL cholesterol and triglyceride levels, as well as a decreased HDL cholesterol level and unresponsiveness to insulin. The majority of fructose is consumed as an added sweetener to various food products, and it is, therefore, wise to read food labels (where possible) and choose foods without added sugars.

More on vitamins

Vitamins, together with minerals, belong to a group of micronutrients. Despite the fact that we need them in very small amounts, they are absolutely vital for the functioning of our body. Most vitamins cannot be synthesized by our body. An exception are some vitamins of the B-complex, which are produced by our intestinal bacteria, and transformations of inactive to active form (for example, beta carotene can be transformed into active vitamin A). Vitamins are not a source of energy, but they are key co-factors which help the enzymes in an array of different metabolic reactions and biochemical organisms. Most enzymes actually cannot function without the help of vitamins. Vitamins can be divide into water-soluble (B, C) and fat-soluble (A, D, E, K). Water-soluble vitamins are usually not stored in the body in large quantities and are quickly lost in the process of storing, processing and preparing foods. For a sufficient intake of water-soluble vitamins, it is recommended to eat whole wheat, unprocessed and fresh foods. Fat-soluble vitamins, however, can be found in fatty parts of animal as well as vegetable food. These vitamins accumulate in the body. Therefore, in the case of vitamins A, D, E, and K, there can be an excess intake of them.

More on minerals

Most of minerals have the role of co-factors, and they are, therefore, vital for enzyme activity and the regulation of the chemical balance. They are important for the formation of different hormones and other key molecules in the body. It is precisely the minerals that ensure the strength of teeth and bones. They are important for an appropriate heart and kidney function, as well as the transmission of nervous impulses. Considering our daily mineral requirements, we divide them into two groups. Calcium, phosphorus and magnesium, which are the main constituents of bones, and sodium and potassium, which regulate the balance of the water in the body, are all macrominerals. Daily, we require relatively high amounts of them – from 50 to 3000 mg. Elements that our body requires only in traces (from 30 mcg to 50 mg) are microminerals: iron, zinc, manganese, copper, chrome and selenium. Despite the fact that we require so little of them, they are indispensable, as our body cannot function without them. We consume them either directly with plants or with the meat of animal that are herbivorous. The sources of minerals are actually plants that have the ability to incorporate them from the soil. Nowadays, the lack of minerals is common for many reasons. Firstly, the amount of minerals in crops is decreasing because of soil impoverishment, which is the result of intensive farming techniques. Intensively grown plants grow quickly, have higher water content and incorporate fewer minerals than non-intensively grown plant. Secondly, there is less minerals in food because of the processing and preparing of food. Refined cereals and sugars, compared to whole wheat cereals, contain only a few percent of minerals. And, last but not least, we are exposed to more harmful substances and nutritionally poor food which depletes our body and, as a consequence, our requirements of minerals are often increased.

More on muscle structure

We know fast and slowly twitch muscle fibres. These two types of fibres differ in structure as well as their functioning. Slow muscle fibres produce energy mostly with cell respiration, and their main energy source are fats. They do not fatigue so easily, and are red coloured, because of the substance, called myoglobin. Fast muscle fibres, however, are rich in glycogene, and their energy source are not fats, but basic constituents, glucose and creatine phosphate. There can be a lack of oxygen in them, and lactic acid starts to form, making the muscles become tired.

While studying neuromuscular disease, Australian scientists have started to pay attention to the alpha-actinin (ACTN3) gene, the product of which is important for muscle cell contraction. They have discovered that the product of this gene is present only in fast muscle fibres. They have identified a mutation which causes the product of this gene to become inactive, and, therefore, ACTN3 is in such people absent. In the research, which included top athletes, they have discovered that sprinters mostly have two active copies of the ACTN3 gene, while long distance runners have two inactive variants of the gene. They have, thereby, proven the hypothesis that an active ACTN3 gene is required for the explosiveness of muscles. In a second research, the scientists have proven that fast twitch muscle fibres, in which the ACTN3 gene is inactive, use more oxygen than those that have at least one active copy of the gene present. A greater need for oxygen slows down the muscles. Muscle fibres with an inactive ACTN3 gene are supposedly weaker and smaller, but they also become fatigued much later.

PPAR alpha is also a known gene, for which scientists have claimed that it is more active in slow muscle fibres, which is logical, considering its function. Namely, PPFAR alpha regulates the activity of genes, responsible for oxidation of fats. Endurance training actually increases the consumption of fats and, through activity of the PPAR alpha gene, increases the oxidative capacity of muscles. Because of its role in regulating the activity of numerous genes which encode muscle enzymes, involved in the oxidation of fats, PPAR alpha is probably an important component of the adaptive response to endurance training. In this gene, there is a known mutation which influences the gene's activity and even influences the ratio of fast and slow twitch muscle fibres in our body. A changed sequence of the gene influences a lower activity of the PPAR alpha gene in slow twitch muscle fibres, and causes that the percentage of slow muscle fibres in our body decreases, while percentage of fast muscle fibres increases. A mutated variant of the gene is present mostly in athletes who, for their disciplines, need strength and explosiveness.

More on caffeine

Caffeine belongs to alkaloids, and its chemical name is 1,3,7-trimethylxanthine. In its pure form it is a crystalline powder that has a slightly sour taste. It can be found in more than 60 plant species, in different parts of plants: coffee and coca beans, specific types of hazelnuts and in tea leaves, where it forms complexes, together with tannins. It is a mild stimulant, which stimulates the entire nervous system and the heart, and, in addition, functions as a weak diuretic – it accelerates the excretion of urine. It also has a psychological effect (excitation, unrest, better well-being), as well as a physiological one (increased alertness and concentration, reduced fatigue, increases metabolism, increases blood pressure). A cup of coffee contains approximately 200 mg of caffeine, a cup of tea approximately 80 mg of tein, and ''coca-cola'' somewhere from 40 to 70 mg of caffeine. High doses can cause unpleasant side-effects such as unrest, trembling, and problems with blood pressure. A cup of coffee a day is supposedly appropriate for all people, or does not seem to have a negative effect on health.

Caffeine absorbs into the blood approximately 5 minutes after the consumption of coffee. The final effect is visible already after 30 minutes, and it lasts for hours. Caffeine does not accumulate in the body, but it is degraded and excreted from the organism within 24 hours. Caffeine is metabolized in the liver by an initial demethylation process through an enzyme, called cytochrome P4501A2 (CYP1A2). The mentioned enzyme is responsible for 95 percent of caffeine metabolism. A high functional variability is characteristic of this enzyme, which is, among other, a result of differences in our genetic makeup. Genetic mutations importantly influence the efficiency of its functioning and greatly determine the rate of an individual's caffeine metabolism, which can be measured by determining the ratio of plasma (or urinary) caffeine, and the amount of metabolic products of caffeine after consuming a certain amount of coffee.

THE INFLUENCE OF DIET ON BODY WEIGHT

Gene	Analysis	Role of the gene	Genotype
INSIG2	Risk for being overweight	*A protein found in the endoplasmic reticulum of the cells and blocks the processing of the protein SREB in order to regulate the synthesis of cholesterol*	**CG**
MC4R	Risk for being overweight	*A receptor involved in many physiological processes, such as regulation consumption/storage of energy in the body, the formation of steroids and control of temperature.*	**TT**
TNFA	Risk for being overweight	*A cytokine, which is secreted by macrophages. It has an important role in the immune response to infections.*	**GG**
PCSK1	Risk for being overweight	*An enzyme which processes proinsulin type I, and, therefore, has an important role in regulating the biosynthesis of insulin.*	**AG**
NRXN3	Risk for being overweight	*A protein from the family of neurexins, which function as adhesive molecules and receptors in the nervous system.*	**AA**
FTO	Risk for being overweight	*A gene that determines the development of excess body weight.*	**TT**
TMEM18	Risk for being overweight	*A highly retained protein, which is best expressed in the brain.*	**CC**
GNPDA2	Risk for being overweight	*A gene involved in the development of excess body weight.*	**AG**
BDNF	Risk for being overweight	*A protein from the family of nervous growth factors. In is involved in the survival and differentiation of certain neurons.*	**GG**
APOA2	Response to saturated fats	*A protein, which is the second most represented component of HDL particles. It has an important role in the HDL metabolism.*	**TT**
ADIPOQ	Response to monounsaturated fats	*A gene expressed in fatty tissue. It regulates fat metabolism and sensitivity to insulin.*	**GG**
PPAR alpha(1)	Response to polyunsaturated fats	*Regulator of the synthesis of fatty acids, the oxidation, gluconeogenesis and ketogenesis.*	**CG**
FTO	Response to carbohydrates	*A gene involved in the development of excess body weight.*	**TT**
KCTD10	Response to carbohydrates	*The gene encodes for the potassium channel domain, responsible for its selective transport through the cell membrane.*	**GG**

FACTORS INFLUENCING METABOLISM

Gene	Analysis	Role of the gene	Genotype
FADS1-2-3(1)	HDL cholesterol	*Family of desaturases which incorporate double bonds into fatty acids.*	**TT**
CETP(1)	LDL cholesterol, HDL cholesterol,	*Protein, which collects triglycerides from VLDL and LDL, and replaces them with cholesterol esters from HDL and vice versa.*	**GG**

FACTORS INFLUENCING METABOLISM

APOE(1)	LDL cholesterol, HDL cholesterol	*Protein, essential for the breaking down of lipoproteins, rich in triglycerides.*	**AA**
APOB(2)	LDL cholesterol	*The main lipoprotein of chylomicrons and LDL particles.*	**GG**
TRIB1(1)	HDL cholesterol	*Protein involved in the regulation of inflammation in the fatty tissue and in obesity, induced by a high-fat content diet.*	**CT**
APOA1	LDL cholesterol, HDL cholesterol, triglycerides	*The main lipoprotein of HDL particles.*	**GG**
PCSK9	LDL cholesterol	*Protein, which has an important role in the regulation of cholesterol concentration.*	**AG**
ABCG5/8	LDL cholesterol	*Proteins, which regulate the transport of cholesterol from the cells. Incorrect functioning is expressed in the accumulation of sterols.*	**TT**
ST3GAL4	LDL cholesterol	*Protein, which has an important role in the metabolism of glycolipids and glycoproteins.*	**GG**
LDLR	LDL cholesterol	*Protein, which binds LDL particles on the surface of cells, and enables their transport into cells.*	**TT**
ANGPTL3	LDL cholesterol, triglycerides	*Protein which, through liver receptor X, influences the level of plasma lipids.*	**GT**
FADS1-2-3(2)	LDL cholesterol, triglycerides	*Family of desaturases which incorporate double bond into fatty acids.*	**CT**
TRIB1(2)	LDL cholesterol	*Protein, involved in the regulation of inflammation in the fatty tissue, and in obesity, induced by a high-fat content diet.*	**AA**
GALNT2	HDL cholesterol, triglycerides	*Protein, responsible for the biosynthesis of oligosaccharides.*	**AG**
PPP1R3B	HDL cholesterol	*Inhibits the inactivation of glycogene phosphorylase, and, therefore, limits the breakdown of glycogene.*	**AG**
TTC39B	HDL cholesterol	*Domain, influencing the HDL cholesterol level.*	**CG**
ABCA1	LDL cholesterol, HDL cholesterol, triglycerides	*A membrane transporter, which regulates the transport of cholesterol and phospholipids, and the formation of HDL.*	**GG**
KLF14	HDL cholesterol	*A transcription factor, whose expression is induced by TGF-beta.*	**CT**
SCARB1	HDL cholesterol	*Receptor for cholesterol, phospholipids and lipoproteins, with which it regulates the flow of cholesterol.*	**CT**
LIPC	HDL cholesterol	*A receptor for cholesterol, phospholipids, glycerides and acil-CoA thioesters.*	**GG**
LCAT	HDL cholesterol	*It esters the cholesterol, which is crucial for the transport of cholesterol.*	**GG**

FACTORS INFLUENCING METABOLISM

LIPG	HDL cholesterol	*Protein, which enables the hydrolysis of HDL particles.*	**GG**
LILRA3	HDL cholesterol	*Receptor on the surface of cells, which can activate or inhibit a certain process.*	**CC**
PLTP	HDL cholesterol, triglycerides	*A transport protein for phospholipids, which is present in the blood plasma. It transports phospholipids from lipoproteins, rich in triglycerides on HDL.*	**CT**
MLXIPL	HDL cholesterol, triglycerides	*In relation to glucose, it binds and activates motifs of response elements for carbohydrates (ChoRE) and motives, responsible for the synthesis of triglycerides.*	**CC**
LPL	HDL cholesterol, triglycerides	*Lipoprotein, which eliminates fats form chylomicrones and VLDL.*	**AA**
APOB(1)	HDL cholesterol, triglycerides	*The main lipoprotein of chylomicrones and LDL particles.*	**AA**
CETP(2)	Triglycerides	*Protein, which collects triglycerides from VLDL and LDL, and replaces them with cholesterol esters from HDL and vice versa.*	**GG**
TRIB1(3)	Triglycerides	*Protein, involved in the regulation of inflammation in the fatty tissue, and in obesity, induced by a high-fat content diet.*	**TT**
APOE(2)	Triglycerides	*Protein, which is crucial for the breakdown of lipoproteins, rich in tryglicerides.*	**CT**
GCKR(1)	Triglycerides, LDL cholesterol	*Inhibits the activity of glucokinase, which is an important enzyme in glucose metabolism.*	**CT**
HLA	Triglycerides, LDL cholesterol	*It helps to differentiate between the body's own and the foreign substances.*	**CC**
TCF7L2	Blood sugar	*A transcription factor which is involved in the Wingles-type (Wnt) signal path through which it influences diabetes type II.*	**CC**
SLC30A8	Blood sugar	*The main component of zinc supply for the production of insulin, and it is involved in processes of storage in insulin-secreting beta-cells of the pancreas.*	**CC**
G6PC2	Blood sugar	*Catalytic sub-unit of an enzyme glucose-6-phosphate, and it, therefore, importantly influences the blood glucose level.*	**GG**
MTNR1B	Blood sugar	*Receptor for melatonin, influencing circadian rhythms.*	**CG**
DGKB	Blood sugar	*Diacylglycerol kinase regulates the level of diacylglycerol, and the secretion of insulin.*	**GT**
GCKR(2)	Blood sugar	*Inhibitor of glucokinase (GCK), which regulates the first step of metabolic pathways of sugar.*	**AG**
ADCY5	Blood sugar	*Enzyme cyclase, responsible for the synthesis of cAMP which regulates the activity of glucagon and adrenalin.*	**GG**

THE REQUIREMENT OF NUTRIENTS

Gene	Analysis	Role of the gene	Genotype
GC	Vitamin D	*Binding and transport of vitamin D and its metabolites through the body, and influencing the vitamin D level.*	**AC**
DHCR7	Vitamin D	*7-dehydrocholesterol transforms vitamin D3, which is the precursor of 25-hydroxivitamin D3, into cholesterol, and in this way eliminates the substrate from the synthetic route.*	**TT**
CYP2R1	Vitamin D	*Transforms vitamin D into an active form, so that it can bind with the receptor for vitamin D.*	**AA**
MTHFR	Vitamin B9	*Reduces 5,10-methylene-tetra-hydro-folate into methyl-tetra-hydro-folate and is, therefore, important for absorption of vitamin B9.*	**CT**
ALPL	Vitamin B6	*Enzyme which functions in an alkaline environment and is crucial for growth and development of bones and teeth, as it is involved in the process of mineralisation, which is the process of accumulation of calcium and phosphorus. It also influences the level of vitamin B6.*	**CT**
FUT2	Vitamin B12	*Protein, which influences the level of vitamin B12.*	**AG**
TMPRSS6	Iron	*Enzyme which is found on the cell surface and is involved in the uptake and recycling of iron.*	**AG**
HFE	Iron	*Enzyme which is found on the cell surface. It detects the amount of iron in the body and regulates the production of protein hepcidin, which is the main iron-regulating hormone in the body*	**GG**
AGT	Sodium (salt)	*Is expressed in the liver. It activates with low pressure through renin and angiotensin converting enzyme (ACE), where angiotensin II is formed. It is in charge of the maintenance of blood pressure and electrolyte homeostasis.*	**TT**
CLCNKA	Sodium (salt)	*Chloride channel with 12 trans-membrane domains, which is in charge of the maintenance of blood pressure.*	**GG**
WNK1	Potassium	*Protein, which supervises the transport of sodium and potassium. It is included in electrolyte homeostasis and regulation of blood pressure.*	**AG**
COL1A1	Bone density	*Collagen type I built from two alpha 1 chains and one alpha 2 chain. Collagen is the main protein of the organic part of the bone matrix (98%).*	**GT**
GPR177	Bone density	*Protein is part of the evolutionary highly retained Wnt signal route, which is important for the differentiation and development of bone cells, and the resorption of bone material.*	**AG**
STARD3NL	Bone density	*An integral membrane protein, which regulates the endolysosomal transport of cholesterol.*	**- -**
DCDC5	Bone density	*A highly retained element, which serves as a template for protein links.*	**AG**
FOXL1	Bone density	*A transcription factor, expressed in the mezenchym of the gastrointestinal tract. Through regulation of the expression of proteoglycans in the intestines, it controls the Wnt/beta-catenin route, which is important for the differentiation and development of bone cells, as well as resorption of bone material.*	**CT**

THE REQUIREMENT OF NUTRIENTS

SPTBN1	Bone density	*Protein whose activity determines the shape of cells, the arrangement of trans-membrane proteins and the organisation of organelles.*	**AA**
MEPE	Bone density	*Expressed in bone cell, where it is involved in the processes of mineralisation.*	**CT**
ZBTB40(1)	Bone density	*Protein, found in the bone tissue, and influences bone density.*	**AG**
ZBTB40(2)	Bone density	*Protein, found in the bone tissue, and influences bone density.*	**CG**
ESR1	Bone density	*A transcription factor involved in the regulation of the expression of genes, which influences the proliferation of cells and differentiation of tissues. It is responsible ofr growth and maintenance of the strength of human bones.*	**AG**
C6ORF97	Bone density	*Protein, which influences bone density.*	**CT**
TNFRSF11B	Bone density	*Protein, which functions as a negative regulator of the resorption of bone material. It specifically binds with ligand, osteoprotegerin and inhibits the activation of oseoclasts.*	**TT**
SP7	Bone density	*Transcription factor and the activator of bone cell differentiation.*	**CT**
AKAP11	Bone density	*Member of a structurally completely different group of proteins, which have a common function of binding the regulatory subunit of kinase A. It is highly expressed during spermatogenesis. It is found next to gene RANKL, which has an important role in bone metabolism.*	**TT**
TNFRSF11A	Bone density	*It is essential for RANKL-regulated osteoclastogenesis - the formation of osteoclasts (cell which break down bone cells).*	**GG**

EATING HABITS

Gene	Analysis	Role of the gene	Genotype
ADRA2A	Sweet treat intake	*Regulates the transmission of the nervous impulse and influences our behavioural habits.*	**CG**
FTO	Insatiety	*Protein, involved in the development of excess body weight.*	**TT**
NMB	Hunger	*Involved in the regulation of feeding processes.*	**CC**
SLC2A2	Sweet taste perception	*Regulates glucose transport and is a glucose sensor.*	**CC**
TAS2R38	Bitter taste perception	*A transmembrane receptor, which determines the ability of detecting bitter substances, found in the plant genus Brassica.*	**CG**

METABOLIC PROPERTIES

Gene	Analysis	Role of the gene	Genotype
ALDH2	Alcohol metabolism	*Enzyme involved in the metabolic pathways of the breakdown of alcohol. It is responsible for an adequate alcohol metabolism.*	**GG**
ADH1B	Alcohol metabolism	*Enzyme involved in the metabolism of countless substrates, such as ethanol, retinol, alifatic alcohols, hydrosysterols,and products of peroxidation. Its activity, therefore, determines an adequate alcohol metabolism.*	**AA**
ADH1C(1)	Alcohol metabolism	*Enzyme involved in the metabolism of countless substrates, such as ethanol, retinol, alifatic alcohols, hydrosysterols,and products of peroxidation. Its activity, therefore, determines an adequate alcohol metabolism.*	**GG**
ADH1C(2)	Alcohol metabolism	*Enzyme involved in the metabolism of countless substrates, such as ethanol, retinol, alifatic alcohols, hydrosysterols, and products of peroxidation. Its activity, therefore, determines an adequate alcohol metabolism.*	**CC**
CYP1A2	Caffeine metabolism	*Enzyme responsible for the breakdown of caffeine, alphatoxin B1 and acetaminophene. It is involved in the synthesis of cholesterol and other lipids.*	**AC**
MCM6	Lactose metabolism	*Gene that regulates the concentration of the enzyme lactase.*	**CT**

DETOXIFICATION OF YOUR BODY

Gene	Analysis	Role of the gene	Genotype
SEPP-1(1)	Selenium	*Functions as an antioxidant. It is in charge of selenium transport, mostly to the brain and the testicles.*	**AG**
SEPP-1(2)	Selenium	*Functions as an antioxidant. It is in charge of selenium transport, mostly to the brain and the testicles.*	**AG**
APOA5	Vitamin E	*Apolipoprotein A5 has an important role in the regulation of theof the level of chylomicrons and triglycerides in the plasma. Because vitamin E is water-soluble, APOA5, through lipid concentrationin the blood, affects the vitamin E level.*	**AC**
CAT	Oxidative stress	*Catalase transforms reactive oxygenspecies into water and oxygen, and, therefore, reduces the toxic influence of hydrogen peroxide*	**AG**
NQO1	Oxidative stress	*Enzyme which functions as quinone reductase in connection to the conjugation of hydroquinones. It is involved in numerous detoxification pathways and biosynthetic processes, such as vitamin K-dependent glutamate carboksylation.*	**CC**

SPORTS AND RECREATION

Gene	Analysis	Role of the gene	Genotype
ACTN3	Muscle structure	*Protein, expressed in the muscles. It bonds to muscle actin, and is, therefore, important for muscle contraction.*	**CC**
PPAR alpha(2)	Muscle structure	*Regulates the expression of genes in charge of the oxidation fatty acids in the skeletal muscles and the heart muscle.*	**CG**
LPL	Endurance training	*Responsible for hydrolysis of lipoproteins, rich in triglycerides.*	**AA**
MMP3	Achilles tendon	*Enzyme responsible for the breakdown of fibronektin, collagen and proteoglicans of the cartilage.*	**GG**

GENETICALLY DETERMINED ADDICTIONS AND AGEING

Gene	Analysis	Role of the gene	Genotype
CHRNA3	Nicotine addiction	*It is a subunit of a nicotine receptor. Nicotine receptors are ion channels in the membranes of nervous cells, which regulate the potential off neuron cell membranes. They are the receptors for the nervous transmitter acetylcholine.*	**GG**
DRD2	Alcohol addiction	*Receptor that inhibits the activity of adenylyl cyclase. It is involved in the processes of movement, cognition (memorisation) and learning.*	**CC**
ERAP1	Alcohol addiction	*Amino peptidase, which has an important role in the metabolism of various types peptides. One of such peptides is angiotensin II, through which it regulates blood pressure.*	**GG**
GABRA	Alcohol addiction	*Receptor, which regulates signal transmission through the synapse in the central nervous system. It is the subunit of the chloride channel and has sites for bonding benzodiazepines, barbiturates, neurosteroids, and ethanol.*	**AG**
TERC	Biological ageing	*A telomerase, whose main component is TERC, is a polymerase, which maintains the length of telomeres (chromosome endings) by adding telomere repeat TTAGGG.*	**CG**

Absorption: taking in, ingestion

Allele: one of the forms of genetic material on a specific part of the chromosome. An individual has a chromosome pair where there are two alleles, which can be identical or not, and this is called homozygosis or heterozygosis. Different alleles in a human population can be the reason for inherited characteristics, such as blood type or hair colour.

Alkaloid: a basic unit, from which protein is built. Its formation is encoded in DNA with three sequential nucleotides, which in different combinations give different amino acids: GCU is the code for amino acid alanine, UGU for cysteine...

Anticarcinogenic: prevents the development of cancer.

Antioxidants: substances which protect us from oxidative stress.

Artery: a blood vessel that carries blood away from the heart. The main artery is the aorta.

Cell respiration: a basic process where energy, carbon dioxide and water are formed from glucose and oxygen.

Tannin: is a bitter plant polyphenolic compound

Detoxification: the process of removing harmful substances

Diabetes: a chronic state in which pancreatic cells do not produce enough insulin or the body cannot effectively use the produced insulin.

Dimethylation: the addition of two methyl compounds.

DNA: a molecule, found in the cell nucleus, which carries the instructions for the development of an organism. Human DNA is encoded by three different nucleotides and has the shape of a double coil. This means that two chains of DNA, which are anti-parallel and coil around one another. Anti-parallel means that the nucleotide C is always paired with G, and A always with T.

Enzyme: a protein involved in chemical processes in the body. Its purpose is to reduce the activation energy required for chemical reactions and thus facilitating their course. This enables faster conversion of substrate to product, for example, conversion of starch into glucose.

Essential fats: plant fats, necessary for our body.

Phenotypical characteristic: a visible characteristic of an individual, such as, for example, eye colour.

Gene: Part of the DNA sequence that carries the information for the formation of protein. Genes are inherited from parents by their descendants, and give information, which is needed for the formation and development of an organism.

Genetic analysis: revision, or the analysis of your genes.

Genome: the entire DNA which is present in the cell nucleus, and includes all the autosomal chromosomes, and both sexual chromosomes.

Genotype: allele forms of a gene, present in an individual. Genotype can represent all of the alleles in a cell, but mostly it is used for describing one or more genes, which together influence a certain characteristic.

Genetic code: is a general term, which is usually a synonym for genotype, or form of the DNA gene sequence. However, the term can refer also to the region of the genome, where the gene is not present.

Genetic risk: risk for, for example, excess body weight, lack of a vitamin or a mineral, which is determined by your genes.

Glycemic index: it shows the increase of blood sugar level, caused by certain food (it does not consider the amount of food).

Glycemic load: it shows the increase of blood sugar level, caused by certain food. (it considers the amount of food).

Glycogen: the basic form of glucose storage in our body.

Glucose: the basic representative of carbohydrates. We also call it blood sugar.

HDL cholesterol: good cholesterol. A desired level should be as high as possible.

Hydrogenised fats: are trans fats, which are formed with heating of plant oils on high temperatures.

Cholymicron: it helps cholesterol in passing through the intestinal mucus, and it contains a minimal amount of cholesterol and triglycerides.

Hypothalamus: is cherry-size part in the middle of the brain, and it is the centre off all information concerning endocrine hormones.

IDL: intermediate density lipoproteins that are formed in the process of breaking down of VLDL.

Insulin: a hormone that regulates blood sugar level.

Insulin resistance: the state of our body being irresponsive to insulin, the hormone that regulates blood sugar level.

BMI: body mass index. The ratio of body mass and square body height (kg/m^2).

Caucasians: term, generally used in scientific articles for members of the white race.

Kcal: kilo calorie, in lay terms, simply calories.

Cofactor: non-protein compound, bound on a protein, and is necessary protein's biological activity.

Complex carbohydrates: compound carbohydrates, which are slowly digested by the body, and energy is provided for a long time, which makes us feel satiety longer. The increase of blood sugar level is slow, and not rapid, as in simple carbohydrates.

Creatine phosphate: a high-energy molecule, which is a source of energy for the muscle.

Chromosome: a stick-like form of DNA molecule, where there are present hundreds or thousands of genes. In the nucleus, there are 22 autosomal chromosome pairs, and 2 sexual chromosomes. In addition to the molecules of DNA, there are also proteins (mostly histones) present, around which the DNA is coiled. Such coiling and further formation results in a tightly formed chromosome, which takes up less space than an uncoiled molecule.

Chromosome (autosomal): a chromosome, where both in the chromosomal pair are similar. One chromosome out of the pair is given to an individual by his father and the other chromosome from his mother.

Chromosome (sex): there are chromosomes X (female) and Y (male). Women have a pair of two X chromosomes (XX) and men have an X and Y chromosome (XY), from which Y is inherited only from the father. Its presence/absence determines the sex of the child.

Lactose: milk sugar, consisting of glucose and galactose.

LDL cholesterol: harmful for our health and this is why its level should be as low as possible.

Lipolysis: the process of fat metabolism.

Lipoprotein particles: Bind cholesterol and transport it through the body.

Macronutrient: carbohydrates, proteins and fats (saturated, monounsaturated, polyunsaturated) are part of this group

Fats: important constituents and an energy source, which contains twice the amount of energy of carbohydrates or proteins.

Metabolism: process of the breakdown, or formation of new substances in the body.

Myoglobin: transports and stores oxygen in muscles.

Muscle fibres: cell that build muscle. Their name is due to their elongated shape.

Monounsaturated fats: an extremely beneficial type of fatty acids.

Monosaccharide: the most basic and simple carbohydrate. For example: glucose, fructose, manose...

Mutation: a random change in the genetic code material. Deletions are mutations where nucleotides on a part of genetic material are erased (deleted), insertions, where there is an insertion of nucleotides on a part of genetic material, and substitution, where nucleotides are replaced with other nucleotides.

Carbohydrates: apart from proteins and fats, it is the main macronutrient. It is the basic source of energy.

Osmotic pressure: pressure needed for the cell to get water.

A more common (copy) of the gene: DNA gene sequence which, on an analysed site, contains a nucleotide that is the most common in a population, and it, therefore, has a frequency higher than 50 percent.

Polymorphism: the presence of two or more different alleles of one gene in the population. The result of this is the presence of several phenotypes. However, a different allele has to be present in more than one percent of the population to be called polymorphism.

Polyunsaturated fats: a very beneficial type of fatty acids. They include omega-3 and omega-6 fatty acids.

Probiotic yoghurt: contains lactic acid bacteria, which help regulate digestion.

Free radicals: instable chemical substances, which harm the cell.

Refined: purified, industrially processed, and it unfavourably influences our health.

Reactive oxygen species: highly reactive free radicals, which contain oxygen.

Rarer form (copy) of a gene: DNA sequence of a gene which, on the analysed site, contains a nucleotide, which is rarer in the population, and it, therefore has a frequency lower than 50 percent.

SNP (Single Nucleotid Polymorphism): is polymorphism on a specifically determined DNA site, and it is occurs because of the substitution of one nucleotide with another (ie. A C) and it represents a variation in the genetic code, which differs among people. These variations can be numerous, because there are approximately 100 million SNPs in the human genome. The mentioned substitutions express in phenotypical differences (illnesses, characteristics) among individual people.

Thermogenesis: the process of heat production.

Types of fats: in essence, we differentiate animal saturated fats and plant mono- and polyunsaturated fats.

Trans fats: known also as hydrogenated or bad fats, which are produced as a result of overheating oil. They increase bad cholesterol and reduce the good one.

Triglycerides: a form of fat storage. A high triglyceride level in the blood is not healthy and it is connected to numerous illnesses.

Fibre: an indigestible carbohydrate, which is in charge of a good digestion and the feeling of satiety. They include cellulose, lignin and pectin.

VLDL: a very low density lipoprotein that carries through the body the cholesterol produced by the body in the liver.

Food (100 g)	Food (general portion)	Calories	Proteins	Carbo-hydrates	Saturated fats	Monoun-saturated fats	Polyun-saturated fats	Choles-terol	B6
CEREALS AND STARCHY FOODS									
Amaranth	half a cup	371	13,6 g	65,7 g	1,50 g	1,70 g	2,80 g	0 mg	0,6 mg
Amaranth, cooked	5 tablespoons	102	3,8 g	18,7 g	~	~	~	0 mg	0,1 mg
Barley	half a cup	352	9,9 g	77,7 g	0,20 g	0,10 g	0,60 g	0 mg	0,3 mg
Barley flakes or flour	3 tablespoons	345	10,5 g	74,5 g	0,30 g	0,20 g	0,80 g	0 mg	0,4 mg
Barley, cooked	5 tablespoons	123	2,3 g	28,2 g	0,10 g	0,10 g	0,20 g	0 mg	0,1 mg
Bread, buckwheat	2 pieces	256	7,9 g	51,4 g	0,34 g	0,62 g	0,50 g	0 mg	0,3 mg
Bread, corn	2 pieces	314	7,2 g	48,1 g	2,70 g	5,10 g	1,20 g	0 mg	0,1 mg
Bread, oat	2 pieces	236	10,4 g	39,8 g	0,70 g	1,60 g	1,70 g	0 mg	0,1 mg
Bread, rye	2 pieces	258	8,5 g	48,3 g	0,60 g	1,30 g	0,80 g	0 mg	0,1 mg
Bread, spelt	2 pieces	333	12,0 g	65,7 g	0,24 g	0,54 g	1,18 g	0 mg	0,4 mg
Bread, white	2 pieces	266	7,6 g	50,6 g	0,70 g	0,70 g	1,40 g	0 mg	0,1 mg
Coconut flakes	1 cup	456	3,1 g	51,8 g	26,40 g	1,40 g	0,20 g	0 mg	0,0 mg
Corn flakes	3/4 a cup	360	6,7 g	86,7 g	0,00 g	0,00 g	0,10 g	0 mg	1,8 mg
Corn polenta, instant	half a cup	371	8,8 g	79,6 g	0,20 g	0,30 g	0,50 g	0 mg	0,1 mg
Khorasan wheat	half a cup	337	14,7 g	70,4 g	0,20 g	0,20 g	0,60 g	0 mg	0,3 mg
Khorasan wheat, cooked	3/4 a cup	146	6,5 g	30,5 g	0,10 g	0,1 g	0,24 g	0 mg	0,1 mg
Macaroni, plain, cooked	3/4 a cup	158	5,8 g	30,9 g	0,20 g	0,10 g	0,30 g	0 mg	0,0 mg
Macaroni, whole wheat	3/4 a cup	124	5,3 g	26,5 g	0,10 g	0,10 g	0,20 g	0 mg	0,1 mg
Oat flakes	4 tablespoons	375	12,7 g	68,2 g	1,50 g	2,10 g	2,40 g	0 mg	1,6 mg
Potato, baked	1 medium potato	93	2,0 g	21,5 g	0,00 g	0,00 g	0,00 g	0 mg	0,3 mg
Potato, cooked	1 medium potato	87	1,9 g	20,1 g	0,00 g	0,00 g	0,00 g	0 mg	0,3 mg
Rice bran	1 cup	316	13,3 g	49,7 g	4,20 g	7,50 g	7,50 g	0 mg	4,1 mg
Rice, brown	half a cup	362	7,5 g	76,2 g	0,50 g	1,00 g	1,00 g	0 mg	0,5 mg
Rice, white	half a cup	360	6,6 g	79,3 g	0,20 g	0,20 g	0,20 g	0 mg	0,1 mg
Spaghetti, plain, cooked	3/4 a cup	158	5,8 g	30,9 g	0,20 g	0,10 g	0,30 g	0 mg	0,0 mg
Spaghetti, whole wheat, cooked	3/4 a cup	124	5,3 g	26,5 g	0,10 g	0,10 g	0,20 g	0 mg	0,1 mg
Spelt	5 tablespoons	338	14,6 g	71,4 g	0,40 g	0,40 g	1,30 g	0 mg	0,2 mg
Tofu	1 slice	271	17,3 g	10,5 g	2,90 g	4,50 g	11,40 g	0 mg	0,1 mg
Wheat germ	1 cup	360	23,1 g	51,8 g	1,70 g	1,40 g	6,00 g	0 mg	1,3 mg
Wheat, plain	half a cup	340	10,7 g	75,4 g	0,40 g	0,20 g	0,80 g	0 mg	0,4 mg

B9	B12	D	C	E	Iron	Potassium	Selenium	Calcium	Magne-sium	Mangan	Sodium
CEREALS AND STARCHY FOODS											
82 mcg	0,0 mcg	0,0 mcg	4 mg	1,20 mg	7,6 mg	508 mg	18,7 mcg	159 mg	248 mg	3,3 mg	4 mg
22 mcg	0 mg	0,0 mcg	4 mg	0,20 mg	2,1 mg	135 mg	5,5 mcg	47 mg	65 mg	0,9 mg	6 mg
23 mcg	0,0 mcg	0,0 mcg	0 mg	0,00 mg	2,5 mg	280 mg	37,7 mcg	29 mg	79 mg	1,3 mg	9 mg
8 mcg	0,0 mcg	0,0 mcg	0 mg	0,60 mg	2,7 mg	4 mg	37,7 mcg	32 mg	96 mg	1,0 mg	4 mg
16 mcg	0,0 mcg	0,0 mcg	0 mg	0,00 mg	1,3 mg	93 mg	8,6 mcg	11 mg	22 mg	0,3 mg	3 mg
43 mcg	0,0 mcg	0,0 mcg	1 mg	0,22 mg	1,3 mg	166 mg	2,5 mcg	19 mg	95 mg	1,0 mg	57 mg
55 mcg	0,2 mcg	~	0 mg	~	1,9 mg	128 mg	9,9 mcg	73 mg	20 mg	0,2 mg	778 mg
81 mcg	0,0 mcg	~	0 mg	0,40 mg	3,1 mg	147 mg	30,0 mcg	65 mg	35 mg	0,8 mg	407 mg
110 mcg	0,0 mcg	~	1 mg	0,30 mg	2,8 mg	166 mg	30,9 mcg	73 mg	40 mg	0,8 mg	660 mg
64 mcg	0,0 mcg	0,0 mcg	0 mg	0,98 mg	3,4 mg	418 mg	0,2 mcg	29 mg	119 mg	0,0 mg	579 mg
111 mcg	0,0 mcg	0,0 mcg	0 mg	0,20 mg	3,7 mg	100 mg	17,3 mcg	151 mg	23 mg	0,5 mg	681 mg
3 mcg	0,0 mcg	0,0 mcg	0 mg	0,00 mg	1,5 mg	361 mg	16,1 mcg	11 mg	51 mg	1,0 mg	285 mg
357 mcg	5,4 mcg	3,6 mcg	0 mg	0,30 mg	19,3 mg	117 mg	5,1 mcg	3 mg	16 mg	0,1 mg	949 mg
5 mcg	0,0 mcg	0,0 mcg	0 mg	~	1,0 mg	137 mg	17,0 mcg	2 mg	27 mg	0,1 mg	1 mg
~	~	0,0 mcg	0 mg	0,60 mg	4,4 mg	446 mg	69,3 mcg	24 mg	134 mg	2,9 mg	6 mg
12 mcg	0,0 mcg	0,0 mcg	0 mg	~	2,0 mg	220 mg	~	10 mg	56 mg	1,2 mg	6 mg
7 mcg	0,0 mcg	~	0 mg	0,10 mg	0,5 mg	44 mg	26,4 mcg	7 mg	18 mg	0,3 mg	1 mg
5 mcg	0,0 mcg	~	0 mg	0,30 mg	1,1 mg	44 mg	25,9 mcg	15 mg	30 mg	1,4 mg	3 mg
286 mcg	0,0 mcg	0,0 mcg	0 mg	0,50 mg	29,3 mg	359 mg	26,8 mcg	352 mg	138 mg	2,9 mg	258 mg
9 mcg	0,0 mcg	0,0 mcg	13 mg	0,00 mg	0,4 mg	391 mg	0,3 mcg	5 mg	25 mg	0,2 mg	5 mg
10 mcg	0,0 mcg	0,0 mcg	13 mg	0,00 mg	0,3 mg	379 mg	0,3 mcg	5 mg	33 mg	0,1 mg	4 mg
63 mcg	0,0 mcg	0,0 mcg	0 mg	4,90 mg	18,5 mg	1485 mg	15,6 mcg	57 mg	781 mg	14,2 mg	5 mg
20 mcg	0,0 mcg	0,0 mcg	0 mg	1,2 mg	1,8 mg	268 mg	23,4 mcg	33 mg	143 mg	3,7 mg	4 mg
9 mcg	0,0 mcg	0,0 mcg	0 mg	1,0 mg	0,8 mg	86 mg	15,1 mcg	9 mg	35 mg	1,1 mg	1 mg
7 mcg	0,0 mcg	0,0 mcg	0 mg	0,10 mg	1,3 mg	44 mg	26,4 mcg	7 mg	18 mg	0,3 mg	1 mg
5 mcg	0,0 mcg	0,0 mcg	0 mg	0,30 mg	1,1 mg	44 mg	25,9 mcg	15 mg	30 mg	1,4 mg	3 mg
45 mcg	0,0 mcg	~	0 mg	0,80 mg	4,4 mg	388 mg	11,7 mcg	27 mg	136 mg	3,0 mg	8 mg
27 mcg	0,0 mcg	0,0 mcg	0 mg	0,00 mg	4,9 mg	146 mg	28,5 mcg	372 mg	60 mg	1,5 mg	16 mg
281 mcg	0,0 mcg	0,0 mcg	0 mg	22,00 mg	6,3 mg	892 mg	79,2 mcg	39 mg	239 mg	13,3 mg	12 mg
41 mcg	0,0 mcg	0,0 mcg	0 mg	1,00 mg	5,4 mg	435 mg	2,1 mcg	34 mg	90 mg	3,4 mg	2 mg

Food (100 g)	Food (general portion)	Calories	Proteins	Carbo-hydrates	Saturated fats	Monoun-saturated fats	Polyun-saturated fats	Choles-terol	B6
FRUITS									
Apple	1 small fruit	52	0,3 g	11,4 g	0,21 g	0,02 g	0,25 g	0 mg	0,0 mg
Apricots, dried	1 cup	241	3,4 g	62,6 g	0,00 g	0,10 g	0,10 g	0 mg	0,1 mg
Avocado	half of the fruit	160	2,0 g	8,5 g	2,10 g	9,80 g	1,80 g	0 mg	0,3 mg
Banana	1 fruit	89	1,1 g	22,8 g	0,10 g	0,00 g	0,10 g	0 mg	0,4 mg
Black currants	1 cup	63	1,4 g	15,4 g	0,00 g	0,10 g	0,20 g	0 mg	0,1 mg
Blueberries	1 cup	57	0,7 g	14,5 g	0,00 g	0,00 g	0,10 g	0 mg	0,1 mg
Cherry, red	2/3 cup, pitted	63	1,1 g	16,0 g	0,07 g	0,08 g	0,10 g	0 mg	0,0 mg
Cranberries, dried	2,5 cup	308	0,1 g	82,4 g	0,10 g	0,20 g	0,70 g	0 mg	0,0 mg
Figs, dried	5 figs	249	3,3 g	63,9 g	0,10 g	0,20 g	0,30 g	0 mg	0,1 mg
Grapefruit	1 small fruit	34	0,6 g	7,4 g	0,03 g	0,03 g	0,06 g	0 mg	0,0 mg
Japanese Persimmon	1 fruit	70	0,6 g	16,0 g	0,05 g	0,09 g	0,06 g	0 mg	0,1 mg
Kiwi	2 fruits	61	1,1 g	14,7 g	0,03 g	0,05 g	0,30 g	0 mg	0,1 mg
Lemon	1 fruit	29	1,1 g	9,3 g	0,13 g	0,04 g	0,10 g	0 mg	0,1 mg
Mandarin	1 medium fruit	53	0,8 g	13,3 g	0,00 g	0,10 g	0,10 g	0 mg	0,1 mg
Melons	2/3 cup	34	0,8 g	8,8 g	0,10 g	0,00 g	0,10 g	0 mg	0,1 mg
Nectarine	1 small fruit	44	1,0 g	10,6 g	0,03 g	0,09 g	0,11 g	0 mg	0,0 mg
Olives, canned	12 tablespoons	145	1,0 g	3,8 g	2,00 g	11,30 g	1,30 g	0 mg	0,0 mg
Orange	1 small fruit	39	1,0 g	8,3 g	0,03 g	0,06 g	0,08 g	0 mg	0,1 mg
Peaches	1 small fruit	39	0,9 g	9,9 g	0,00 g	0,10 g	0,10 g	0 mg	0,0 mg
Pear	half of the fruit	62	0,2 g	15,0 g	0,04 g	0,07 g	0,13 g	0 mg	0,0 mg
Pineapple	2 thin slices	54	0,5 g	13,1 g	0,02 g	0,03 g	0,08 g	0 mg	0,1 mg
Plums	3 fruits	69	0,6 g	11,4 g	0,02 g	0,05 g	0,08 g	0 mg	0,0 mg
Rasberries	2/3 cup	52	1,2 g	11,9 g	0,00 g	0,10 g	0,40 g	0 mg	0,1 mg
Redcurrants	1 cup	26	1,1 g	13,8 g	0,04 g	0,03 g	0,07 g	0 mg	0,1 mg
Strawberries	half a cup, chopped	32	0,6 g	6,9 g	0,32 g	0,06 g	0,24 g	0 mg	0,0 mg
Watermelon	2/3 cup	38	0,6 g	8,3 g	0,05 g	0,03 g	0,07 g	0 mg	0,0 mg
VEGETABLES AND LEGUMES									
Artichoke	1 medium fruit	47	3,3 g	10,5 g	0,00 g	0,00 g	0,10 g	0 mg	0,1 mg
Asparagus	5 big asparagus	20	2,2 g	4,0 g	0,00 g	0,00 g	0,10 g	0 mg	0,1 mg
Beet, pickled	3/4 cup	65	0,8 g	16,3 g	0,00 g	0,00 g	0,00 g	0 mg	0,1 mg
Bell pepper, green	1 medium size	20	0,9 g	4,6 g	0,10 g	0,00 g	0,10 g	0 mg	0,2 mg

B9	B12	D	C	E	Iron	Potassium	Selenium	Calcium	Magne-sium	Mangan	Sodium
FRUITS											
3 mcg	0,0 mcg	0,0 mcg	5 mg	0,20 mg	0,1 mg	107 mg	0,0 mcg	6 mg	5 mg	0,0 mg	1 mg
10 mcg	0,0 mcg	0,0 mcg	1 mg	4,30 mg	2,7 mg	1162 mg	2,2 mcg	55 mg	32 mg	0,2 mg	10 mg
81 mcg	0,0 mcg	0,0 mcg	10 mg	2,10 mg	0,5 mg	485 mg	0,4 mcg	12 mg	29 mg	0,1 mg	7 mg
20 mcg	0,0 mcg	0,0 mcg	9 mg	0,10 mg	0,3 mg	358 mg	1,0 mcg	5 mg	27 mg	0,3 mg	1 mg
8,8 mcg	0,0 mcg	0,0 mcg	181 mg	1,00 mg	1,5 mg	322 mg	1,7 mcg	55 mg	24 mg	0,3 mg	2 mg
6 mcg	0,0 mcg	0,0 mcg	10 mg	0,60 mg	0,3 mg	77 mg	0,1 mcg	6 mg	6 mg	0,3 mg	1 mg
4 mcg	0,0 mcg	0,0 mcg	7 mg	0,10 mg	0,4 mg	222 mg	0,0 mcg	13 mg	11 mg	0,1 mg	0 mg
0 mcg	0,0 mcg	0,0 mcg	0 mg	1,10 mg	0,5 mg	40 mg	0,5 mcg	10 mg	5 mg	0,3 mg	3 mg
9 mcg	0,0 mcg	0,0 mcg	1 mg	0,40 mg	2,0 mg	680 mg	0,6 mcg	162 mg	1 mg	0,5 mg	10 mg
10 mcg	0,0 mcg	0,0 mcg	33 mg	0,10 mg	0,1 mg	148 mg	1,4 mcg	12 mg	9 mg	0,0 mg	0 mg
8 mcg	0,0 mcg	0,0 mcg	8 mg	0,70 mg	0,2 mg	161 mg	0,6 mcg	8 mg	9 mg	0,4 mg	1 mg
25 mcg	0,0 mcg	0,0 mcg	93 mg	1,50 mg	0,3 mg	312 mg	0,2 mcg	34 mg	17 mg	0,1 mg	3 mg
11 mcg	0,0 mcg	0,0 mcg	53 mg	0,20 mg	0,6 mg	138 mg	0,4 mcg	26 mg	8 mg	0 mcg	2 mg
16 mcg	0,0 mcg	0,0 mcg	27 mg	0,20 mg	0,2 mg	166 mg	0,1 mcg	37 mg	12 mg	0,0 mg	2 mg
21 mcg	0,0 mcg	0,0 mcg	37 mg	0,10 mg	0,2 mg	267 mg	0,4 mcg	9 mg	12 mg	0,0 mg	16 mg
5 mcg	0,0 mcg	0,0 mcg	5 mg	0,80 mg	0,3 mg	201 mg	0,0 mcg	6 mg	9 mg	0,1 mg	0 mg
3 mcg	0,0 mcg	0,0 mcg	0 mg	3,80 mg	0,5 mg	42 mg	0,9 mcg	52 mg	11 mg	0,0 mg	1556 mg
30 mcg	0,0 mcg	0,0 mcg	53 mg	0,20 mg	0,1 mg	181 mg	0,5 mcg	40 mg	10 mg	0,0 mg	0 mg
4 mcg	0,0 mcg	0,0 mcg	7 mg	0,70 mg	0,3 mg	190 mg	0,1 mcg	6 mg	9 mg	0,1 mg	0 mg
7 mcg	0,0 mcg	0,0 mcg	4 mg	0,10 mg	0,2 mg	119 mg	0,1 mcg	9 mg	7 mg	0,0 mg	1 mg
18 mcg	0,0 mcg	0,0 mcg	48 mg	0,00 mg	0,3 mg	109 mg	0,1 mcg	13 mg	12 mg	0,9 mg	1 mg
5 mcg	0,0 mcg	0,0 mcg	10 mg	0,30 mg	0,2 mg	157 mg	0,0 mcg	6 mg	7 mg	0,1 mg	0 mg
21 mcg	0,0 mcg	0,0 mcg	26 mg	0,90 mg	0,7 mg	151 mg	0,2 mcg	25 mg	22 mg	0,7 mg	1 mg
8 mcg	0,0 mcg	0,0 mcg	41 mg	0,10 mg	1,0 mg	275 mg	0,6 mcg	33 mg	13 mg	0,2 mg	1 mg
24 mcg	0,0 mcg	0,0 mcg	59 mg	0,30 mg	0,4 mg	153 mg	0,4 mcg	16 mg	13 mg	0,4 mg	1 mg
3 mcg	0,0 mcg	0,0 mcg	8 mg	0,10 mg	0,2 mg	112 mg	0,4 mcg	7 mg	10 mg	0,0 mg	1 mg
VEGETABLES AND LEGUMES											
68 mcg	0,0 mcg	0,0 mcg	12 mg	0,20 mg	1,3 mg	370 mg	0,2 mcg	44 mg	60 mg	0,3 mg	94 mg
52 mcg	0,0 mcg	0,0 mcg	6 mg	1,10 mg	2,1 mg	202 mg	2,3 mcg	24 mg	14 mg	0,2 mg	2 mg
27 mcg	0,0 mcg	0,0 mcg	2 mg	0,10 mg	0,4 mg	148 mg	1,0 mcg	11 mg	15 mg	0,2 mg	264 mg
10 mcg	0,0 mcg	0,0 mcg	80 mg	0,40 mg	0,3 mg	175 mg	0,0 mcg	10 mg	10 mg	0,1 mg	3 mg

Food (100 g)	Food (general portion)	Calories	Proteins	Carbo-hydrates	Saturated fats	Monoun-saturated fats	Polyun-saturated fats	Choles-terol	B6
VEGETABLES AND LEGUMES									
Bell pepper, red	half of a large	31	1,0 g	6,3 g	0,00 g	0,00 g	0,10 g	0 mg	0,3 mg
Broccoli	1 cup, cubes	34	2,8 g	6,6 g	0,00 g	0,00 g	0,00 g	0 mg	0,2 mg
Cabbage, sour	1 cup	12	1,5 g	0,8 g	0,03 g	0,01 g	0,07 g	0 mg	0,2 mg
Cabbage, white, fresh	1 cup	25	1,3 g	5,8 g	0,00 g	0,00 g	0,00 g	0 mg	0,1 mg
Carrot	1 small carrot	41	0,9 g	9,6 g	0,00 g	0,00 g	0,10 g	0 mg	0,1 mg
Cauliflower	1 cup, cubes	25	2,0 g	5,3 g	0,00 g	0,00 g	0,00 g	0 mg	0,2 mg
Chard	2 leafs	19	1,8 g	3,7 g	0,00 g	0,00 g	0,10 g	0 mg	0,1 mg
Chick peas, cooked	half a cup	164	8,9 g	27,4 g	0,30 g	0,60 g	1,20 g	0 mg	0,1 mg
Dandelion	2 cups	45	2,7 g	9,2 g	0,20 g	0,00 g	0,30 g	0 mg	0,3 mg
Fennel	1 cup, cubes	31	1,2 g	7,3 g	0,09 g	0,07 g	0,17 g	0 mg	0,0 mg
Field beans, cooked	2/3 cup	110	7,6 g	19,7 g	0,10 g	0,10 g	0,20 g	0 mg	0,1 mg
Garlic	1 cup	149	6,4 g	33,1 g	0,10 g	0,00 g	0,20 g	0 mg	1,2 mg
Green kohlrabi, cooked	half a cup, sliced	29	1,8 g	6,7 g	0,00 g	0,00 g	0,10 g	0 mg	0,2 mg
Kale	1 cup	50	3,3 g	10,0 g	0,10 g	0,10 g	0,30 g	0 mg	0,3 mg
Kale, bud	1 cup	43	3,4 g	9,0 g	0,10 g	0,00 g	0,20 g	0 mg	0,2 mg
Kidney beans, cooked	half a cup	127	8,7 g	22,8 g	0,10 g	0,00 g	0,30 g	0 mg	0,1 mg
Kohlrabi	half a tuber	27	1,7 g	6,2 g	0,00 g	0,00 g	0,00 g	0 mg	0,2 mg
Lamb's lettuce	1 cup	21	2,0 g	3,6 g	0,02 g	0,01 g	0,08 g	0 mg	0,3 mg
Leek	1 cup	61	1,5 g	14,2 g	0,00 g	0,00 g	0,20 g	0 mg	0,2 mg
Lentils, cooked	half a cup	116	9,0 g	20,1 g	0,10 g	0,10 g	0,20 g	0 mg	0,2 mg
Parsley, green	10 shoots	36	3,0 g	6,3 g	0,10 g	0,30 g	0,10 g	0 mg	0,1 mg
Parsnips, cooked	1 cup	71	1,3 g	17,0 g	0,10 g	0,10 g	0,00 g	0 mg	0,1 mg
Peas, cooked	half a cup	40	3,3 g	6,8 g	0,00 g	0,00 g	0,10 g	0 mg	0,1 mg
Radish	1 ½ cups, sliced	16	0,7 g	3,5 g	0,00 g	0,00 g	0,00 g	0 mg	0,1 mg
Red cabbage	1 ½ cup, grated	31	1,4 g	7,4 g	0,00 g	0,00 g	0,10 g	0 mg	0,2 mg
Soy milk	half a cup	45	2,9 g	3,5 g	0,20 g	0,40 g	1,20 g	0 mg	0,2 mg
Soy yogurt	1 cup	94	3,5 g	9,7 g	0,26 g	0,40 g	1,02 g	0 mg	0,0 mg
Soy, cooked	half a cup	141	12,3 g	11,1 g	0,70 g	1,20 g	3,00 g	0 mg	0,1 mg
Spinach, cooked	half a cup	23	3,0 g	3,7 g	0,00 g	0,00 g	0,10 g	0 mg	0,2 mg
Spring onion	1 cup, cubes	32	1,8 g	7,3 g	0,00 g	0,00 g	0,10 g	0 mg	0,0 mg
Tomato	half a cup	18	0,9 g	3,9 g	0,00 g	0,00 g	0,10 g	0 mg	0,1 mg
Turnip	2 cups	28	0,9 g	6,4 g	0,00 g	0,00 g	0,10 g	0 mg	0,1 mg

B9	B12	D	C	E	Iron	Potassium	Selenium	Calcium	Magne-sium	Mangan	Sodium
VEGETABLES AND LEGUMES											
46 mcg	0,0 mcg	0,0 mcg	128 mg	1,60 mg	0,4 mg	211 mg	0,1 mcg	7 mg	12 mg	0,1 mg	4 mg
63 mcg	0,0 mcg	0,0 mcg	89 mg	0,80 mg	0,7 mg	316 mg	2,5 mcg	47 mg	21 mg	0,2 mg	33 mg
31 mcg	0,0 mcg	0,0 mcg	20 mg	0,14 mg	0,6 mg	288 mg	0,6 mcg	48 mg	14 mg	0,1 mg	355 mg
43 mcg	0,0 mcg	0,0 mcg	37 mg	0,20 mg	0,5 mg	170 mg	0,3 mcg	40 mg	12 mg	0,2 mg	18 mg
19 mcg	0,0 mcg	0,0 mcg	6 mg	0,70 mg	0,3 mg	320 mg	0,1 mcg	33 mg	12 mg	0,1 mg	69 mg
57 mcg	0,0 mcg	0,0 mcg	46 mg	0,10 mg	0,4 mg	303 mg	0,6 mcg	22 mg	15 mg	0,2 mg	30 mg
14 mcg	0,0 mcg	0,0 mcg	30 mg	1,90 mg	1,8 mg	379 mg	0,9 mcg	51 mg	81 mg	0,4 mg	213 mg
172 mcg	0,0 mcg	0,0 mcg	1 mg	0,40 mg	2,9 mg	291 mg	3,7 mcg	49 mg	48 mg	1,0 mg	7 mg
27 mcg	0,0 mcg	0,0 mcg	35 mg	3,40 mg	3,1 mg	397 mg	0,5 mcg	187 mg	36 mg	0,3 mg	76 mg
27 mcg	0,0 mcg	0,0 mcg	12 mg	0,58 mg	0,7 mg	414 mg	0,7 mcg	49 mg	17 mg	0,2 mg	52 mg
104 mcg	0,0 mcg	0,0 mcg	0 mg	0,00 mg	1,5 mg	268 mg	2,6 mcg	36 mg	43 mg	0,4 mg	5 mg
3 mcg	0,0 mcg	0,0 mcg	31 mg	0,10 mg	1,7 mg	401 mg	14,2 mcg	181 mg	25 mg	1,7 mg	17 mg
12 mcg	0,0 mcg	0,0 mcg	54 mg	0,50 mg	0,4 mg	340 mg	0,8 mcg	25 mg	19 mg	0,1 mg	21 mg
29 mcg	0,0 mcg	0,0 mcg	120 mg	0,88 mg	1,7 mg	447 mg	0,9 mcg	135 mg	34 mg	0,8 mg	43 mg
61 mcg	0,0 mcg	0,0 mcg	85 mg	0,90 mg	1,4 mg	389 mg	1,6 mcg	42 mg	23 mg	0,3 mg	25 mg
130 mcg	0,0 mcg	0,0 mcg	1 mg	0,00 mg	2,2 mg	405 mg	1,1 mcg	35 mg	42 mg	0,4 mg	1 mg
16 mcg	0,0 mcg	0,0 mcg	62 mg	0,50 mg	0,4 mg	350 mg	0,7 mcg	24 mg	19 mg	0,1 mg	20 mg
14 mcg	0,0 mcg	0,0 mcg	38 mg	0,22 mg	2,2 mg	459 mg	0,9 mcg	38 mg	13 mg	0,4 mg	4 mg
64 mcg	0,0 mcg	0,0 mcg	12 mg	0,90 mg	2,1 mg	180 mg	1,0 mcg	59 mg	28 mg	0,5 mg	20 mg
181 mcg	0,0 mcg	0,0 mcg	2 mg	0,10 mg	3,3 mg	369 mg	2,8 mcg	19 mg	36 mg	0,5 mg	2 mg
152 mcg	0,0 mcg	0,0 mcg	133 mg	0,70 mg	6,2 mg	554 mg	0,1 mcg	138 mg	50 mg	0,2 mg	56 mg
58 mcg	0,0 mcg	0,0 mcg	13 mg	1,00 mg	0,6 mg	367 mg	1,7 mcg	37 mg	29 mg	0,3 mg	10 mg
29 mcg	0,0 mcg	0,0 mcg	48 mg	0,40 mg	2,0 mg	240 mg	0,7 mcg	42 mg	26 mg	0,2 mg	240 mg
25 mcg	0,0 mcg	0,0 mcg	15 mg	0,00 mg	0,3 mg	233 mg	0,6 mcg	25 mg	10 mg	0,1 mg	39 mg
18 mcg	0,0 mcg	0,0 mcg	57 mg	0,10 mg	0,8 mg	243 mg	0,6 mcg	45 mg	16 mg	0,2 mg	27 mg
32 mcg	1,1 mcg	12,0 mcg	7 mg	2,50 mg	0,5 mg	141 mg	2,3 mcg	140 mg	10 mg	~	50 mg
6 mcg	~	1,3 mcg	13 mg	0,31 mg	1,06 mg	0 mg	13,0 mcg	118 mg	40 mg	~	13 mg
111 mcg	0,0 mcg	0,0 mcg	17 mg	0,21 mg	2,5 mg	539 mg	1,4 mcg	145 mg	60 mg	0,5 mg	14 mg
146 mcg	0,0 mcg	0,0 mcg	10 mg	2,10 mg	3,6 mg	466 mg	0,5 mcg	136 mg	87 mg	0,9 mg	70 mg
64 mcg	0,0 mcg	0,0 mcg	19 mg	0,50 mg	1,5 mg	276 mg	0,6 mcg	72 mg	20 mg	0,2 mg	16 mg
15 mcg	0,0 mcg	0,0 mcg	13 mg	0,50 mg	0,3 mg	237 mg	0,0 mcg	10 mg	11 mg	0,1 mg	5 mg
15 mcg	0,0 mcg	0,0 mcg	21 mg	0,00 mg	0,3 mg	191 mg	0,7 mcg	30 mg	11 mg	0,91mg	67 mg

Food (100 g)	Food (general portion)	Calories	Proteins	Carbo-hydrates	Saturated fats	Monoun-saturated fats	Polyun-saturated fats	Choles-terol	B6
NUTS AND SEEDS									
Almonds	1 cup	575	21,2 g	21,7 g	3,70 g	30,90 g	12,10 g	0 mg	0,1 mg
Brazil nuts	7 tablespoons	656	14,3 g	12,3 g	15,10 g	24,60 g	20,60 g	0 mg	0,1 mg
Cashews	7 tablespoons	587	17,6 g	27,6 g	9,80 g	29,10 g	8,40 g	0 mg	0,3 mg
Chestnuts, cooked	1 cup	131	2,0 g	27,8 g	0,30 g	0,50 g	0,50 g	0 mg	0,2 mg
Hazelnuts	10 tablespoons	628	15,0 g	16,7 g	4,50 g	45,70 g	7,90 g	0 mg	0,6 mg
Macadamia	3/4 cup	718	7,9 g	14,2 g	12,10 g	58,90 g	1,50 g	0 mg	0,3 mg
Peanuts	7 tablespoons	567	25,8 g	16,1 g	6,80 g	24,40 g	15,60 g	0 mg	0,3 mg
Pine nuts	3/4 cup	673	13,7 g	13,1 g	4,90 g	18,76 g	34,07 g	0 mg	0,1 mg
Pistachios	3/4 cup	557	20,6 g	28,0 g	5,40 g	23,30 g	13,50 g	0 mg	1,7 mg
Poppy seeds	11 teaspoons	525	18,0 g	28,1 g	4,50 g	6,00 g	28,60 g	0 mg	0,2 mg
Pumpkin seeds, dried	10 teaspoons	541	24,5 g	17,8 g	8,70 g	14,30 g	20,90 g	0 mg	0,2 mg
Sesame seeds	11 teapoons	631	20,5 g	12,1 g	9,10 g	23,90 g	25,50 g	0 mg	0,4 mg
Walnuts	1 cup	654	15,2 g	13,7 g	6,10 g	8,90 g	47,20 g	0 mg	0,5 mg
FISH AND SEAFOOD									
Anchovies	1 fillet	131	20,4 g	0,0 g	1,30 g	1,20 g	1,60 g	60 mg	0,1 mg
Brown trout, farmed	1 fillet	148	20,8 g	0,0 g	1,10 g	3,30 g	1,50 g	58 mg	0,2 mg
Cod	1 fillet	82	17,8 g	0,0 g	0,10 g	0,10 g	0,20 g	43 mg	0,2 mg
Eel, cooked	1 small fillet	236	23,7 g	0,0 g	3,00 g	9,20 g	1,20 g	161 mg	0,1 mg
Gray mullet	1 fillet	117	19,4 g	0,0 g	1,10 g	1,10 g	0,70 g	49 mg	0,4 mg
Hake	1 fillet	82	17,9 g	0,0 g	0,10 g	0,10 g	0,20 g	37 mg	0,4 mg
Herring	100 g	158	18,0 g	0,0 g	2,00 g	3,70 g	2,10 g	60 mg	0,3 mg
Lobster	half a lobster	90	18,8 g	0,5 g	0,20 g	0,30 g	0,20 g	95 mg	0,1 mg
Mackerel	1 small fillet	205	18,6 g	0,0 g	3,30 g	5,50 g	3,30 g	70 mg	0,4 mg
Mussels, cooked	2 cup	172	23,8 g	7,4 g	0,90 g	1,00 g	1,20 g	56 mg	0,1 mg
Octopus	100 g	82	14,9 g	2,2 g	0,20 g	0,20 g	0,20 g	48 mg	0,4 mg
Salmon	1 small fillet	208	20,4 g	0,0 g	3,00 g	3,80 g	3,90 g	55 mg	0,6 mg
Sardines	2 Fish	117	19,7 g	0,0 g	0,82 g	0,44 g	1,15 g	81 mg	~
Sardines, canned	2 Fish	208	24,6 g	0,0 g	1,50 g	3,90 g	5,10 g	142 mg	0,2 mg
Seabass	1 fillet	97	18,4 g	0,0 g	0,50 g	0,40 g	0,70 g	41 mg	0,4 mg
Squid, fried	1 cup	175	17,9 g	7,8 g	1,90 g	2,70 g	2,10 g	260 mg	0,1 mg
Tuna in its own juice	100 g	128	23,6 g	0,0 g	0,80 g	0,80 g	1,10 g	42 mg	0,2 mg
Tuna, ordinary	1 small fillet	108	23,4 g	0,0 g	0,20 g	0,20 g	0,30 g	45 mg	0,9 mg

B9	B12	D	C	E	Iron	Potassium	Selenium	Calcium	Magnesium	Mangan	Sodium
NUTS AND SEEDS											
50 mcg	0,0 mcg	0,0 mcg	0 mg	26,20 mg	3,7 mg	705 mg	2,5 mcg	264 mg	268 mg	2,3 mg	1 mg
22 mcg	0,0 mcg	0,0 mcg	1 mg	5,70 mg	2,4 mg	659 mg	1917,0 mcg	160 mg	376 mg	1,2 mg	3 mg
68 mcg	0,0 mcg	0,0 mcg	0 mg	0,90 mg	5,0 mg	546 mg	11,5 mcg	43 mg	258 mg	0,8 mg	15 mg
38 mcg	0,0 mcg	0,0 mcg	27 mg	0,50 mg	1,7 mg	715 mg	0,9 mcg	46 mg	54 mg	0,5 mg	27 mg
113 mcg	0,0 mcg	0,0 mcg	6 mg	15,00 mg	4,7 mg	680 mg	2,4 mcg	114 mg	163 mg	6,2 mg	0 mg
11 mcg	0,0 mcg	0,0 mcg	1 mg	0,50 mg	3,7 mg	368 mg	3,6 mcg	85 mg	130 mg	4,1 mg	5 mg
240 mcg	0,0 mcg	0,0 mcg	0 mg	8,30 mg	4,6 mg	705 mg	7,2 mcg	92 mg	168 mg	1,9 mg	18 mg
34 mcg	0,0 mcg	0,0 mcg	1 mg	9,30 mg	5,5 mg	597 mg	0,7 mcg	16 mg	251 mg	8,8 mg	2 mg
51 mcg	0,0 mcg	0,0 mcg	1 mg	2,30 mg	4,2 mg	1025 mg	7,0 mcg	107 mg	121 mg	1,2 mg	1 mg
82 mcg	0,0 mcg	0,0 mcg	1 mg	1,80 mg	9,8 mg	719 mg	13,5 mcg	1438 mg	347 mg	6,7 mg	26 mg
58 mcg	0,0 mcg	0,0 mcg	2 mg	0,00 mg	15,0 mg	807 mg	5,6 mcg	43 mg	535 mg	3,0 mg	18 mg
115 mcg	0,0 mcg	0,0 mcg	0 mg	1,70 mg	6,4 mg	370 mg	97,5 mcg	60 mg	345 mg	1,4 mg	47 mg
98 mcg	0,0 mcg	0,0 mcg	1 mg	0,70 mg	2,9 mg	441 mg	4,9 mcg	98 mg	158 mg	3,4 mg	2 mg
FISH AND SEAFOOD											
9 mcg	0,6 mcg	1,7 mcg	0 mg	0,60 mg	3,3 mg	383 mg	36,5 mcg	147 mg	41 mg	0,1 mg	104 mg
13 mcg	7,8 mcg	3,9 mcg	1 mg	0,20 mg	1,5 mg	361 mg	12,6 mcg	43 mg	22 mg	0,9 mg	52 mg
7 mcg	0,9 mcg	1,1 mcg	1 mg	0,60 mg	0,4 mg	413 mg	33,1 mcg	16 mg	32 mg	0,0 mg	54 mg
17 mcg	2,9 mcg	23,3 mcg	2 mg	4,00 mg	0,6 mg	349 mg	90,0 mcg	26 mg	26 mg	0,0 mg	65 mg
9 mcg	0,2 mcg	18,3 mcg	1 mg	1,00 mg	1,0 mg	357 mg	149,0 mcg	41 mg	29 mg	0,0 mg	65 mg
7 mcg	0,9 mcg	4,2 mcg	3 mg	0,60 mg	0,3 mg	403 mg	36,5 mcg	7 mg	24 mg	0,0 mg	71 mg
10 mcg	13,7 mcg	1,0 mcg	1 mg	1,10 mg	1,1 mg	327 mg	36,5 mcg	57 mg	32 mg	0,0 mg	90 mg
9 mcg	0,9 mcg	0,0 mcg	0 mg	1,50 mg	0,3 mg	275 mg	41,4 mcg	48 mg	27 mg	0,1 mg	296 mg
1 mcg	8,7 mcg	9,0 mcg	1 mg	1,50 mg	1,6 mg	314 mg	44,1 mcg	12 mg	76 mg	0,0 mg	90 mg
76 mcg	24,0 mcg	0,0 mcg	14 mg	0,55 mg	6,7 mg	268 mg	89,6 mcg	33 mg	37 mg	6,8 mg	369 mg
16 mcg	20,0 mcg	0,0 mcg	5 mg	1,20 mg	5,3 mg	350 mg	44,8 mcg	53 mg	30 mg	0,0 mg	230 mg
26 mcg	3,2 mcg	16,0 mcg	4 mg	3,60 mg	0,3 mg	363 mg	24,0 mcg	9 mg	27 mg	0,0 mg	59 mg
~	~	~	~	0,00 mg	2,7 mg	474 mg	640,6 mcg	379 mg	40 mg	0,2 mg	59 mg
12 mcg	8,9 mcg	6,8 mcg	0 mg	2,00 mg	2,9 mg	397 mg	52,7 mcg	382 mg	39 mg	0,1 mg	505 mg
5 mcg	0,3 mcg	67,8 mcg	0 mg	0,50 mg	0,3 mg	256 mg	36,5 mcg	10 mg	41 mg	0,0 mg	68 mg
14 mcg	1,2 mcg	0,0 mcg	4 mg	1,20 mg	1,0 mg	279 mg	51,8 mcg	39 mg	38 mg	0,1 mg	306 mg
2 mcg	1,2 mcg	4,5 mcg	0 mg	0,90 mg	1,0 mg	237 mg	65,7 mcg	14 mg	33 mg	0,0 mg	377 mg
2 mcg	0,5 mcg	4,5 mcg	1 mg	0,50 mg	0,7 mg	444 mg	36,5 mcg	16 mg	50 mg	0,0 mg	37 mg

Food (100 g)	Food (general portion)	Calories	Proteins	Carbo-hydrates	Saturated fats	Monoun-saturated fats	Polyun-saturated fats	Choles-terol	B6
MILK AND DAIRY PRODUCTS									
Butter, raw	7 tablespoon	717	0,9 g	0,1 g	51,40 g	21,00 g	3,00 g	215 mg	0,0 mg
Buttermilk	half a cup	56	4,1 g	5,3 g	1,20 g	0,60 g	0,10 g	8 mg	0,1 mg
Curd, 20% m.m.	8 tablespoons	109	12,5 g	2,7 g	2,76 g	0,15 g	0,03 g	17 mg	0,1 mg
Curd, 40% m.m.	8 tablespoons	160	11,1 g	2,6 g	6,17 g	0,34 g	0,07 g	37 mg	0,1 mg
Curd, skimmed	8 tablespoons	70	13,5 g	3,2 g	0,17 g	0,08 g	0,00 g	1 mg	0,1 mg
Edamer cheese	100 g	357	25,0 g	1,4 g	17,60 g	8,10 g	0,70 g	89 mg	0,1 mg
Gauda cheese	100 g	356	24,9 g	2,2 g	17,60 g	7,70 g	0,70 g	114 mg	0,1 mg
Kefir 1,1%	half a cup	41	3,1 g	4,6 g	0,57 g	0,00 g	0,00 g	0 mg	0,1 mg
Margarine, regular	7 tablespoon	713	0,2 g	0,7 g	14,20 g	36,40 g	26,70 g	0 mg	0,0 mg
Margarine, vegetable	7 tablespoon	526	0,6 g	0,0 g	10,00 g	20,30 g	24,70 g	1 mg	0,0 mg
Mozzarella	100 g	300	22,2 g	2,2 g	13,20 g	6,60 g	0,80 g	79 mg	0,1 mg
Pasteurized milk 1,6%	half a cup	46	3,0 g	4,8 g	0,91 g	0,41 g	0,04 g	5 mg	0,1 mg
Pasteurized whole milk	half a cup	60	3,2 g	5,3 g	1,90 g	0,80 g	0,20 g	10 mg	0,1 mg
Ricotta cheese	100 g	174	11,3 g	0,3 g	8,30 g	3,60 g	0,40 g	51 mg	0,0 mg
Sour cream	8 tablespoons	193	2,1 g	3,5 g	11,50 g	5,10 g	0,80 g	52 mg	0,1 mg
Trappist cheese	100 g	358	26,6 g	0,0 g	17,38 g	0,42 g	0,20 g	0 mg	0,0 mg
OILS									
Avocado oil	7 tablespoons	884	0,0 g	0,0 g	11,60 g	70,60 g	13,50 g	~	0,0 mg
Butter, cashew nuts	6 tablespoons	587	17,6 g	27,6 g	9,80 g	29,10 g	8,40 g	0 mg	0,3 mg
Butter, peanut	6 tablespoons	588	25,1 g	20,0 g	10,50 g	24,20 g	14,20 g	0 mg	0,5 mg
Coconut oil	7 tablespoons	862	0,0 g	0,0 g	86,50 g	5,80 g	1,80 g	0 mg	0,0 mg
Fish oil, sardine	7 tablespoons	902	0,0 g	0,0 g	29,90 g	33,80 g	31,90 g	710 mg	0,0 mg
Linseed oil	7 tablespoons	884	0,0 g	0,0 g	9,40 g	20,20 g	66,00 g	0 mg	0,0 mg
Mustard oil	7 tablespoons	884	0,0 g	0,0 g	11,60 g	59,20 g	21,20 g	~	0,0 mg
Olive oil	7 tablespoons	884	0,0 g	0,0 g	13,80 g	73,00 g	10,50 g	0 mg	0,0 mg
Palm oil	7 tablespoons	884	0,0 g	0,0 g	49,30 g	37,00 g	9,30 g	0 mg	0,0 mg
Pumpkin seed oil	7 tablespoons	884	0,0 g	0,0 g	16,63 g	13,32 g	9,01 g	0 mg	0,0 mg
Rapeseed oil	7 tablespoons	884	0,0 g	0,0 g	7,40 g	63,30 g	28,10 g	0 mg	0,0 mg
Sunflower oil, refined	7 tablespoons	884	0,0 g	0,0 g	13,00 g	46,20 g	36,40 g	0 mg	0,0 mg
Walnut oil	7 tablespoons	884	0,0 g	0,0 g	9,10 g	22,80 g	63,30 g	0 mg	0,0 mg
Wheat germ oil	7 tablespoons	884	0,0 g	0,0 g	18,80 g	15,10 g	61,70 g	0 mg	0,0 mg

B9	B12	D	C	E	Iron	Potassium	Selenium	Calcium	Magne-sium	Mangan	Sodium
MILK AND DAIRY PRODUCTS											
3 mcg	0,2 mcg	1,4 mcg	0 mg	2,30 mg	0,0 mg	24 mg	1,0 mcg	24 mg	2 mg	0,0 mg	576 mg
6 mcg	0,4 mcg	0,3 mcg	2 mg	0,10 mg	0,1 mg	180 mg	2,3 mcg	143 mg	13 mg	0,0 mg	86 mg
16 mcg	0,8 mcg	0,1 mcg	1 mg	0,12 mg	0,4 mg	87 mg	5,0 mcg	85 mg	11 mg	0,1 mg	35 mg
28 mcg	0,7 mcg	0,2 mcg	1 mg	0,27 mg	0,3 mg	82 mg	0,0 mcg	95 mg	10 mg	0,1 mg	34 mg
16 mcg	0,9 mcg	0,0 mcg	1 mg	0,01 mg	0,4 mg	95 mg	9,4 mcg	92 mg	12 mg	0,1 mg	40 mg
16 mcg	1,5 mcg	36,0 mcg	0 mg	0,20 mg	0,4 mg	188 mg	14,5 mcg	731 mg	30 mg	0,0 mg	965 mg
21 mcg	1,5 mcg	1,3 mcg	0 mg	0,20 mg	0,2 mg	121 mg	14,5 mcg	700 mg	29 mg	0,0 mg	819 mg
5 mcg	0,5 mcg	0,1 mcg	1 mg	0,11 mg	0,1 mg	160 mg	0,0 mcg	120 mg	14 mg	0,0 mg	38 mg
1 mcg	0,1 mcg	2,5 mcg	0 mg	15,40 mg	0,0 mg	17 mg	0,0 mcg	3 mg	1 mg	0,0 mg	657 mg
1 mcg	0,1 mcg	2,5 mcg	0 mg	5,00 mg	0,0 mg	30 mg	0,0 mcg	21 mg	2 mg	0,0 mg	785 mg
7 mcg	2,3 mcg	4,8 mcg	0 mg	0,20 mg	0,4 mg	76 mg	17,0 mcg	505 mg	20 mg	0,0 mg	627 mg
4 mcg	0,4 mcg	0,0 mcg	2 mg	0,04 mg	0,0 mg	155 mg	2,5 mcg	118 mg	12 mg	0,0 mg	47 mg
5 mcg	0,4 mcg	1,0 mcg	2 mg	0,10 mg	0,0 mg	143 mg	3,7 mcg	113 mg	10 mg	0,0 mg	40 mg
12 mcg	0,3 mcg	3,0 mcg	0 mg	0,10 mg	0,4 mg	105 mg	14,5 mcg	207 mg	11 mg	0,0 mg	84 mg
7 mcg	0,3 mcg	4,2 mcg	1 mg	0,40 mg	0,2 mg	141 mg	2,6 mcg	110 mg	10 mg	0,0 mg	80 mg
3 mcg	2,1 mcg	0,0 mcg	0 mg	0,42 mg	0,3 mg	67 mg	0,0 mcg	920 mg	29 mg	0,0 mg	1 mg
OILS											
0 mcg	0,0 mcg	0,0 mcg	0 mg	~	0,0 mg	0 mg	0,0 mcg	0 mg	0 mg	0,0 mg	0 mg
68 mcg	0,0 mcg	0,0 mcg	0 mg	0,92 mg	5,0 mg	546 mg	11,5 mcg	43 mg	258 mg	0,8 mg	15 mg
74 mcg	0,0 mcg	0,0 mcg	0 mg	9,00 mg	1,9 mg	649 mg	5,6 mcg	43 mg	154 mg	1,5 mg	459 mg
0 mcg	0,0 mcg	0,0 mcg	0 mg	0,10 mg	0,0 mg	0 mg	0,0 mcg	0 mg	0 mg	0,0 mg	0 mg
0 mcg	0,0 mcg	99,6 mcg	0 mg	~	0,0 mg	0 mg	0,0 mcg	0 mg	0 mg	0,0 mg	0 mg
0 mcg	0,0 mcg	0,0 mcg	0 mg	17,50 mg	0,0 mg	0 mg	0,0 mcg	0 mg	0 mg	~	0 mg
0 mcg	0,0 mcg	0,0 mcg	0 mg	~	0,0 mg	0 mg	0,0 mcg	0 mg	0 mg	0,0 mg	0 mg
0 mcg	0,0 mcg	0,0 mcg	0 mg	14,30 mg	0,6 mg	1 mg	0,0 mcg	1 mg	0 mg	0,0 mg	0 mg
0 mcg	0,0 mcg	0,0 mcg	0 mg	15,90 mg	0,0 mg	0 mg	0,0 mcg	0 mg	0 mg	~	0 mg
0 mcg	0,0 mcg	0,0 mcg	0 mg	0,00 mg	0,0 mg	0 mg	0,0 mcg	0 mg	0 mg	0,0 mg	0 mg
0 mcg	0,0 mcg	0,0 mcg	0 mg	17,50 mg	0,0 mg	0 mg	0,0 mcg	0 mg	0 mg	0,0 mg	0 mg
0 mcg	0,0 mcg	0,0 mcg	0 mg	41,10 mg	0,0 mg	0 mg	0,0 mcg	0 mg	0 mg	0,0 mg	0 mg
0 mcg	0,0 mcg	0,0 mcg	0 mg	0,40 mg	0,0 mg	0 mg	0,0 mcg	0 mg	0 mg	0,0 mg	0 mg
0 mcg	0,0 mcg	0,0 mcg	0 mg	149,00 mg	0,0 mg	0 mg	0,0 mcg	0 mg	0 mg	0,0 mg	0 mg

Food (100 g)	*Food (general portion)*	*Calories*	*Proteins*	*Carbo-hydrates*	*Saturated fats*	*Monoun-saturated fats*	*Polyun-saturated fats*	*Choles-terol*	*B6*
MEAT AND REPLACEMENTS									
Beef, outer thigh	1 steak	192	20,7 g	0,0 g	4,50 g	5,00 g	0,40 g	58 mg	0,6 mg
Beef, upper thigh	1 steak	135	22,9 g	0,0 g	1,40 g	1,70 g	0,20 g	55 mg	0,7 mg
Chicken liver	100 g	116	16,9 g	0,0 g	1,60 g	1,20 g	1,30 g	345 mg	0,9 mg
Chicken without skin	2 thighs	119	19,7 g	0,0 g	1,00 g	1,20 g	1,00 g	83 mg	0,3 mg
Cooked ham	100 g	172	22,3 g	0,3 g	2,80 g	4,00 g	1,00 g	58 mg	0,3 mg
Deer meat	100 g	120	23,0 g	0,0 g	0,90 g	0,70 g	0,50 g	85 mg	0,4 mg
Domestic goose, without skin	half a portion	161	22,8 g	0,0 g	2,80 g	1,90 g	0,90 g	84 mg	0,6 mg
Egg, hard boiled	1 egg	155	12,6 g	1,1 g	3,30 g	4,10 g	1,40 g	424 mg	0,1 mg
Fried egg	1,5 eggs	196	13,6 g	0,9 g	4,30 g	6,30 g	2,70 g	457 mg	0,2 mg
Karst prosciutto	100 g	250	28,6 g	3,6 g	7,14 g	0,00 g	0,00 g	107 mg	~
Lamb thigh	1 steak	185	19,0 g	0,0 g	4,90 g	4,70 g	0,90 g	67 mg	0,2 mg
Mortadella	100 g	311	16,4 g	3,0 g	9,50 g	11,40 g	3,10 g	56 mg	0,1 mg
Pork hot dog	1 pair	269	12,8 g	0,3 g	8,70 g	10,90 g	2,20 g	66 mg	0,3 mg
Pork liver	100 g	134	21,4 g	2,5 g	1,20 g	0,50 g	0,90 g	301 mg	0,7 mg
Pork, shoulder	100 g	236	17,2 g	0,0 g	6,20 g	8,00 g	1,90 g	71 mg	0,3 mg
Rabbit meat	100 g	136	20,0 g	0,0 g	1,70 g	1,50 g	1,10 g	57 mg	0,5 mg
Rabbit, wild	100 g	114	21,8 g	0,0 g	0,70 g	0,60 g	0,50 g	81 mg	~
Roast horse meat	100 g	175	28,1 g	0,0 g	1,90 g	2,10 g	0,90 g	68 mg	0,3 mg
Scrambled eggs	1 egg	167	11,1 g	2,2 g	3,70 g	4,80 g	2,10 g	352 mg	0,1 mg
Turkey	1 steak	160	20,4 g	0,0 g	2,30 g	2,90 g	2,00 g	68 mg	0,4 mg
Turkey hot dog	1 pair	233	12,2 g	3,8 g	4,00 g	5,70 g	3,90 g	77 mg	0,1 mg
Turkey liver	100 g	228	17,8 g	2,3 g	5,50 g	7,40 g	1,70 g	331 mg	1,5 mg

*1 cup is about 200ml

*1 teaspoon is about 5ml

*1 tablespoon is about 15ml

B9	B12	D	C	E	Iron	Potassium	Selenium	Calcium	Magnesium	Mangan	Sodium
MEAT AND REPLACEMENTS											
11 mcg	1,5 mcg	~	0 mg	0,40 mg	1,7 mg	327 mg	24,8 mcg	20 mg	22 mg	0,0 mg	56 mg
13 mcg	1,6 mcg	~	0 mg	0,30 mg	2,0 mg	362 mg	29,2 mcg	20 mg	25 mg	0,0 mg	61 mg
588 mcg	16,6 mcg	0,0 mcg	18 mg	0,70 mg	9,0 mg	230 mg	54,0 mcg	8 mg	19 mg	0,3 mg	71 mg
10 mcg	0,4 mcg	0,0 mcg	0 mg	0,30 mg	1,0 mg	231 mg	13,5 mcg	10 mg	24 mg	0,0 mg	86 mg
3 mcg	0,7 mcg	~	0 mg	0,30 mg	1,4 mg	386 mg	19,5 mcg	8 mg	21 mg	0,0 mg	969 mg
4 mcg	6,3 mcg	~	0 mg	0,20 mg	3,4 mg	318 mg	9,7 mcg	5 mg	23 mg	0,0 mg	51 mg
31 mcg	0,5 mcg	~	7 mg	~	2,6 mg	420 mg	16,8 mcg	13 mg	24 mg	0,0 mg	87 mg
44 mcg	1,1 mcg	2,9 mcg	0 mg	1,00 mg	1,2 mg	126 mg	30,8 mcg	50 mg	10 mg	0,0 mg	124 mg
51 mcg	1,4 mcg	3,1 mcg	0 mg	1,20 mg	2,0 mg	147 mg	34,2 mcg	59 mg	13 mg	0,0 mg	204 mg
~	~	~	0 mg	~	1,9 mg	510 mg	16,7 mcg	0 mg	38 mg	0,0 mg	1714 mg
21 mcg	2,5 mcg	~	0 mg	~	1,7 mg	267 mg	21,9 mcg	7 mg	25 mg	0,0 mg	58 mg
3 mcg	1,5 mcg	12,3 mcg	0 mg	0,20 mg	1,4 mg	163 mg	22,6 mcg	18 mg	11 mg	0,0 mg	1246 mg
3 mcg	0,5 mcg	~	2 mg	~	3,7 mg	264 mg	27,8 mcg	267 mg	15 mg	0,0 mg	816 mg
212 mcg	26,0 mcg	~	25 mg	0,60 mg	23,3 mg	273 mg	52,7 mcg	9 mg	18 mg	0,3 mg	87 mg
5 mcg	0,7 mcg	6,6 mcg	1 mg	0,20 mg	1,1 mg	302 mg	25,5 mcg	15 mg	18 mg	0,0 mg	65 mg
8 mcg	7,2 mcg	~	0 mg	~	1,6 mg	330 mg	23,7 mcg	13 mg	19 mg	0,0 mg	41 mg
~	~	~	0 mg	~	3,2 mg	378 mg	9,4 mcg	12 mg	29 mg	~	50 mg
~	3,2 mcg	~	2 mg	~	5,0 mg	379 mg	13,5 mcg	8 mg	25 mg	0,0 mg	55 mg
30 mcg	0,8 mcg	14,4 mcg	0 mg	1,10 mg	1,2 mg	138 mg	22,5 mcg	71 mg	12 mg	0,0 mg	280 mg
8 mcg	0,4 mcg	~	0 mg	0,40 mg	1,4 mg	266 mg	24,4 mcg	15 mg	22 mg	0,0 mg	65 mg
9 mcg	0,8 mcg	6,9 mcg	0 mg	0,60 mg	1,5 mg	392 mg	15,1 mcg	148 mg	14 mg	0,0 mg	1078 mg
677 mcg	49,4 mcg	~	25 mg	0,10 mg	12,0 mg	255 mg	70,8 mcg	5 mg	15 mg	0,2 mg	71 mg

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