DNAnutriControl
lifestyle

Lifestyle genetic analysis

Lucinda Wallop
X257D6083C

DNAnutriControl

COVER LETTER

Dear Ms. Wallop,

Your sample for the analysis arrived on 18/05/2021 in the laboratory and was evaluated according to the highest laboratory quality standards. The results were evaluated and released by two independent geneticists and molecular biologists. After obtaining the results, your personal report was compiled. We hereby convey the results to you in the format of your choice.

We would like to thank you for your trust and hope that you are satisfied with our service. We are always open to questions and suggestions. Please do not hesitate to contact us. We value your feedback. This is the only way we can continuously improve our services.

We hope the analysis meets your expectations.

Kind regards,

Dr. Daniel Wallerstorfer BSc.
Laboratory Director

Florian Schneebauer, MSc.
Laboratory Manager

Lifestyle genetic analysis

Personal analysis results for:
Lucinda Wallop

Order number:
X257D6083C

Date of birth:
09/02/1956

This report contains personal medical information that is highly confidential. Data protection must be ensured.

NUTRITION GENES
FOOD INGREDIENTS
DIETARY SUPPLEMENT
DETOXIFICATION
MUSCLE FIBRE TYPE
OXIDATIVE STRESS AND RISK OF INJURY
OPTIMAL PERFORMANCE NUTRITION
DIETARY SUPPLEMENT
FOOD LIST
SCIENCE
ADDITIONAL INFORMATION

NUTRITION GENES

How your genes influence which food is particularly healthy or unhealthy for you.

Nutrigenetics: How a genetic analysis can provide dietary recommendations

The genetic polymorphisms analysed influence how your body responds to certain nutrients and food ingredients, and affect which substances your body can metabolize properly. As your diet plays a decisive role in your health, we can evaluate your gene analysis and provide a suitable nutritional plan that will reduce your genetic weaknesses.

This area of medicine —called nutrigenetics— seeks to determine how adjusting our diet according to genetic data influences our health. If a particular weakness is identified, your nutritional plan is adjusted to exclude all dietary ingredients that are unhealthy for you, and it increases other healthy substances. By analysing over 50 genetic variations, we have compiled a wealth of information about your innate strengths and weaknesses. When deciding whether a certain food or food ingredient is healthy for you, we look at the bigger picture. For instance, if one nutrient is beneficial for one health factor but harmful for another, the risks must be considered in the decision. When the data from all relevant gene analyses are factored in, we are able to evaluate your individual risks and determine whether a particular nutrient is required in elevated or reduced doses for you.

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FOOD INGREDIENTS

The effects of individual food ingredients as per your genes.

Nutrition genetics

Genes and their variations influence a number of processes in the body and a lot of these processes can be optimized through an appropriate diet. In this way, inherent health deficits can be neutralized through a specifically adjusted diet, or inherent genetic strengths can be used in the best possible way.

Sample description of the concept

We have developed a simple arrow system to display our complex analysis and make it easier to understand. These arrows will show you, based on your genetic profile, which micronutrients are good for you and ones you should avoid. Here is an explanation of the symbols:

INCREASE

Green arrows pointing upwards indicate that, based on your genetics, you have an increased requirement for this nutrient. You should increase your nutrient intake according to the size of the arrow.

NEUTRAL

No arrow means that the recommended standard dose of this nutrient is sufficient for you. Based on your genetics you do not need to increase or decrease the dose.

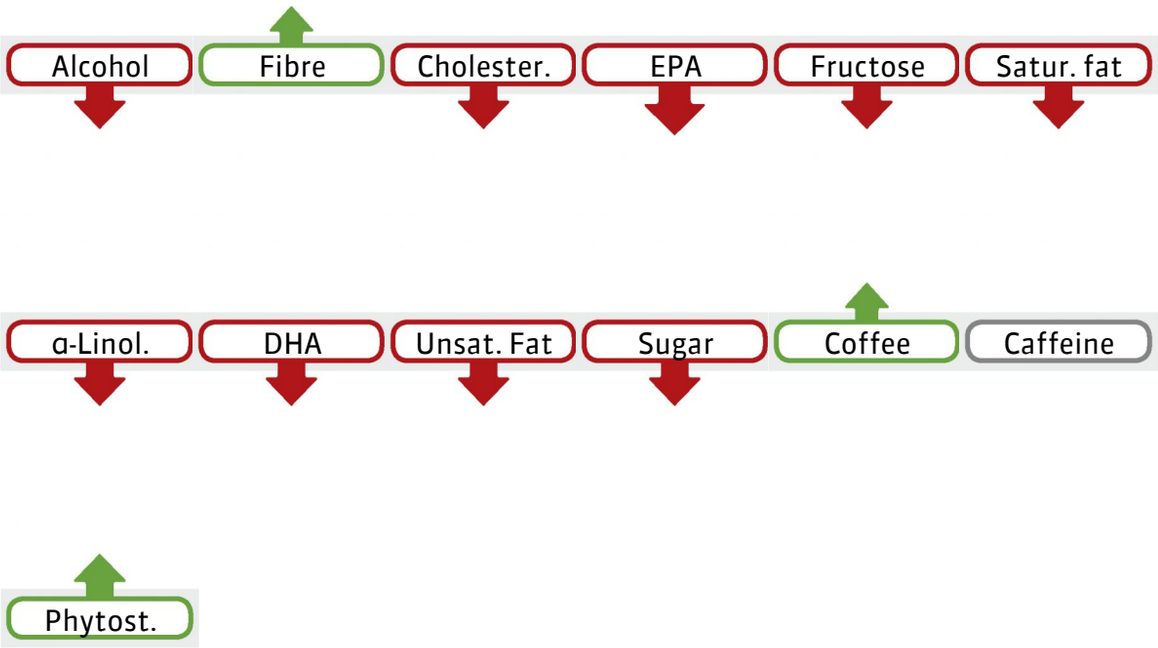
REDUCE

Red arrows pointing downwards indicate that, based on your genetics, you should decrease the intake of this nutrient. You should try to reduce the intake according to the size of the arrow.

Nutritional Genes - Heart

Your nutrition is very important. Based on your genes and their associated strengths and weaknesses you should increase or decrease certain foods and nutrients. These recommendations are calculated based on your genetic profile.

Your personalized recommendations based on this section:

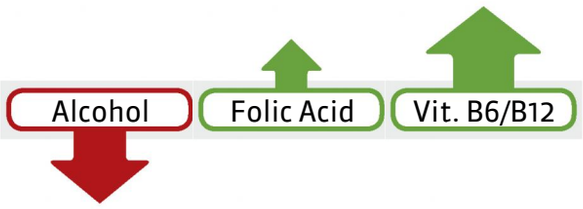


Legend: GREEN ARROWS > this nutrient or substance is classed as healthy for your genetic profile. Try to increase the intake of this substance. RED ARROWS > this substance is classed as unhealthy for your genetic profile. Try to reduce your intake of the substance. NO ARROWS > There is no effect of the nutrient on the genetics of this section. PLEASE NOTE! This interpretation only considers your genetic profile of this section.

Nutritional Genes - Blood

Your nutrition is very important. Based on your genes and their associated strengths and weaknesses you should increase or decrease certain foods and nutrients. These recommendations are calculated based on your genetic profile.

Your personalized recommendations based on this section:



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Nutritional Genes - Vitamin B2

Your nutrition is very important. Based on your genes and their associated strengths and weaknesses you should increase or decrease certain foods and nutrients. These recommendations are calculated based on your genetic profile.

Your personalized recommendations based on this section:

Vit B2

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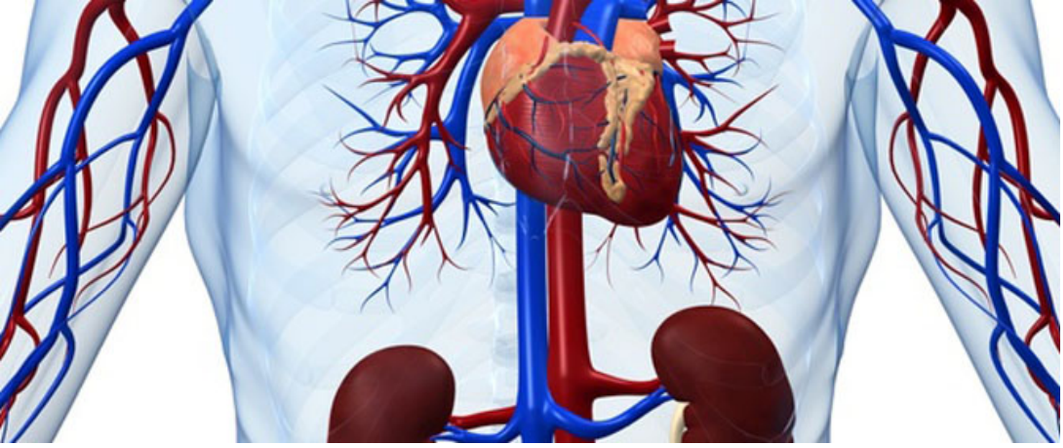
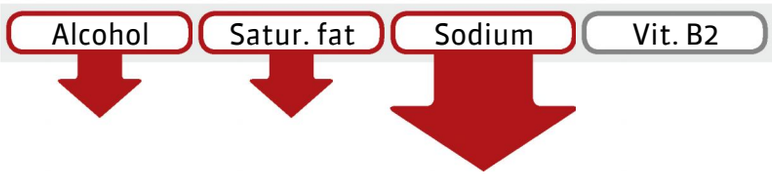


Nutritional Genes - Blood pressure

Your nutrition is very important. Based on your genes and their associated strengths and weaknesses you should increase or decrease certain foods and nutrients. These recommendations are calculated based on your genetic profile.

Your personalized recommendations based on this section:



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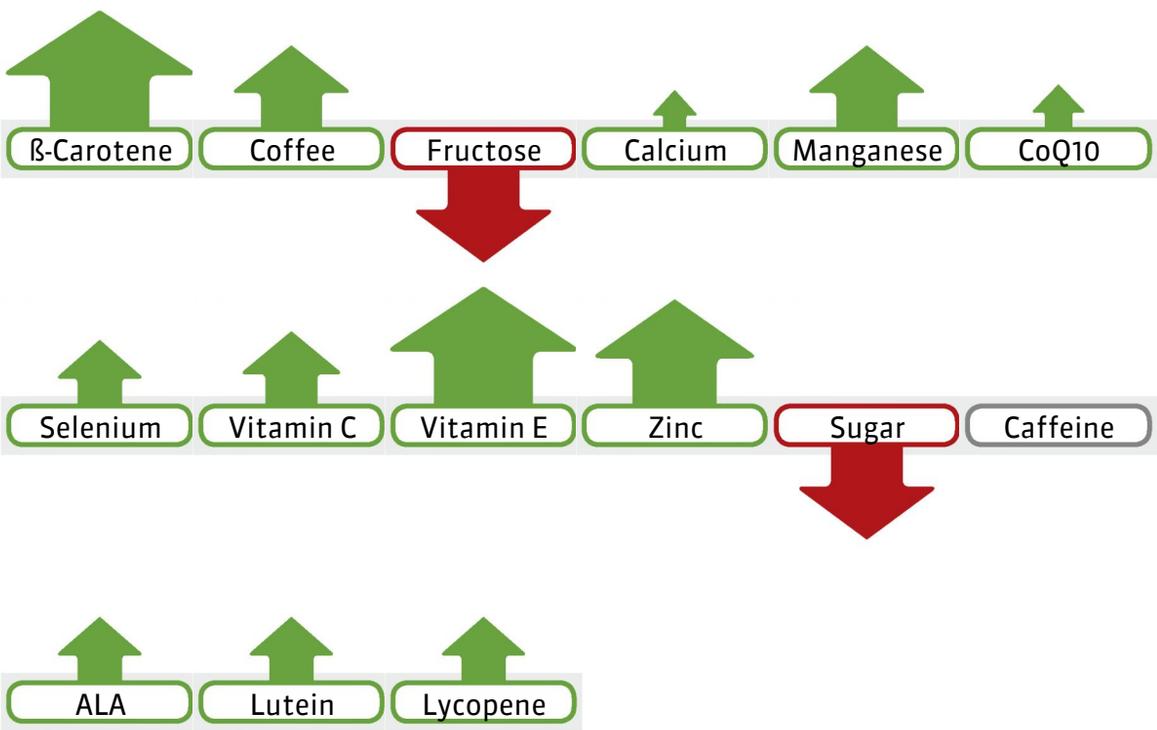
Nutritional Genes - Oxidative Stress

Your nutrition is very important. Based on your genes and their associated strengths and weaknesses you should increase or decrease certain foods and nutrients. These recommendations are calculated based on your genetic profile.

Your personalized recommendations based on this section:



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Nutritional Genes - Metabolism

Your nutrition is very important. Based on your genes and their associated strengths and weaknesses you should increase or decrease certain foods and nutrients. These recommendations are calculated based on your genetic profile.

Your personalized recommendations based on this section:

ß-Carotene ↑	Alcohol ↓	Fibre ↑	High Glyc. ↓	EPA ↑	Fructose ↓
Satur. fat ↓	Iron ↑	Calcium ↑	Copper ↑	Manganese ↑	Sodium ↓
DHA ↑	Saccharose ↓	Selenium	Unsat. Fat ↑	Vit B2 ↑	Vitamin C ↑
Vitamin D3 ↑	Vitamin E ↑	Vit. B6/B12 ↑	Zinc ↑	Sugar ↓	

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Nutritional Genes - Brain

Your nutrition is very important. Based on your genes and their associated strengths and weaknesses you should increase or decrease certain foods and nutrients. These recommendations are calculated based on your genetic profile.

Your personalized recommendations based on this section:

ß-Carotene	Alcohol	Fibre	High Glyc.	Coffee	EPA
Folic Acid	Fructose	Satur. fat	Potassium	Manganese	Sodium
DHA	Saccharose	Selenium	Unsat. Fat	Vit B2	Vitamin C
Vitamin D3	Vit. B6/B12	Vitamin E	Zinc	Sugar	

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Nutritional Genes - Heavy metal detoxification

Your nutrition is very important. Based on your genes and their associated strengths and weaknesses you should increase or decrease certain foods and nutrients. These recommendations are calculated based on your genetic profile.

Your personalized recommendations based on this section:

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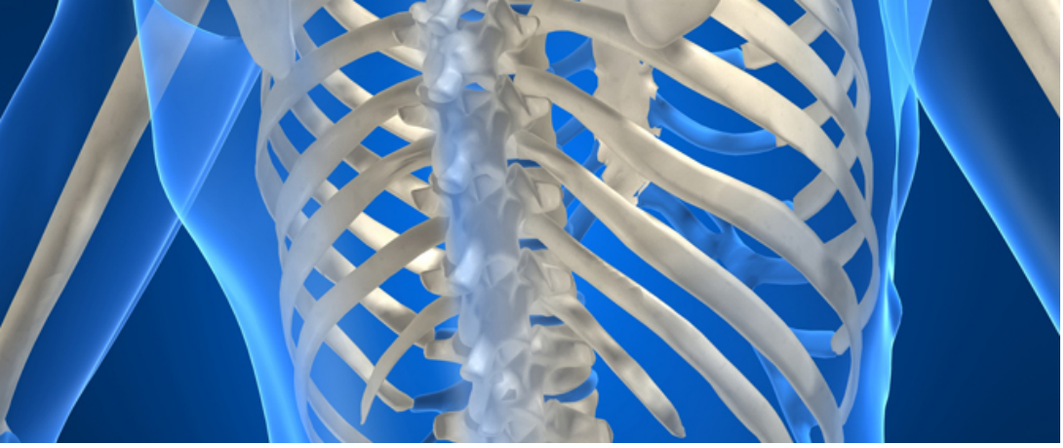
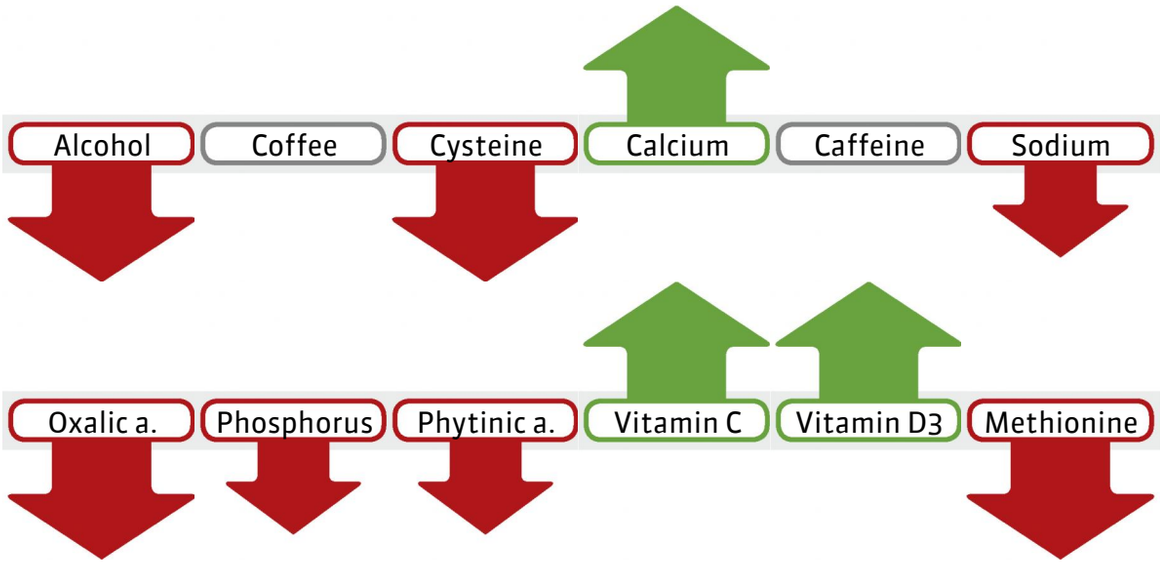


Nutritional Genes - Bones

Your nutrition is very important. Based on your genes and their associated strengths and weaknesses you should increase or decrease certain foods and nutrients. These recommendations are calculated based on your genetic profile.

Your personalized recommendations based on this section:



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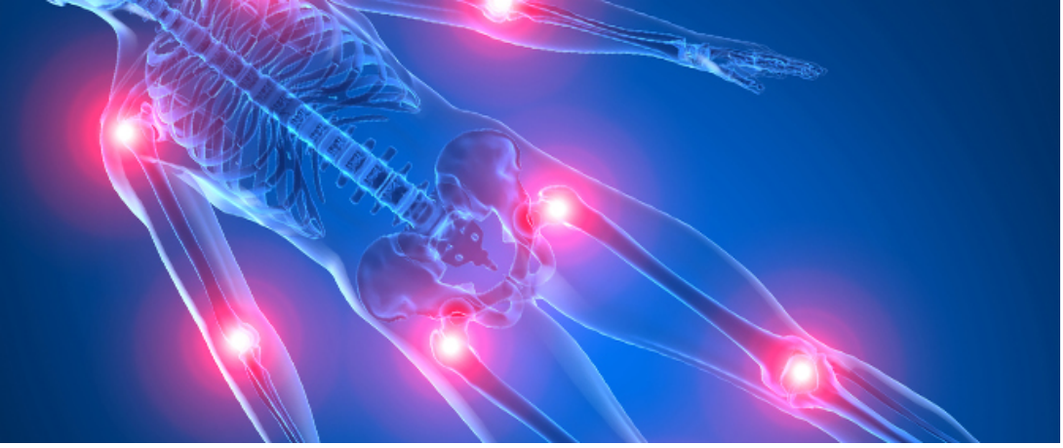
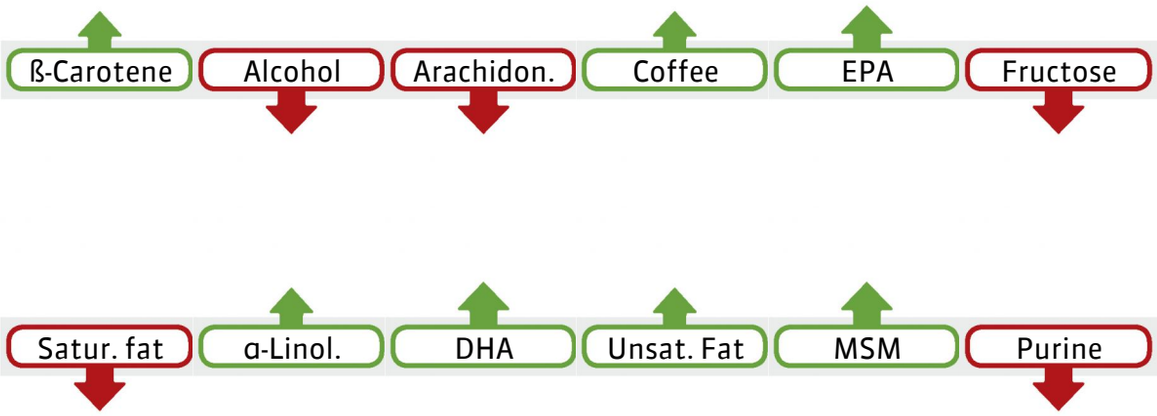


Nutritional Genes - Joints

Your nutrition is very important. Based on your genes and their associated strengths and weaknesses you should increase or decrease certain foods and nutrients. These recommendations are calculated based on your genetic profile.

Your personalized recommendations based on this section:



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Nutritional Genes - Eyes

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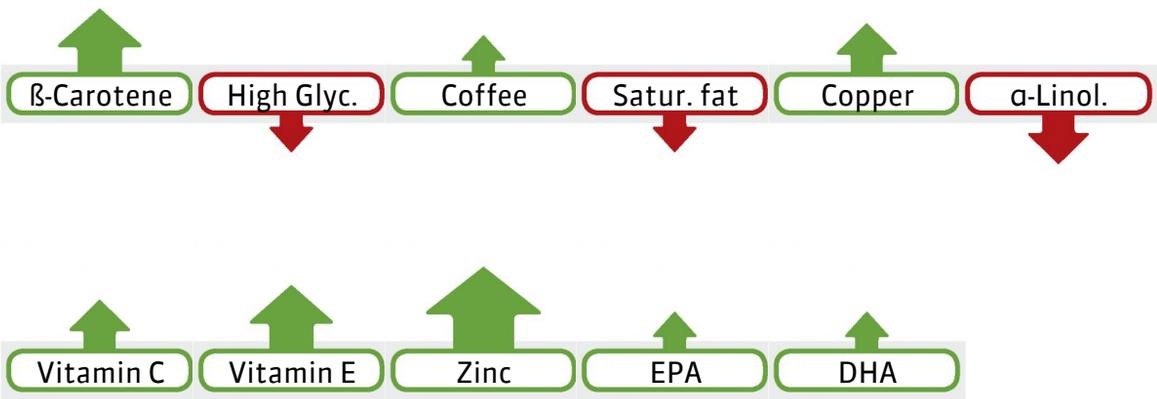
Your personalized recommendations based on this section:



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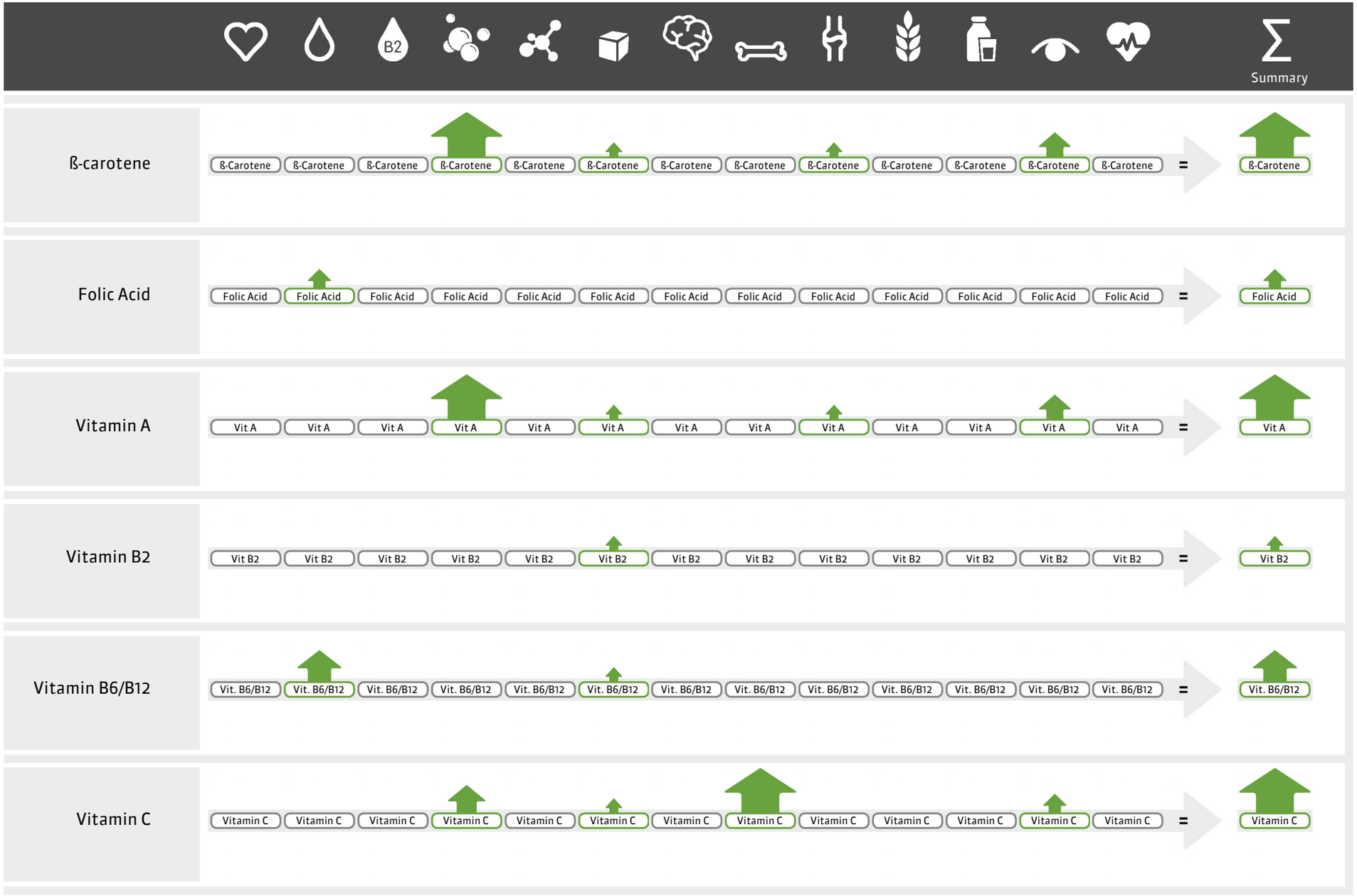
Food ingredients

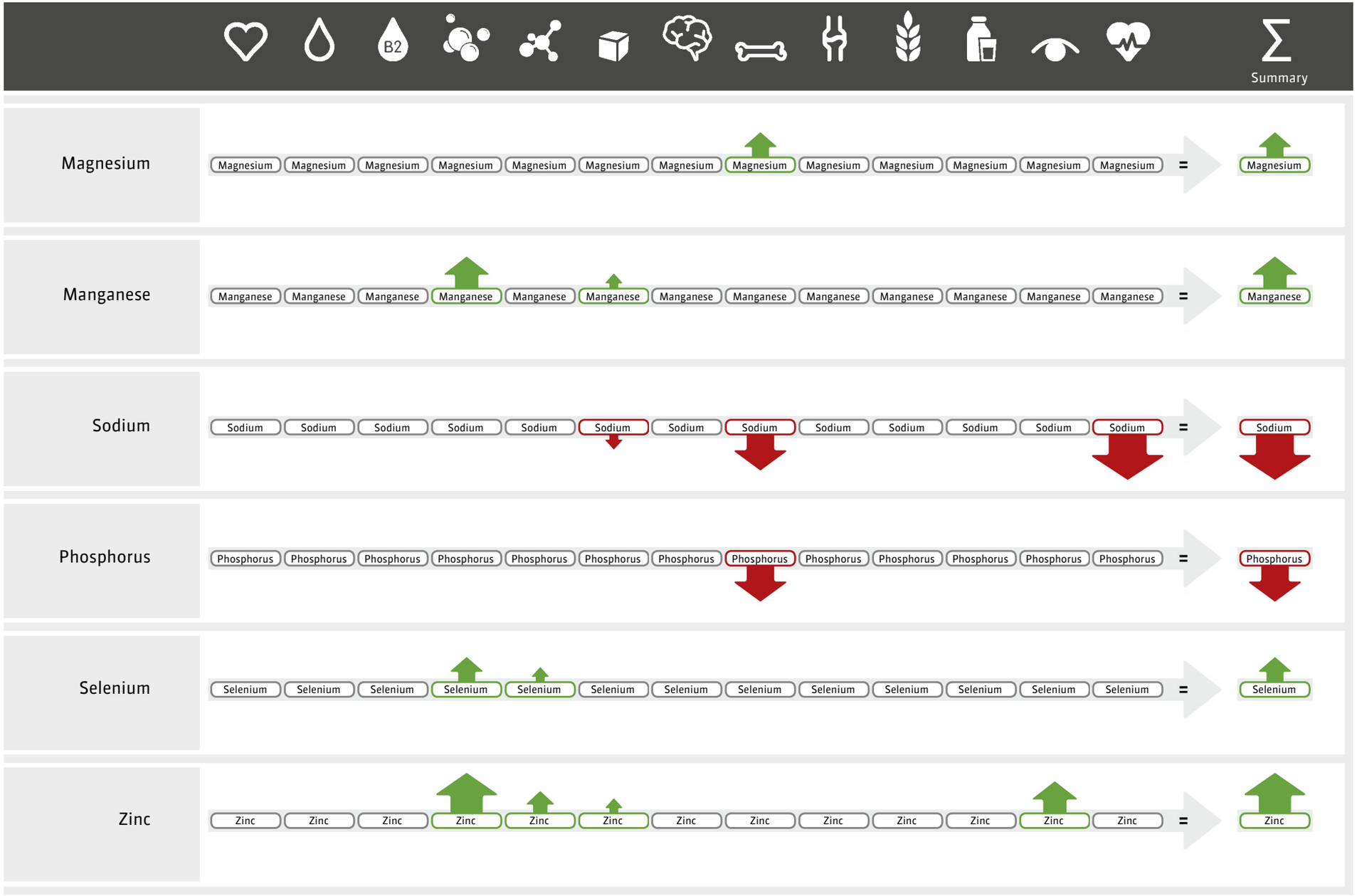
Different foods are composed of a great variety of ingredients and constituents. Some have positive effects on our health, while others affect our bodies adversely. Our genes and the resulting health risks also influence the amount of different nutrients we need and the effect different substances have on the body. All of these influence our requirement of certain ingredients, and there is no universal nutritional plan that applies to everyone. Your genetic analysis has enabled us to identify those food ingredients you should increase in your diet, as well as those you are recommended to avoid.

The following part lists each food ingredient and its compatibility with your genetic profile. Some foods contain both positive and negative ingredients so the quantity of a given ingredient is often important. In order to simplify the diet planning process for you, we have included the Food Table, which evaluates hundreds of foods according to your genes. Using a complex algorithm, it evaluates the major ingredients of each individual food, as well as the typical portion size based on your genetic profile. The final result is compiled in the column with the apple icons, and ranges from six green apples (especially healthy) to six red apples (especially unhealthy).

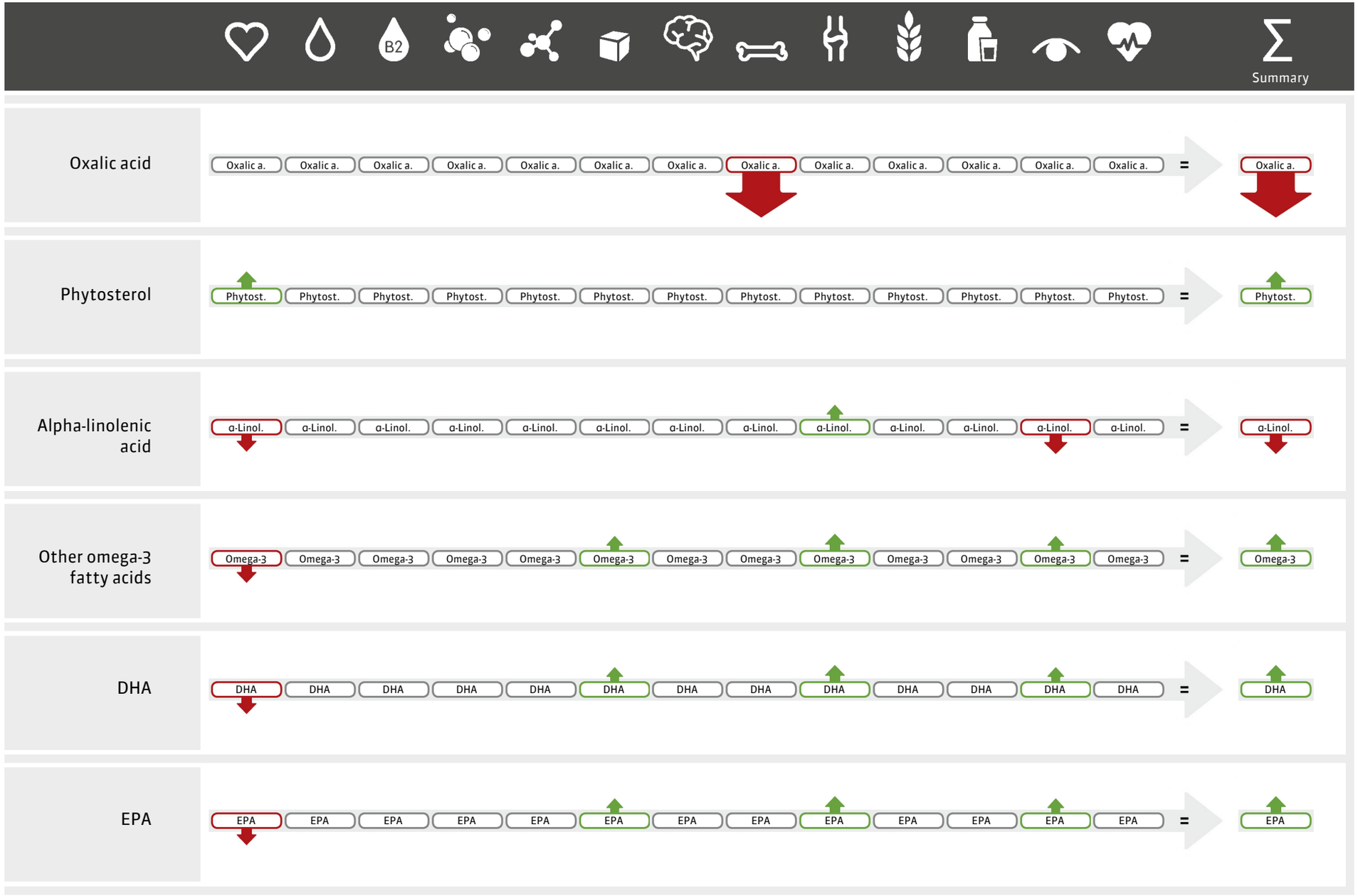
Go through the list and choose food items that contain as many green apple icons as possible, and minimize food items in the red area in your future diet. The better you follow these instructions, the better your diet will neutralize your genetic weaknesses and use your genetic strengths to maintain optimal health.

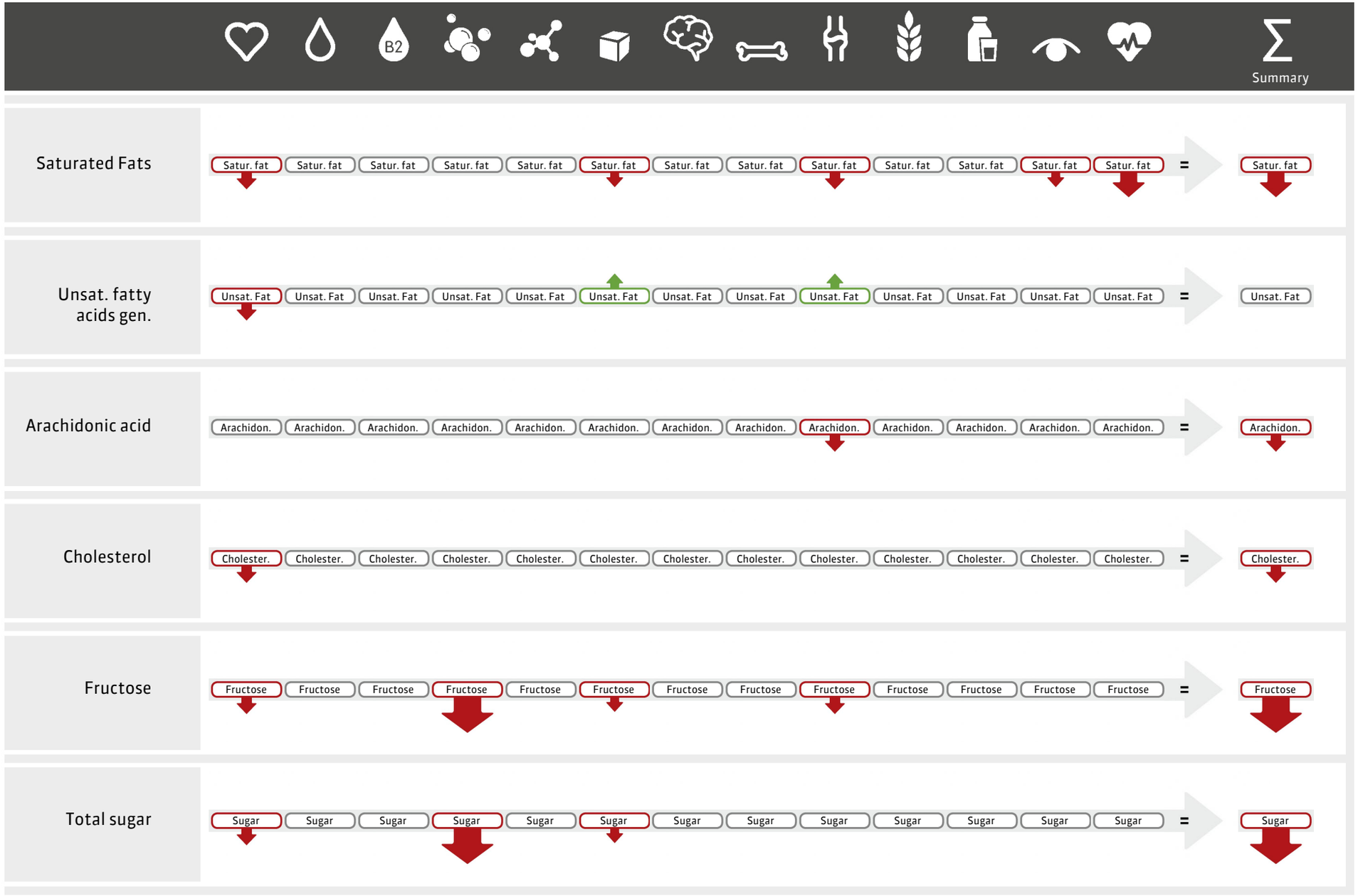

B2
Summary
ß-carotene
ß-Carotene ß-Carotene ß-Carotene ß-Carotene ß-Carotene ß-Carotene ß-Carotene ß-Carotene ß-Carotene ß-Carotene ß-Carotene ß-Carotene ß-Carotene = ß-Carotene
Folic Acid
Folic Acid Folic Acid Folic Acid Folic Acid Folic Acid Folic Acid Folic Acid Folic Acid Folic Acid Folic Acid Folic Acid Folic Acid = Folic Acid
Vitamin A
Vit A Vit A Vit A Vit A Vit A Vit A Vit A Vit A Vit A Vit A Vit A Vit A Vit A = Vit A
Vitamin B2
Vit B2 Vit B2 Vit B2 Vit B2 Vit B2 Vit B2 Vit B2 Vit B2 Vit B2 Vit B2 Vit B2 Vit B2 Vit B2 = Vit B2
Vitamin B6/B12
Vit. B6/B12 Vit. B6/B12 Vit. B6/B12 Vit. B6/B12 Vit. B6/B12 Vit. B6/B12 Vit. B6/B12 Vit. B6/B12 Vit. B6/B12 Vit. B6/B12 Vit. B6/B12 Vit. B6/B12 Vit. B6/B12 = Vit. B6/B12
Vitamin C
Vitamin C Vitamin C Vitamin C Vitamin C Vitamin C Vitamin C Vitamin C Vitamin C Vitamin C Vitamin C Vitamin C Vitamin C Vitamin C = Vitamin C

B2
Summary
Vitamin D3
Vitamin D3 Vitamin D3 Vitamin D3 Vitamin D3 Vitamin D3 Vitamin D3 Vitamin D3 Vitamin D3 Vitamin D3 Vitamin D3 Vitamin D3 Vitamin D3 Vitamin D3 =
Vitamin D3
Vitamin E
Vitamin E Vitamin E Vitamin E Vitamin E Vitamin E Vitamin E Vitamin E Vitamin E Vitamin E Vitamin E Vitamin E Vitamin E Vitamin E =
Vitamin E
Iron
Iron Iron Iron Iron Iron Iron Iron Iron Iron Iron Iron Iron Iron =
Iron
Potassium
Potassium Potassium Potassium Potassium Potassium Potassium Potassium Potassium Potassium Potassium Potassium Potassium Potassium =
Potassium
Calcium
Calcium Calcium Calcium Calcium Calcium Calcium Calcium Calcium Calcium Calcium Calcium Calcium Calcium =
Calcium
Copper
Copper Copper Copper Copper Copper Copper Copper Copper Copper Copper Copper Copper Copper =
Copper

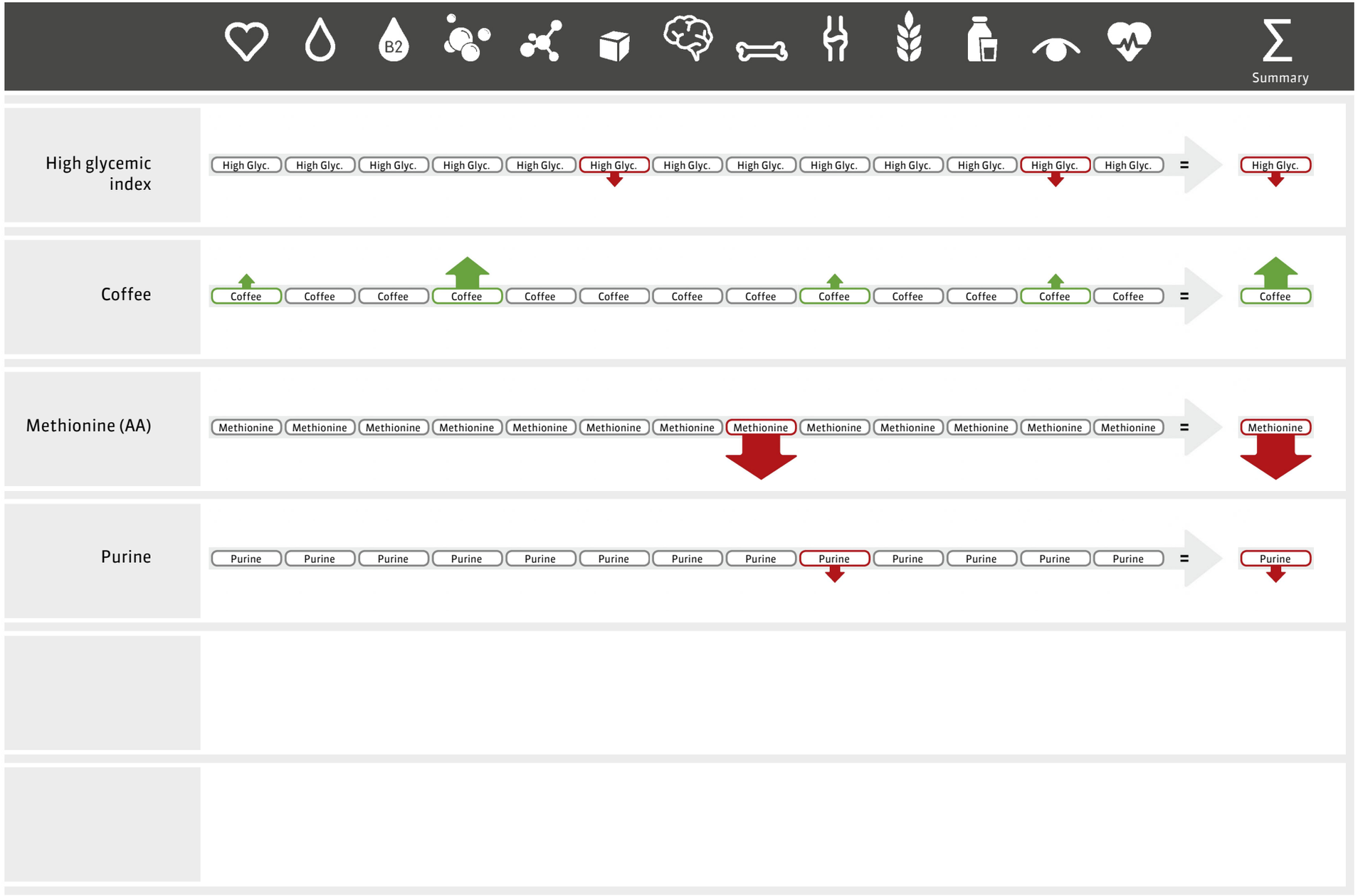

B2
Summary
Magnesium
Magnesium Magnesium Magnesium Magnesium Magnesium Magnesium Magnesium Magnesium Magnesium Magnesium Magnesium Magnesium Magnesium =
Magnesium
Manganese
Manganese Manganese Manganese Manganese Manganese Manganese Manganese Manganese Manganese Manganese Manganese Manganese Manganese =
Manganese
Sodium
Sodium Sodium Sodium Sodium Sodium Sodium Sodium Sodium Sodium Sodium Sodium Sodium Sodium =
Sodium
Phosphorus
Phosphorus Phosphorus Phosphorus Phosphorus Phosphorus Phosphorus Phosphorus Phosphorus Phosphorus Phosphorus Phosphorus Phosphorus Phosphorus =
Phosphorus
Selenium
Selenium Selenium Selenium Selenium Selenium Selenium Selenium Selenium Selenium Selenium Selenium Selenium Selenium =
Selenium
Zinc
Zinc Zinc Zinc Zinc Zinc Zinc Zinc Zinc Zinc Zinc Zinc Zinc Zinc =
Zinc

B2
Summary
Phytic acid
Phytinic a.
=
Fibre
Caffeine
Lutein
Lycopene
Methylsulphonyl methane
MSM


B2
Summary
Oxalic acid
Oxalic a.
=
Phytosterol
Phytost.
Alpha-linolenic acid
α-Linol.
Other omega-3 fatty acids
Omega-3
DHA
EPA


B2
Summary
Saturated Fats
Satur. fat
=
Unsat. fatty acids gen.
Unsat. Fat
Arachidonic acid
Arachidon.
Cholesterol
Cholester.
Fructose
Total sugar
Sugar

B2
Summary
Lactose
Lactose Lactose Lactose Lactose Lactose Lactose Lactose Lactose Lactose Lactose Lactose Lactose Lactose = Lactose
Sucrose
Saccharose Saccharose Saccharose Saccharose Saccharose Saccharose Saccharose Saccharose Saccharose Saccharose Saccharose Saccharose Saccharose = Saccharose
Alcohol
Alcohol Alcohol Alcohol Alcohol Alcohol Alcohol Alcohol Alcohol Alcohol Alcohol Alcohol Alcohol Alcohol = Alcohol
Alpha lipoic acid
ALA ALA ALA ALA ALA ALA ALA ALA ALA ALA ALA ALA ALA = ALA
Coenzyme Q10
CoQ10 CoQ10 CoQ10 CoQ10 CoQ10 CoQ10 CoQ10 CoQ10 CoQ10 CoQ10 CoQ10 CoQ10 CoQ10 = CoQ10
Cysteine (amino acid)
Cysteine Cysteine Cysteine Cysteine Cysteine Cysteine Cysteine Cysteine Cysteine Cysteine Cysteine Cysteine Cysteine = Cysteine


B2
Summary
High glycemic index
High Glyc.
=
Coffee
Methionine (AA)
Methionine
Purine

Alcohol	*Alcohol is a substance that can cause a variety of health-related problems if consumption is too high. Due to genetic differences, some people are more sensitive to the negative effects of excessive alcohol consumption.*
Alpha lipoic acid	*ALA is a strong antioxidant that helps the body neutralize toxic free radicals that would otherwise cause chain reactions of damage to cells and tissues.*
Arachidonic acid	*Arachidonic acid is part of the body's secondary messenger system and can trigger negative reactions in some people. Persons with a genetic predisposition to increased inflammatory reactions should avoid arachidonic acid.*
Fibre	*Fibre consists of indigestible plant material that does not enter the body but remains in the intestine where it aids in mechanical breakdown of food components.*
Cholesterol	*The body produces cholesterol on its own but also absorbs it from our diet. A surplus of cholesterol can have a variety of negative effects on the body.*
Coenzyme Q10	*Coenzyme Q10 is an important antioxidant that the body can produce itself, but it needs a special gene to convert it to the active form ubiquinol. People who carry a genetic defect in this gene (NQO1) are unable to convert Coenzyme Q10 to the active form.*
Cysteine and Methionine (Amino Acids)	*Amino acids are the building blocks for proteins and are essential for life. Cysteine and methionine are such amino acids that can, however, have a negative impact on bone health in some genetic types.*
Iron	*Iron is an important component of blood that allows it to carry oxygen in the form of haemoglobin. Some genetic variants can cause excessive absorption of iron which can damage organs.*
Folic acid, Vitamin B6 & B12	*These vitamins help in regulating the homocysteine levels in blood, which are influenced by certain genetic variants. High homocysteine levels have a negative impact on heart health and should be kept low.*
Vitamin B2	*Similar to folic acid, this vitamin can aid in stabilizing homocysteine levels but only if a certain genetic variant is present. If this is not the case, vitamin B2 has no effect on homocysteine levels.*
Fructose	*Fructose, also called fruit sugar, is a small molecule that can be absorbed into the bloodstream without being digested by enzymes. Some people are intolerant to this sugar and should reduce its consumption to avoid unpleasant symptoms.*
Total fat & total sugar	*These two energy sources are contained in most types of food and can lead to excessive weight gain if consumed in excessive amounts. Certain genetic types are particularly sensitive to the fat and sugar quantities in their diet and should reduce them if possible.*
Saturated Fats	*Saturated fats are one group of fats that are considered the "unhealthy fats" and can have a negative impact on heart health. Certain genetic types should pay particular attention to the saturated fat content in their diet.*
High GI (glycemic)	

Index	*Food types with a high glycemic index contain sugars that enter the bloodstream quickly and cause a rapid rise of the blood sugar levels. Certain genes counteract this effect, but some genetic variants can cause this system to be less effective. As a consequence, certain genetic types should avoid food types with a high glycemic index.*
Coffee/coffein	*Coffee contains a high dose of antioxidants and hence can be beneficial in the prevention of certain metabolic problems caused by free radicals. The caffeine can, however, have a negative impact on bone health and should be avoided by certain genetic types.*
Potassium	*Potassium is an important nutrient for a variety of bodily functions, and has a strong impact on blood pressure and cognitive health. Certain genetic types benefit from a higher potassium intake.*
Calcium	*Calcium is an important component of many bodily functions. Certain genetic types require higher amounts of calcium for optimal bone health and to aid in detoxification.*
Copper	*Copper is an important component of many enzymes and is therefore an important trace element for metabolism. It has also been shown to reduce the aggressiveness of the immune system and to improve eye health.*
Lactose	*The milk sugar, lactose, contains calories and cannot be digested well by some genetic types. Depending on their genes, certain people react negatively to lactose and should reduce its consumption.*
Lutein and Lycopene	*Lutein and lycopene are substances from the group of carotenes and have shown to be beneficial for eye health. Therefore, an increased intake of these substances is beneficial for certain genetic types.*
Magnesium	*Magnesium is an essential component of more than 300 enzymes, and therefore particularly important for metabolism, muscle cell function and bone health.*
Manganese	*Manganese is an important component of many enzymes and has an impact on neutralizing free radicals and protecting the joints. Certain genetic types benefit in these areas if manganese intake is increased.*
Methyl-sulfonylmethane	*This organic sulphur compound reduces the aggressiveness of the immune system and can help protect joints in certain genetic types.*
Sodium	*Sodium is a component of table salt and can lead to an increase in blood pressure in some people.*
Oxalic acid, phosphoric acid, phytic acid	*These substances are contained in many types of food and can have a negative impact on bone health.*
Phytosterol	*In genetic types, where omega-3 fatty acids have a negative impact on HDL cholesterol levels, phytosterols are a good alternative to improve cholesterol levels.*
Purine	*Purines can be produced by our bodies but are also taken up in high amounts when eating animal products. Very high levels of purines can have a negative*

impact on joint health in certain genetic types.

Sucrose	*This sugar contains calories and can have a huge negative impact on certain genetic types in terms of cognitive health and blood sugar regulation.*
Selenium	*Selenium is an important component of many enzymes, some of which can neutralize free radicals. Certain genetic types need higher amounts of selenium to increase antioxidant protection.*
ß-carotene and vitamin A	*These vitamins and other important substances are contained in coloured vegetables and can aid certain genetic types in processes like detoxification, protection from free radicals and cognitive health.*
Vitamin C, E and zinc	*These substances are strong antioxidants and can have a positive impact on cognitive health, eye health, joint health and protection from free radicals.*
Vitamin D	*This vitamin can be produced by the skin using sunlight and is an important component for healthy bones. Certain genetic types require higher doses of this vitamin to maintain optimal bone health.*
Unsaturated fatty acids (group)	*This term describes all unsaturated fatty acids which are generally considered the "healthy fats".*
Omega-3 fatty acids	*This general term describes all omega-3 fatty acids (there are several types) which can be found in fish and fish oils, as well as some plants. They have a positive impact on joint health but can have a negative impact on HDL cholesterol in some genetic types.*
Alpha linolenic acid	*Alpha-linolenic acid is important for the conversion of omega-3 fatty acids and has a positive effect on joint health. However, this substance can also have a negative impact on cholesterol levels in certain genetic types.*
Docosahexaenoic acid (DHA) and Eicosapentaenoic acid (EPA)	*These omega-3 fatty acids are important for regulation of cholesterol levels and correct function of the immune system, joints and brain. Some genetic types do, however, experience a negative effect on the HDL cholesterol levels, which needs to be considered.*
Zinc	*Zinc is needed by the body for optimal macronutrient metabolism, proper protein construction, healthy bone maintenance and to create new DNA. It is an essential micronutrient for many proteins and enzymes.*

EATING HEALTHY WITH THE HELP OF THE FOOD LIST

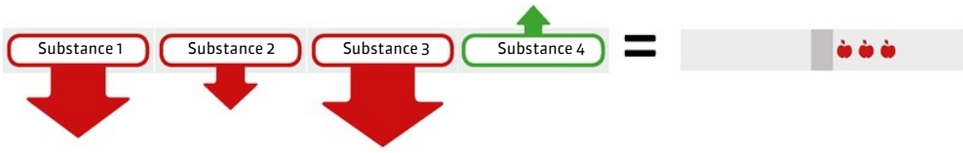
How to use the food list to eat healthy.

How food types are evaluated

Based on your analysis that takes all relevant genetic factors into account, we now know which food components are especially healthy or unhealthy for you. We need to apply this knowledge when choosing the right food types for you.

More than 900 types of food were individually evaluated, while considering which substances are present in this type of food, their concentration levels and how healthy/unhealthy these substances are for you.

Example of a largely unhealthy food type



This type of food may contain a few positive substances, but it largely consists of negative/unhealthy substances based on your genetic type. The negative substances far outweigh the positive substances, and therefore the overall rating for this type of food is negative with up to six red apples.

Example of a neutral food type

This type of food contains positive and negative food components for your health. Therefore, this type of food is neither especially healthy nor unhealthy for you. As the positive and negative effects cancel each other out, this type of food is rated as neutral with one black apple in the centre.

Example of a healthy food type

This type of food consists of many positive components for your health, and so is healthy for you for a number of different reasons. Healthy foods are rated with up to six green apples.

The food table explained

Now that we know which nutrients are good and which are bad for your body, it is important to determine which foods are appropriate for you. To simplify this complex analysis, we have compiled a list that rates each food according to your genes. The rating ranges from 6 green apple icons (very healthy for you) to 6 red apple icons (very unhealthy for you).

Green apple icons

Green apple icons indicate that this type of food (if eaten in typical portion sizes and frequency) contains substances that are especially healthy for your genetic profile. Try to plan your nutrition with as many types of food in the very green category. Make sure you roughly follow the typical portion sizes of each type of food and that you do not eat too many foods of the same type at once.

Red apple icons

Red apple icons indicate that the amount of unhealthy food constituents greatly outweighs the amount of healthy food constituents in this type of food. Based on your genetic profile, this type of food is especially unhealthy for you. Try to make negatively rated food types a rare exception and try to eat mildly negatively rated food types over very negatively rated food types (4-6 red apples).

Warning - Genetic ingredients warning

A warning sign (!) in this column means that this type of food contains a substance that may cause digestion problems or other signs of a food intolerance due to your genetics. When eating these foods, watch for digestive problems or other signs and avoid these foods if necessary. If no problems occur, you can continue eating this food.

Warning - Order form information

If you have informed us of any allergies or intolerances that you suffer from or you just want to avoid some kind of food, you may find a warning symbol (!) in this section of the table. This means that this type of food may contain substances that can cause allergic reactions or symptoms of a food intolerance. This warning is solely based on the information you provided in the order form and no genes are tested for this section. PLEASE NOTE! This warning is a guideline to help you plan your diet and is in no way a complete

and accurate list of ingredients. Always check the components of each food item you eat if you suffer from a known food allergy.

NUTRITION GENES
FOOD INGREDIENTS
DIETARY SUPPLEMENT
DETOXIFICATION
MUSCLE FIBRE TYPE
OXIDATIVE STRESS AND RISK OF INJURY
OPTIMAL PERFORMANCE NUTRITION
DIETARY SUPPLEMENT
FOOD LIST
SCIENCE
ADDITIONAL INFORMATION

Detoxification

How your body is able to detoxify different harmful substances.

Phase 1 Detoxification of ashes and soot

Polycyclic aromatic hydrocarbons (PAHs) are common atmospheric pollutants produced mainly by burning fossil fuels such as coal, natural gas and oil. These pollutants enter the body via a myriad of paths: in food and drinking water, through the lungs when fumes or smoke are inhaled, and even directly through the skin. Once in our bodies, they can cause many different types of diseases.

A number of detoxification genes are responsible for the production of important detoxification enzymes. These enzymes bind to pollutants in the body and render them harmless. If these genes are defective, they cannot properly function, and the exposure to these pollutants can endanger your health. Therefore, it is very important for people carrying a genetic defect to be aware of their increased risk, and to minimize the contact with contaminants in order to remain healthy. In the case of limited detoxification capabilities, it is essential to avoid cigarette smoke.

Your genetic analysis revealed the following:

Genetic traits

SYMBOL	rs NCBI	POLYMORPH	GENOTYPE
CYP1A1	rs4646903	T>C	T/T
CYP1B1	rs1056836	C>G	C/G

Summary of effects

- Phase 1 Detoxification is significantly limited
- Detoxification of ashes, smoke and soot (grilled foods) is limited

Effectiveness of Phase 1 Detoxification

EFFECTIVE INEFFECTIVE

Detoxification of ashes, soot (food), smoke

EFFECTIVE INEFFECTIVE

Phase 2 Detoxification of pesticides & heavy metals

Detoxification genes produce enzymes that bind and neutralize toxic substances often found in industrial solvents, herbicides, fungicides or insect repellent sprays, and also neutralize toxic heavy metals such as mercury, lead and cadmium. As long as they function efficiently, these genes ensure that these toxic substances are effectively filtered out of your body. However, these genes can carry traits that prevent your body from adequately detoxifying these substances. These traits significantly increase the risk of many different types of cancer and chronic fatigue syndrome.

Genetic traits

SYMBOL	rs NCBI	POLYMORPH	GENOTYPE
GSTM1	Null allele	Null allele	INS
GSTT1	Null allele	Null allele	DEL
GSTP1	rs1695	A>G	G/A

Summary of effects

- Phase 2 Detoxification of pesticides, chemicals and heavy metals is limited
- You need large amounts of calcium, selenium and zinc

Effectiveness of Phase 2 Detoxification

EFFECTIVE INEFFECTIVE

Detoxification of heavy metals

EFFECTIVE INEFFECTIVE

Detoxification of pesticides, chemicals, fungicides, herbicides and insect repellent sprays

EFFECTIVE INEFFECTIVE

Oxidative stress and free radicals

Free radicals are created in cells during energy conversion. Free radicals are small, aggressive substances that damage the molecules around them through a chain reaction. They must be neutralized swiftly by the body. An imbalance between the formation and neutralization of free radicals is known as oxidative stress, which is one of the factors that affects the aging of your body and skin.

Certain genes are responsible for the neutralization of free radicals. Unfortunately, many people have genetic traits that reduce their protection from free radicals. If your body does not have an innate ability to neutralize free radicals, you should consume higher levels of antioxidants (such as beta-carotene, vitamin C, vitamin E and acetylcysteine) that will increase your body's ability to resist oxidative stress.

Coenzyme Q10 is a strong antioxidant that is capable of neutralizing free radicals but only after being transformed into its active form, ubiquinol, by a certain gene. If this gene does not function, coenzyme Q10 cannot be transformed into ubiquinol and cannot protect against free radicals. It is therefore important to know if your body is capable of activating coenzyme Q10 to determine your need to take antioxidants.

The antioxidant enzyme glutathione peroxidase (GPX) is crucial for the detoxification of free radicals in the body's cells. Selenium is, among other things, important for enzymatic activity. If the gene is defective, it decreases its activity and certain free radicals can be only poorly neutralized. An elevated selenium intake may increase the GPX activity.

Genetic traits

SYMBOL	rs NCBI	POLYMORPH	GENOTYPE
GSTM1	Null allele	Null allele	INS
GSTT1	Null allele	Null allele	DEL
GSTP1	rs1695	A>G	G/A
SOD2	rs4880	C>T	C/T
GPX1	rs1050450	C>T	C/T
NQO1	rs1800566	C>T	C/T

LEGEND: rsNCBI = description of examined genetic variation, POLYMORPHISM = form of the genetic variation, GENOTYPE = personal analysis result

Summary of effects

- You have a significantly elevated level of oxidative stress in your cells.
- You should consume a high amount of antioxidants.
- Your body is capable of activating coenzyme Q10 at a very low rate
- You should take other antioxidants in combination with coenzyme Q10
- Your need for selenium is moderately above average

Your oxidative stress in cells

NORMAL INCREASED

Recommended dose of antioxidants

NORMAL INCREASED

Activation of coenzyme Q10 to ubiquinol

POSSIBLE NOT POSSIBLE

Your daily requirement of selenium

NORMAL INCREASED

Substances and risks

Every person is exposed to substances that affect them depending on their genes. The moderate consumption of alcohol is, for most people, not a problem, while others have a significantly higher risk of becoming addicted due to genetic variations. Illegal drugs have different effects on our bodies. Caffeine is also degraded at different rates for different genetic types, and leads to different levels of caffeine/coffee consumption. Your genetic analysis came to the following conclusion:

Genetic traits

SYMBOL	rs NCBI	POLYMORPH	GENOTYPE
COMT	rs4680	G>A	A/G
CYP1A2	rs762551	C/A Pos. -163	A/A

LEGEND: rsNCBI = description of examined genetic variation, POLYMORPHISM = form of the genetic variation, GENOTYPE = personal analysis result

Summary of effects

- You have a normal risk of alcoholism
- Consumption of cannabis before the age of 16 increases your risk of schizophrenia by 2.5 times increased
- 2+ cups of coffee per day could delay the development of breast cancer by approximately 7 years
- Your body breaks down caffeine at a normal rate.

Your risk of alcohol dependence

NORMAL INCREASED

How quickly is caffeine broken down?

NORMAL SLOW

The effect of coffee on breast cancer

EFFECTIVE INEFFECTIVE

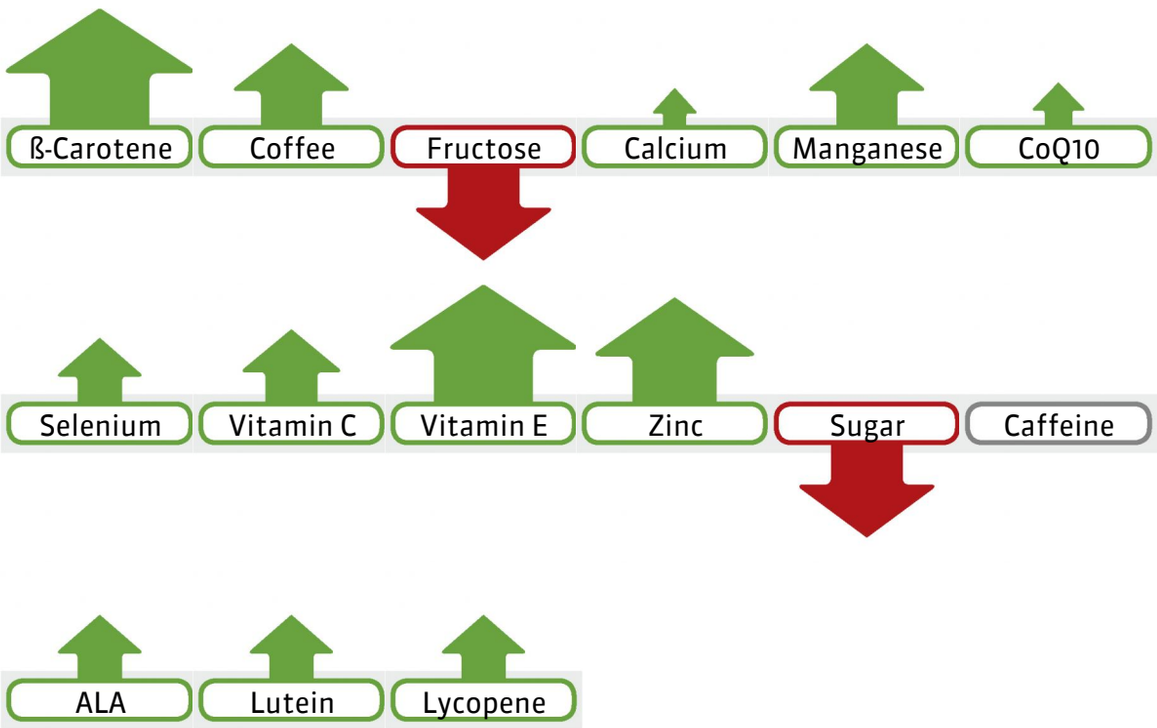
Your risk of schizophrenia (use of cannabis during adolescence)

NORMAL INCREASED

Nutritional Genes - Oxidative Stress

Your nutrition is very important. Based on your genes and their associated strengths and weaknesses you should increase or decrease certain foods and nutrients. These recommendations are calculated based on your genetic profile.

Your personalized recommendations based on this section:



Legend: GREEN ARROWS > this nutrient or substance is classed as healthy for your genetic profile. Try to increase the intake of this substance. RED ARROWS > this substance is classed as unhealthy for your genetic profile. Try to reduce your intake of the substance. NO ARROWS > There is no effect of the nutrient on the genetics of this section. PLEASE NOTE! This interpretation only considers your genetic profile of this section.

Nutritional Genes - Heavy metal detoxification

Your nutrition is very important. Based on your genes and their associated strengths and weaknesses you should increase or decrease certain foods and nutrients. These recommendations are calculated based on your genetic profile.

Your personalized recommendations based on this section:

Legend: GREEN ARROWS > this nutrient or substance is classed as healthy for your genetic profile. Try to increase the intake of this substance. RED ARROWS > this substance is classed as unhealthy for your genetic profile. Try to reduce your intake of the substance. NO ARROWS > There is no effect of the nutrient on the genetics of this section. PLEASE NOTE! This interpretation only considers your genetic profile of this section.

Prevention

PHASE 1 Detoxification: Due to your genetic profile, your body does not neutralize certain pollutants (PAHs) quickly and effectively in order to render them harmless. Therefore, it is very important that you are aware of all the potential sources of these pollutants and avoid contact with them at all costs. As much as possible, avoid the following sources of PAHs:

TOBACCO SMOKE
Tobacco smoke is one of the major sources of PAHs in humans. It is always healthier not to smoke, but smoking is especially harmful to you because your body cannot neutralize these pollutants as effectively as other people. If you are a smoker, or are frequently exposed to second-hand smoke, your risk of lung cancer is dramatically increased due to your genetic profile.

GRILLED AND CHARRED FOODS
Grilled and charred foods are also a source of PAH pollutants. Therefore, you should minimize the consumption of these foods as much as possible.

EXHAUST FUMES
Gases produced by the burning of fossil fuels contain PAHs. Therefore, avoid contact with exhaust fumes produced by engines and incinerators. PAHs accumulate in areas with high ground pollution and are especially concentrated in the proximity of incinerators and power plants.

ASH AND SOOT
Ash, soot and waste oils all contain a high concentration of PAHs. For this reason, it is very important to avoid skin contact with these substances as much as possible.

PHASE 2 DETOXIFICATION: Your genes cause a reduced Phase 2 detoxification. Therefore, your body does not eliminate certain pollutants efficiently. You should familiarize yourself with the potential sources of these pollutants, and reduce the contact with them as much as possible. You should avoid the following sources:

MERCURY
Most uses of mercury are not allowed in Europe because of its toxicity. However, dental amalgam fillings still contain traces of mercury, so it would be advisable for you to use other materials for fillings. Selenium is an effective mercury detoxifier, and should be included in your diet. Eat a balanced diet which is rich in nuts, or use dietary supplements that contain selenium.

LEAD

Dust containing lead is the main cause of lead contamination. The main sources of lead dust are the lead industry, coal-burning power plants and vehicle emissions. People who work in plants that produce or process lead are exposed to the most levels of lead. Try to reduce any contact with sources of lead, e.g. by using respiratory protection. In highly polluted regions, lead can be contained on dust that falls on plants. This dust may be removed by careful washing. Lead contained in plates and dishes can be ingested when eating acidic food (fruits, wine, vegetables). Therefore, avoid dishes that contain lead. Calcium is an important component in lead detoxification. Eat a diet rich in calcium (including dairy products and dark green vegetables) or use dietary supplements that contain calcium.

CADMIUM
Cadmium is mostly ingested through food. Cadmium-rich foods include liver, mushrooms, mussels and other shellfish, cocoa powder and dried seaweed. Another important source of cadmium is flaxseed, and as such, some genetically susceptible people are advised to limit their intake of flaxseed to no more than 20g per day. In addition, since the introduction of artificial fertilizers, cadmium finds its way into almost all types of food. Even tobacco smoke transports relatively large quantities of cadmium to the lungs, from where it is transported into the entire body. Try to base your diet on organic products, which are produced without artificial fertilizers, and refrain from smoking. Use adequate respiratory protection if your working environment is polluted with cadmium. Zinc is an important component in the cadmium detoxification process. Follow a diet rich in zinc (for example, seafood) or use dietary supplements that contain zinc.

CHEMICALS
Pollutants found in industrial solvents, herbicides, fungicides or insecticides can also have a negative impact on your health. Try to base your diet on organic products, and carefully wash vegetables and fruits before eating them. Avoid skin contact with industrial solvents, and use adequate respiratory protection when working with these agents.

POLLUTION TEST
The amalgam load is easy to check with a chewing gum test. It would therefore be advisable, if necessary, to carry out such a test with your doctor.

Oxidative stress: According to your genetic profile, you are not sufficiently protected against the harmful effects of free radicals. For this reason, you should ensure that your diet contains enough antioxidants.

FREE RADICALS
Based on your genes, your defense against free radicals (toxic substances in your body) is lower than normal. Therefore, your diet should include larger amounts of antioxidants than normal. Increase your intake of vegetables and coloured fruits.

Substances: Your genes influence the effect that many substances have on your body. Based on your genetic profile, you should be aware of the following traits:

CAFFEINE
Your body breaks down caffeine at a normal rate.

NUTRITION GENES
FOOD INGREDIENTS
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MUSCLE FIBRE TYPE
OXIDATIVE STRESS AND RISK OF INJURY
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MUSCLE STRUCTURE AND TALENT

This chapter describes the structure of your muscle cells and analyzes your genetic talent for weight lifting and endurance sports.

Athletics gene 1 (ACTN3 SNP rs181573)

Human muscle fibres can be classified into two categories. Firstly, there are the so-called "slow-twitch" (red) muscle fibres, which are well supplied with blood, and therefore are optimally supplied with oxygen. As such, they fatigue slower, which has a positive effect on persistent activity. These muscle fibres are, however, slow and do not generate high forces, presenting a disadvantage for fast and powerful movements. The second type are the "fast-twitch" (white) muscle fibres, which are less supplied with blood, and therefore get tired more quickly but they also react faster and generate higher forces. This property makes these fibres powerful with fast powerful movements.

The ACTN3 gene is active only in fast-twitch (white) muscle fibres, and plays an important role in their function. However, this gene is frequently inactive due to a gene mutation, which reduces the function of white muscle fibres and thus power with fast movements. However, the red muscle fibres increase stamina in the muscles. Each individual has two genes of this type, therefore the following gene combinations are possible:

- ENDURANCE - Both genes are INACTIVE and produce no ACTN3 protein (24% of population)
- POWER - One of the genes is ACTIVE and produces ACTN3 protein (44% of population)
- POWER - Both genes are ACTIVE and produce ACTN3 protein (31% of population)

Genetic traits

SYMBOL	rs NCBI	POLYMORPH	GENOTYPE
ACTN3	rs1815739	C>T	C/T

Legend: rsNCBI = database number of genetic variation, Polymorphism = type of genetic change, Genotype = the genetic laboratory result

Your result

The genetic programming of your muscle fibres

ENDURANCE (24% of the population) | POWER (44% of the population) | POWER (31% of the population)

One of your two genes is active and hence creates large and strong muscle fibres that are able to produce strong forces and react quickly. On the downside, they tend to fatigue more quickly. The muscle protein alpha-actinin is being produced, but in somewhat lower quantities.

Athletics gene 2 (ACE SNP rs4646994)

The human enzyme, "Angiotensin Converting Enzyme", also called ACE, plays an important role in the regulation of the blood pressure. Production of this enzyme is controlled by the ACE gene (Sports gene 2) which occurs in two forms. On the one hand, there is the endurance sports variant of the ACE gene, which has a positive effect on muscle endurance, commonly found in elite marathon runners. The second form is the power form of the ACE gene, which makes the muscles more suitable for power and sprint sports. Each individual has two genes of this type, therefore the following gene combinations are possible:

- ENDURANCE - Both genes are the endurance variants (25% of population)
- ENDURANCE - One gene is the endurance variant, the other is the power variant (50% of population)
- POWER - Both genes are the power variants (25% of population)

Genetic traits

SYMBOL	rs NCBI	POLYMORPH	GENOTYPE
ACE	rs4646994	Ins>Del	Ins/Del

Legend: rsNCBI = database number of genetic variation, Polymorphism = type of genetic change, Genotype = the genetic laboratory result

Your result

The genetic predisposition

ENDURANCE (25% of the population) | ENDURANCE (50% of the population) | POWER (25% of the population)

In your case, one of the genes is of the endurance type while the other gene is of the power oriented type. This genetic profile is best suited for endurance-oriented sports and represents a possible handicap for power-oriented exercise.

Summary of the genetic predisposition

If both genes are present, a general genetic predisposition to a particular mix of endurance and strength training, which can vary greatly from person to person, occurs. This knowledge can influence the individual training program, depending on the type of sport performed.

The following conclusion can be drawn, considering both the performance-relevant genes:

ENDURANCE MIXED TYPE POWER

Your genetic profile is well balanced and gives you a good basis in both endurance and in power-oriented sports. This is a great allrounder-profile that enables you to perform in both categories and has a significant advantage over other genetic types in sports that require both. Try to use this knowledge about your strengths against other competitors, if possible.

OXYGEN UPTAKE (VO2max)

Your genetic capability to absorb oxygen through the lungs and transport it to the appropriate muscles.

Maximal oxygen uptake

Cells need a precise amount of oxygen, that the body gets from the air, for kinetic energy conversion. The body needs more energy and therefore more oxygen during exercise, which is why breathing is accelerated during exercise.

If there is not enough oxygen in the cells, energy conversion is reduced and performance drops. The capacity to absorb oxygen through the lungs and transport it to appropriate muscles is called VO2max. This number can be increased through good endurance training. However, there are certain genetic variations that increase the VO2max level considerably, and therefore create a better starting point without any training.

Genetic traits

SYMBOL	rs NCBI	POLYMORPH	GENOTYPE
NRF-2	rs7181866	A>G	A/A
VEGF	rs2010963	C>G	G/G
ADRB2	rs1042714	C>G	C/G
ADRB2	rs1042713	C>G	A/G
CRP	rs3093066	A>C	C/C

Legend: rsNCBI = database number of genetic variation, Polymorphism = type of genetic change, Genotype = the genetic laboratory result

Summary of effects

➤ Your body's maximal oxygen uptake capacity is below the average population.

Your predisposition for maximal oxygen uptake

LOW AVERAGE HIGHER

Result

OXYGEN UPTAKE (VO2max)

According to your genetics, your maximal oxygen uptake is below the average of the general population. This means that your body can't provide oxygen to your cells as well as the average person. Intensive endurance training is advisable to increase your VO2max level and performance. You can find more ways to determine your VO2max level here.

CALCULATING VO2MAX

The best and most accurate way to calculate the VO2max level is a breath gas analysis. Here, the respiratory gases (oxygen and carbon dioxide) are measured and analyzed under continuously increasing effort. The maximal oxygen uptake is also determined during this analysis.

An alternative to the breath gas analysis is the Cooper test (considerably less accurate). The test is a 12-minute run which determines the maximum distance covered in that time. The VO2max level can then be determined using the following formula:

VO2max = (distance covered in metres – 505) / 45

You can assess your VO2max level using this table:

AGE	POOR	MEDIOCRE	GOOD	VERY GOOD	EXCELLENT
20 - 29	≤ 35	36 - 39	40 - 43	44 - 49	50+
30 - 39	≤ 33	34 - 36	37 - 40	41 - 45	46+
40 - 49	≤ 31	32 - 34	35 - 38	39 - 44	45+
50 - 59	≤ 24	25 - 28	29 - 30	31 - 34	35+
60 - 69	≤ 25	26 - 28	29 - 31	32 - 35	36+
70 - 79	≤ 23	24 - 26	27 - 29	30 - 35	36+

Source: The Cooper Institute for Aerobics Research, The Physical Fitness Specialist Manual. Dallas, TX. 2005.

NUTRITION GENES
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OXIDATIVE STRESS

Athletes produce considerably more free radicals that can damage the tissue. This chapter describes the degradation of free radicals and analyzes the right dose of antioxidants.

Oxidative stress

Your body constantly produces free radicals (poisonous molecules) which damage your tissues and cells, and accelerate the aging process. Athletes produce considerably more of these molecules because they consume more energy during intensive exercise. These molecules affect your health and athletic performance very negatively therefore your body has specific genes that can recognize and neutralize these molecules.

Unfortunately, many people have genetic variations in these genes which disturb their function and the protection, and therefore increase the oxidative stress. Certain micronutrients, however, called antioxidants, can compensate for the lack of protection if they are in the right dose. It is therefore possible to test the appropriate genes and compensate for any genetic weakness with the right dose of micronutrients, regardless of the result.

Genetic traits

SYMBOL	rs NCBI	POLYMORPH	GENOTYPE
GSTM1	Null allele	Null allele	INS
GSTT1	Null allele	Null allele	DEL
GSTP1	rs1695	A>G	G/A
SOD2	rs4880	Val16Ala	C/T
GPX1	rs1050450	C>T	C/T
NQO1	rs1800566	C>T	C/T

Legend: rsNCBI = database number of genetic variation, Polymorphism = type of genetic change, Genotype = the genetic laboratory result

Summary of effects

- You have a significantly elevated level of oxidative stress in your cells.
- You should consume a high amount of antioxidants.
- Your body is capable of activating coenzyme Q10 at a very low rate
- You should take other antioxidants in combination with coenzyme Q10
- Your need for selenium is moderately above average

Your oxidative stress in cells

NORMAL INCREASED

Recommended dose of antioxidants

NORMAL INCREASED

Activation of coenzyme Q10 to ubiquinol

POSSIBLE NOT POSSIBLE

Your daily requirement of selenium

NORMAL INCREASED

Prevention

OXIDATIVE STRESS

Your genetic results show little protection against oxidative stress and therefore free radicals in your body are removed very slowly. In addition, the sport-related surge in free radical production increases your oxidative stress even more. For this reason, you should counteract with a very high dose of antioxidant supplements to protect your cells and tissue. These will explained in detail in the “Optimal Supply of Micro-nutrients” section.

COENZYME Q10 MECHANISM

The co-enzyme Q10 micronutrient must be converted to the active ubiquinol form by a specific gene in order to protect you from free radicals. Your gene is affected but functional, and you can therefore use co-enzyme Q10 as an effective antioxidant. However, it would be wise to compensate for the impairment with other additional antioxidants.

SELENIUM NEEDS

The GPX1 gene protects your body against certain types of free radicals but can be impaired by a common genetic variation. Studies have shown that impaired GPX1 genes can be reactivated by particularly high doses of selenium. One of your two GPX1 genes has this genetic variation and therefore you need a higher dose of selenium to compensate.

INFLAMMATORY RESPONSE AND INJURY

Certain genes control the aggressiveness of the immune system and can lead to a higher risk of injury. This chapter describes your inflammatory responses and analyzes your risk of injury.

Inflammatory responses and risk of injury

During excessive exercise, the tissue is slightly damaged in various places. The immune system normally recognizes this as a normal process and there is no inflammation or swelling. The immune system only reacts to serious damage, e.g. injury to the ankle would lead to swelling.

Certain genes control the aggressiveness of the immune system. Sometimes light sport-related tissue damage can lead to an excessively aggressive inflammation, which doesn't trigger any apparent swelling but causes excessive tissue damage. Therefore, tendon injuries (usually the Achilles tendon or the tendons in the knee) can occur over a longer period of time.

Genetic traits

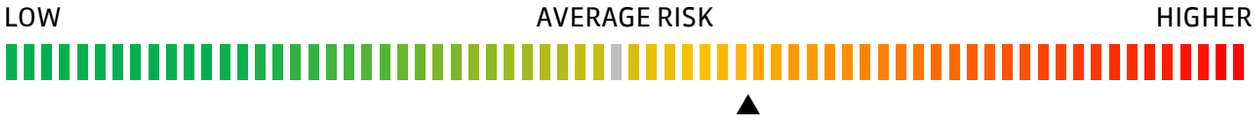
SYMBOL	rs NCBI	POLYMORPH	GENOTYPE
IL1RN	rs419598	C>T	C/T
IL6	rs1800795	G>C	C/C
TNFa	rs1800629	G>A	A/G
GDF5	rs143383	G>A	G/A
COL5A1	rs12722	T>C	C/T
IL-6R	rs2228145	A>C	A/A
Col1A1	rs1800012	G>T	G/G
CRP	rs3093066	A>C	C/C

Legend: rsNCBI = database number of genetic variation, Polymorphism = type of genetic change, Genotype = the genetic laboratory result

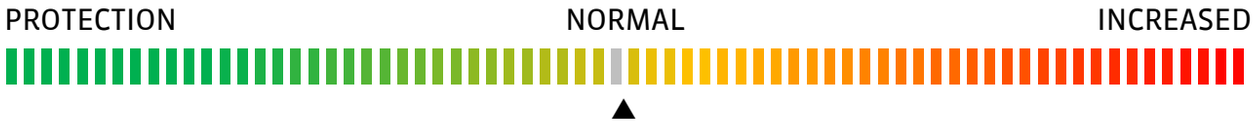
Summary of effects

- The aggressiveness of your inflammatory responses is increased
- Your risk of injury is the same as the average population

Aggressiveness of your inflammatory responses



Your risk of injury



Prevention

PREVENTING INFLAMMATION

According to your genetics, your immune system is a bit too aggressive due to genetic variations, which can lead to tendon and tissue damage over a long period. For this reason, you should counteract the aggressive inflammatory responses with nutrition and lower the consumption of the inflammation-causing arachidonic acid. In addition, you should increase consumption of anti-inflammatory substances like omega-3 fatty acids and organic sulfur (methylsulfonylmethane (MSM)). Your food list and micronutrient recommendations on the back of the report take this into account. Learn more about this in the paragraph: Optimal Nutrition.

PREVENTING INJURIES

Your genetics show that you do not have an increased risk of sports- or exercise-related injuries. Therefore, the following general precautionary measures only apply to you to prevent injuries:

- Optimal preparation (warm-up) for sport minimizes the risk of injury.
- The risk of injury is decreased through special exercises that improve the interaction of certain muscles ("muscle groups").
- Avoid over straining the tendons and ligaments during your training sessions.
- Watch out for small strains and pains and look after the affected joint to prevent further damage to the tissue.
- You should never train when you're sick or injured.
- Correct taping can reduce the risk of injury.
- Make sure to wear the appropriate gear (the right footwear is especially important).
- Use protective equipment.
- Avoid overestimating yourself and take timely breaks.
- Get the right nutrition and a sufficient supply of micronutrients (learn more about this in the paragraph: Optimal Nutrition).
- "Cooling down" (e.g. jogging) after exercise reduces recovery time and prevents injuries.
- Sleep

RECOVERY PHASE

This chapter gives you information on rest periods between training sessions.

Recovery and rest period

Tissue gets damaged in many places and many free radicals form during extreme physical activity, therefore the body needs a rest period to recover from the stress. The recovery period differs greatly from person to person because of varying genetics (in relation to inflammation and oxidative stress).

However, your gene analysis reveals your genetic strengths and weaknesses and you can compensate for your genetic weaknesses with supplements and a proper diet. For this reason, your body's required rest periods are normally reduced. When you can adhere to the nutritional and micronutrient recommendations, you can train as follows:

You should rest for two days between particularly intensive training sessions, where you either are not physically active at all or you only do light training. Elite athletes can increase the number of intensive training sessions to 6 times a week, but they should rest at least one day per week.

NUTRITION GENES
FOOD INGREDIENTS
DIETARY SUPPLEMENT
DETOXIFICATION
MUSCLE FIBRE TYPE
OXIDATIVE STRESS AND RISK OF INJURY
OPTIMAL PERFORMANCE NUTRITION
DIETARY SUPPLEMENT
FOOD LIST
SCIENCE
ADDITIONAL INFORMATION

OPTIMAL CALORIE BALANCE

Calories are the fuel for our cells and athletic performance. Peak performances can only be achieved with the optimal distribution.

Ideal calorie distribution

Calories are the fuel for our cells and for athletic performance, and they are mainly obtained from the macronutrients: fat, carbohydrates and protein. During the resting phase, the body uses carbohydrates (glucose) and fat (triglycerides) in roughly equal proportions. When an energy deficit occurs, the body starts to consume the proteins from muscle breakdown to produce energy; this should, of course, be avoided in competitive sports. Additionally, the shape of the muscle plays a crucial role. As previously stated in this report, the ACTN3 gene controls the ratio between the white and red muscle fibres, which burn different nutrients in order to produce energy. The amount of fat and carbohydrates needed during exercise thus depends on the nature (strength/endurance/mixture) and extent (short/long) of the activity.

Energy balance during power sports

The white muscle fibres are used for power and speed sports. These activities use energy, stored in the muscle, without oxygen to power the muscles (anaerobic). After about 20 seconds to 8 minutes without oxygen, this energy decreases and the muscle fibres begin to convert carbohydrates into energy. More oxygen is needed now, which is why breathing becomes faster. This form of energy consumes the stored carbohydrates (glycogen), which also gets depleted after a long period of exercising. After exercising, the carbohydrate stores are replenished. White muscle fibres are the main ones used for power sports, and carbohydrates are used exclusively. For this reason, this type of physical activity requires a high-carbohydrate diet.

Energy balance during endurance sports

The red muscle fibres are used mainly in mild exercise. In comparison to the white muscle fibre, the energy is obtained not only from carbohydrates, but also from fat. This process yields about 3 times more energy than from carbohydrates, but it requires significantly more oxygen and is limited by respiration. In this form of exercise the carbohydrate stores (glycogen) remain mostly untouched and are available for short sprints.

As opposed to strength athletes, endurance athletes not only use carbohydrates, but also fat. For this reason, the correct supply of fat and carbohydrates for endurance athletes is very important.

Energy balance during play sports

Playing sports are usually a mixture of endurance sports, which is maintained throughout the game, and strength training with short sprints and high efforts. For this reason, the red muscle uses fat and carbohydrates, leaving some carbohydrate stores in the muscle. During the short bursts of high intensity and high force, the white muscles fibres burn carbohydrates to provide more strength to the activity. For this reason, the nutrient demand of game-athletes is a

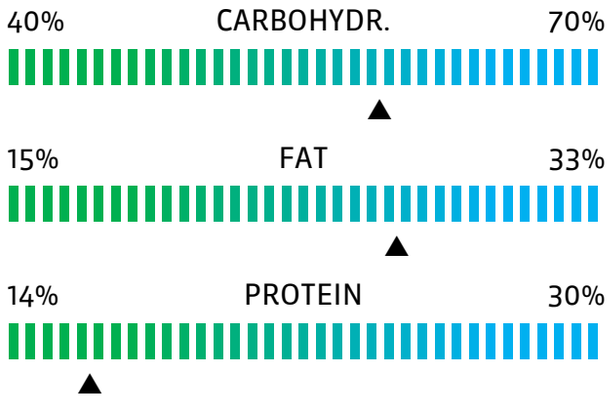
mixture between the demand of the endurance and the strength athletes.

Your optimal caloric distribution

On the basis of the individual genetic relationship between red and white muscle fibres, as well as the type of sport you practice, we can define a calorie distribution that will lead to your best performance.

Your result

Here you can see the optimal calorie distribution for your genes and sport. If you adjust your diet before the competition, the body is supplied with the right proportion of macronutrients. The result is better performance in power and in endurance sport. So, it would be advisable to revise your diet before a competition to this distribution in order to increase your performance to the maximum.



Based on the analysis, you should obtain your daily calories from the specified macronutrients in the recommended percentages:

- 57% of calories from carbohydrates
- 26% of calories from fat
- 17% of calories from protein

Achieve the optimal caloric distribution

Based on your analysis, we know the ideal ratio between fat, carbohydrates and protein, for improving your athletic performance. In order to benefit from this knowledge, you must follow a specific diet. Almost every food contains certain amounts of these three macronutrients, but the ratio may sometimes be inappropriate for your needs.

Therefore, the goal should be to eat mainly the foods with the optimal distribution, and to avoid the foods with the wrong distribution. All foods were evaluated individually, in order to enable you to put these principles easily into practice. Foods that have an optimal distribution for you are marked with a green trophy icon. Foods with an unfavourable distribution are marked with red trophy icons.

Green trophy icons

Green trophy icons indicate that the calorie balance in this type of food is optimal for your athletic performance. This type of food contains a good balance of calorie fuel for your muscles. The more green trophy icons a type of food has, the better it will influence your athletic performance.

Red trophy icons

Red trophy icons indicate that the distribution of calories in these foods is not optimal for your body. These foods contain calories that are not ideal for your optimal performance. Avoid these foods just before you want peak athletic performance.

Warning - Genetic ingredients warning

A warning sign (!) in this column means that this type of food contains a substance that may cause digestion problems or other signs of a food intolerance due to your genetics. When eating these foods, watch for digestive problems or other signs and avoid these foods if necessary. If no problems occur, you can continue eating this food.

Warning - Order form information

If you have informed us of any allergies or intolerances that you suffer from or you just want to avoid some kind of food, you may find a warning symbol (!) in this section of the table. This means that this type of food may contain substances that can cause allergic reactions or symptoms of a food intolerance. This warning is solely based on the information you provided in

the order form and no genes are tested for this section. PLEASE NOTE! This warning is a guideline to help you plan your diet and is in no way a complete and accurate list of ingredients. Always check the components of each food item you eat if you suffer from a known food allergy.

STRATEGIC PLAN

This chapter gives you a strategic plan for your athletic career.

The schedule of the performance program

Now that your genes were evaluated in terms of your performance, you know how to change your diet accordingly. The question is, what should you do, and when.

During the training season

The optimal caloric distribution is important during your workout. Summer or winter breaks are, however, of little relevance. Pay attention to the red and green trophy icons before intensive training or competition, in order to achieve better performance.

Frequency of the meals (training phase)

As a competitive athlete you consume an excessive amount of energy and since the absorption capacity of the intestine is limited, you should divide your food into several smaller servings per day. Ideally, if circumstances permit, you should have five to six meals daily. To achieve the optimal distribution of energy intake relative to the total daily energy requirements, the following is recommended:

- Breakfast 25%
- Snack 10%
- Lunch 30%
- Snack 10%
- Dinner 25%

45 minutes after training

The first meal/snack should be taken no later than 45 minutes after training. The glycogen is usually largely depleted after training and the body begins to consume energy from other sources, such as the muscle proteins (preferred) or the body fat. In order to keep the muscles from breaking down, you should take a carbohydrate-rich snack immediately after training. Drinks with a high glucose content (6-10%) or solid foods with easily digestible carbohydrates, such as glucose, and foods with a high glycemic index are recommended.

The absorption of carbohydrates into the bloodstream causes an increase in the insulin level, and leads to the storage of carbohydrates in the muscles. In addition to insulin, your body needs proteins for increasing the muscle mass. So ensure that your meal/snack contains not only carbohydrates, but also sufficient quantities of proteins to promote the growth of muscle cells. The recommended dosage is 0.4 grams per kilogram of body weight. The easiest way to meet the needs of your body after a workout is with a low-fat shake containing both carbohydrates and proteins.

Your current recommended protein intake after training: **26 g**

Competition diet

The diet during the competition is particularly important, as you need to be in your best form. The competition diet does not start immediately before the competition, but days or even weeks in advance. You already know what you should eat during the preparation phase. This section elaborates on the optimal nutrition before, during and after a competition.

The 5 days before the competition - fill up the glycogen stores

Since the glycogen stores (sugar stored in the muscles) are one of the most efficient sources of energy during exercise, it is important to fill these reserves as much as possible. This is crucial especially in sports that require speed and power.

To replenish these stores: in the 5 days preceding the competition you should eat plenty of food rich in carbohydrates (bread, potatoes, pasta, cereal products, sweets, sugar). Potassium is stored together with the sugar in the muscles and should be supplied in larger quantities by fruit. With this diet, you can increase the glycogen stored in the muscles by 25-100%.

The last hours before the competition

Ideally, an athlete should start a competition neither hungry nor with undigested food in the stomach. The last large meal should be three to four hours before the competition. There are certain criteria for choosing the right nutrients. The athlete should already be accustomed to the food and tolerate it well. It is optimal if the meal contains about 200-300g carbs (from cereals, bread, pasta, rice, etc), be low in fibre and with a moderate protein content and be sufficiently well-hydrated. It is particularly important that the carbohydrates release slowly into the blood because it could otherwise negatively affect performance. The food should have a low to medium glycemic index (10 to 70).

One to one and a half hours before the sports activity, a smaller portion should be eaten. Too much food leads to an increased accumulation of blood in the gastrointestinal tract for digestion, thereby preventing the optimum blood circulation to the muscles. Moreover, a distended stomach obstructs diaphragmatic breathing, which becomes especially noticeable in endurance exercise.

During the competition (if possible)

If there are breaks during the athletic competition (e.g. team sports) or multiple competitions within the same day (e.g. in martial arts), the loss of minerals, fluid and carbohydrates should be compensated. Suitable sports drinks and easily digestible carbohydrates are recommended. Ideally, the athlete should consume about 30-60g of carbohydrates per hour.

If you are in the preparatory phase, and the glycogen stores are not filled, you can still catch up in the short term by consuming a snack every 15 minutes, during the race (optimally glucose / dextrose). These carbohydrates should have a high glycemic index, so that they are absorbed quickly into the bloodstream.

For events lasting more than 45 minutes, an adequate intake of fluid is important. After the first 45 minutes, drink about 200ml of fluid every 15 minutes .

After the competition

After the competition, follow the same instructions as after a normal workout.

Strategic plan for your athletic career

Based on this table, you can see the instructions you should consider and at what time. Avoid foods that can negatively affect your health and your performance, as a rule. Your body should be supplied with the right nutrients to ensure you remain healthy and in peak form.

During the competitions, your diet will be tailored to best fill the glycogen stores, taking into account the type of sport you practise.

	Observe the red/green trophy icons	5 meals per day	Carbohydrates with low glycemic index	Carbohydrates with high glycemic index	High protein intake	Increased potassium intake (fruit)	Fibre intake
Outside the TRAINING SEASON			X				High
TRAINING/WORK-OUT PHASE	X	X	X				High
45 minutes after the TRAINING				100g	30g		Low
5 days before the COMPETITION			X			X	High
2 hours before the COMPETITION			250g				Low
During the COMPETITION				45g/h			Low
45 minutes after the COMPETITION				100g	30g		Low

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DIETARY SUPPLEMENT
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OXIDATIVE STRESS AND RISK OF INJURY
OPTIMAL PERFORMANCE NUTRITION
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SYNERGY PRODUCT RECOMMENDATION

Synergy product recommendations based on your individual results.

Detoxification

Effectiveness of Phase 1 Detoxification

EFFECTIVE — INEFFECTIVE

Effectiveness of Phase 2 Detoxification

EFFECTIVE — INEFFECTIVE

Detoxification of pesticides, chemicals, fungicides, herbicides and insect repellent sprays

EFFECTIVE — INEFFECTIVE

Detoxification of ashes, soot (food), smoke

EFFECTIVE — INEFFECTIVE

Detoxification of heavy metals

EFFECTIVE — INEFFECTIVE

Oxidative stress and free radicals

Your oxidative stress in cells

NORMAL — INCREASED

Activation of coenzyme Q10 to ubiquinol

POSSIBLE — NOT POSSIBLE

Recommended dose of antioxidants

NORMAL — INCREASED

Your daily requirement of selenium

NORMAL — INCREASED

Muscle structure and talent

Athletics gene 1 (ACTN3 SNP rs181573)

ENDURANCE (24% of the population) | POWER (44% of the population) | POWER (31% of the population)

Athletics gene 2 (ACE SNP rs4646994)

ENDURANCE (25% of the population) | ENDURANCE (50% of the population) | POWER (25% of the population)

Summary of the genetic predisposition

ENDURANCE | MIXED TYPE | POWER

Maximal oxygen uptake

Your predisposition for maximal oxygen uptake

LOW | AVERAGE | HIGHER

Inflammatory responses and risk of injury

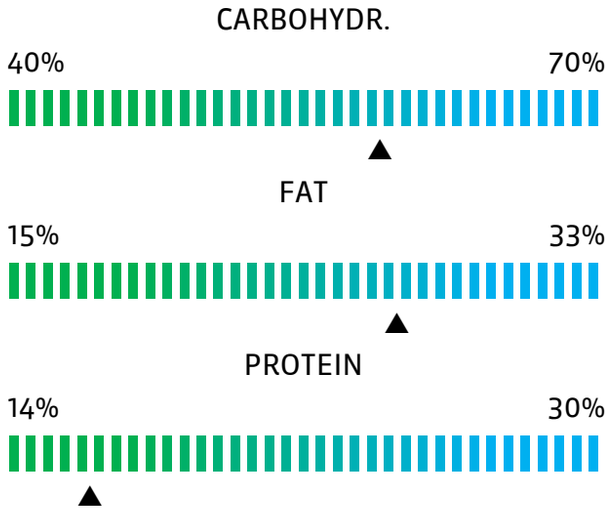
Aggressiveness of your inflammatory responses

LOW | AVERAGE RISK | HIGHER

Your risk of injury

PROTECTION | NORMAL | INCREASED

Your optimal caloric distribution



Based on the analysis, you should obtain your daily calories from the specified macronutrients in the recommended percentages:

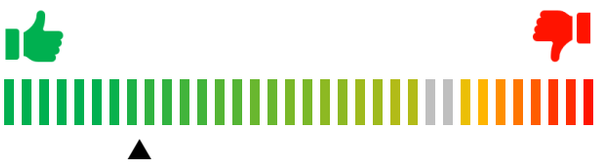
- 57% of calories from carbohydrates
- 26% of calories from fat
- 17% of calories from protein

Synergy product recommendation

Our diet contains nutrients that are essential for life and others that prevent illness. Diet is one of the most significant influences on our health. By altering your diet, you can reduce your genetic risks and improve your health and performance. Your genetic analysis results reveal your body's specific needs, making it possible to calculate your personal daily requirement of essential vitamins and minerals, which are then combined in a dietary supplement recommendation personalized to your individual needs.

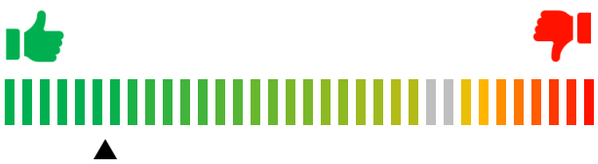
The bars below indicate if the ingredients and benefits of the product fit to your individual genetic needs. The green zone indicates that this type of supplement contains ingredients, that are especially healthy due to your genetic profile. The red zone indicates that the supplement contains ingredients that are not recommended for your special needs.

BIOME DT



Biome DT is an innovative food supplement with psyllium husk, broccoli, inulin, glutamine, and zinc. Also gluten-free and vegetarian-friendly.

BIOME SHAKE



As part of the Purify program, Biome Shake was carefully formulated to support proper balance in the microbiome. Biome Shake is high in vegetable protein with a blend of vitamins, minerals, fiber, and beneficial fats from sources such as flax seed and borage oil.

BODY PRIME

Body Prime effectively prepares your body for any health regimen. With a significant amount of magnesium, it contributes to normal energy metabolism and valuable electrolyte balance.

PROARGI-9+

The combination of ingredients in ProArgi-9+ was meticulously formulated to support exceptional health. This product is pure, potent and formulated to help you live life optimized.

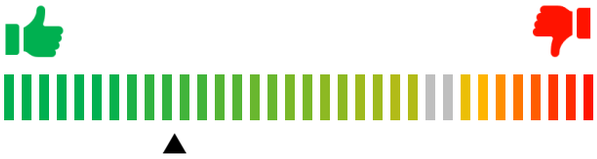
FL-3X GEL

Synergys FL-3X is the perfect complement to an active lifestyle- with plant extracts, Glucosamine HCL, MSM and chondroitin sulfate in a gel matrix delivery system.

MISTIFY

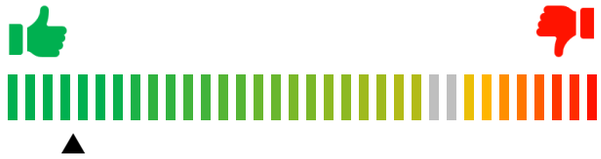
Mistify is a liquid food supplement, which contains vitamin B6, Açai Berry, and Green Tea extract.

PHYTOLIFE



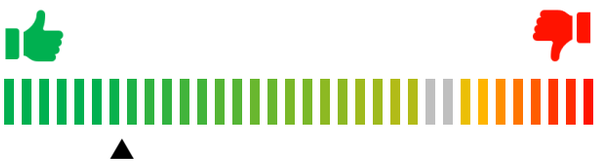
Synergy's PhytoLife is a rich combination of chlorophyllin (sodium copper chlorophyllin) and peppermint oil.

SLMSMART



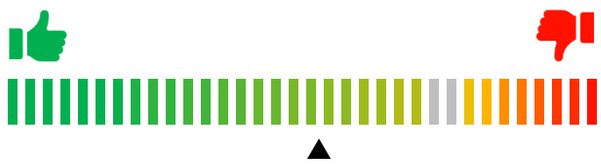
A meal replacement that touts 26 grams of protein and 23 vitamins and minerals.

E9



A natural energy formula that includes yerba, mate, guarana and green tea.

OMEGA-3



Omega-3 fatty acids help the human body in many ways, from the heart to the brain.

COLLAGEN+

Collagen is a fibrous protein of connective tissues that provides structural support and enhanced strength to a variety of body tissues including hair, skin, nails, muscles, bones, and cartilage. Overall, collagen comprises one-third of the total proteins in our body. Synergy Collagen+ offers all the benefits of collagen plus Vitamin C, Hyaluronic Acid, and Zinc. This synergistic blend of vitamins and nutrients supports collagen production, hydration, and normal protein synthesis for the whole body, giving you powerful support for total body benefits.

VITAMIN D3

Vitamin D3 “The Sunshine Vitamin” provides powerful immune support, working with both the innate and adaptive immune systems. Together with other vitamins, minerals, and hormones, Vitamin D supports healthy bone metabolism supporting the building, growth, and restoration of bones. It also helps to maintain normal levels of calcium in the blood, and plays a role in the healthy development of muscles. Through adequate supplementation you can provide your body with the necessary levels of Vitamin D3 needed to ensure a healthy and strong skeletal system.

V3 PRODUCT ADVANTAGE

- Synergy's R&D staff consists of Ph.D.'s, biologists, chemists, and research scientists
- Synergy follows Good Manufacturing Practices (GMP)
- Synergy is certified by NSF
- Synergy invests millions of dollars each year into research and world-class quality testing
- Synergy sources the ingredients for its products and thoroughly tests every incoming batch for purity, quality, and potency

PROARGI-9+

ProArgi-9+ contains the amino acids L-Arginine and L-Citrulline along with vitamins C, D, and B6. With its myriad of benefits, the vitamins C and B6 found in ProArgi-9+ contribute to the normal functioning of the nervous and immune systems as well as to the reduction of tiredness and fatigue while the vitamin D found in ProArgi-9+ contributes to normal blood calcium levels, the absorption of phosphorus and the maintenance of normal muscle function.

PHYTOLIFE

Synergy's PhytoLife is a rich combination of chlorophyllin (sodium copper chlorophyllin) and peppermint oil. With quality in every drop, the peppermint oil found in PhytoLife contributes to normal digestive function and helps turn ordinary water into a great tasting drink that you can enjoy throughout the day. This, along with the fresh taste and liquid form, makes PhytoLife a great companion to your food supplement regime.

MISTIFY

Mistify is a liquid food supplement, which contains vitamin B6, Açai Berry, and Green Tea extract. This extraordinary supplement is rich in flavor and incorporates a delicious blend of fruit and berry extracts and concentrates, including; grape, blueberry, raspberry, cranberry, bilberry, and pomegranate.

ELITE HEALTH IS POSSIBLE, AND A BALANCED AND PROPERLY FED MICROBIOME IS THE KEY TO ACHIEVING IT.

BIOME CORE KIT

This program provides a one-month supply of clinically-formulated products that target and support optimal microbiome balance. The Biome Core Kit provides probiotics, vegetable proteins, fiber, and many powerful nutrient blends. This kit, along with adherence to the healthy diet and lifestyle guidelines contained in this guide, works by promoting detoxification, encouraging elimination, and maintaining a healthy microbiome balance.

PURIFY KIT

The Purify Kit includes a complete supply of clinically formulated nutrition for the microbiome. Use these carefully engineered supplements alongside a healthy diet as you begin your journey to Elite Health.

PROARGI-9+

Live life optimised with Synergy's ProArgi-9+.

Featuring 100% pure granular-grade, free-form l-arginine, l-citrulline, and a carefully selected array of vitamins, ProArgi-9+ provides powerful support for your health. L-arginine is an amino acid that is naturally found in the body. While it contributes to many other vital functions in the body, it also converts to nitric oxide, which causes blood vessels to expand leading to improved blood flow. In a clinical study conducted by the Hughes Center for Research and Innovation, this patent-pending supplement was found to significantly increase nitric oxide production in the body. ProArgi-9+ is the ultimate health and energy supplement.

BENEFITS

- 5,000 mg of pure, 100% granular-grade free-form l-arginine
- Contains five essential vitamins: Vitamin C, Vitamin D3, Vitamin K, Vitamin B6, and Vitamin B12.
- Comes in serving-sized packets to take with you on the go
- Contains Vitamin B6 and B12, which contribute to normal red blood cell formation and homocysteine metabolism
- Flavoured for refreshing, citrus taste

Nobel Prize-Winning Science

The Nobel Prize for Medicine was awarded to three American scientists for researching the power of nitric oxide in humans. ProArgi-9+ has been shown in clinical study to significantly increase nitric oxide. This product builds on the legacy of these great scientific discoveries for the benefit of people everywhere.

BIOME SHAKE

New and improved Biome Shake formula to support proper balance in the microbiome.

Biome Shake is high in vegetable protein with a blend of vitamins, minerals, fibre, amino acids, and beneficial fats from sources such as flax seed and medium-chain triglycerides. This formula features a vegetable base made of broccoli and clean pea protein, stored in our new bio-based jar.

BENEFITS

- 22 grams of vegetable protein per serving
- Essential vitamins & minerals
- Promotes a feeling of fullness
- Gluten free and vegetarian
- Delicious vanilla flavour

BIOME ACTIVES

Biome Actives supports the balance of the microbiome in the digestive system.

Biome Actives is an innovative formula that contains inulin and 1 billion colony-forming units (CFU) of Bacillus coagulans (a lactic acid-forming bacterial species) per capsule, which supports a favourable environment for beneficial gut bacteria.

BENEFITS

- Provides 1 billion CFU of Bacillus coagulans per capsule
- Supports the digestive system

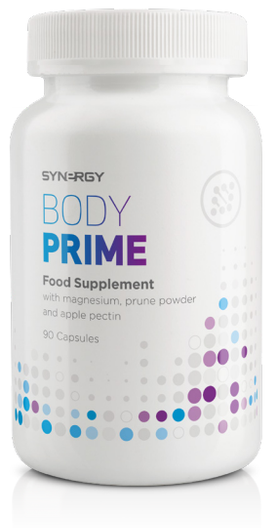
MENU FOR SUCCESS

For best results, Synergy's Medical & Scientific Advisory Board recommends healthy food choices along with these microbiome-focused supplements. Here are a few tips to remember when deciding what to eat:

- Choose meals that contain plenty of leafy greens and cruciferous vegetables
- Avoid meals, treats, or snacks heavy in sugar and carbohydrates
- Beware of sugars and starches hiding in condiments and sauces
- Drink plenty of water
- Avoid fruit juice, sports drinks, and soda
- Practice portion control at every meal and if you must add more food to your plate, extra vegetables are the best choice

BODY PRIME

Body Prime effectively prepares your body for any health regimen.



With a significant amount of magnesium, Body Prime supports normal energy metabolism and valuable electrolyte balance, which prime your system to initiate your next health programme. At the same time, magnesium supports a healthy balance of electrolytes and proper energy levels. Additionally, magnesium has been shown to support proper cardiovascular function.

Body Prime also features an apple pectin and prune powder blend. Together, apple pectin and prune powder comprise the majority of one capsule's contents. Like magnesium, these familiar fruit sources provide a variety of benefits. These ingredients are non-GMO and are approved for daily use, making this a gentle formula derived from familiar fruit sources.

BENEFITS

- Supports proper electrolyte balance
- Supports natural energy metabolism
- Supports muscle function
- Supports normal muscle contraction

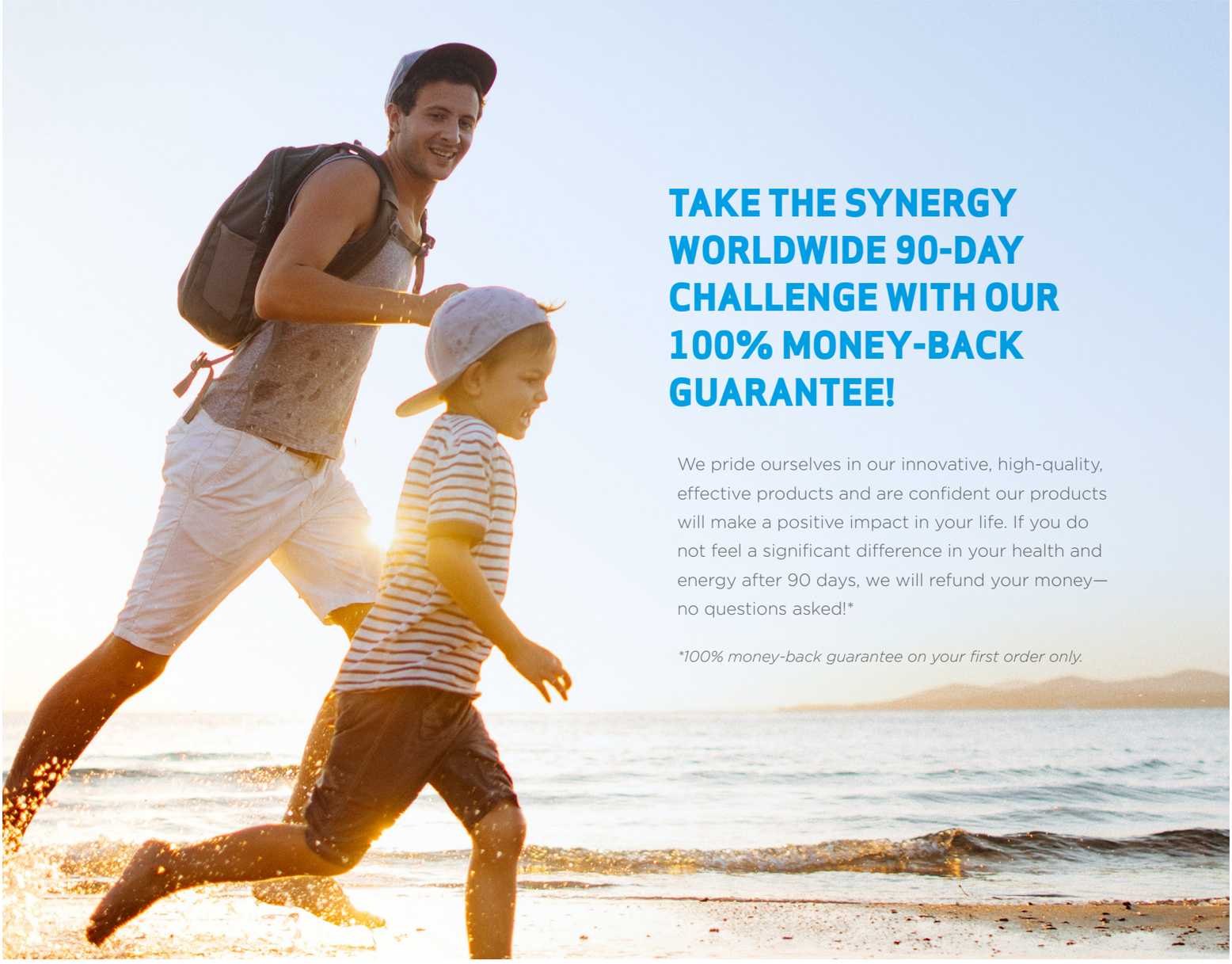
BIOME DT

Biome DT is gluten-free, vegetarian-friendly, and utilises distinct pathways to support the microbiome.

Biome DT is a patent-pending drink mix that combines psyllium, broccoli, inulin, glutamine, and zinc to support microbiome purification for a new beginning to Elite Health.

BENEFITS

- Zinc contributes to the protection of cell constituents from oxidative stress
- Zinc contributes to the normal function of the immune system



TAKE THE SYNERGY WORLDWIDE 90-DAY CHALLENGE WITH OUR 100% MONEY-BACK GUARANTEE!

We pride ourselves in our innovative, high-quality, effective products and are confident our products will make a positive impact in your life. If you do not feel a significant difference in your health and energy after 90 days, we will refund your money—no questions asked!*

**100% money-back guarantee on your first order only.*

OMEGA-3

High potency fish oil with unwavering quality.

Synergy's highly potent Omega-3 capsules each contain 1,000 mg of oil sourced from cold water, fatty fish. These mackerel, anchovy, and sardine sources are known to be rich in EPA and DHA unsaturated fats, while being reliably low in contaminants. No need to worry about unpleasant fish flavors, as Synergy Omega-3 contains natural lemon oil for a better experience.

BENEFITS

- Potent, convenient capsules
- Pleasant, natural lemon oil to mask fishy flavor
- Reinforces normal brain function
- Supports normal function of the heart
- Promotes normal vision and eye health

VITAMIN D3

Benefits the body's numerous biological functions to promote a greater state of overall health.

Vitamin D3 "The Sunshine Vitamin" provides powerful immune support, working with both the innate and adaptive immune systems. Vitamin D supports healthy bone metabolism supporting the building, growth, and restoration of bones. It also helps to maintain normal levels of calcium in the blood, and plays a role in the healthy development of muscles. Through adequate supplementation you can provide your body with the necessary levels of Vitamin D3 needed to ensure a healthy and strong skeletal system.

BENEFITS

- Provides 600 IU of Vitamin D3 per tablet
- Helps maintain normal levels of calcium in the blood
- Helps maintain bone health and mineralization
- Helps support a healthy immune system
- Facilitates calcium absorption in the body to support a healthy skeletal system

COLLAGEN+

Enhanced formula for total body benefits.

Collagen is a fibrous protein of connective tissues that provides structural support and enhanced strength to a variety of body tissues including hair, skin, nails, muscles, bones, and cartilage. Overall, collagen comprises one-third of the total proteins in our body. Synergy Collagen+ offers all the benefits of collagen plus Vitamin C, Hyaluronic Acid, and Zinc. This synergistic blend of vitamins and nutrients supports collagen production, hydration, and normal protein synthesis for the whole body, giving you powerful support for total body benefits.

BENEFITS

- Supports collagen production throughout the body
- Supports a normal protein synthesis
- Strengthens body tissues including hair, skin, nails, muscles, bones, and cartilage

MISTIFY

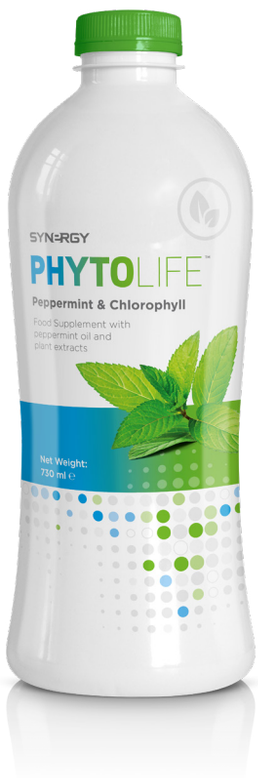
Mistify is a flavourful, earthy blend of your favourite berries, seeds and other fruits, including:

• Açai berries • Blueberries • Red raspberries • Cranberries • Bilberries • Red and concord grapes • Pomegranate

These ingredients are rich in Vitamin B6, which contributes to the normal function of the immune system, and also contain potassium. Let Mistify contribute to your body's natural balance and give your systems the support they deserve.

BENEFITS

- Counters free radical damage and premature aging
- Maintains cholesterol levels already in the normal range
- Supports normal psychological function
- Supports normal red blood cell formation
- Supports normal homocysteine metabolism



PHYTOLIFE

PhytoLife is a high-potency supplement made from chlorophyll-rich ingredients, including barley leaves and alfalfa.

The body craves the essential nutrition benefits that dark green vegetables provide. These ingredients, along with a balanced diet, will help satisfy your body's need for leafy greens. PhytoLife also contains peppermint oil, which transforms a typical glass of water into a nutritious, refreshing drink. Fortify your body with green super foods. It's the simple solution.

BENEFITS

- Helps promote the natural blood-cleansing functions of the body
- Promotes the elimination of toxins from the body
- Helps protect and support healthy cells
- Inhibits LDL oxidation
- Helps to maintain low homocysteine levels
- Promotes a strong immune response
- May offer circulatory system support
- Increased intestinal health

SLMSMART

Ignite your metabolism for smooth and effective weight loss.

Synergy's Meal Replacement for weight control is fueled by three proteins—whey, casein, and soy—each of which is designed to ignite your metabolism and support lean muscle mass.

BENEFITS

- Delivers a balanced array of carbohydrates, fats, and proteins that give you the right amount of energy any time of the day
- Keeps you feeling full for hours
- Contains whey, soy, and casein proteins that support the maintenance and growth of lean muscle mass
- Contains fructose which leads to a lower blood glucose rise compared to foods containing sucrose or glucose

e9

Redefine your limits and give today your all with a healthy boost.

This delicious, sugar-free mixture contains additional energising ingredients including Vitamin B6 and B12, which contribute to the reduction of tiredness and fatigue. e9 also replenishes your system with essential vitamins and minerals, giving you the boost you need to finish the day strong.

BENEFITS

- Long-lasting, healthy energy through a unique, low-calorie formulation
- Contributes to normal, energy-yielding metabolism
- Plays a role in the reduction of tiredness and fatigue
- Contributes to normal psychological and mental function
- Supports the body's natural ability to produce energy
- Great-tasting piña colada flavour
- Sweetened with steviol glycosides that occur naturally in stevia leaves

SYNERGY GELS

Available in select markets. Other markets, available by personal import only.

Call Customer Service to order or to learn more about these products.

ESSENTIAL GREENS

Gel-Matrix Food Supplement with Mixed Greens.

Essential Greens Gel provides an energising burst of algae, vegetables, and herbs, plus a patented, proprietary phytonutrient blend in a unique gel-matrix delivery system. Essential Greens helps you bridge the nutritional gaps in your diet with an array of nutritious green vegetables infused with a refreshing lemon-mint flavor.

BENEFITS

- Phytonutrients provide health-protective benefits
- Antioxidants combat free radicals and help counter cell damage
- Chlorophyll enhances immunity and protects cells

MISTIFY

Gel-Matrix Food Supplement with Superfruits and Vitamins.

Synergy Mistify Gel delivers the free-radical-fighting antioxidant power of 11 superfruits, including acai berry, red grape, and blueberry and Vitamin B6, plus a patented, proprietary phytonutrient blend in a unique gel-matrix delivery system. With a mouthwatering, exotic berry flavor, Mistify provides immune, energy, and nervous system support.

BENEFITS

- Boosts energy
- Functioning of the nervous system
- Psychological function
- Reduction of tiredness and fatigue
- Red blood cell formation

FL-3X

Gel-Matrix Food Supplement with Glucosamine, Chondroitin, and Plant Extracts

Synergy's FL-3X gel is the perfect complement to an active lifestyle, as its ingredients support the way you move. FL-3X contains 500 mg glucosamine HCL and 300 mg chondroitin sulfate, the fundamental components of joint tissue involved in the production of hyaluronic acid.

This formula also includes plant extracts and 125 mg MSM for additional health and mobility benefits. Likewise, Vitamin C benefits the body's ability to defend itself and form important collagen needed throughout the body. Vitamin C also contributes to a normal energy-yielding metabolism. Enjoy the effects, the convenience, and the tasty orange flavor.

BENEFITS

- Supports mobility, range of motion, and flexibility
- Glucosamine and Chondroitin are fundamental components of joint tissue involved in the production of beneficial hyaluronic acid
- Antioxidant plant extracts including green tea, grape seed, and apple fruit
- Vitamin C contributes to the collagen formation for the normal function of cartilage and bones
- Popularly taken by those who enjoy an active lifestyle

VITAZONE

Gel-Matrix Food Supplement with Vitamins, Minerals, and Plant Extracts.

Synergy VitaZone gel provides a full spectrum of vitamins, minerals, and antioxidant-rich plant extracts in a unique gel-matrix delivery format. VitaZone is the convenient, tasty way to obtain essential daily nutrients your body needs.

BENEFITS

- Provides 100% NRV of 14 vitamins and minerals, including Vitamins A, D, E, B6, and B12, Riboflavin, Niacin, Biotin, Selenium, and Chromium
- B6 and B12 Vitamins contribute to normal energy-yielding metabolism
- Vitamin E contributes to the protection of cells from oxidative stress
- Vitamin A and Selenium contribute to the normal function of the immune system
- Features a proprietary blend of antioxidant-rich plant extracts including green tea

PRO-MŪN

Gel-Matrix Food Supplement with Zinc and Plant Extracts.

Synergy PRO-MŪN gel provides a unique blend of immune-supporting zinc, brown seaweed extract, and antioxidant-rich plant extracts in a single, go-anywhere packet. With its delicious peach-apricot flavor, PRO-MŪN is the convenient, tasty way to naturally support the healthy function of your immune system.

BENEFITS

- Provides 30% NRV of Zinc, which contributes to normal function of the immune system, protection of the cells from oxidative stress, normal DNA synthesis, and normal metabolism of macronutrients
- 480 mg Laminaria japonica (brown seaweed) extract
- Features a proprietary blend of antioxidant-rich plant extracts including green tea

NUTRITION GENES
FOOD INGREDIENTS
DIETARY SUPPLEMENT
DETOXIFICATION
MUSCLE FIBRE TYPE
OXIDATIVE STRESS AND RISK OF INJURY
OPTIMAL PERFORMANCE NUTRITION
DIETARY SUPPLEMENT
FOOD LIST
SCIENCE
ADDITIONAL INFORMATION

FOOD LIST

This individual food list contains approx. 900 food products assessed according to your genes and helps you to plan your nutrition optimally.

The food table explained

The food list includes more than 900 different food types that were evaluated according to your genes and which should help to achieve your goals.
Please note: Irrespective of your goal with this program, you should ensure a varied and balanced diet. To achieve this, consider the typical portion as your maximum daily amount for this type of food. Also try to vary your choice of food types and do not eat many of the same or similar food types at once. Alcoholic beverages should be limited to a maximum of three times per week.

Green apple icons

Green apple icons indicate that this type of food (if eaten in typical portion sizes and frequency) contains substances that are especially healthy for your genetic profile. Try to plan your nutrition with as many types of food in the very green category. Make sure you roughly follow the typical portion sizes of each type of food and that you do not eat too many foods of the same type at once.

Red apple icons

Red apple icons indicate that the amount of unhealthy food constituents greatly outweighs the amount of healthy food constituents in this type of food. Based on your genetic profile, this type of food is especially unhealthy for you. Try to make negatively rated food types a rare exception and try to eat mildly negatively rated food types over very negatively rated food types (4-6 red apples).

Green trophy icons

Green trophy icons indicate that the calorie balance in this type of food is optimal for your athletic performance. This type of food contains a good balance of calorie fuel for your muscles. The more green trophy icons a type of food has, the better it will influence your athletic performance.

Red trophy icons

Red trophy icons indicate that the distribution of calories in these foods is not optimal for your body. These foods contain calories that are not ideal for your optimal performance. Avoid these foods just before you want peak athletic performance.

Warning - Order form information

If you have informed us of any allergies or intolerances that you suffer from or you just want to avoid some kind of food, you may find a warning symbol (!) in this section of the table. This means that this type of food may contain substances that can cause allergic reactions or symptoms of a food intolerance. This warning is solely based on the information you provided in the order form and no genes are tested for this section. PLEASE NOTE! This warning is a guideline to help you plan your diet and is in no way a complete and accurate list of ingredients. Always check the components of each food item you eat if you suffer from a known food allergy.

Warning - Genetic ingredients warning

A warning sign (!) in this column means that this type of food contains a substance that may cause digestion problems or other signs of a food intolerance due to your genetics. When eating these foods, watch for digestive problems or other signs and avoid these foods if necessary. If no problems occur, you can continue eating this food.

Bread and pastry

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Baguette	30	85	5	20	5	95.0
							Buckwheat bread	45	106	5	25	5	47.0
				ⓘ	ⓘ		Croissant	70	357	5	35	25	60.0
					ⓘ		Spelt bread	50	117	5	20	5	50.0
					ⓘ		Pita bread	50	121	5	25	5	40.0
					ⓘ		Brown/rye bread with sunflower seeds	45	99	5	20	5	35.0
					ⓘ		Brown bread - rye-wheat bread	45	101	5	25	0	65.0
					ⓘ		Brown bread - mixed wheat bread	45	106	5	25	5	48.0
					ⓘ		Green seed bread	45	108	5	25	5	51.0
							Millet bread	45	106	5	25	5	71.0
				ⓘ	ⓘ		Potato Bread	50	122	5	25	5	80.0
					ⓘ		Crispbread - multigrain bread	10	34	5	10	0	59.0
					ⓘ		Crispbread - rye-wheat bread	10	34	5	10	0	55.0
					ⓘ		Crispbread - mixed wheat bread	10	36	5	10	0	63.0
					ⓘ		Pretzel	50	171	5	35	5	83.0
					ⓘ		Cornbread	45	104	5	20	5	99.0
					ⓘ		Pumpernickel bread	40	78	5	20	5	41.0
							Rice bread	45	107	5	25	5	70.0
					ⓘ		Wholemeal bread with sunflower seeds	50	110	5	20	5	95.0
					ⓘ		Wholemeal bread - barley wholemeal bread	50	102	5	20	5	54.0
					ⓘ		Wholemeal bread - rye-wheat bread	50	103	5	20	5	54.0
					ⓘ		Wholemeal bread - whole wheat bread	50	102	5	20	0	95.0
					ⓘ		White bread	30	73	5	15	0	70.0

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference	Bread and pastry	All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							White bread - toast	30	78	5	15	5	70.0

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference	Cereals, grains and grain products, rice	All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Amaranth Wholemeal (as flour, semolina, grain or flakes)	15	46	5	10	5	3.0
							Buckwheat peeled (as flour, semolina, grain or flakes)	40	137	5	30	5	37.0
							Buckwheat whole grains (as flour, semolina, grain or flakes)	60	206	10	45	5	37.0
							Bulgur	180	585	20	125	5	50.0
							Spelt peeled (as flour, semolina, grain or flakes)	20	68	5	15	0	60.0
							Spelt whole grains (as flour, semolina, grain or flakes)	100	329	20	60	5	60.0
							Barley peeled (as flour, semolina, grain or flakes)	60	193	10	40	5	40.0
							Barley whole grains (as flour, semolina, grain or flakes)	40	128	5	25	5	40.0
							Unripe spelt grain peeled (from flour, semolina, grain or flakes)	60	196	10	40	5	65.0
							Unripe spelt grain wholegrain (from flour, semolina, grain or flakes)	40	131	5	25	5	42.0
							Oats peeled (from flour, semolina, grain or flakes)	60	199	10	35	5	16.0
							Oats wholegrain (from flour, semolina, grain or flakes)	10	33	5	10	5	15.0
							Millet peeled (from flour, semolina, grain or flakes)	60	214	10	45	5	44.0
							Millet wholegrain (from flour, semolina, grain or flakes)	20	66	5	15	5	44.0
							Khorasan wholegrain (from flour, semolina, grain or flakes)	100	337	15	70	5	36.0

Cereals, grains and grain products, rice

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Corn peeled (from flour, semolina, grain or flakes)	20	66	5	15	5	48.0
							Corn wholegrain (from flour, semolina, grain or flakes)	60	197	5	40	5	46.0
					ⓘ		Breadcrumbs	20	72	5	15	0	40.0
							Popcorn	30	111	5	20	5	22.0
							Quinoa peeled (from flour, semolina, grain or flakes)	100	355	15	65	10	6.0
							Rice peeled (from flour, semolina, grain or flakes)	40	140	5	35	0	82.0
							Rice wholegrain (from flour, semolina, grain or flakes)	60	211	5	45	5	75.0
					ⓘ		Rye peeled (from flour, semolina, grain or flakes)	60	180	10	40	5	41.0
					ⓘ		Rye wholegrain (from flour, semolina, grain or flakes)	40	120	5	25	5	41.0
					ⓘ		Wheat peeled (from flour, semolina, grain or flakes)	60	183	10	40	5	5.0
					ⓘ		Wheat wholegrain (from flour, semolina, grain or flakes)	40	122	5	25	5	27.0

Confectionary, sugar, sweets, chocolate, sweet spread, ice cream

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Maple syrup	100	274	0	70	0	55.0
							Candy sour	5	20	0	5	0	41.0
				ⓘ	ⓘ		Ice strawberry	30	58	5	10	5	11.0
				ⓘ	ⓘ		Ice vanilla	30	58	5	10	5	11.0
							Fruit drops	5	20	0	5	0	41.0

Confectionary, sugar, sweets, chocolate, sweet spread, ice cream

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference		All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Gumdrops	15	52	5	15	0	41.0
							Honey	20	61	0	15	0	60.0
							Cocoa powder	5	14	5	5	5	5.0
							Jam apple	25	66	0	20	0	65.0
							Jam apricot	25	63	0	15	0	65.0
							Jam blackberry	25	65	0	20	0	65.0
							Jam strawberry	25	65	0	20	0	65.0
							Jam blueberry	25	66	0	20	0	65.0
							Jam raspberry	25	64	0	15	0	65.0
							Jam orange	25	66	0	20	0	65.0
							Jam peach	25	68	0	20	0	65.0
							Jam plums	25	61	0	15	0	65.0
							Jam cranberry	25	67	0	20	0	65.0
							Jam sour cherry	25	63	0	15	0	65.0
							Jam damson plum	25	68	0	20	0	65.0
							Marshmallow	15	50	0	15	0	61.0
							Marzipan	15	79	5	10	5	6.0
							Nougat	15	78	5	10	5	32.0
				ⓘ	ⓘ		Chocolates	15	49	0	10	5	61.0
							Rum balls	20	81	0	15	5	50.0
				ⓘ			Chocolate kiss	20	71	5	10	5	61.0
							Chocolate bitter	20	79	5	10	5	35.0
				ⓘ			Chocolate milk	20	107	5	15	10	34.0

Confectionary, sugar, sweets, chocolate, sweet spread, ice cream

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
	● ● ● ● ●	● ● ● ●		ⓘ			Chocolate cream	20	99	5	15	5	33.0
	● ● ● ● ●		●	ⓘ			Unskimmed chocolate milk	20	107	5	10	10	44.0
	● ● ● ● ●	● ●		ⓘ			Chocolate white	20	108	5	15	10	63.0
	● ● ● ●		●				Chocolate dark	20	99	5	10	10	23.0
	● ● ●		● ● ●				Sugar white	5	20	0	5	0	58.0

Eggs and egg products, pasta

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
● ● ● ● ●			● ● ●				Glass noodles	100	339	0	85	0	35.0
● ● ● ●			● ● ● ●				Chicken egg	60	82	10	5	10	35.0
	●						Soba noodles	100	336	15	75	5	48.0
● ●			●		ⓘ		Noodles	100	138	10	40	5	6.0
● ●		● ● ●			ⓘ		Pasta with egg	150	543	20	105	5	50.0
●		● ●			ⓘ		Pasta without egg	50	174	10	35	5	53.0
● ● ● ●		● ● ● ●			ⓘ		Wholemeal pasta with egg	150	485	20	95	5	50.0
●		● ● ● ●			ⓘ		Wholemeal pasta without egg	50	162	10	30	5	50.0

Baked goods, cakes and confectionary

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Apple crumble cake from shortcrust	150	350	5	50	20	64.0
							Apple strudel	150	411	5	40	10	35.0
							Apricot cream cake from cake batter	100	208	5	25	15	46.0
							Beer batter	100	225	10	35	10	2.7
							Biscuit cuts	100	390	5	50	20	46.0
							Puff pastry	100	420	5	30	35	2.4
							Choux paste	100	183	10	15	15	1.3
							Butter biscuits	25	109	5	20	5	55.0
							Cream cake	120	400	10	40	25	65.0
							Domino squares	15	50	5	10	5	4.0
							Doughnut	60	236	5	30	15	76.0
							Strawberry cream cake from cake batter	100	281	5	25	20	65.0
							Yeast dough (pizza dough)	100	304	10	45	15	3.7
							Yogurt cream cake	100	264	5	25	20	65.0
							Carrot nut cake from cake batter	100	318	10	35	20	53.0
							Cheesecake from shortcrust pastry	100	270	10	30	15	65.0
							Cheesecake	120	344	5	30	25	65.0
							Cherry cake from shortcrust pastry	120	354	5	45	20	64.0
							Gingerbread	25	97	5	15	5	76.0
							Linzer cake	120	501	10	55	30	38.0
							Macaroons	50	218	10	25	15	32.0
							Almond cake from yeast dough	100	384	10	45	20	65.0
							Marble cake from batter	70	249	5	30	15	45.0

Baked goods, cakes and confectionary

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Marzipan cake	120	421	10	35	30	70.0
							Apple and poppy seed cake from shortcrust	120	346	10	40	20	64.0
							Poppy seed roll from dough	100	358	10	40	20	45.0
							Muffin with chocolate	60	175	5	25	10	50.0
							Muffins with blueberries	60	226	5	25	10	59.0
							Nut cake	50	229	5	20	15	45.0
							Nut cream cake	120	427	10	30	35	65.0
							Gingerbread biscuits	25	96	5	20	5	15.0
							Cookies from shortcrust	50	246	5	30	15	57.0
							Quark-apple cake	120	232	10	30	10	40.0
							Cream cake	50	151	5	15	10	40.0
							Rhubarb cake with meringue	120	292	5	25	15	40.0
							Raisin cake from batter	70	241	5	35	10	65.0
							Red wine cake from batter	70	255	5	30	15	74.0
							Sacher cake	120	462	10	55	25	38.0
							Pretzel sticks	30	106	5	25	0	0
							Chocolate cake from batter	70	237	5	25	15	38.0
							Chocolate-nuts cake from batter	100	393	10	35	25	38.0
							Chocolate cake with cream topping from cake batter	100	308	5	50	10	38.0
							Black Forest cake	120	333	5	40	20	38.0
							Chelsea bun with crumbles	75	257	10	40	10	65.0
							Tiramisu	125	390	10	50	20	12.0
							Waffles	50	279	5	25	25	75.0

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference	Baked goods, cakes and confectionary	All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Damson plum cake from shortcrust	100	239	5	30	10	53.0

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference	Fruit and fruit products	All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Acerola	120	19	0	5	0	20.0
							Pineapple	125	70	5	20	0	45.0
							Pineapple canned	125	108	0	30	0	65.0
							Apple	125	76	0	20	0	35.0
							Applesauce canned	250	203	5	50	0	38.0
							Apricot	50	22	0	5	0	57.0
							Apricot canned	125	99	5	25	0	65.0
							Avocado	225	293	5	10	30	10.0
							Banana	100	90	5	20	0	51.0
							Tree gooseberry (starfruit)	125	34	5	5	5	15.0
							Soft fruit	125	40	5	10	5	40.0
							Pear	140	73	5	20	0	40.0
							Pear canned	125	83	0	20	0	55.0
							Blackberry	125	45	5	10	5	25.0
							Breadfruit	125	130	5	30	0	65.0

Fruit and fruit products

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference	Fruit and fruit products	All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
●●●●●●		●●●					Cashew apple	125	68	5	15	5	22.0
●●●●●		●					Clementine	40	18	0	5	0	0
	●●●●●●		●●				Date	125	350	5	85	5	42.0
	●●●●●●	●●					Durian	125	180	5	40	5	44.0
●●●●●●		●●●●					Strawberry	250	80	5	15	5	30.0
●●		●●●●●					Ground Cherry (Physalis)	125	64	5	15	5	22.0
●●●●		●					Fig	20	13	0	5	0	35.0
	●●●		●				Pomegranate	125	94	5	20	5	35.0
●●		●●●					Grapefruit	250	110	5	20	0	53.0
●●●●●●		●●●●					Guava	125	43	5	10	5	24.0
●●●		●					Guava small	125	69	5	15	5	78.0
●●●●●●		●●●●					Rosehip	125	119	5	20	5	1.0
●●●●●		●●●●					Blueberry	125	46	5	10	5	28.0
●●●●●●		●●●●●					Raspberry	125	43	5	10	0	25.0
●●●●		●●●●●●					Elderberry	125	69	5	10	5	4.0
●●●●●		●●●●●					Currant red	125	41	5	10	0	25.0
●●●●●●		●●●●●					Currant black	125	50	5	10	0	15.0
●●●●		●●●●					Currant white	125	51	5	10	0	35.0
	●●		●				Japanese persimmon	125	89	5	20	0	1.3
●●●●		●●●					Prickly pear	125	46	5	10	5	0
	●	●●●●					Cape gooseberry	125	95	5	20	5	15.0
	●		●●				Cherry canned	125	68	5	20	0	20.0
●●●●●●		●●					Cherry sour	120	62	5	15	5	45.0

Fruit and fruit products

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference	Fruit and fruit products	All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
●●●●●●	●●●●●●	●●●●●●	●●●●●●										
●			●				Cherry sweet	120	72	5	20	0	22.0
●●●●		●●●●					Kiwi	45	24	0	5	0	52.0
	●●		●●●●				Coconut	50	181	5	5	20	0
	●		●				Kumquat	125	85	5	20	0	0
●●●●●			●●				Lime	125	59	5	5	5	26.6
	●●		●				Litchi	125	94	5	25	0	50.0
	●●●●●●		●●				Litchi canned	125	120	5	30	0	38.0
●			●				Mamey apple	125	71	5	15	0	3.0
●●●●							Mandarins	40	20	0	5	0	19.0
	●●●●●		●●				Mandarins canned	125	104	0	25	0	47.0
●●●							Mango	125	74	5	20	5	50.0
	●●●		●				Mangosteen	125	93	5	20	5	1.0
●●●		●●					Mulberry	125	55	5	10	0	25.0
	●●		●				Mirabelle	125	80	5	20	0	3.0
●●●●			●				Medlar	25	12	0	5	0	0
	●		●				Nectarine	115	64	5	15	0	35.0
●●●●●		●●					Orange	150	65	5	15	0	42.0
●●			●				Pampelmuse	125	58	5	15	0	53.0
●●			●				Papaya	125	40	5	10	0	55.0
●●●●		●●●●●					Passion fruit	125	80	5	15	5	24.0
●●			●				Peach	115	47	5	10	0	28.0
●●			●				Plums	125	56	5	15	0	0
●●●		●●●					Cranberry	125	44	0	10	5	2.0

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference	Fruit and fruit products	All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Quince	150	59	5	15	5	35.0
							Rhubarb	150	20	5	5	0	13.0
							Raisins	25	76	5	20	0	28.0
							Round plum	125	56	5	15	0	33.0
							Sea buckthorn berry	125	108	5	5	10	0
							Gooseberry	125	46	5	10	0	25.0
							Starfruit	100	27	5	5	5	0
							Wild blackberry	125	45	5	10	5	51.0
							Wild strawberry	125	40	5	10	5	59.0
							Wild raspberry	125	43	5	10	0	59.0
							Watermelon	125	48	5	10	0	72.0
							Grape red	125	88	5	20	0	45.0
							Grape white	125	88	5	20	0	15.0
							Winter melon	125	35	5	10	0	72.0
							Lemon	125	45	5	5	5	0
							Muskmelon	125	69	5	20	0	68.0

Vegetables and vegetable products

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Algae	5	2	0	0	0	1.0
							Artichokes	150	33	5	5	0	20.0
							Aubergine	250	43	5	10	0	20.0
							Wild garlic	100	19	5	5	0	16.0
							Kale	150	20	5	5	0	0
							Cauliflower	150	35	5	5	0	15.0
							White beans	60	158	15	25	5	35.0
							Beans thick	150	126	15	20	5	46.0
							Beans green	150	50	5	10	0	54.0
							Nettle	150	63	15	5	5	0
							Broccoli	150	42	10	5	0	0
							Bush beans green	150	50	5	10	0	54.0
							Chicory	50	9	5	5	0	15.0
							China beans	150	170	15	30	5	0
							Chinese cabbage	150	20	5	5	0	0
							Iceberg lettuce	50	7	5	5	0	0
							Endives	50	8	5	5	0	15.0
							Green peas	150	123	10	20	5	35.0
							Green peas, canned	150	57	5	10	5	45.0
							Lamb's lettuce	50	8	5	0	0	47.0
							Fennel bulb	150	29	5	5	0	0.3
							Chinese style vegetable mix	150	56	5	10	5	42.0
							Mexican style vegetable mix	150	77	5	15	5	32.0

Vegetables and vegetable products

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference	Vegetables and vegetable products	All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Sweet pepper yellow	150	45	5	10	0	35.0
							Sweet pepper green	150	29	5	5	0	20.0
							Sweet pepper red	150	56	5	10	5	30.0
							Kale	150	56	10	5	5	7.0
							Cucumber	150	18	5	5	0	15.0
							Capers	100	23	5	5	0	0
							Carrot	150	50	5	10	0	30.0
							Kidney beans	60	151	15	25	5	23.0
							Garlic	5	3	0	5	0	16.0
							Celeriac	150	29	5	5	0	85.0
							Kohlrabi	150	38	5	10	0	0
							Turnip	150	45	5	10	0	72.0
							Lettuce	50	6	5	5	0	15.0
							Butternut pumpkin	150	38	5	10	0	0
							Pumpkin Hokkaido	150	38	5	10	0	0
							Spring onion	30	13	0	5	0	3.0
							Lima bean	150	98	5	20	0	46.0
							Lollo Rosso	100	20	5	5	0	0
							Dandelion	150	44	5	5	5	0
							Chard	150	24	5	5	0	32.0
							Horseradish	150	96	5	20	0	0
							Mixed pickles	200	72	5	15	5	75.0
							Okra	150	30	5	5	0	0

Vegetables and vegetable products

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference	Vegetables and vegetable products	All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Olive green	20	26	0	5	5	30.0
							Olive black	20	69	0	5	10	0
							Palm heart	150	54	5	10	0	32.0
							Peppers	150	29	5	5	0	0
							Parsnips	150	89	5	20	5	52.0
							Pearl onion	15	11	0	5	0	3.0
							Purslane	150	18	5	5	5	2.0
							Scarlet runner bean	150	126	15	20	5	15.0
							Radicchio	50	7	5	5	0	0
							Radishes	100	15	5	5	0	15.0
							Radish	150	24	5	5	0	15.0
							Romanesco	150	35	5	5	0	46.0
							Romano salad	50	8	5	5	0	15.0
							Brussels sprouts	150	54	10	5	5	15.0
							Red cabbage	150	35	5	5	0	15.0
							Beet red	150	63	5	15	0	91.0
							Beet white	150	39	5	10	0	30.0
							Rocket	100	27	5	5	5	32.0
							Sorrel	150	33	5	5	5	0
							Pickled cabbage	150	26	5	5	0	25.0
							Shallot	30	7	0	5	0	8.0
							Leaf lettuce	50	10	5	5	0	0
							Black salsify	150	29	5	5	5	0

Vegetables and vegetable products

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Pearl onions	30	8	0	5	0	3.0
							Soybeans	150	216	20	20	10	18.0
							Asparagus canned	150	18	5	5	0	15.0
							Asparagus white	150	27	5	5	0	15.0
							Spinach	150	29	5	5	0	15.0
							Pointed cabbage	150	35	5	5	0	15.0
							Green runner beans	150	50	5	10	0	30.0
							Stalk celery	150	26	5	5	0	15.0
							Bush beans	150	132	15	20	5	30.0
							Pigeon peas	60	172	15	30	5	22.0
							Soup vegetables	150	38	5	10	0	3.0
							Tomatoes	80	14	5	5	0	15.0
							Tomatoes canned	80	14	5	5	0	31.0
							Wax beans	150	48	5	10	0	20.0
							Wax gourd	150	21	5	5	0	0
							Wasabi raw	150	185	10	35	5	8.0
							Vine leaves	100	114	10	20	5	2.0
							White cabbage	150	38	5	10	0	20.0
							Savoy cabbage	150	41	5	5	0	0
							Parsley root	150	59	5	10	5	5.0
							Zucchini	150	32	5	5	0	15.0
							Sugar peas	150	89	10	15	0	65.0
							Sweetcorn	150	134	5	25	5	0

Vegetables and vegetable products

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference		All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Onion	80	22	5	5	0	3.0

Potatoes and potato products, starchy plant parts, mushrooms

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference		All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Oyster mushroom	100	23	5	5	0	0
							Batata (sweet potato)	150	167	5	40	5	8.0
							Birch mushroom	200	50	10	0	5	0
							Slippery Jack	200	30	5	5	5	67.0
							Champignon	100	21	5	5	0	0.0
							Champignon canned	100	19	5	0	5	0
							Red pine mushroom	200	36	10	0	5	0
					ⓘ		Gnocchi	125	203	5	45	5	70.0
							Armillaria	200	38	10	0	5	61.0
							Chinese artichoke	200	362	10	75	5	3.1
					ⓘ		Potato chips	25	132	0	5	10	77.0
							Potatoes peeled	200	146	5	35	0	70.0
							Potatoes unpeeled	240	175	5	40	0	65.0
					ⓘ		Potatoes frozen	200	290	5	35	15	76.0
							Potato starch flour	20	68	0	20	0	32.0

Potatoes and potato products, starchy plant parts, mushrooms

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference		All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Lotus root	150	119	5	25	0	6.0
							Manioc	200	274	5	65	0	20.0
							Morel	200	30	5	5	5	0
							Arrowroot	200	208	15	40	5	6.0
							Chanterelle	200	30	5	0	5	0
							Boletes	200	34	5	5	5	0
							Sago palm	200	362	10	75	5	5.0
							Shiitake mushroom	200	84	5	25	0	0
							Porcini	200	54	15	5	5	0
							Taro	150	153	5	35	0	11.0
							Jerusalem artichoke	200	62	5	10	5	7.0
							Truffle	200	118	20	15	5	23.0
							Wild mushroom mix canned	200	118	5	15	10	20.0
							Yam bean	200	82	5	20	0	32.0
							Yam	200	202	5	45	0	12.0

Spices, seasonings, additives

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Agar-Agar	5	3	0	0	0	12.0
							Agave syrup	100	270	5	65	0	20.0
							Anise	5	0	0	0	0	0
							Apple vinegar	15	3	0	0	0	5.0
							Balsamic vinegar	100	99	0	25	0	5.0
					ⓘ		Barbecue sauce	45	54	5	5	5	19.0
							Basil	5	0	0	0	0	5.0
							Cayenne pepper	5	0	0	0	0	5.0
							Chili red	5	0	0	0	0	5.0
							Apple chutney	20	29	0	10	0	5.0
							Mango chutney	20	28	0	10	0	5.0
							Tomato chutney	20	21	0	5	0	5.0
					ⓘ		Curry powder	5	0	0	0	0	1.0
				ⓘ	ⓘ		Curry sauce	60	91	5	5	10	0
							Dill	5	0	0	0	0	5.0
							Cocktail dressing	20	116	0	5	15	40.0
							Dressing vinegar-herb	45	134	0	5	15	0
				ⓘ			Dressing French	60	222	5	5	25	0
							Dressing Italian	60	146	5	5	15	0
							Dressing mayonnaise	50	360	5	0	40	1.0
							Tarragon	5	0	0	0	0	5.0
							Gelatin	5	3	5	0	0	12.0
					ⓘ		Vegetable stock granulated	100	176	20	15	10	0

Spices, seasonings, additives

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Hoisin sauce	20	35	5	10	5	4.0
							Chicken stock granulated	5	7	5	5	0	15.0
							Ginger	5	0	0	0	0	0
							Cardamom	5	0	0	0	0	5.0
							Ketchup	20	22	0	5	0	80.0
							Coriander	5	0	0	0	0	5.0
							Herb vinegar	15	3	0	0	0	5.0
							Cumin	5	0	0	0	0	5.0
							Caraway	5	0	0	0	0	5.0
							Turmeric	5	0	0	0	0	5.0
							Bay leaf	5	0	0	0	0	5.0
							Mace	5	0	0	0	0	5.0
							Marjoram	5	0	0	0	0	5.0
							Balm	5	0	0	0	0	5.0
							Nutmeg	5	0	0	0	0	5.0
							Cloves	5	0	0	0	0	5.0
							Fruit vinegar	15	3	0	0	0	5.0
							Oregano	5	0	0	0	0	5.0
							Paprika sweet	5	0	0	0	0	10.0
							Pectins	5	1	0	0	0	12.0
							Parsley	5	0	0	0	0	0
							Green pepper	5	0	0	0	0	5.0
							Black pepper	5	0	0	0	0	5.0

Spices, seasonings, additives

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							White pepper	5	0	0	0	0	5.0
							Allspice	5	0	0	0	0	5.0
							Rosemary	5	0	0	0	0	5.0
							Saffron	5	0	0	0	0	5.0
							Sage	5	0	0	0	0	5.0
							Sambal Oelek	20	28	5	5	5	5.0
							Chives	5	0	0	0	0	5.0
							Mustard hot	5	4	0	0	0	35.0
							Mustard sweet	5	4	0	0	0	55.0
							Soy sauce	15	17	5	5	5	4.0
							Tabasco	5	1	0	0	0	0
							Thyme	5	0	0	0	0	5.0
							Tomato paste	10	4	0	5	0	45.0
							Vanilla pod	5	0	0	0	0	5.0
							Juniper berry	5	4	0	0	0	15.0
							Wine vinegar	15	3	0	0	0	15.0
							Cinnamon	5	0	0	0	0	5.0

Legumes (mellow), nuts, oil and other seeds

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
●●●●●●			●●●				Bamboo shoots	150	27	5	5	0	20.0
●●●		●●●●					Bean sprouts	15	5	0	5	0	15.0
●●●			●●●				Cashew	60	355	15	15	30	25.0
●●●●●			●				Chia seeds	30	137	5	15	10	1.0
●●							Sweet chestnut	60	118	5	25	5	30.0
●●●●			●●●				Peas germinated	15	4	5	0	0	0
●●●●●●			●●●●				Peanut	100	576	30	10	50	0
●●		●●●●					Grain sprouts	15	8	0	5	0	35.0
●●●●●●			●●●●				Hazelnut	60	390	10	5	40	0
●●●●●●		●●●●●					Chickpeas	60	161	15	25	5	26.0
●●●			●●●				Chickpeas germinated	15	4	5	0	0	30.0
●●			●●●●				Pumpkin seed	20	113	10	5	10	53.0
●●●●●●			●●●●				Flaxseeds	20	89	5	5	10	0
●●●●●●		●●●					Lima beans	60	167	15	30	5	32.0
●●●●●●		●●●					Lentils	60	185	15	30	5	30.0
●●●			●●●				Lentils germinated	15	4	5	0	0	29.0
●●●●●●		●●●●					Lupine seeds	100	371	40	40	10	24.0
	●		●				Alfalfa sprout	15	4	0	0	0	0
●●●			●●●●				Macadamia nut	60	418	5	5	45	39.0
●●●●●●			●●●●				Almond	60	353	15	5	35	35.0
●●●●●●			●●●●				Poppy	20	97	5	5	10	0
●●●●●●		●●●					Mung beans	60	164	15	25	5	25.0
●●●			●●●●				Brazil nut	60	412	10	5	45	10.0

Legumes (mellow), nuts, oil and other seeds

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Pecan nut	60	419	10	5	45	0
							Pine nut	20	115	5	5	10	0
							Pistachio	60	352	15	10	35	18.0
							Sesame	20	114	5	5	10	0
							Soy bran	10	11	5	5	0	7.0
							Soy sprouts	15	6	5	5	0	15.0
							Sunflower seed	20	96	5	10	5	20.0
							Walnut	40	286	10	5	30	0

Mostly animal menu components

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							White bean soup with meat	450	275	25	30	10	64.0
				ⓘ	ⓘ		Chicken burger	150	378	15	50	15	15.0
							Chilli con carne	250	258	20	15	15	34.0
					ⓘ		Chicken cordon bleu	150	300	35	15	15	70.0
					ⓘ		Pork cordon bleu	150	329	35	15	15	4.4
					ⓘ		Curried sausage with fries	100	184	5	15	15	70.0
				ⓘ	ⓘ		Debreziner bean goulash	350	420	25	20	30	79.0
							Roasted duck with oranges and sauce	300	507	35	10	35	68.0

Mostly animal menu components

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
	●●●●●●	●●●●●●	●●●●●		●		Fish and chips	350	931	25	105	50	32.0
	●	●●●●	●●				Fish roll with tomato sauce	350	301	40	15	15	35.0
	●●		●		●		Fish sticks	150	380	20	25	25	33.0
	●●●●●●		●	●	●		Meat pie	350	945	40	60	65	1.4
	●●●●●●		●●●●		●		Roast goose with gravy	300	672	50	10	55	0
	●●●●●●		●●●●	●			Poultry cream soup	350	340	30	5	25	19.0
	●●●●●●		●●●	●	●		Poultry croquette	200	378	20	15	30	0
	●●●●		●●●●	●			Chicken salad with pineapple and mushrooms	100	194	20	5	15	0
●●●●●●			●●		●		Kale stew with cooked sausage	450	365	20	20	25	42.0
	●●●●		●●●		●		Goulash soup canned	150	164	20	5	10	0
●●●●●●			●●●				Herring cooked in tomato sauce	80	98	10	5	10	35.0
	●●●●●●		●●●				Venison stew with red wine	350	508	50	10	30	20.0
	●●●●	●●●●			●		Hot Dog	115	267	15	30	15	61.0
	●●●●●●		●●●	●	●		Chicken fricassee with mushrooms	450	693	45	15	55	25.0
	●●●●●●		●●●	●	●		Sliced veal with curry-garlic sauce	250	433	35	10	30	10.0
	●●●		●●●●		●		Filled veal roll, with sauce	200	302	40	5	15	10.0
	●●●		●●●●		●		Veal shoulder braised in cream sauce	200	164	25	5	10	2.9
	●●		●				Carrot stew with pork belly	450	365	20	20	25	30.0
●●●●●●			●●●●	●	●		Cheese souffle	140	424	20	5	40	86.0
●			●	●			Stuffed cabbage with meat filling	300	258	20	15	15	55.0
	●●●		●●●		●		Königsberger meatballs	200	388	35	15	25	0
	●●●●●●		●●●●		●		Herbal pâté	350	588	65	5	40	0.1
	●●●●		●●●		●		Lamb meatballs with curry in tomato sauce	200	340	20	15	25	35.0

Mostly animal menu components

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Lasagna with minced meat	475	665	30	40	45	0
							Liver dumplings	350	536	40	50	25	50.0
							Liver pâté	150	294	25	10	20	0
							Oxtail soup	350	350	15	15	30	0
							Paprika chicken with sauce	250	263	30	10	15	25.0
							Ragout fin	180	236	20	10	15	0
							Ravioli stuffed with meat in tomato sauce	200	276	15	30	15	75.0
							Beef goulash	400	472	40	10	35	0
							Stewed beef with red wine sauce	350	382	35	10	15	0
							Scrambled eggs	120	193	15	5	15	50.0
							Cream herring	100	129	10	5	15	50.0
							Pork with sauce	250	583	35	10	50	0
							Breaded pork cutlet, fried	180	454	35	35	25	4.4
							Breaded pollock fillet	180	407	35	20	25	0
							Spaghetti Bolognese	250	350	15	55	10	38.0
							Brawn Berliner style	250	238	25	5	15	0
							Sushi	400	1224	45	220	20	55.0
							Dumplings stuffed with cheese and ham	250	803	40	25	65	84.0
							Squid fried in beer batter	280	375	45	30	15	32.0
							Tomatoes stuffed with minced meat	250	330	30	15	20	60.0
							Wild ragout with sauce	250	270	30	10	15	0
							Sweet 'n sour boar	300	522	50	10	35	0
							Game sauce	60	45	5	5	5	0

Mostly animal menu components

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Game soup	350	315	35	15	15	54.0
					ⓘ		Sausage salad	100	202	10	5	20	25.0

Mostly vegetable menu components

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Apple cold soup	350	161	0	40	0	52.0
				ⓘ	ⓘ		Apple turnover	250	768	15	75	50	3.0
					ⓘ		Baguette with mozzarella and tomatoes	200	434	20	55	20	30.0
					ⓘ		Bami Goreng	450	689	40	80	25	0
				ⓘ	ⓘ		Cauliflower casserole	300	204	10	15	15	15.0
							White bean casserole	450	473	35	40	20	35.0
							Green bean soup	400	208	10	20	15	94.0
				ⓘ			Bouillabaisse	400	344	35	5	20	0.1
				ⓘ			Broccoli cream soup	300	96	5	10	10	15.0
				ⓘ	ⓘ		Bread soup	400	252	15	30	10	70.0
				ⓘ			Cold buttermilk soup	350	196	15	35	5	79.0
				ⓘ			Champignon cream soup	350	315	20	20	20	32.0
				ⓘ	ⓘ		Champignon pâté	200	514	25	20	40	15.0
				ⓘ			Champignon stuffed	250	315	25	10	20	54.0

Mostly vegetable menu components

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Champignon in batter	200	282	15	30	15	51.0
				ⓘ	ⓘ		Cornflakes with milk and sugar	200	22	10	65	5	112.0
				ⓘ	ⓘ		Vegetarian kebab	350	504	20	85	15	49.0
					ⓘ		Egg gruel	320	122	5	10	10	40.0
							Pea stew	450	297	10	30	15	66.0
				ⓘ	ⓘ		Falafel in pita bread	350	364	30	45	10	86.0
							Fish stock	100	6	0	5	0	0
				ⓘ	ⓘ		Tarte flambée	75	136	10	20	5	0
				ⓘ	ⓘ		Spring rolls	150	362	15	20	30	50.0
							Clear spring soup	350	168	15	25	5	0
							Vegetable broth	300	57	5	5	10	38.0
					ⓘ		Vegetable burger	200	276	10	40	10	59.0
							Vegetable stew	350	196	20	10	10	48.0
					ⓘ		Grains patty	200	250	15	40	10	0
							Greek salad	120	110	5	5	10	0
					ⓘ		Semolina dumplings	30	26	5	5	5	75.0
							Green beans in tomato sauce	250	113	5	15	5	40.0
					ⓘ		Grain burger	180	256	15	30	15	65.0
				ⓘ	ⓘ		Porridge	310	270	15	25	15	60.0
					ⓘ		Oatmeal pithy	330	109	5	10	10	58.0
							Yeast flakes	5	16	5	5	0	35.0
					ⓘ		Yeast dumplings	180	518	15	85	20	28.0
				ⓘ	ⓘ		Yeast cake with plums	540	842	20	155	20	32.0

Mostly vegetable menu components

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Light sauce	110	62	5	5	5	0
							Chicken broth with noodles	330	281	20	15	20	19.0
							Hummus	100	166	10	15	10	5.0
							Italian salad	100	97	10	5	10	0
							Caramel sauce	60	53	5	10	5	48.0
							Potato gratin without cheese	350	417	10	50	25	85.0
							Potato croquettes	250	375	10	45	20	30.0
							Mashed potatoes	250	240	10	40	10	57.0
							Potato salad with vinegar/oil dressing	250	270	5	30	15	85.0
							Potato soup	400	356	15	40	20	63.0
							Cheese salad	150	314	20	10	25	15.0
							Cheese sauce	60	67	5	5	5	4.0
							Cheese noodles	200	492	25	65	20	2.6
							Dumplings from boiled potatoes	200	194	10	35	5	77.0
							Herb cream sauce	60	94	5	5	10	0
							Herb sauce	60	58	5	5	5	0
							Pumpkin cream soup	350	217	10	15	15	0
							Lentil stew	450	342	20	35	15	40.0
							Mangold steamed, in light sauce	100	58	5	5	5	70.0
							Swabian ravioli	250	343	30	40	10	1.2
							Horseradish sauces from lighter sauce	60	67	5	5	5	0
							Dumplings	200	278	10	50	10	0
							Cold milk soup	320	285	10	40	15	31.0

Mostly vegetable menu components

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
	●●●	●●●●●		ⓘ			Rice pudding	250	235	10	40	10	67.0
	●●●●●●	●●●		ⓘ			Rice pudding with cream and cherries	200	248	5	30	15	1.0
	●●●●●	●●●●●		ⓘ	ⓘ		Milk soup with flour	350	291	15	35	15	20.0
●●		●●●●●		ⓘ	ⓘ		Cereals with milk 3.5%	200	270	15	40	10	25.0
	●●●	●●●●●		ⓘ	ⓘ		Cereals with milk, sugar and fruit	150	207	10	35	5	30.0
	●●	●●●●					Nasi Goreng	550	677	45	70	30	0
●●●●●●		●●●		ⓘ	ⓘ		Pasta casserole with cheese	350	627	30	60	35	45.0
	●●●	●●●●●		ⓘ	ⓘ		Pasta salad with vegetables/mayonnaise	350	508	15	75	20	95.0
●●			●●●●		ⓘ		Omelette	140	249	20	5	20	50.0
	●●	●●●●●		ⓘ	ⓘ		Pancake	150	284	10	40	10	67.0
	●●●●●●		●●●		ⓘ		Pepper sauce	100	118	5	10	10	0
	●●●●		●●●●	ⓘ	ⓘ		Mushroom ragout au gratin	250	398	25	5	35	20.0
●●●●●●		●●●●			ⓘ		Pizza al formaggio (with cheese)	250	753	40	70	40	86.0
●●		●●●●●●			ⓘ		Pizza al funghi (with mushrooms)	250	498	20	70	20	58.0
●●●●		●●●●●●			ⓘ		Pizza napolitana	250	578	25	75	25	30.0
	●●	●●●●●●			ⓘ		Pizza salami	250	590	20	80	25	58.0
	●	●●●●●●			ⓘ		French fries	200	234	5	35	10	75.0
	●●●●		●		ⓘ		Cranberry sauce	60	43	0	10	0	17.0
	●●		●●●●	ⓘ	ⓘ		Cream sauce	60	113	5	5	15	9.0
●●●			●●				Ratatouille	350	189	5	15	15	20.0
●●●●●●			●	ⓘ			Brussels sprouts puree	250	195	10	15	15	32.0
	●●●●●	●●●●					Beetroot steamed sweet/sour	250	148	5	20	10	29.3
	●●		●●		ⓘ		Red wine sauce	60	37	0	5	5	12.0

Mostly vegetable menu components

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Rum sauce	60	61	5	10	5	0
							herbal dressing	60	112	5	5	15	0
							Horseradish cream	60	85	5	5	10	0
							Processed cheese with mushrooms	30	86	5	5	10	0
							Chocolate sauce	60	52	5	10	5	0
							Chocolate waffle	50	267	5	20	20	70.0
							Potato dumplings	125	160	10	30	5	52.0
							Seitan	100	370	75	15	5	7.0
							Braised celery, in light sauce	250	145	5	10	15	0
							Bread dumplings	290	447	20	55	20	74.0
							Mustard sauce	60	67	5	5	5	19.0
							Sauces dark	60	37	0	5	5	0
							Spaghetti with tomato sauce	250	320	15	60	5	38.0
							Asparagus casserole	550	418	20	30	25	15.0
							Asparagus cream soup	300	240	15	15	15	15.0
							Spinach casserole with cheese	300	393	15	5	40	0
							Soups dark, bound	350	119	15	5	10	41.0
							Soups light, bound	350	221	10	30	10	41.0
							Clear soups with vegetables.	350	175	10	20	10	53.0
							Tagliatelle with tomatoes and parsley	250	320	10	50	10	55.0
							Tapioca pearls	100	0	0	90	0	62.0
							Tempeh	20	30	5	0	5	1.0
							Tofu	100	77	10	5	5	15.0

Mostly vegetable menu components

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
	●●●		●●●	ⓘ			Tomato cream soup	300	156	5	10	15	38.0
●●			●●●●				Tomato and mozzarella salad with olive oil	100	159	10	5	15	15.0
	●		●●●●				Tomato sauce	100	65	5	5	10	4.0
	●●●●		●●●				Tomato soup, clear	300	90	10	5	5	50.0
			●●●	ⓘ			Tzatziki	20	11	5	5	0	0
	●●	●●●●●●		ⓘ			Custard	60	52	5	10	5	0
●●		●●●●●			ⓘ		Wholemeal pasta with tomato sauce	250	305	15	35	15	42.0
●●●●●●		●●●●●●			ⓘ		Whole grain pasta salad with vegetables	330	503	20	70	20	50.0
●●		●●●●●			ⓘ		Whole grain pizza with vegetables	230	331	20	40	15	60.0
●●●		●					Wax beans, steamed	250	155	5	15	10	20.0
	●●●●●●	●●●●●●			ⓘ		Sabayon sauce	60	118	5	20	5	3.0
		●●●●●●					White beans in tomato sauce	250	173	15	25	5	35.0
	●●●		●●		ⓘ		White wine sauce	100	95	5	5	10	0
	●●		●●		ⓘ		Semolina porridge	320	109	5	10	10	87.0
●●●				ⓘ			Savoy cabbage with cheese sauce	100	54	5	5	5	35.0
	●●		●●●●	ⓘ	ⓘ		Zucchini cream sauce	60	72	5	5	10	0
	●●●●●●	●●●●●			ⓘ		Plum dumplings with sugar/cinnamon	200	284	5	50	10	0
	●●●	●●●		ⓘ	ⓘ		Onion tart	215	368	15	40	20	15.0
	●●		●●		ⓘ		Onion sauce	60	43	5	5	5	4.0
	●●●●		●				Onion soup, clear	300	159	10	10	10	15.0

Milk, milk products and cheese

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Blue cheese min. 50% fat	30	107	10	0	10	0
							Brie	30	109	5	0	10	0
							Butter cheese	30	90	10	0	10	31.0
				ⓘ			Buttermilk	150	56	5	10	5	31.0
							Camembert	30	85	10	0	10	0
							Cashew milk	100	155	5	10	15	4.0
							Chester	30	110	10	0	10	75.0
				ⓘ			Creme fraiche 30% fat	100	277	5	10	30	0
							Danablu	30	104	10	0	10	50.0
				ⓘ			Curdled milk (sour milk) 1.5% fat	150	69	5	10	5	0
				ⓘ			Curdled milk (sour milk) 10% fat	150	177	5	10	15	0
				ⓘ			Curdled milk (sour milk) less than 1.5% fat	150	51	5	10	0	0
							Curdled milk	100	95	5	20	5	10.0
							Edam	30	106	10	0	10	27.0
							Blue cheese	30	91	10	0	10	0
							Emmental	30	113	10	0	10	30.0
							Feta	30	85	5	0	10	27.0
				ⓘ			Cream cheese	30	101	5	5	10	47.0
							Gorgonzola	30	107	10	0	10	0
							Gouda	30	109	10	0	10	27.0
							Grill and pan cheese (Halloumi)	100	378	30	0	30	17.0
							Oat milk	100	109	0	5	5	10.0
							Hard cheese	30	88	10	0	5	0

Milk, milk products and cheese

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
●●●●●●	●	●●●●●●	●●●●●●										
●●●●●●			●●●●●				Hard cheese 10% fat	30	50	15	0	0	0
●●●●●●			●●●●				Hard cheese min. 30% fat	30	112	15	0	10	0
●●●●●●			●●●●				Hard cheese min. 45% fat	30	113	10	0	10	0
●●●●●●			●●●●				Hard cheese min. 50% fat	30	119	10	0	10	0
●●			●●●●				Hazelnut milk	100	176	5	5	20	0
●			●●●	ⓘ			Cottage cheese	30	31	5	5	5	38.0
●●●●		●●		ⓘ			Yogurt 1% fat	150	56	5	10	0	35.0
●●●		●●●●		ⓘ			Yogurt 1.5% fat	150	74	5	10	5	0.4
	●●		●●●●	ⓘ			Yogurt 10% fat	150	177	5	10	15	36.0
●●			●	ⓘ			Yogurt 3.5% fat	150	104	10	10	10	36.0
●●			●●●●	ⓘ			Coffee creamer 10% fat	5	6	0	0	5	0
●●			●●●●	ⓘ			Coffee creamer 20% fat	5	10	0	0	5	0
●●			●●●●	ⓘ			Coffee creamer 30% fat	5	14	0	0	5	0
●●●			●	ⓘ			Kefir	150	98	5	5	5	0
●●			●●●	ⓘ			Cooked cheese	30	37	5	5	5	0
	●●	●●●●●●		ⓘ			Condensed milk, sweetened	15	48	5	10	5	33.0
●●●		●●●●		ⓘ			Cow milk 1.5% fat	150	72	5	10	5	39.0
●●			●	ⓘ			Cow milk 3.5% fat	150	98	5	10	5	39.0
	●		●●●●				Macadamia milk	100	201	5	5	25	0
●●●			●●●				Almond milk	100	163	10	10	15	0
	●		●●●●	ⓘ			Mascarpone	30	116	5	5	15	0
	●●●●	●●●●		ⓘ			Whey	150	38	5	10	0	36.0
	●●●●	●●●●●●		ⓘ			Whey cheese	30	101	5	20	5	30.0

Milk, milk products and cheese

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
●●●●●●	●●●●●●	●●●●●●	●●●●●●										
●●●●●●			●●●●	ⓘ			Mozzarella	150	395	30	5	35	23.0
●●			●●●●				Münster	30	87	10	0	10	1.0
●●●●●●			●●●●				Parmesan	30	119	10	0	10	0
●●			●●●●	ⓘ			Quark	30	22	5	5	0	0
●			●				Rice milk	100	104	5	25	0	16.0
●●●			●●●●	ⓘ			Ricotta, low fat	100	79	15	5	5	0
●●			●●●●	ⓘ			Cream 10% fat	15	18	0	5	5	0
●			●●●●	ⓘ			Cream 30% fat	15	45	0	0	5	0
●●●●●			●●●●	ⓘ			Brine cheese from cow milk	100	226	15	5	20	65.0
●●●●			●●●●●				Sour milk quark	30	35	10	0	0	52.0
●			●●●●	ⓘ			Sour cream (heavy sour cream) 20% fat	25	51	5	5	5	1.0
●			●●●●	ⓘ			Sour cream (heavy sour cream) 30% fat	25	72	5	5	10	1.0
●			●●●●	ⓘ			Sour cream (heavy sour cream) 40% fat	25	93	5	5	10	1.0
●			●●●●	ⓘ			Sour cream 10% fat	25	47	5	5	5	0
●			●●●●	ⓘ			Sour cream 20% fat	25	51	5	5	5	0.3
●●●●			●●	ⓘ			Sheep milk	150	141	10	10	10	38.0
●			●●●●				Sheep cheese	30	85	5	0	10	15.0
●●			●●●	ⓘ			Layered cheese	30	33	5	5	5	0
●●			●●●	ⓘ			Whipped cream 10% fat	25	30	5	5	5	0
●			●●●●	ⓘ			Whipped cream 30% fat	25	76	5	5	10	1.0
●			●●●●	ⓘ			Processed cheese	30	98	5	0	10	27.0
●●			●●●	ⓘ			Processed cheese with spices	30	86	5	5	10	2.0
●		●●●●●					Soy milk	100	48	5	10	5	4.0

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference	Milk, milk products and cheese	All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Soy cream	30	41	0	5	5	1.0
							Tilsit	30	106	10	0	10	2.0
							Quadrangle hard cheese	30	115	10	0	10	0
							Soft cheese	30	83	10	0	10	64.0
				ⓘ			Goat milk	150	101	10	10	10	27.0

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference	Deep sea fish, fresh water fish, crustaceans, shellfish, mollusks	All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Eel	150	417	25	0	40	0
							Oyster	100	67	10	5	5	3.0
							Perch	150	123	30	0	5	0
					ⓘ		Perch, marinated	65	80	15	5	5	0
							Cod liver	150	920	10	5	100	0
							Flounder	150	110	25	0	5	0
							Crayfish	100	70	15	5	0	0
							Trout	150	155	30	0	5	0
							Shrimp	100	92	20	5	5	0
					ⓘ		Shrimp, marinated	65	86	15	5	5	0
							Yellowfin tuna.	150	227	35	0	10	0

Deep sea fish, fresh water fish, crustaceans, shellfish, mollusks

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
●●●●●●	●●●●●●	●●●●●●	●●●●●●										
●●●●			●●●●				Pike	150	123	30	0	5	20.0
	●●●		●●●●				Halibut	150	144	30	0	5	0
●●●●●●			●●●●				Herring	150	347	30	0	30	0
●●●●●●			●●●●		ⓘ		Herring, marinated	140	360	25	5	30	0
	●●		●●●●				Lobster	100	83	20	5	5	0
	●●●●		●●●				Scallops	100	77	15	10	5	2.0
●●			●●●●				Cod	150	117	30	0	5	0
●●			●●●●				Carp	150	174	30	0	10	0
	●		●●●●		ⓘ		Carp, marinated	100	153	20	5	10	0
●●			●●●●				Catfish	150	120	25	0	5	0
	●●●●●●		●●●				Clam	100	65	15	5	5	0
●●			●●●●		ⓘ		Crab, marinated	150	197	25	5	10	0
	●●●●		●●●●				Crabs	100	91	20	5	5	0
●●●●●●			●●●●				Salmon	150	270	30	0	20	0
●●●●●●			●●●●		ⓘ		Salmon, marinated	150	317	30	5	25	27.0
	●●●●●●		●●●●				Crawfish	100	85	20	5	5	0
●●●●●●			●●●●				Shad	150	215	30	0	15	0
●●●●●●			●●●●				Mackerel	150	272	30	0	20	0
●●●			●●●●		ⓘ		Mackerel, marinated	100	212	20	5	20	0
●●●●●●			●●●●				Dutch herring	150	398	25	0	35	0
	●●●●		●●●				Mussel	100	70	15	5	5	50.0
●●			●●●●				Pangasius	100	77	15	0	5	0
●●●●●●			●●●●				Pickled herring, canned	50	70	5	0	5	0

Deep sea fish, fresh water fish, crustaceans, shellfish, mollusks

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference		All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Redfish	150	159	30	0	5	0
							Bluefin tuna	150	207	35	0	10	0
							Lemon sole	150	110	25	0	5	0
							Anchovy	150	153	30	0	5	0
					ⓘ		Anchovy, canned	65	92	15	5	5	0
							Sardine	150	179	30	0	10	0
							Haddock	150	117	30	0	5	30.0
							Shield mackerel	150	171	30	0	10	0
							Tench	150	117	30	0	5	0
							Plaice	150	129	30	0	5	0
							Greenland halibut	150	215	20	0	15	0
							Swordfish	150	177	30	0	10	0
							Hake	150	141	30	0	5	45.0
							Pollock	150	150	30	0	5	39.0
					ⓘ		Pollock, marinated	65	90	15	5	5	0
							Monkfish	150	99	25	0	5	0
							Sole	150	125	30	0	5	0
							Sprat	150	321	25	0	25	0
							Turbot	150	125	25	0	5	0
					ⓘ		Surimi (crab meat imitation)	100	114	10	15	5	0
							Tuna	150	336	35	0	25	52.0
							Octopus	150	123	25	5	5	0
							Clam	100	77	15	10	5	50.0

Deep sea fish, fresh water fish, crustaceans, shellfish, mollusks

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference		All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Albacore	150	264	35	0	15	0
							Catfish	150	243	25	0	20	0
							Sander	150	126	30	0	5	0

Sausage, embutidos

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference		All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Berliner sausages	30	98	5	0	10	2.0
							Beer ham sausage/ham pâté	30	52	5	5	5	0
							Bockwurst	115	312	15	0	30	0
							Bratwurst/Rhineland Bratwurst	150	408	20	0	40	28.0
							Cervelatwurst	30	117	10	0	10	13.0
							Corned Beef	30	42	10	0	5	0
							Meatloaf	125	188	25	0	10	40.0
							Foie gras	30	75	10	5	5	0
							Foie roll	80	192	15	5	20	0
							Poultry bratwurst	100	115	25	0	5	0
							Vegetable aspic	50	22	5	5	0	0
							Venison pie	30	68	10	0	5	0
							Jagdwurst	30	61	5	0	5	0

Sausage, embutidos

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Veal aspic	30	33	10	0	5	80.0
							Veal sausage	125	401	20	0	40	38.0
							Kassel	30	32	10	0	5	0
							Polish Colbassa	30	92	5	0	10	2.0
							Rolled fillet of ham	200	232	40	5	10	0
							Liver sausage	30	86	5	0	10	0
							Lyon sausage	125	383	15	0	40	40.0
							Sausage coarse	30	88	10	0	10	28.0
							Smoked meat	30	39	5	0	5	0
							Beef cured meat smoked	30	41	5	0	5	0
							Beef aspic	30	42	10	0	5	65.0
							Salami	30	113	10	5	10	0
							Ham roll	30	83	10	0	10	0
							Ham sausage	30	92	5	0	10	0
							Pork bacon	30	46	10	0	5	0
							Pork bacon smoked	30	96	5	0	10	50.0
							Sausage spread	30	137	5	0	15	0
							White sausage	125	371	15	5	35	32.0
							Wiener sausages	70	183	10	0	20	40.0

Beef, veal, pork, mutton and lamb meat

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference		All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Mutton breast	100	376	15	0	40	0
							Mutton chop	100	343	15	0	35	0
							Veal belly	125	298	25	0	25	0
							Veal breast	125	250	25	0	20	0
							Veal filet	150	153	35	0	5	0
							Veal goulash	150	188	30	0	10	0
							Veal mince meat	100	148	20	0	10	15.0
							Veal knuckle	150	177	30	0	10	0
							Veal leg	125	114	30	0	5	0
							Veal chop	150	219	30	0	15	0
							Veal nut/fricandeau	125	128	30	0	5	0
							Veal neck	125	138	30	0	5	0
							Veal ball	125	128	30	0	5	0
							Veal roll	150	153	35	0	5	0
							Veal back	150	162	35	0	5	0
							Veal shoulder	125	119	30	0	5	0
							Veal steak	150	162	35	0	5	0
							Veal fore knuckle	150	177	30	0	10	0
							Lamb breast	100	287	20	0	25	0
							Lamb chop	100	216	20	0	20	0
							Lamb neck	100	190	20	0	15	0
							Lamb ball	100	122	20	0	5	0
							Beef belly	125	314	25	0	25	0

Beef, veal, pork, mutton and lamb meat

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference		All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Beef hip	125	135	30	0	5	0
							Beef breast	125	328	25	0	30	0
							Beef filet	125	151	30	0	5	0
							Beef goulash	150	194	30	0	10	0
							Beef minced meat	100	207	25	0	15	15.0
							Beef leg	150	182	35	0	10	0
							Beef chop	150	240	30	0	15	0
							Beef neck	150	240	30	0	15	0
							Beef olives	125	156	30	0	10	0
							Beef oxtail	150	441	35	0	35	0
							Beef roll	150	182	35	0	10	0
							Beef back	125	163	30	0	10	0
							Beef escalope	125	151	30	0	5	0
							Beef shoulder	125	161	25	0	10	0
							Beef steak	150	219	35	0	10	0
							Sheep belly	125	290	25	0	25	0
							Sheep breast	125	204	25	0	15	0
							Sheep filet	125	141	30	0	5	0
							Sheep goulash	150	209	30	0	10	0
							Sheep knuckle	125	244	25	0	20	0
							Sheep chop	150	318	30	0	25	0
							Sheep neck	125	216	25	0	15	0
							Sheep roll	150	293	30	0	20	0

Beef, veal, pork, mutton and lamb meat

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference		All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Sheep escalope	150	293	30	0	20	0
							Sheep shoulder	125	174	25	0	10	0
							Sheep steak	150	302	30	0	25	0
							Pork belly	150	389	30	0	35	0
							Pork breast	150	362	25	0	30	0
							Pork filet	125	134	30	0	5	0
							Pork goulash	150	326	30	0	25	0
							Pork minced meat	100	276	20	0	25	1.0
							Pork knuckle	175	312	40	0	20	0
							Pork leg	125	170	30	0	10	0
							Pork chop	150	200	35	0	10	0
							Pork neck	150	294	30	0	25	0
							Pork roll	150	204	35	0	10	0
							Pork escalope	125	134	30	0	5	0
							Pork shoulder	150	326	30	0	25	0
							Pork trotter	125	416	20	0	40	0
							Pork steak	150	200	35	0	10	0

Wild game, poultry, game birds, giblets

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
●●●●●●	●	●●●●●●	●●●●●●										
●●●●●●			●●●				Deer liver	125	171	25	5	10	0
	●●		●●●●				Duck meat with skin	150	338	30	0	30	50.0
●●●●			●●●●				Duck meat without skin	150	179	30	0	10	45.0
●●●●●●			●●●				Duck liver	125	164	25	5	10	0
	●		●●●●				Duck leg	150	374	25	0	35	0
	●		●●●●				Pheasant	150	231	40	0	10	0
	●●●●●●		●●●●				Piglets	150	347	30	0	30	0
	●●		●●●●●				Frog legs	75	52	15	0	0	0
	●●●		●●●●				Goose meat with skin, raw	150	507	25	0	50	0
	●		●●●●				Goose meat without skin, raw	150	233	35	0	15	45.0
	●●		●●●●				Goose leg	150	327	25	0	30	0
●●●●●●			●●●				Goose liver	125	164	25	10	5	0
	●●●●●		●●●●				Rabbit	150	171	35	0	5	0
	●●●		●●●●				Venison	150	170	35	0	5	0
	●		●●●●●				Chicken breast	150	153	35	0	5	0
	●●●●●●		●●●●				Chicken wings	150	312	25	0	25	0
	●●●		●●●●				Chicken gizzard	125	141	25	5	5	0
	●●●●●●		●●●●				Chicken leg	150	260	30	0	20	0
●●●●●●			●●●●				Chicken heart	125	156	25	5	10	0
●●●●●●			●●●●				Chicken liver	125	170	30	5	10	0
	●●●		●●●●				Veal sweetbread	125	125	25	0	5	0
●			●●●●				Veal heart	125	138	20	0	10	0
●●●●●●			●●●●				Veal liver	125	109	20	5	5	0

Wild game, poultry, game birds, giblets

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
	●●●		●●●●●●				Veal tongue	125	224	25	5	15	0
	●●●●		●●●●				Lamb sweetbread	125	115	20	0	5	2.0
●●●●●●			●●●●				Lamb liver	125	168	25	5	10	2.0
	●●		●●●●				Guinea-fowl	150	219	30	0	15	0
	●●●●●		●●●●				Horse	150	164	35	5	5	0
	●		●●●●				Turkey breast	150	161	40	0	5	0
	●●●●●●		●●●●				Turkey wings	150	287	30	0	20	0
	●●		●●●●				Turkey leg	150	173	35	0	5	0
	●●●		●●●●				Partridge	150	333	55	0	15	0
	●●●		●●●●				Deer	150	183	35	0	5	0
●			●●●●				Beef heart	125	155	25	5	10	0
●●●●●●			●●●				Beef liver	125	165	25	10	5	0
	●●●		●●●●				Beef tongue	125	275	20	5	20	0
	●●●●		●●●●				Sheep sweetbreads	125	115	20	0	5	0
●			●●●●				Sheep heart	125	201	25	5	15	0
●●●●●●			●●●●				Sheep liver	125	160	30	5	5	0
	●		●●●●				Snails	50	35	10	5	5	0
●			●●●●				Pork heart	125	116	25	5	5	0
●●●●●●			●●●●				Pork liver	125	163	30	5	10	2.0
	●●		●●●●				Pork tongue	125	200	25	5	15	3.0
	●●		●●●●				Pigeon	150	254	35	0	15	0
	●●●●		●●●●				Boar	125	201	25	0	15	0
	●●●●		●●●●				Goat	150	224	30	0	15	0

Oils, fats, butter, lard

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Butter	20	148	0	0	20	15.0
							Concentrated butter	10	88	0	0	10	0
							Safflower oil	15	106	0	0	15	0
							Peanut oil	15	106	0	0	15	0
							Cocoa butter	20	177	0	0	20	15.0
							Coconut fat	20	177	0	0	20	0
							Pumpkin seed oil	15	106	0	0	15	0
							Linseed oil	15	106	0	0	15	0
							Corn oil	15	106	0	0	15	0
							Margarine	20	142	0	0	20	0
							aioli dip	25	186	0	5	25	0
							Nutmeg butter	20	176	0	0	20	15.0
							Olive oil	15	106	0	0	15	0
							Palm oil	15	106	0	0	15	0
							Rapeseed oil	15	106	0	0	15	0
							Sesame oil	15	106	0	0	15	0
							Shea butter	20	177	0	0	20	15.0
							Soybean oil	15	106	0	0	15	0
							Sunflower oil	15	106	0	0	15	0
							Cream butter	20	147	0	0	20	40.0
							Walnut oil	15	106	0	0	15	0
							Wheat germ oil	15	106	0	0	15	0

Non-alcoholic beverages (coffee, tea, soft drinks)

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Bancha tea	125	0	0	0	0	0
					ⓘ		Beer, non-alcoholic	330	86	5	20	0	0
				ⓘ			Cappuccino	150	57	5	10	5	25.0
							Cola beverage	330	186	0	55	0	70.0
							Cola drink (low calorie)	200	8	0	5	0	0
							Iced Tea lemon	200	64	0	5	0	0
							Espresso	25	1	0	0	0	0
							Filter coffee	150	3	0	0	0	0
							Fruit tea	125	1	0	0	0	0
				ⓘ			Hot chocolate	100	131	5	25	5	51.0
							Isotonic drink	200	38	0	10	0	45.0
							Isotonic drink (low calorie)	200	38	0	10	0	0
							Coconut water	60	6	0	5	0	41.0
							Herbal tea	125	1	0	0	0	0
				ⓘ			Latte Macchiato	125	55	5	5	5	49.0
					ⓘ		Lemonade-herbs	200	72	0	20	0	25.0
					ⓘ		Lemonade-lemon	200	58	0	15	0	15.0
					ⓘ		Lemonade-orange	200	58	0	15	0	45.0
							Matcha tea	125	0	0	0	0	0
							Mate tea	150	0	0	0	0	0
							Multi-fruit nectar	200	114	0	30	0	42.0
							Multi fruit juice	200	76	5	20	0	45.0
							Orange juice	100	54	0	15	0	45.0

Non-alcoholic beverages (coffee, tea, soft drinks)

Recommendations for healthy nutrition		Recommendations to improve performance		genet. warning 1	genet. warning 2	your preference		All values per standard serving					Glyc. Index
often	rarely	often	rarely					g	kcal	Prot	Carb	Fat	
							Mint tea	125	1	0	0	0	0
							Juice spritzer pineapple	200	44	0	10	0	25.0
							Juice spritzer apple	200	66	0	15	0	25.0
							Juice spritzer grapefruit	200	10	0	5	0	25.0
							Juice spritzer currant	200	56	0	15	0	25.0
							Juice spritzer carrots	200	24	0	5	0	25.0
							Juice spritzer - orange	200	50	0	10	0	25.0
							Juice spritzer - peach / passion fruit	200	126	5	30	0	25.0
							Juice spritzer - lemon	200	6	0	5	0	25.0
							Sparkling wine, nonalcoholic	100	25	0	5	0	0
							Sencha tea	125	0	0	0	0	0
							Green tea	125	0	0	0	0	0
							Black tea	125	0	0	0	0	0
							Turkish mocha	100	69	0	20	0	0
							Water and mineral water	200	0	0	0	0	0

Alcoholic beverages (beer, wine, spirits)

Recommendations for healthy nutrition: often	Recommendations for healthy nutrition: rarely	Recommendations to improve performance: often	Recommendations to improve performance: rarely	genet. warning 1	genet. warning 2	your preference		All values per standard serving: g	kcal	Prot	Carb	Fat	Glyc. Index
							Beer, dark	330	122	5	10	0	0
							Beer, light	330	129	5	10	0	25.0
							Beer Pils, light	330	139	5	10	0	43.0
							Brands from sugarcane	20	46	0	0	0	0
							Champagne	100	83	0	5	0	0
							Cognac	20	47	0	0	0	0
							Gin	20	52	0	0	0	0
							Fruit wine	130	53	0	5	0	0
							Red wine, light	130	88	0	5	0	0
							Red wine, medium	130	88	0	5	0	0
							Red wine, heavy	130	107	0	5	0	0.2
							Rum	20	46	0	0	0	0
							Sparkling wine	100	83	0	5	0	0
							Sherry	50	59	0	5	0	0
							Wine rose	100	88	0	5	0	0
							White wine, medium dry	130	95	0	5	0	0
							White wine, sweet	130	127	0	10	0	0
							White wine, dry	130	94	0	0	0	0
							Whiskey	20	49	0	0	0	0
							Vodka	20	46	0	0	0	0

NUTRITION GENES
FOOD INGREDIENTS
DIETARY SUPPLEMENT
DETOXIFICATION
MUSCLE FIBRE TYPE
OXIDATIVE STRESS AND RISK OF INJURY
OPTIMAL PERFORMANCE NUTRITION
DIETARY SUPPLEMENT
FOOD LIST
SCIENCE
ADDITIONAL INFORMATION

SCIENCE

This chapter shows the science behind the test.

Nutrigenetics

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Your Result

You have chosen a genetic testing package to analyze your genes to predict if certain dietary ingredients are particularly beneficial or harmful for you. The genetic testing package is able to match your requirements exactly to your unique genetic risk profile.

Nutritional Genes - Heart

SYMBOL	rs NCBI	GENOTYPE
CDH13	rs8055236	G/G
CHDS8	rs1333049	C/C
APOA5	rs662799	A/A
PON1	rs662	G/A
PON1	rs854560	T/A
APOB	rs5742904	G/G
SREBF2	rs2228314	G/C
NOS3	rs2070744	C/T
NOS3	rs1799983	G/T
APOA1	rs670	G/G
MTRR	rs1801394	G/G
MMP3	rs3025058	T/del
GJA4	rs1764391	T/T
ITGB3	rs5918	T/C
CETP	rs708272	C/T
MTHFR	rs1801133	C/C
NOS1AP	rs16847548	T/T
NOS1AP	rs12567209	G/G
NOS1AP	rs10494366	T/G
AGT	rs699	T/C
ADRB1	rs1801253	C/C
GNB3	rs5443	T/T

Nutritional Genes - Oxidative Stress

SYMBOL	rs NCBI	GENOTYPE
GSTM1	Null allele	INS
GSTT1	Null allele	DEL
GSTP1	rs1695	G/A
SOD2	rs4880	C/T
GPX	rs1050450	C/T

Nutritional Genes - Metabolism

SYMBOL	rs NCBI	GENOTYPE
TCF7L2	rs7903146	C/C
HIGD1C	rs12304921	A/A
HHEX	rs1111875	G/A
IL6	rs1800795	C/C
IL10	rs1800872	C/C
PPARG	rs1801282	C/C
FTO	rs9939609	T/T
KCNJ11	rs5219	C/T

Nutritional Genes - Brain

SYMBOL	rs NCBI	GENOTYPE
APOE	rs429358	T/T
APOE	rs7412	T/C
ApoE type	combination	E2/E3

Nutritional Genes - Detoxification

SYMBOL	rs NCBI	GENOTYPE
HFE	rs1799945	C/C
HFE	rs1800730	A/A
HFE	rs1800562	G/G
GSTM1	Null allele	INS
GSTT1	Null allele	DEL
GSTP1	rs1695	G/A
CYP1A2	rs762551	A/A
NQO1	rs1800566	C/T
COMT	rs4680	A/G
CYP1B1	rs1056836	C/G
CYP1A1	rs4646903	T/T

Nutritional Genes - Bones

SYMBOL	rs NCBI	GENOTYPE
Col1A1	rs1800012	G/G
VDR	rs1544410	A/G
ESR1	rs2234693	T/T
LCT	rs4988235	C/C

Nutritional Genes - Joints

SYMBOL	rs NCBI	GENOTYPE
TNFa	rs1800629	A/G
IL1a	rs1800587	C/T

Nutritional Genes - Cereal

SYMBOL	rs NCBI	GENOTYPE
HLA DQ2.5	rs2187668	A/G
HLA DQ8	rs7454108	T/C

Nutritional Genes - Milk

SYMBOL	rs NCBI	GENOTYPE
LCT	rs4988235	C/C

Nutritional Genes - Eyes

SYMBOL	rs NCBI	GENOTYPE
HTRA1	rs11200638	A/G
CFH	rs1061170	T/T
LOC387715	rs10490924	G/T

Nutritional Genes - Blood

SYMBOL	rs NCBI	GENOTYPE
MTHFR	rs1801133	C/C
MTHFR	rs1801131	A/A
MTRR	rs1801394	G/G

Nutritional Genes - Vitamin B2

SYMBOL	rs NCBI	GENOTYPE
MTHFR	rs1801133	C/C

Nutritional Genes - Blood pressure

SYMBOL	rs NCBI	GENOTYPE
AGT	rs699	T/C
ADRB1	rs1801253	C/C
GNB3	rs5443	T/T

LEGEND: SYMBOL = Name of investigated genetic variation, rsNCBI = description of investigated genetic variation, GENOTYPE = result.

Detoxification

CYP1A1 - Cytochrome P450, family 1, subfamily A, polypeptide 1 (rs4646903)

The haeme protein cytochrome P450-1A1 (CYP1A1) belongs to the group of phase I enzymes, and mediates the metabolism of environmental toxins and various xenobiotic substances. Defects in this gene can alter the enzymatic activity.

RES	Genotype	POP	Possible results
X	T/T	52%	**Effective phase 1 detoxification of polycyclic aromatic hydrocarbons (PAHs)** **Effective detoxification of ash, soot and smoke**
	T/C	37%	**Limited phase 1 detoxification of polycyclic aromatic hydrocarbons (PAHs) (OR: 2.4)** **Limited detoxification of ash, soot and smoke**
	C/C	11%	**Limited phase 1 detoxification of polycyclic aromatic hydrocarbons (PAHs) (OR: 2.4)** **Limited detoxification of ash, soot and smoke**

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CYP1B1 - Cytochrome P450, family 1, subfamily B, polypeptide 1 (rs1056836)

CYP1B1 belongs to the cytochrome P450 superfamily. This protein catalyzes reactions for detoxification of endogenous metabolites and exogenous toxic substances. This catalytic activity can be affected by polymorphisms.

RES	Genotype	POP	Possible results
	C/C	23%	**Effective phase 1 detoxification of polycyclic aromatic hydrocarbons (PAHs)** **Effective detoxification of ash, soot and smoke**
X	C/G	31%	**Limited phase 1 detoxification of polycyclic aromatic hydrocarbons (PAHs) (OR: 3.4)** **Limited detoxification of ash, soot and smoke**
	G/G	36%	**Limited phase 1 detoxification of polycyclic aromatic hydrocarbons (PAHs) (OR: 3.4)** **Limited detoxification of ash, soot and smoke**

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GSTM1 - glutathione s-transferase mu1 (null allele)

The glutathione s-transferases are found in the liver and in lymphocytes. They are involved in the detoxification of endogenous and exogenous substances. A defective GSTM1 gene reduces the enzymatic activity of the protein, which leads to a limited cellular detoxification.

RES	Genotype	POP	Possible results
X	INS	56%	**Effective phase 2 detoxification** **Effective detoxification of pesticides, chemicals, fungicides, weed agents, insect sprays and heavy metals** **Good protection against oxidative stress/free radicals**
	DEL	44%	**Limited phase 2 detoxification** **Limited detoxification of pesticides, chemicals, fungicides, weed agents, insect sprays and heavy metals** **Limited protection against oxidative stress/free radicals**

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GSTP1 - glutathione s-transferase pi 1 (rs1695)

The glutathione s-transferases are found in the liver and in lymphocytes. They are involved in the detoxification of endogenous and exogenous substances. The GSTP1 enzymes are involved in the metabolism of endogenous metabolites, and protect the cells against oxidative stress- similar to GSTM1 and GSTT1.

RES	Genotype	POP	Possible results
	A/A	43%	**Effective phase 2 detoxification** **Effective detoxification of pesticides, chemicals, fungicides, weed agents, insect sprays and heavy metals** **Good protection against oxidative stress/free radicals**
X	A/G	43%	**Limited phase 2 detoxification** **Limited detoxification of pesticides, chemicals, fungicides, weed agents, insect sprays and heavy metals** **Limited protection against oxidative stress/free radicals**
	G/G	14%	**Limited phase 2 detoxification** **Limited detoxification of pesticides, chemicals, fungicides, weed agents, insect sprays and heavy metals** **Limited protection against oxidative stress/free radicals**

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GSTT1 - glutathione s-transferase theta 1 (null allele)

The glutathione s-transferases are found in the liver and in lymphocytes. They are involved in the detoxification of endogenous and exogenous substances. A defective GSTM1 gene reduces the enzymatic activity of the protein, which leads to a limited cellular detoxification.

RES	Genotype	POP	Possible results
	INS	74%	**Effective phase 2 detoxification** **Effective detoxification of pesticides, chemicals, fungicides, weed agents, insect sprays and heavy metals** **Good protection against oxidative stress/free radicals**
X	DEL	26%	**Limited phase 2 detoxification** **Limited detoxification of pesticides, chemicals, fungicides, weed agents, insect sprays and heavy metals** **Limited protection against oxidative stress/free radicals**

References

Sreeja et al. Glutathione S-transferase M1, T1 and P1 polymorphisms: susceptibility and outcome in lung cancer patients. J Exp Ther Oncol. 2008,7(1):73-85.

Funke et al. Genetic Polymorphisms in Genes Related to Oxidative Stress (GSTP1, GSTM1, GSTT1, CAT, MnSOD, MPO, eNOS) and Survival of Rectal Cancer Patients after Radiotherapy. J Cancer Epidemiol. 2009, 2009: 302047.

Hayes JD et al. Glutathione S-transferase polymorphisms and their biological consequences. Pharmacology. 2000 Sep,61(3):154-66.

SOD2 - superoxide dismutase 2, mitochondrial (rs4880)

SOD2 encodes the superoxide dismutase enzyme 2 and it is involved in the degradation of reactive oxygen molecules (ROS), thus protecting the body against oxidative stress. Defects may affect the enzymatic activity of the SOD2 enzyme, resulting in a limited protection against the free radicals.

RES	Genotype	POP	Possible results
	C/C	37%	**Good protection against oxidative stress/free radicals**
X	C/T	43%	**Limited protection against oxidative stress/free radicals**
	T/T	20%	**Limited protection against oxidative stress/free radicals**

References

Sutton et al. The manganese superoxide dismutase Ala16Val dimorphism modulates both mitochondrial import and mRNA stability. Pharmacogenet Genomics. 2005 May,15(5):311-9.

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Sutton A. et al. The Ala16Val genetic dimorphism modulates the import of human manganese superoxide dismutase into rat liver mitochondria. Pharmacogenetics. 2003 Mar.13(3):145-57.

GPX1 - glutathione peroxidase (rs1050450)

The GPX gene encodes the enzyme glutathione peroxidase, which catalyzes the reduction of peroxides and hydrogen peroxide. Thus, GPX plays a role in protecting the body against oxidative stress.

RES	Genotype	POP	Possible results
	C/C	62%	**Good protection against oxidative stress/free radicals**
X	C/T	33%	**Limited protection against oxidative stress/free radicals**
	T/T	5%	**Limited protection against oxidative stress/free radicals**

References

Tang et al. Association between the rs1050450 glutathione peroxidase-1 (C > T) gene variant and peripheral neuropathy in two independent samples of subjects with diabetes mellitus. Nutr Metab Cardiovasc Dis. 2012 May,22(5):417-25.

Bhatti et al. Lead exposure, polymorphisms in genes related to oxidative stress and risk of adult brain tumors. Cancer Epidemiol Biomarkers Prev. Jun 2009, 18(6): 1841–1848.

Xiong et al. Association study between polymorphisms in selenoprotein genes and susceptibility to Kashin-Beck disease. Osteoarthritis Cartilage. 2010 Jun,18(6):817-24.

Soerensen et al. The Mn-superoxide dismutase single nucleotide polymorphism rs4880 and the glutathione peroxidase 1 single nucleotide polymorphism rs1050450 are associated with aging and longevity in the oldest old. Mech Ageing Dev. 2009 May,130(5):308-14.

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Jablonska E et al. Association between GPx1 Pro198Leu polymorphism, GPx1 activity and plasma selenium concentration in humans. Eur J Nutr. 2009 Sep,48(6):383-6.

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NQO1 - NAD(P)H dehydrogenase, quinone 1 (rs1800566)

The enzyme NAD(P)H dehydrogenase, encoded by the NQO1, is a so-called oxidoreductase, and catalyzes the oxidation of nicotinamide adenine dinucleotide (NAD). The polymorphism rs1800566 inhibits the enzymatic activity, and coenzyme Q10 cannot be converted into ubiquinol, or the conversion is slower than normal.

RES	Genotype	POP	Possible results
	C/C	51%	**The enzyme NQO1 effectively converts the coenzyme Q10 into the antioxidant ubiquinol.**
X	C/T	40%	**The enzyme NQO1 converts the coenzyme Q10 into the antioxidant ubiquinol at a slower rate.**
	T/T	9%	**The enzyme NQO1 cannot convert the coenzyme Q10 into the antioxidant ubiquinol.**

References

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COMT - Catechol-O-methyltransferase (rs4680)

The enzyme catechol-O-methyltransferase (COMT) can inactivate various substances (epinephrine, norepinephrine and dopamine) and initiate their breakdown. In addition, COMT may inhibit the effect of various drugs. The COMT rs4680 polymorphism is associated with psychological disorders, such as schizophrenia, eating disorders and alcoholism.

RES	Genotype	POP	Possible results
	A/A	15%	**No effect** **Increased risk of alcoholism** **Associated with insufficient breakdown of epinephrine, norepinephrine and dopamine**
X	A/G	44%	**Increased risk of schizophrenia when cannabis is consumed under the age of 16 years (OR: 2.5)** **Normal risk of alcoholism**
	G/G	41%	**Increased risk of schizophrenia when cannabis is consumed under the age of 16 years (OR: 10.9)** **Normal risk of alcoholism**

References

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Smith SB et al. Epistasis between polymorphisms in COMT, ESR1, and GCH1 influences COMT enzyme activity and pain. Pain. 2014 Nov,155(11):2390-9.

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CYP1A2 - cytochrome P450, family 1, subfamily A, polypeptide 2 (rs762551)

The haeme protein cytochrome P450-1A2 (CYP1A2) belongs to the group of cytochrome P450 enzymes, and metabolizes various xenobiotic substances (including caffeine), medications and oestrogens. The polymorphism rs762551 is associated with the risk of breast cancer.

RES	Genotype	POP	Possible results
X	A/A	41%	**Caffeine is broken down normally** **The consumption of 2 or more cups of coffee per day delays the appearance of breast cancer by approximately 7 years (59.8 years instead of 52.6 years).**
	A/C	44%	**Caffeine is broken down slowly** **Coffee consumption does not influence the appearance of breast cancer**
	C/C	15%	**Caffeine is broken down slowly** **Coffee consumption does not influence the appearance of breast cancer**

References

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LEGEND: RES = your personal analysis result (marked with an X), GENOTYPE = different variations of the gene (called alleles),
POP = percent of the general population that have this genetic result,
POSSIBLE RESULTS = influence of the genetic variation.

Athletic performance

Angiotensin converting enzyme - ACE (rs4646994)

Angiotensin-converting enzyme, or "ACE" indirectly increases blood pressure by causing blood vessels to constrict. It does that by converting angiotensin I to angiotensin II, which constricts the vessels. For this reason, drugs known as ACE inhibitors are used to lower blood pressure. Studies have shown a link between genetic variations in this gene and athletic performance.

RES	Genotype	POP	Possible results
	Ins/Ins	25%	Genetic talent for endurance sports
X	Ins/Del	50%	Genetically balanced endurance and power talent
	Del/Del	25%	Genetic power oriented athletic talent

References

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Collins M, Xenophontos SL, Cariolou MA, Mokone GG, Hudson DE, Anastasiades L & Noakes TD (2004). The ACE gene and endurance performance during the South African Ironman Triathlons. Med Sci Sports Exerc 36, 1314–1320.

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Alpha actinin 3 - ACTN3 (rs1815739)

The protein Alpha Actinin 3 is found exclusively in white muscle fibers (large cells) and leads to a faster and more powerful response of the muscle cells. Since larger cells can suffer from a diminished supply of oxygen, they tend to tire faster. The genetic variation leads to a complete loss of protein production, and has no medical effect except a predisposition for power or endurance sports.

RES	Genotype	POP	Possible results
	C/C	31%	**High production of Alpha Actinin 3** **High proportion of white muscle fibers** **High genetic predisposition for power sports**
X	C/T	44%	**Moderate production of Alpha Actinin 3** **Moderate proportion of white muscle fibers** **Moderate genetic predisposition for power sports**
	T/T	24%	**No production of Alpha Actinin 3** **Low proportion of white muscle fibers** **High genetic predisposition for endurance sports**

References

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Maximal oxygen uptake (VO2max)

Nuclear Respiratory Factor 2 - NRF-2 (rs7181866)

The NRF-2 (Nuclear Respiratory Factor 2) transcription factor induces mitochondrial biogenesis and plays an important role in nuclear-mitochondrial interactions, along with Factor 1. It was shown that NRF-2 has an impact on the maximal oxygen uptake and that the AG genotype appears more frequently in endurance athletes.

RES	Genotype	POP	Possible results
X	A/A	98%	No increased maximal oxygen uptake (VO2max)
	G/A	1%	Increased maximal oxygen uptake (VO2max)
	G/G	1%	Increased maximal oxygen uptake (VO2max)

References

Eynon N et al. NRF2 intron 3 A/G polymorphism is associated with endurance athletes' status. J Appl Physiol (1985). 2009 Jul,107(1):76-9.

He Z et al. NRF2 genotype improves endurance capacity in response to training. Int J Sports Med. 2007 Sep,28(9):717-21. Epub 2007 Mar 15.

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Vascular Endothelial Growth Factor - VEGF (rs2010963)

The Vascular Endothelial Growth Factor (VEGF) is an important signal molecule that transmits extracellular signals inside the cell and is involved in the growth of blood vessels. Mutations in the VEGF gene can modify the expression and therefore the amount of protein in the body. A higher level of VEGF is associated with a better VO2max level.

RES	Genotype	POP	Possible results
	C/C	14%	Increased maximal oxygen uptake (VO2max)
	C/G	44%	Increased maximal oxygen uptake (VO2max)
X	G/G	42%	No increased maximal oxygen uptake (VO2max)

References

Akhmetov II et al. Polymorphism of the vascular endothelial growth factor gene (VEGF) and aerobic performance in athletes. Fiziol Cheloveka. 2008 Jul-Aug,34(4):97-101.

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ADRB2 adrenoceptor beta 2, surface (rs1042714)

The beta-2 adrenergic receptor (β2 adrenoreceptor), also known as ADRB2, is a beta-adrenergic receptor within a cell membrane which reacts with adrenaline (epinephrine) as a hormone or neurotransmitter affecting muscles or organs. The ADRB2 gene is intronless. Different polymorphic forms, point mutations, and/or downregulation of this gene are associated with nocturnal asthma, excessive weight and type 2 diabetes. This receptor is directly associated with one of its ultimate effectors, the class C L-type calcium channel CaV1.2. This receptor-channel complex is coupled to the Gs G protein, which activates adenylyl cyclase, catalyzing the formation of cyclic adenosine monophosphate (cAMP), which then activates protein kinase A, and counterbalancing phosphatase PP2A.

RES	Genotype	POP	Possible results
	C/C	42%	Increased maximal oxygen uptake (VO2max)
X	C/G	51%	Increased maximal oxygen uptake (VO2max)
	G/G	7%	No increased maximal oxygen uptake (VO2max)

References

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Moore GE et al. Obesity gene variant and elite endurance performance. Metabolism. 2001 Dec,50(12):1391-2.

ADRB2 adrenoceptor beta 2, surface (rs1042713)

The beta-2 adrenergic receptor (β2 adrenoreceptor), also known as ADRB2, is a beta-adrenergic receptor within a cell membrane which reacts with adrenaline (epinephrine) as a hormone or neurotransmitter affecting muscles or organs. The ADRB2 gene is intronless. Different polymorphic forms, point mutations, and/or downregulation of this gene are associated with nocturnal asthma, excessive weight and type 2 diabetes. This receptor is directly associated with one of its ultimate effectors, the class C L-type calcium channel CaV1.2. This receptor-channel complex is coupled to the Gs G protein, which activates adenylyl cyclase, catalyzing the formation of cyclic adenosine monophosphate (cAMP), which then activates protein kinase A, and counterbalancing phosphatase PP2A.

RES	Genotype	POP	Possible results
	A/A	22%	Increased maximal oxygen uptake (VO2max)
X	A/G	51%	Increased maximal oxygen uptake (VO2max)
	G/G	27%	No increased maximal oxygen uptake (VO2max)

References

Wagoner LE et al. Polymorphisms of the beta(2)-adrenergic receptor determine exercise capacity in patients with heart failure. Circ Res. 2000 Apr 28,86(8):834-40.

Wolfarth B et al. Association between a beta2-adrenergic receptor polymorphism and elite endurance performance. Metabolism. 2007 Dec,56(12):1649-51.

CRP - C-Reactive Protein (rs3093066)

The protein encoded by the CRP gene (C-reactive protein) belongs to the acute-phase proteins and elevated levels of CRP in the blood can be found in inflammatory processes. CRP binds to phosphocholine which is located on the surface of dead or dying cells and activates the complement system, binds to phagocytes and triggers a part of the non-specific defense mechanism. CRP is used as a marker of acute inflammation. The rs3093066 polymorphism is associated with a lower CRP concentration in the blood.

RES	Genotype	POP	Possible results
	A/A	12%	Increased maximal oxygen uptake (VO2max)
	A/C	30%	No increased maximal oxygen uptake (VO2max)
X	C/C	58%	No increased maximal oxygen uptake (VO2max)

References

Kullo IJ et al. Markers of inflammation are inversely associated with VO2 max in asymptomatic men. J Appl Physiol (1985). 2007 Apr,102(4):1374-9.

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Oxidative stress

GSTM1 - glutathione s-transferase mu1 (null allele)

The glutathione s-transferases are found in the liver and in lymphocytes. They are involved in the detoxification of endogenous and exogenous substances. A defective GSTM1 gene reduces the enzymatic activity of the protein, which leads to a limited cellular detoxification.

RES	Genotype	POP	Possible results
X	INS	56%	Good protection against oxidative stress/free radicals
	DEL	44%	Limited protection against oxidative stress/free radicals

References

McWilliams et al. Glutathione S-transferase M1 (GSTM1) deficiency and lung cancer risk. Cancer Epidemiol Biomarkers Prev 1995,4:589-594.

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Funke et al. Genetic Polymorphisms in Genes Related to Oxidative Stress (GSTP1, GSTM1, GSTT1, CAT, MnSOD, MPO, eNOS) and Survival of Rectal Cancer Patients after Radiotherapy. J Cancer Epidemiol. 2009, 2009: 302047.

GSTP1 - glutathione s-transferase pi 1 (rs1695)

The glutathione s-transferases are found in the liver and in lymphocytes. They are involved in the detoxification of endogenous and exogenous substances. The GSTP1 enzymes are involved in the metabolism of endogenous metabolites, and protect the cells against oxidative stress- similar to GSTM1 and GSTT1.

RES	Genotype	POP	Possible results
	A/A	48%	Good protection against oxidative stress/free radicals
X	A/G	42%	Limited protection against oxidative stress/free radicals
	G/G	10%	Limited protection against oxidative stress/free radicals

References

Sreeja et al. Glutathione S-transferase M1, T1 and P1 polymorphisms: susceptibility and outcome in lung cancer patients. J Exp Ther Oncol. 2008,7(1):73-85.

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Stücker et al. Genetic polymorphisms of glutathione S-transferases as modulators of lung cancer susceptibility. Carcinogenesis. 2002 Sep, 23(9):1475-81.

GSTT1 - glutathione s-transferase theta 1 (null allele)

The glutathione s-transferases are found in the liver and in lymphocytes. They are involved in the detoxification of endogenous and exogenous substances. A defective GSTM1 gene reduces the enzymatic activity of the protein, which leads to a limited cellular detoxification.

RES	Genotype	POP	Possible results
	INS	74%	Good protection against oxidative stress/free radicals
X	DEL	26%	Limited protection against oxidative stress/free radicals

References

Sreeja et al. Glutathione S-transferase M1, T1 and P1 polymorphisms: susceptibility and outcome in lung cancer patients. J Exp Ther Oncol. 2008,7(1):73-85.

Funke et al. Genetic Polymorphisms in Genes Related to Oxidative Stress (GSTP1, GSTM1, GSTT1, CAT, MnSOD, MPO, eNOS) and Survival of Rectal Cancer Patients after Radiotherapy. J Cancer Epidemiol. 2009, 2009: 302047.

SOD2 - superoxide dismutase 2, mitochondrial (rs4880)

SOD2 encodes the superoxide dismutase enzyme 2 and it is involved in the degradation of reactive oxygen molecules (ROS), thus protecting the body against oxidative stress. Defects may affect the enzymatic activity of the SOD2 enzyme, resulting in a limited protection against the free radicals.

RES	Genotype	POP	Possible results
	C/C	20%	Good protection against oxidative stress/free radicals
X	C/T	53%	Limited protection against oxidative stress/free radicals
	T/T	27%	Limited protection against oxidative stress/free radicals

References

Sutton et al. The manganese superoxide dismutase Ala16Val dimorphism modulates both mitochondrial import and mRNA stability. Pharmacogenet Genomics. 2005 May,15(5):311-9.

Funke et al. Genetic Polymorphisms in Genes Related to Oxidative Stress (GSTP1, GSTM1, GSTT1, CAT, MnSOD, MPO, eNOS) and Survival of Rectal Cancer Patients after Radiotherapy. J Cancer Epidemiol. 2009, 2009: 302047.

GPX1 - glutathione peroxidase (rs1050450)

The GPX gene encodes the enzyme glutathione peroxidase, which catalyzes the reduction of peroxides and hydrogen peroxide. Thus, GPX plays a role in protecting the body against oxidative stress.

RES	Genotype	POP	Possible results
	C/C	67%	**Good protection against oxidative stress/free radicals**
X	C/T	26%	**Limited protection against oxidative stress/free radicals**
	T/T	7%	**Limited protection against oxidative stress/free radicals**

References

Tang et al. Association between the rs1050450 glutathione peroxidase-1 (C > T) gene variant and peripheral neuropathy in two independent samples of subjects with diabetes mellitus. Nutr Metab Cardiovasc Dis. 2012 May,22(5):417-25.

Bhatti et al. Lead exposure, polymorphisms in genes related to oxidative stress and risk of adult brain tumors. Cancer Epidemiol Biomarkers Prev. Jun 2009, 18(6): 1841–1848.

Xiong et al. Association study between polymorphisms in selenoprotein genes and susceptibility to Kashin-Beck disease. Osteoarthritis Cartilage. 2010 Jun,18(6):817-24.

Soerensen et al. The Mn-superoxide dismutase single nucleotide polymorphism rs4880 and the glutathione peroxidase 1 single nucleotide polymorphism rs1050450 are associated with aging and longevity in the oldest old. Mech Ageing Dev. 2009 May,130(5):308-14.

Steinbrecher et al. Effects of selenium status and polymorphisms in selenoprotein genes on prostate cancer risk in a prospective study of European men. Cancer Epidemiol Biomarkers Prev. 2010 Nov,19(11):2958-68.

Chen et al. GPx-1 polymorphism (rs1050450) contributes to tumor susceptibility: evidence from meta-analysis. J Cancer Res Clin Oncol. 2011 Oct,137(10):1553-61.

Karunasinghe et al. Serum selenium and single-nucleotide polymorphisms in genes for selenoproteins: relationship to markers of oxidative stress in men from Auckland, New Zealand. Genes Nutr. 2012 Apr,7(2):179-90.

Hong et al. GPX1 gene Pro200Leu polymorphism, erythrocyte GPX activity, and cancer risk. Mol Biol Rep. 2013 Feb,40(2):1801-12.

Jablonska E et al. Association between GPx1 Pro198Leu polymorphism, GPx1 activity and plasma selenium concentration in humans. Eur J Nutr. 2009 Sep,48(6):383-6.

NQO1 - NAD(P)H dehydrogenase, quinone 1 (rs1800566)

The enzyme NAD(P)H dehydrogenase, encoded by the NQO1, is a so-called oxidoreductase, and catalyzes the oxidation of nicotinamide adenine dinucleotide (NAD). The polymorphism rs1800566 inhibits the enzymatic activity, and coenzyme Q10 cannot be converted into ubiquinol, or the conversion is slower than normal.

RES	Genotype	POP	Possible results
	C/C	66%	**The enzyme NQO1 effectively converts the coenzyme Q10 into the antioxidant ubiquinol.**
X	C/T	30%	**The enzyme NQO1 converts the coenzyme Q10 into the antioxidant ubiquinol at a slower rate.**
	T/T	4%	**The enzyme NQO1 cannot convert the coenzyme Q10 into the antioxidant ubiquinol.**

References

Fischer et al. Association between genetic variants in the Coenzyme Q10 metabolism and Coenzyme Q10 status in humans. Published online Jul 21, 2011.

Freriksen et al. Genetic polymorphism 609C>T in NAD(P)H:quinone oxidoreductase 1 enhances the risk of proximal colon cancer. J Hum Genet. 2014 May 15.

Inflammation and risk of injury

IL-6 - interleukin 6 (rs1800795)

Interleukin 6 is a pro-inflammatory cytokine and is an essential part of the immune response to inflammatory processes. The rs1800795 polymorphism lies in the gene's promoter and modifies the expression of the cytokine. People who have the C-allele have a higher CK activity after intense training.

RES	Genotype	POP	Possible results
	G/G	25%	No increased risk of inflammation
	G/C	43%	Increased risk of inflammation
X	C/C	32%	Increased risk of inflammation

References

Yamin C et al. IL6 (-174) and TNFA (-308) promoter polymorphisms are associated with systemic creatine kinase response to eccentric exercise. Eur J Appl Physiol. 2008 Oct,104(3):579-86.

Huuskonen A et al. A common variation in the promoter region of interleukin-6 gene shows association with exercise performance. J Sports Sci Med. 2009 Jun 1,8(2):271-7.

Helge JW et al. The effect of graded exercise on IL-6 release and glucose uptake in human skeletal muscle. J Physiol. 2003 Jan 1, 546(Pt 1):299-305.

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TNF-α - tumor necrosis factor a (TNF superfamily, member 2) (rs1800629)

The tumour necrosis factor (TNF or TNF-α) is a cytokine in the human immune system that regulates the activity of immune cells. TNF regulates apoptosis, cell proliferation, cell differentiation and the secretion of various cytokines. The polymorphism rs1800629 leads to a highly increased TNFa expression, and thus to an increased inflammatory capacity.

RES	Genotype	POP	Possible results
	G/G	67%	No increased risk of inflammation
X	G/A	31%	No increased risk of inflammation
	A/A	2%	Increased risk of inflammation

References

Lakka HM et al. The TNF-alpha G-308A polymorphism is associated with C-reactive protein levels: the HERITAGE Family Study. Vascul Pharmacol. 2006 May,44(5):377-83.

Moldoveanu AI et al. Exercise elevates plasma levels but not gene expression of IL-1beta, IL-6, and TNF-alpha in blood mononuclear cells. J Appl Physiol (1985). 2000 Oct,89(4):1499-504.

IL1RN - interleukin 1 receptor antagonist (rs419598)

The interleukin-1 receptor antagonist is involved in the control of immune and inflammatory processes. The rs419598 polymorphism can increase inflammatory activity.

RES	Genotype	POP	Possible results
	T/T	47%	Increased risk of inflammation
X	T/C	47%	Increased risk of inflammation
	C/C	6%	No increased risk of inflammation

References

Wójtowicz A et al. IL1B and DEFB1 Polymorphisms Increase Susceptibility to Invasive Mold Infection After Solid-Organ Transplantation. J Infect Dis. 2015 May 15,211(10):1646-57.

Iglesias-Linares A et al. Postorthodontic external root resorption is associated with IL1 receptor antagonist gene variations. Oral Dis. 2012 Mar,18(2):198-205.

X. Wu et al. IL-1 receptor antagonist gene as a predictive biomarker of progression of knee osteoarthritis in a population cohort. Osteoarthritis Cartilage. 2013 Jul, 21(7): 930–938.

CRP - C-Reactive Protein (rs3093066)

The protein encoded by the CRP gene (C-reactive protein) belongs to the acute-phase proteins and elevated levels of CRP in the blood can be found in inflammatory processes. CRP binds to phosphocholine which is located on the surface of dead or dying cells and activates the complement system, binds to phagocytes and triggers a part of the non-specific defense mechanism. CRP is used as a marker of acute inflammation. The rs3093066 polymorphism is associated with a lower CRP concentration in the blood.

RES	Genotype	POP	Possible results
	A/A	12%	No increased risk of inflammation
	A/C	30%	Increased risk of inflammation
X	C/C	58%	Increased risk of inflammation

References

Obisesan TO et al. C-Reactive Protein Genotypes Affect Baseline, but not Exercise Training–Induced Changes, in C-Reactive Protein Levels. Arterioscler Thromb Vasc Biol. 2004 Oct, 24(10): 1874–1879.

Neubauer O et al. Recovery after an Ironman triathlon: sustained inflammatory responses and muscular stress. Eur J Appl Physiol. 2008 Oct,104(3):417-26.

Phillips T et al. A dietary supplement attenuates IL-6 and CRP after eccentric exercise in untrained males. Med Sci Sports Exerc. 2003 Dec,35(12):2032-7.

IL6R - interleukin 6 receptor (rs2228145)

Interleukin 6 is a pro-inflammatory cytokine and is an essential part of the immune response to inflammatory processes. The interleukin-6 receptor (IL-6R) forms a complex and has an impact on IL-6 activity. It has been shown that the rs2228145 polymorphism has an impact on the concentration of IL-6R and IL-6 and therefore on inflammatory responses.

RES	Genotype	POP	Possible results
X	A/A	42%	No increased risk of inflammation
	A/C	47%	Increased risk of inflammation
	C/C	11%	Increased risk of inflammation

References

Galicia JC et al. Polymorphisms in the IL-6 receptor (IL-6R) gene: strong evidence that serum levels of soluble IL-6R are genetically influenced. Genes Immun. 2004 Sep,5(6):513-6.

Gray SR et al. The response of circulating levels of the interleukin-6/interleukin-6 receptor complex to exercise in young men. Cytokine. 2009 Aug,47(2):98-102.

Pedersen BK et al. The metabolic role of IL-6 produced during exercise: is IL-6 an exercise factor? Proc Nutr Soc. 2004 May,63(2):263-7.

Jones SA et al. IL-6 transsignaling: the in vivo consequences. J Interferon Cytokine Res. 2005 May,25(5):241-53.

Reich Db (2007). Health, Aging and Body Composition (Health ABC) Study: Admixture mapping of an allele affecting interleukin 6 soluble receptor and interleukin 6 levels. Am J Hum Genet. 80(4): 716-726.

Robson-Ansley P et al. (2011). The effect of carbohydrate ingestion on plasma interleukin-6, hepcidin and iron concentrations following prolonged exercise. Cytokine. 53(2):196-200.

GDF5 - growth differentiation factor 5 (rs143383)

The protein encoded by the GDF5 gene (Growth/differentiation factor 5) is a member of the TGF-beta super family and plays a vital, regulative role in the development and repair of bone, joint and connective tissue. The rs143383 polymorphism leads to a reduced expression of the GDF5 protein and is associated with a higher risk of injury in the knee and Achilles tendon.

RES	Genotype	POP	Possible results
	G/G	12%	No increased injury risk
X	G/A	43%	No increased injury risk
	A/A	45%	Increased injury risk

References

Ge W et al. The GDF5 SNP is associated with meniscus injury and function recovery in male Chinese soldiers. Int J Sports Med. 2014 Jun,35(7):625-8.

Valdes AM et al. Association of the DVWA and GDF5 polymorphisms with osteoarthritis in UK populations. Ann Rheum Dis. 2009 Dec,68(12):1916-20.

Posthumus M et al. Components of the transforming growth factor-beta family and the pathogenesis of human Achilles tendon pathology--a genetic association study. Rheumatology (Oxford). 2010 Nov,49(11):2090-7.

Maffulli N et al. The genetics of sports injuries and athletic performance. Muscles Ligaments Tendons J. 2013 Aug 11,3(3):173-89.

Kiah McCabe et al. Can Genetics Predict Sports Injury? The Association of the Genes GDF5, AMPD1, COL5A1 and IGF2 on Soccer Player Injury Occurrence, Sports (Basel). 2018 Mar, 6(1): 21

Col1A1 - Collagen, type I, alpha 1 (rs1800012)

The protein encoded by the COL1A1 gene (collagen, type I, alpha 1) is a fibrillary collagen and is the major protein component of many connective tissues like ligaments and tendons. Type 1 collagen is important for the structure and strength, and the interaction with other parts of the extracellular matrix. Defects in the COL1A1 gene's structure can lead to a modification of this connective tissue.

RES	Genotype	POP	Possible results
X	G/G	81%	No increased protection against injuries
	G/T	17%	No increased protection against injuries
	T/T	2%	Increased protection against injuries

References

Collins M et al. Genetic risk factors for musculoskeletal soft tissue injuries. Med Sport Sci. 2009,54:136-49.

Collins M et al. The COL1A1 gene and acute soft tissue ruptures. Br J Sports Med. 2010 Nov,44(14):1063-4.

Maffulli N et al. The genetics of sports injuries and athletic performance. Muscles Ligaments Tendons J. 2013 Aug 11,3(3):173-89.

Khoschnau S et al. Type I collagen alpha1 Sp1 poly-morphism and the risk of cruciate ligament ruptures or shoulder dislocations. Am J Sports Med 2008, 36:2432–2436.

Posthumus M et al. Genetic risk factors for anterior cru-ciate ligament ruptures: COL1A1 gene variant. Br J Sports Med 2009,43:352–356.

Col5A1 - collagen, type V, alpha 1 (rs12722)

The protein encoded by the COL5A1 gene (collagen, type V, alpha 1) is a fibrillary collagen and is found predominantly in connective tissue like ligaments and tendons that are composed of up to 10% of collagen. Defects in this gene are associated with tendon and ligament damage.

RES	Genotype	POP	Possible results
	T/T	25%	No increased protection against injuries
X	T/C	64%	No increased protection against injuries
	C/C	11%	Increased protection against injuries

References

Collins M et al. Genetic risk factors for musculoskeletal soft tissue injuries. Med Sport Sci. 2009,54:136-49.

September AV et al. Variants within the COL5A1 gene are associated with Achilles tendinopathy in two populations. Br J Sports Med. 2009 May,43(5):357-65.

Collins M et al. The COL5A1 genotype is associated with range of motion measurements. Scand J Med Sci Sports. 2009 Dec,19(6):803-10.

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NUTRITION GENES
FOOD INGREDIENTS
DIETARY SUPPLEMENT
DETOXIFICATION
MUSCLE FIBRE TYPE
OXIDATIVE STRESS AND RISK OF INJURY
OPTIMAL PERFORMANCE NUTRITION
DIETARY SUPPLEMENT
FOOD LIST
SCIENCE
ADDITIONAL INFORMATION

ADDITIONAL INFORMATION

In this chapter you will receive useful information

Technical details

Order number
X257D6083C

Date of birth
09/02/1956

Established analysis methods
qRT-PCR, DNA sequencing, fragment length analysis, CNV assay, GC-MS, Immunocap ISAC, Cytolisa

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Product codes
L3NUTSYN, L4PER, L5TOX, GFPO

Current version
V538

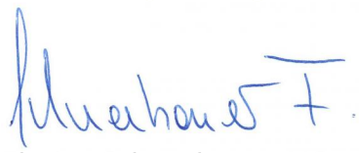
Ordering company
Synergy Worldwide Europe B.V.
Jachthavenweg 109
1081KM Amsterdam
NETHERLANDS

Analyzing company
DNA Plus - Zentrum für Humangenetik
Georg Wrede Strasse 13
83395 Freilassing
Deutschland

Laboratory Director

Dr. Daniel Wallerstorfer Bsc.

Laboratory Manager



Florian Schneebauer, MSc.

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DNAnutriControl
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Lifestyle genetic analysis

Lucinda Wallop
X257D6083C

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