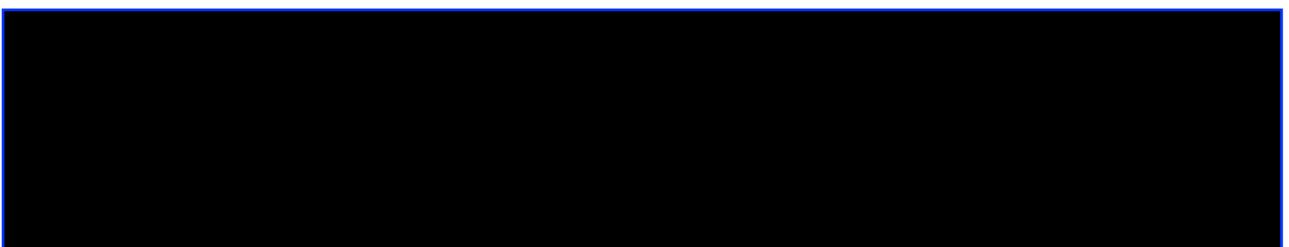




Fagron NutriGen™

Professional Nutrigenomic Advice







How to read and use the Fagron NutriGen™ report

This report is structured into the following sections:

I. General information

Summary of your health habits, including the various factors related to your weight, exercise, metabolism, and key parameters, all related and analyzed by our diagnostic platform.

II. Results overview

Which includes an overview of the genetic analysis, the optimal type of diet, vitamin deficiency risk and the recommended supplements, allowing for a quick and easy global interpretation of the patient's nutrigenomic profile.

III. Personalized Diet Plan

Compiled from your genetic and health/behaviour data. List of foods to avoid and enhance: the nutritional description of 419 foods, beverages and sauces, classified into 17 general categories for easy interpretation and daily use. Food is suggested from the results of the test performed and professional nutritionists.

IV. Complete genetic results

Which includes a complete description of all the analysed SNPs within both at gene and SNP level with detailed descriptions to get the maximum from the test.

Before proceeding with your nutritional and dietary modifications, please read this report carefully and consult your specialist.

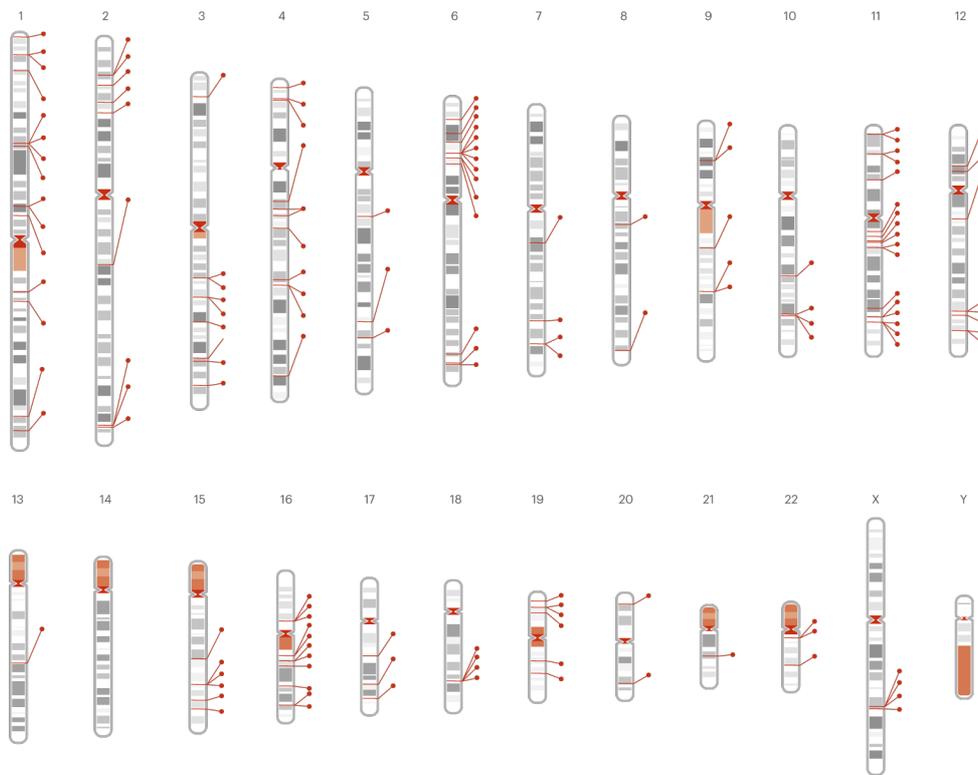
LEGAL DISCLAIMER: Fagron Genomics, S.L.U carries out genetic tests upon request by healthcare professionals, in relation to biological samples from patients obtained by the healthcare professional. Our tests do not replace a medical consultation, nor do they make up a diagnostic or treatment, nor should they be interpreted this way. Only healthcare professionals can interpret the results of said tests, based on their knowledge of the clinical records of the patients and other relevant factors and, under their responsibility, give a diagnostic or prescribe treatment to the patient. We decline all responsibility derived from the use and interpretation of the results of our tests by the solicitant healthcare professional. Fagron Genomics, S.L.U expressly reserves any legal actions in case of an inappropriate, negligent or incorrect use or interpretation of the results of our tests. It is the responsibility of the healthcare professional who requests a test to guarantee to the patient the appropriate genetic advice as foreseen by Law 14/2007, of 3rd July, of biomedical research. As Fagron Genomics, S.L.U does not have access to the personal identifiable information about the patient from whom the sample comes, it is the responsibility of the requesting healthcare professional to comply with the applicable data protection Laws and regulations.



**Fagron Nutrigen™ studies 384 top-informative DNA variations
in 59 different categories summarized in 15 macro
categories**

1. Morphological genetics in overweight predisposition
2. Behavioural genetics in food intake
3. Efficacy of exercise
4. Fat metabolism
5. Carbohydrate metabolism
6. Lipid metabolism
7. Glucose metabolism
8. Flavour sensitivities
9. Detoxification imbalances
10. Supplementation
11. Intolerance
12. Vitamin deficiency risk
13. Matching Diet Type
14. Hormones
15. Inflammation

Analyzed genetic variations in the Fagron Nutrigen test¹



ABOUT

Your personalized diet plan and suggested food habits are carefully selected in order to enhance individual strengths and minimize localized genetic deficiencies.

¹ The plot represents a global and not individualized genetic map for informative purposes. Please note that the genes that are analyzed are the same for everyone (men or women), however the results shown in part II may be different. Chromosome Y is not analyzed, therefore the test is useful both for men and women.

Weight related variables

Gender Female
Age 25 years
Height 165 cm

Current weight 53 Kg
Goal weight 52 Kg

Current BMI 19,46
Goal BMI 19,10

Weight type Normoweight

ABOUT

* In case of underweight, Obesity Type I, II, III, IV and/or existing pathologies, the results of this test should be evaluated and implemented by a professional.

Physical exercise and metabolism related factors

Daily sport activity Without activity

- Basal metabolism -

Current (cal) 1.275
Target (cal) 1.265

- Current daily energy expenditure -

Current (Kcal) 1.530
Target (Kcal) 1.518
Variation (Kcal) -12





Sample code	—●—	NUT04121AA
Reception date	—●—	15-09-2022
Results date	—●—	20-09-2022
Passed quality control	—●—	YES
Passed genotyping quality	—●—	YES
Final quality control	—●—	YES



Efficacies

CATEGORY	DESCRIPTION	RESULTS
 Morphological genetics in overweight predisposition	Medium-low genetic predisposition to being overweight. In case of overweight or obesity, it is caused mainly by imbalanced nutritional habits.	53.51% 
Genetic risk of overweight/obesity		MEDIUM-HIGH RISK ● Pg. 51
Risk of rebound weight gain		HIGH REBOUND EFFECT ● Pg. 52
Risk of increased BMI		MEDIUM-LOW RISK ● Pg. 53
Basal metabolic rate (burn calories at rest)		HIGH BURNER ● Pg. 54
Weight loss capability during diet interventions		NORMAL WEIGHT LOSS ● Pg. 55

CATEGORY	DESCRIPTION	RESULTS
 Behavioural genetics in food intake	Medium-low dysregulation of food intake behaviour. Slight predisposition to being overweight. In case of excessive quantity or compulsive intake, strategies to reduce anxiety should be considered.	66.98% 
Appetite and anxiety risk		NORMAL ● Pg. 56
Satiety: Feeling Full		SLIGHTLY LOWER SATIETY ● Pg. 57

CATEGORY	DESCRIPTION	RESULTS
 Efficacy of exercise	Low-medium efficacy of exercise to reduce body fat and regulate cholesterol levels. Intensive dietary interventions may be the best option.	26.06% 
Benefits from endurance exercise for improving HDL levels		VERY LOW EXPECTED BENEFITS FROM EXERCISE ● Pg. 58
Exercise to reduce body fat		MEDIUM-HIGH EXPECTED BENEFIT FROM EXERCISE ● Pg. 59

INDICATIONS

■ 75% - 100% High efficacy
 ■ 50% - 75% Medium-high efficacy
 ■ 25% - 50% Medium efficacy
 ■ 0% - 25% Low efficacy

Efficacies

CATEGORY	DESCRIPTION	RESULTS
 Fat metabolism	Negative fat burning capacity. It would be recommended to decrease the general fat intake.	25.5% 

- Response to monounsaturated fats (MUFAs) **VERY LOW MUFA METABOLISM** ● Pg. 60
- Response to polyunsaturated fats (PUFAs) **FAST PUFA METABOLISM** ● Pg. 61
- Response to fat intake to improve the HDL levels **VERY LOW EXPECTED BENEFITS** ● Pg. 62

CATEGORY	DESCRIPTION	RESULTS
 Carbohydrate metabolism	Negative carbohydrate metabolism: Carbohydrate intake will lead to dysregulation in cholesterol levels and also to increased calorie and fat intake. Eliminating refined carbohydrates is urgent; move to wholegrain carbohydrates and reduce the quantity.	37.38% 

- Capability to digest starchy food **REDUCED STARCH DIGESTION** ● Pg. 63
- Refined carbohydrate sensitivity **VERY HIGH CARBOHYDRATE SENSITIVITY** ● Pg. 64
- Carbohydrates and HDL levels predisposition **HIGH RISK OF DYSREGULATION** ● Pg. 65
- Carbohydrates and LDL levels **LOW RISK OF DYSREGULATION** ● Pg. 66

CATEGORY	DESCRIPTION	RESULTS
 Lipid metabolism	Affected lipid metabolism. Cholesterol and triglyceride levels may show irregular results in blood analyses. Specific LDL or HDL treatments would be recommended. Increased cardiovascular risk.	43.17% 

- Predisposition to reduced HDL levels **REDUCED HDL LEVELS** ● Pg. 67
- Predisposition to increased levels of triglycerides **HIGHLY INCREASED TRIGLYCERIDES** ● Pg. 68
- Predisposition to increased oxidation of LDL **SLIGHTLY INCREASED LDL OXIDATION** ● Pg. 69
- Risk of increased cholesterol LDL levels **SLIGHTLY INCREASED LDL LEVELS** ● Pg. 70
- Risk of unbalanced Triglycerides/HDL ratio **SLIGHTLY INCREASED TG/HDL RATIO** ● Pg. 71

INDICATIONS

■ 75% - 100% High efficacy
 ■ 50% - 75% Medium-high efficacy
 ■ 25% - 50% Medium efficacy
 ■ 0% - 25% Low efficacy

Efficacies

CATEGORY	DESCRIPTION	RESULTS
 Glucose metabolism	Medium-high dysregulation of glucose metabolism. Intake of refined sugar and carbohydrates will be dangerous. High risk of developing Type-II diabetes.	38.41% 

Risk of increased glucose levels in plasma after fasting

MEDIUM-HIGH RISK OF HIGH GLUCOSE LEVELS ●

Pg. 72

Risk of insulin resistance

HIGH INSULIN RESISTANCE ●

Pg. 73

Risk of Type-II diabetes

MEDIUM-HIGH DIABETES TYPE-II RISK ●

Pg. 74

CATEGORY	DESCRIPTION	RESULTS
 Flavour sensitivities	Normal or average flavour sensitivity.	84.22% 

Bitter taste sensitivity

NORMAL ●

Pg. 75

Salt sensitivity

MEDIUM-LOW SALT SENSITIVITY ●

Pg. 76

Sweet flavour preference

NORMAL ●

Pg. 77

CATEGORY	DESCRIPTION	RESULTS
 Detoxification imbalances	Average detoxification capacities.	78.81% 

Antioxidant capability

NORMAL ANTIOXIDANT CAPABILITY ●

Pg. 78

INDICATIONS

■ 75% - 100% High efficacy
 ■ 50% - 75% Medium-high efficacy
 ■ 25% - 50% Medium efficacy
 ■ 0% - 25% Low efficacy

Risks

CATEGORY	DESCRIPTION
 Supplementation	Please find below the different analysed categories related to food supplementation needs.

Calcium malabsorption risk	LOW RISK OF CALCIUM MALABSORPTION ●	Pg. 79
Predisposition to dysregulated calcium levels	NO ADDITIONAL RISK OF DYSREGULATED PLASMA CALCIUM LEVELS ●	Pg. 80
Risk of iron overload	LOW RISK OF HEMOCHROMATOSIS ●	Pg. 81
Risk of low iron plasma levels	LOW RISK OF DECREASED IRON LEVELS ●	Pg. 82
Predisposition to dysregulated magnesium levels	MEDIUM-HIGH RISK OF DYSREGULATED MAGNESIUM LEVELS ●	Pg. 83
Predisposition to dysregulated selenium levels	NO ADDITIONAL RISK OF DYSREGULATED SELENIUM LEVELS ●	Pg. 84
Sodium sensitivity	MEDIUM-LOW SODIUM SENSITIVITY ●	Pg. 85

CATEGORY	DESCRIPTION
 Intolerance	Please find below the different analysed categories related to intolerances and sensitivities.

Lactose intolerance risk	LACTOSE INTOLERANCE ●	Pg. 86
Alcohol metabolism	NORMAL ALCOHOL METABOLISM ●	Pg. 88
Risk of celiac disease	LOW RISK OF CELIAC DISEASE ●	Pg. 90
Caffeine metabolism	FAST CAFFEINE METABOLIZER ●	Pg. 92
Fructose intolerance risk	LOWER RISK OF FRUCTOSE INTOLERANCE ●	Pg. 94

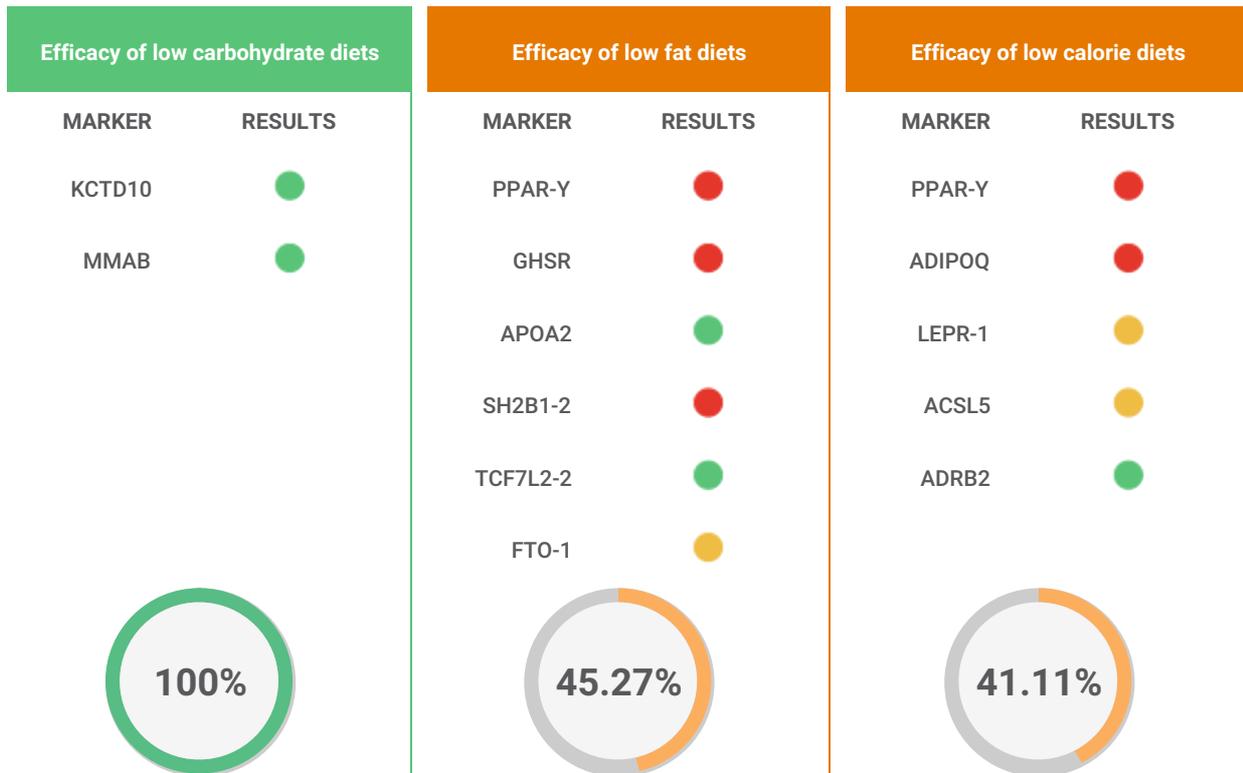
EFFECTIVENESS OF DIETS

- INTEGRATED NUTRITIONAL PLAN (LOW IN CARBOHYDRATES) -

Depending on the specific needs of your body, the optimal type of nutritional plan is determined. It has been defined by our nutritional experts and based on the foods you are better able to metabolize, the genetic information and the available personal health data.

ABOUT

13 genetic variations related to the metabolism of various nutrients are analyzed in this section. This information allow us to develop a personalized plan aimed at improving your eating habits and exercise, that will help you achieve your weight goals, improve your muscle and bone mass, lower the fat mass and maintain a balanced and healthy diet.



ABOUT

Knowing the type of diet that will be more effective to maintain a balanced and healthy diet.

Know the most effective type of diet to maintain your good metabolic balance

INDICATIONS

- High expected benefits from diet
- Medium-High expected benefits from diet
- Medium-Low expected benefits from diet
- Very Low expected benefits from diet

Vitamin deficiency risk

ABOUT

Major genetic variations related to the metabolism of each vitamin are analysed. Possible deficiencies are determined so that our specialists are able to adapt your diet to improve your health and prevent putative diseases related to the lack of vitamins.

VITAMINS	DESCRIPTION	RESULTS
Vitamin A	Normal vitamin A metabolism. Ensure daily recommended intake.	
Vitamin B ⁶	Little predisposition to a vitamin B6 deficiency. Make sure that the recommended daily intake is met.	
Vitamin B ⁹	Normal folate metabolism. Ensure daily recommended intake.	
Vitamin B ¹²	Low risk of vitamin B12 deficiency. Ensure daily recommended intake.	
Vitamin C	Medium risk of Vitamin C deficiency. Ensure daily recommended intake. Supplementation strategies might be of interest.	
Vitamin D	Low risk of Vitamin D deficiency. Ensure daily recommended intake.	
Vitamin E	Low risk of Vitamin E deficiency. Ensure daily recommended intake.	

INDICATIONS

-  Normal metabolism of vitamin
-  Low risk of vitamin deficiency
-  Medium risk of vitamin deficiency
-  High risk of vitamin deficiency

📍 Vitamin deficiency risk

Results evaluation

Each vitamin is analyzed independently to facilitate their incorporation in the final diet if a genetic defect is detected. The high, medium or low results in this section correspond to a global view of the metabolic status of vitamins. Here we highlight the main consequences of a vitamin deficiency.

Vitamin A

- ▶ Infectious diseases
- ▶ Vision problems

Vitamin B⁶

- ▶ Confusion
- ▶ Depression
- ▶ Canker on mouth and tongue
- ▶ Anemia and lack of hemoglobin.

Vitamin B⁹

- ▶ Fatigue
- ▶ Gray hair
- ▶ Oral stripes
- ▶ Poor growth
- ▶ Swelling of the tongue
- ▶ Anemia
- ▶ In severe cases, deficiency of white blood cells (defenses) and platelets
- ▶ It is essential for the development of the spinal cord and brain

Vitamin B¹²

- ▶ Anemia
- ▶ Equilibrium loss
- ▶ Numbness or tingling in arms and legs

Vitamin C

- ▶ Anemia
- ▶ Bleeding gums
- ▶ Decreased ability to fight infections
- ▶ Decreased rate of wound healing
- ▶ Dry and splitting hair tufts
- ▶ Tendency to hematoma formation
- ▶ Gingivitis (gum inflammation)
- ▶ Nosebleeds
- ▶ Possible weight gain due to slow metabolism
- ▶ Rough, dry, scaly skin
- ▶ Pain and swelling in the joints
- ▶ Weakened enamel of the teeth
- ▶ Weakness

Vitamin D

- ▶ Osteoporosis
- ▶ Reduced cognitive function (mental process that allows us to carry out any task)

Vitamin E

- ▶ Neurological symptoms
- ▶ Muscular weakness
- ▶ Retinal degeneration with potential blindness

Inflammation

CATEGORY	DESCRIPTION
TNF- α	TNF- α is a pro-inflammatory cytokine, strongly linked to many inflammatory conditions, expressed in, and secreted by adipose tissues. Increased levels are associated with obesity-induced inflammation, adiposity and insulin resistance.

• TNF- α -1 Predisposition to average levels of TNF-alpha. ●

CATEGORY	DESCRIPTION
IL-6	IL-6 is an interleukin with mainly pro-inflammatory functions and is commonly used as inflammatory marker. High levels of IL-6 are associated with obesity, insulin resistance and metabolic syndrome.

• IL-6-1 Predisposition to intermediate levels of IL-6. Pro-inflammation. ●

CATEGORY	DESCRIPTION
IL-10	IL-10 is a cytokine with potent anti-inflammatory properties.

• IL-10-1 Predisposition to intermediate levels of the anti-inflammatory cytokine IL-10. ●

Hormones

CATEGORY	DESCRIPTION
Leptin	Leptin is a hormone which main function is sending a signal to the brain for food intake regulation. Leptin is commonly called the "satiety hormone". Low levels of leptin may imply problems of overeating and/or burning the stored fat. LEP-R is the gene coding for the cellular receptor of the leptin hormone. Its capability to bind leptin and start the cellular signalling is key for the satiety regulation function. Lower leptin binding capability may lead to high possibilities of leptin resistance, overeating and lower fat burning.

• LEP

Predisposition to lower levels of leptin. ●

CATEGORY	DESCRIPTION
Visfatin	Visfatin is an adipokine with an inflammatory and catabolic profile that has been associated with several metabolic risk factors, such as obesity, insulin resistance, and Type-II diabetes.

• NAMPT-1

High predisposition to increased levels of circulating visfatin. ●

CATEGORY	DESCRIPTION
Ghrelin	Ghrelin is a hormone produced in the gut, often termed "the hunger hormone", since it causes an increase in appetite through its effect in the brain. Imbalances in ghrelin are associated with appetite increase, increased calorie consumption and fat storage.

• GHSR

Predisposition to normal ghrelin receptor (GHSR) expression. ●

CATEGORY	DESCRIPTION
Adiponectin	Adiponectin is a hormone that regulates glucose levels and fatty acid breakdown. Low levels of adiponectin are associated with inflammation, lipid abnormalities and insulin resistance.

• ADIPOQ-2

High predisposition to lower adiponectin plasma levels. ●

• ADIPOQ-3

High predisposition to lower adiponectin plasma levels. ●

ABOUT

After analyzing your DNA and lifestyle, we have selected food supplements that will help you combat overweight and ageing.

The following color scale shows what we mostly recommend (the length of the green indicating from more to less recommended), and those compounds we do not recommend (from green to red, indicating less recommended) because your body does not need them or potential toxicity.



CLEANING PHASE

You don't require this phase in your treatment



RESTRUCTURING PHASE

- ▶ Glucosamine
- ▶ Vitamin B12
- ▶ Biotin
- ▶ Ubiquinol
- ▶ Vitamin B9 (Methylfolate)
- ▶ Vitamin B2 (Riboflavine)
- ▶ Vitamin B6
- ▶ Vitamin B1 (Thiamine HCl)
- ▶ Resveratrol
- ▶ Niacin



SUPPLEMENTATION PHASE

- ▶ Magnesium
- ▶ Vitamin B12
- ▶ Biotin
- ▶ Vitamin C
- ▶ Ubiquinol
- ▶ Vitamin B9 (Methylfolate)
- ▶ Vitamin B2 (Riboflavine)
- ▶ Vitamin B6
- ▶ Vitamin D3 (Cholecalciferol)
- ▶ Vitamin K2
- ▶ Vitamin B1 (Thiamine HCl)
- ▶ Vitamin E
- ▶ Citrimax
- ▶ Vitamin A
- ▶ Resveratrol
- ▶ Niacin

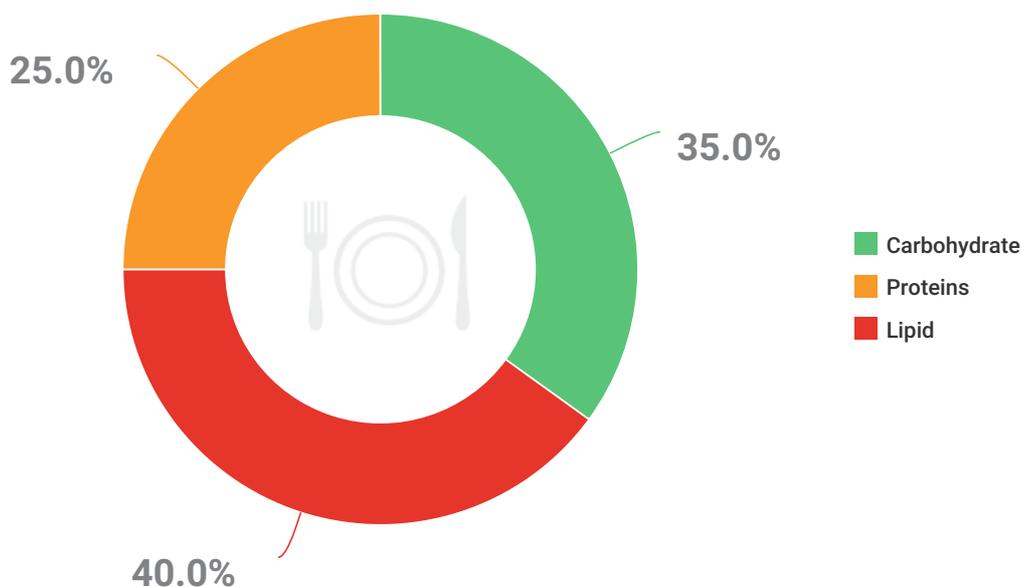


- INTEGRATED NUTRITIONAL PLAN (LOW IN CARBOHYDRATES) -

From the combination of your genetic results with your health information and your current habits, our nutrition experts have determined that your body will respond better and you will get better results with a INTEGRATED NUTRITIONAL PLAN (LOW IN CARBOHYDRATES).

Your nutritional plan includes the following types of food

1. Vegetables
2. Legumes and derivatives
3. Fruits and derivatives
4. Cereals and derivatives
5. Fish and derivatives
6. Meats and derivatives
7. Nuts and seeds
8. Shellfish and derivatives
9. Eggs and derivatives
10. Milk and derivatives
11. Oils and fats
12. Tubers and derivatives
13. Sauces and condiments
14. Sugars and derivatives
15. Snacks
16. Non-alcoholic beverages
17. Alcoholic beverages



ABOUT

From the results obtained in the analysis, your dietary habits and your general information, our genetic and nutritionist adviser team have determined a personalized plan with nutritional and dietetic recommendations.



1
Make the 3 main meals of the day and in their hours



2
Make 2 small snacks of fruit and nuts according to recommendations: 11am - 5pm



3
Drink natural water 1.5 - 2 l / day before and between main meals

Daily food intake

Recommendation

- Allowed, adjusting the amounts and / or frequency *
- Allowed without raising the recommended quantities and / or frequency *
- Reduce the amount and / or frequency *
- Restrict, occasionally / in small quantities *

*Observations on recommended foods are a suggestion based on the genetic findings. The results should be evaluated by a professional and accurately adapted to the clinical history, blood analyses, fitness, eating habits, exercise, medication and psychological status.

Indications

On the food table, we have incorporated specific symbols for the reported pathologies, intolerances or vitamin deficiencies based on the data included in the clinical questionnaires. When several foods from a category have a similar level of recommendation, those symbols will help you decide whether they will have a positive effect or negative impact in the diet plan. Find below the list of the symbols.

■ Recommended ■ Avoid consumption

	Caffeine intolerance		Monounsaturated Fatty Acids (MUFAs)	A	Vitamin A
	Fructose intolerance			B⁶	Vitamin B6
	Gluten intolerance		Polyunsaturated Fatty Acids (PUFAs)	B⁹	Vitamin B9
	Lactose intolerance			B¹²	Vitamin B12
	Alcohol		Starch	C	Vitamin C
	Carbohydrate		Glucose	D	Vitamin D
	Lipid		Salt	E	Vitamin E
	Fat		Kiwi intolerance		Antioxidant
	Astaxanthin intolerance		Nuts intolerance		Satiety
	Carrot intolerance		Papaya intolerance	Fe	Iron
	Egg intolerance		Pineapples intolerance	Mg	Magnesium
	Figs intolerance		Cow-milk protein intolerance	Ca	Calcium
	Galactose intolerance		Seafood intolerance	Se	Selenium
	Ginger intolerance		Soya intolerance		
	Tomato intolerance				

Vegetables



FOOD	Indications	FOOD	Indications
Chicory	A B⁹ C E (Ca)	Tomato	B⁹ C (Ca)
Red pepper	A B⁶ B⁹ C (Ca)	Chive	A B⁹ C (Ca)
Courgette	B⁹ C (Ca)	Asparagus, green	B⁹ (Fe) (Ca)
Cauliflower, boiled	B⁹ C (Ca)	Arugula	B⁹ C (Ca)
Radish	B⁹ C (Ca)	Tomato, ripe, peeled and ground, canned	B⁹ C (Ca)
Brussels sprout, frozen	B⁹ C (Ca)	Watercress	A B⁹ C (Ca)
Red cabbage, boiled	B⁶ B⁹ C (Ca)	Mushroom	B⁹ (Ca) (Se)
Savoy cabbage	B⁹ C (Ca)	Green bean, boiled	B⁹ (Ca)
Broccoli, boiled	B⁹ C (Ca)	Leek, frozen	B⁶ B⁹ (Ca)
Cabbage, white	B⁹ C (Ca)	Garlic	B⁶ B⁹ C (Ca) (Se)
Cabbage	B⁹ C (Ca)	Chard	A B⁹ C E (Ca) (Mg) 

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Vegetables



FOOD	Indications	FOOD	Indications
Chard, boiled	A B ⁹ C E (Fe) (Ca) (Mg)	Celery	B ⁹ (Ca)
Spinach, boiled	A B ⁶ B ⁹ E (Fe) (Ca) (Mg)	Soybean, sprouts, canned	B ⁹ (Ca) (Mg)
Lettuce	A B ⁹ (Ca)	Carrot	A B ⁹ (Ca)
Sweet pepper, canned	C B ⁹ (Ca)	Asparagus, white, canned	C B ⁹ (Ca)
Corn, on the cob	B ⁹ (Ca)	Caper	(Ca) B ⁹
Turnip, peeled	B ⁹ (Ca)	Artichoke, tinned	(Ca) B ⁹
Cucumber	B ⁹ (Ca)	Aubergine	B ⁹ (Ca)
Pumpkin, boiled	A B ⁹ (Ca)	Mushrooms, canned	(Ca) B ⁹
Onion	B ⁹ (Ca)	Pickled gherkin	B ⁹ (Ca)

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Legumes and derivatives



FOOD	Indications
Lentil, boiled	B ⁹ Fe Ca
Pinto bean, steeped, boiled	B ⁶ B ⁹ Ca
Pea, frozen, boiled	B ⁹ Ca
White bean, boiled	B ⁹ Fe Ca Mg
Chickpea, canned	B ⁶ B ⁹ Ca
Pea, canned	Ca B ⁹

FOOD	Indications
Chickpea, boiled	B ⁹ Fe Ca
White bean, tinned	B ⁹ Fe Ca Mg
Soybean, dry, soaked, boiled	B ⁶ B ⁹ Fe Ca Mg
Tofu	B ⁹ Fe Ca Se
Soya, fried	B ⁹ B ⁶ Ca Mg
Soy flour	B ⁶ B ⁹ E Fe Ca Mg

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Fruits and derivatives



FOOD	Indications	FOOD	Indications
Raspberry	B ⁹ C Ca	Red currant	B ⁹ C Ca
Black currant	C Ca	Papaya, without skin	B ⁹ C Ca
Strawberry	B ⁹ C Ca	Pineapple	B ⁹ C Ca
Lime	B ⁹ C Ca	Apricot	B ⁹ Ca
Melon	B ⁹ C Ca	Nectarine	B ⁹
Grapefruit	B ⁹ C Ca	Pear	B ⁹ Ca
Red grape	B ⁹ C Ca	Olive	B ⁹ E Ca
Watermelon	B ⁹ Ca	Coconut	B ⁹ Fe Ca Se
Avocado	B ⁶ B ⁹ E Ca 	Yellow plum, with skin	B ⁹ Ca
Orange	B ⁹ C Ca	Kiwi	B ⁹ C Ca
White grapes	B ⁹ C Ca	Peach	B ⁹ Ca

Allowed, adjusting the amounts and / or frequency

Allowed without raising the recommended quantities and / or frequency

Reduce the amount and / or frequency

Restrict, occasionally / in small quantities

Fruits and derivatives



FOOD	Indications	FOOD	Indications
Maracuja - Passion Fruit	B⁹ C	Banana	B⁹ B⁶
Litchis	C B⁹	Blueberry	B⁹
Mango, without skin	C B⁹	Cherry	B⁹
Olive, black, with pip		Figs	B⁹
Tangerine	C B⁹	Apple	B⁹
Coconut, dried	B⁶ B⁹ 	Pear, canned, in syrup	B⁹
Syrup peach	B⁹	Pineapple, canned, in juice	B⁹
Persimmon	B⁹	Date	B⁹
Pomegranate	B⁹	Raisin	B⁹

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Cereals and derivatives



FOOD	Indications	FOOD	Indications
Barley	B⁶ B⁹ 	Pasta, homemade, made with egg, cooked	B⁹
Rye	B⁶ B⁹ 	Oat	B⁹
Barley flour	B⁶ B⁹ 	Crackers, melba toast, wheat	B⁹
Rye flour	B⁶ B⁹ 	Wholewheat bread	B⁶ B⁹
Wheat, bran	B⁶ B⁹ 	Pasta, whole, cooked	B⁹
Quinoa	B⁶ B⁹ E 	Egg-free pasta	B⁹
Corn flour	B⁶ B⁹ 	Rye bread	B⁹
Wholewheat flour	B⁹	Rice, boiled	B⁹
Wheat cereal, chocolate flavored, cooked	B⁹	Flax, seeds	B⁶ B⁹
Wheat flour	B⁹	Bread, white wheat	B⁹
Millet	B⁶ B⁹	Oat flour	B⁹

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Cereals and derivatives



FOOD	Indications	FOOD	Indications
White bread		Chocolate cake	
Wheat germ		Cookie, chocolate, with icing or coating	
Cereal, puffed wheat, sweetened		Muffin	
Cereal (Kellogg's Apple Jacks)		Croissant with chocolate	
Cereal, frosted corn flakes		Doughnut, with chocolate	
Corn bread		Croissant	
Pasta, filled with meat, boiled		Doughnut	
Sponge cake		Cookie, with chocolate	
Fruit cake			

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Fish and derivatives



FOOD	Indications	FOOD	Indications
Tuna	B⁶ B⁹ B¹² D (Ca) (Se)	Sole, baked	B⁹ B¹² D (Ca) (Se)
Cod	B⁶ B⁹ B¹² D (Ca) (Se)	Mullet	B⁶ B⁹ D (Ca) (Se)
Halibut	B⁶ B⁹ B¹² D (Ca) (Se)	Flounder, steamed	B⁹ B¹² D (Ca) (Se)
Monkfish, grilled	B⁶ B⁹ B¹² (Ca) (Se)	Codfish, fried	B¹² B⁹ (Ca) (Se)
Tuna, canned in water	B⁶ B⁹ B¹² D (Ca) (Se) 	Swordfish	B⁶ B⁹ B¹² D E (Ca) (Se)
Cod, smoked	B⁹ B¹² D (Ca) (Se)	Salmon	B⁶ B⁹ B¹² D (Ca) (Se)
Perch	B⁹ B¹² D (Ca) (Se)	Sea bream	B⁶ B⁹ B¹² D (Ca) (Se)
Seabass	B⁶ B⁹ D (Ca) (Se)	Smoked salmon	B⁶ B⁹ B¹² D (Ca) (Se)
Pike, baked	B⁹ B¹² D (Ca) (Se)	Trout	B⁶ B⁹ B¹² D E (Ca) (Se)
Cod, fresh, baked	B¹² B⁹ (Ca) (Se)	Trout, smoked	A B⁶ B⁹ B¹² D E (Ca) (Se)
Perch, baked	B⁹ B¹² D (Ca) (Se)	Tuna, griddle	B⁶ B⁹ D (Ca) (Se)

■ Allowed, adjusting the amounts and / or frequency
■ Allowed without raising the recommended quantities and / or frequency

■ Reduce the amount and / or frequency
■ Restrict, occasionally / in small quantities

Fish and derivatives



FOOD	Indications	FOOD	Indications
Anchovy in vegetable oil	B⁹ B¹² D E (Fe) (Ca) (Mg) (Se)	European eel, boiled	A B⁹ B¹² D E (Ca) (Se)
Anchovy	B⁹ B¹² (Fe) (Ca) (Se)	Herring, smoked	B⁶ B⁹ B¹² D (Ca) (Se)
Mackerel, canned in oil, drained	A B⁹ B¹² D (Ca) (Se) 	Herring, salted	B⁶ B⁹ D E (Fe) (Ca) (Mg) (Se)
Hake	B⁶ B⁹ B¹² (Fe) (Ca) (Mg) (Se)	Sardine	B⁹ B¹² D E (Fe) (Ca) (Se)
Tuna, canned, oil pack	B⁹ B¹² D (Ca) (Se) 	Sardine, canned in oil, drained	B⁹ B¹² D E (Fe) (Ca) (Se)
Carp, baked	B⁶ B⁹ B¹² D (Ca) (Se) 	Mackerel, baked	B⁶ B⁹ B¹² D E (Ca) (Mg) (Se)
Salmon, griddle	B⁶ B⁹ B¹² D (Ca) (Se) 	Caviar	A B⁶ B⁹ B¹² D E (Fe) (Ca) (Mg) (Se)
Mackarel	B⁶ B⁹ B¹² D (Ca) (Mg) (Se)	Swordfish, griddle	B⁶ B⁹ B¹² D E (Ca) (Se)
Iridescent shark	B⁹ B¹² (Ca) (Se)	European eel, baked	A B⁹ B¹² D E (Ca) (Se)
Sardine, roasted	B⁶ B⁹ B¹² D E (Fe) (Ca) (Mg) (Se)	Sardine canned in tomato sauce	B⁹ B¹² D (Fe) (Ca) (Se)

■ Allowed, adjusting the amounts and / or frequency
■ Allowed without raising the recommended quantities and / or frequency

■ Reduce the amount and / or frequency
■ Restrict, occasionally / in small quantities

Meats and derivatives



FOOD	Indications	FOOD	Indications
Turkey, breast, without skin, grilled	B⁶ B⁹ B¹² Ca Se	Chicken, leg, with skin, roasted	B⁶ B⁹ B¹² Ca Se
Turkey	B⁶ B⁹ B¹² Ca Se	Chicken, breast, grilled	B⁶ B⁹ Ca Se
Liver, pork	A B⁶ B⁹ B¹² C Fe Ca Se	Veal, rib, with separable fat	B⁶ B⁹ B¹² Ca Se
Pork, loin	B¹² B⁶ Ca Se	Liver, chicken	A B⁶ B⁹ B¹² C Fe Ca Se
Beef, part n/s, roasted, with separable fat	B⁶ B⁹ B¹² Fe Ca Se 	Turkey, leg, with skin	B⁶ B⁹ Fe Ca Se
Beef, heart, cooked	B⁶ B⁹ B¹² Fe Ca Se	Turkey, breast, with skin	B⁹ B⁶ Ca Se
Chicken, fried	B⁹ B⁶ Ca Se	Heart, chicken	B⁶ B⁹ B¹² Fe Ca
Liver, beef	A B⁶ B⁹ B¹² D Fe Ca Se	Pork, chop	B⁶ B¹² Ca Se
Pork, rib	B¹² B⁶ Ca Se	Veal, sirloin, roasted, with separable fat	B⁶ B⁹ B¹² Ca Se
Pork, sirloin, roasted	B¹² B⁶ Ca Se	Cured ham	B⁶ B⁹ B¹² D Ca Se
Ham, roasted	B¹² B⁶ Ca Se	Cooked ham	B⁶ B⁹ B¹² D Ca Se

■ Allowed, adjusting the amounts and / or frequency
■ Allowed without raising the recommended quantities and / or frequency

■ Reduce the amount and / or frequency
■ Restrict, occasionally / in small quantities

Meats and derivatives



FOOD	Indications	FOOD	Indications
Pork, shoulder, cooked, lean and fat eaten	B⁶ B⁹ B¹² D Ca Se   	Sausage, smoked link sausage, pork	B⁹ B¹² D Ca Se   
Veal, loin, with separable fat	B⁶ B⁹ B¹² Ca Se  	Chorizo	B⁶ B⁹ B¹² D Fe Ca   
Chicken, breast, with skin	B⁶ B⁹ Ca Se  	Salami	B⁶ B¹² D Ca Se   
Turkey or chicken sausage, reduced sodium	B⁶ B⁹ Se  	Beef, sirloin, grilled	B⁶ B⁹ B¹² Fe Ca Se  
Bacon, smoked, grilled	B⁶ B¹² Ca Se   	Lamb, rib	B⁹ B¹² Ca Se   
Pork sausage	B⁹ B¹² D Ca Se   	Lamb, not specified part	B⁹ B¹² Ca Se   
Chicken, wing, with skin	B⁶ B⁹ Ca Se  	Liver sausage, liverwurst, pork	A B⁹ B¹² Fe Ca Se   
Chicken, with skin, roasted	B⁶ B⁹ Ca Se  	Bacon	B⁶ B¹² Ca Se   
Oxtail	B⁶ B⁹ B¹² Fe Ca Se   	Rabbit, stewed	B⁶ B⁹ B¹² Ca Se   
Beef, part n/s, stewed, with separable fat	B⁶ B⁹ B¹² Fe Ca Se   	Foie gras	A B⁹ B¹² Fe Ca Se   
Blood sausage, fried	B⁹ B¹² D Fe Ca Se   	Cooked ham, canned	B⁶ B⁹ B¹² Ca Se   

■ Allowed, adjusting the amounts and / or frequency
■ Allowed without raising the recommended quantities and / or frequency

■ Reduce the amount and / or frequency
■ Restrict, occasionally / in small quantities

Meats and derivatives



FOOD	Indications
Duck, roasted	B⁹ Fe Ca Se ⚖️ 🍖 🍖
Pork luncheon meat	B⁹ B¹² Ca Se ⚖️ 🍖 🍖

FOOD	Indications
Breaded chicken, fried	Ca Se ⚖️ 🍖 🍖

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Nuts and seeds



FOOD	Indications	FOOD	Indications
Sunflower seeds	B⁶ B⁹ E	Pine nut	B⁹ E
Hazelnut	B⁶ B⁹ E	Peanut, fried, salted	B⁶ B⁹
Sesame, seed	B⁶ B⁹	Almond, fried, salted	B⁶ E
Almond	B⁹ E	Cashew nut	B⁶ B⁹
Walnut	B⁶ B⁹	Chestnut, roasted	B⁶ B⁹ C
Pumpkin seeds	B⁹	Pistachio nut	B⁶ B⁹ E
Sunflower seeds, peeled, with salt	B⁶ B⁹ E		

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Shellfish and derivatives



FOOD	Indications	FOOD	Indications
Cockles	Fe Ca	Shrimp, boiled	B ¹² B ⁹ Ca Se
Lobster, boiled	B ¹² B ⁹ Ca Se	Octopus, boiled	B ⁶ B ⁹ B ¹² Fe Ca Se
Crayfish	B ¹² B ⁹ Ca Se	Mollusks, blue mussel, cooked, moist heat	B ⁹ B ¹² C Fe Ca Se
Clams	B ⁹ B ¹² Ca Se	Mussel, boiled	B ⁹ B ¹² C Fe Ca Mg Se
Crab	B ⁹ B ¹² E Ca Se	Oyster	B ⁹ B ¹² Fe Ca Mg Se

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Eggs and derivatives



FOOD	Indications	FOOD	Indications
Egg, chicken, yolk	A B⁶ B⁹ B¹² D E 	Egg, chicken, white	A B⁹ B¹² D   
Egg, chicken, boiled	A B⁹ B¹² D   	Egg, chicken, fried	 A B⁹ B¹² D  
Egg, quail	A B⁹ B¹² D   	Egg, scrambled, with butter	    A B⁹ B¹² D  

-  Allowed, adjusting the amounts and / or frequency
-  Allowed without raising the recommended quantities and / or frequency

-  Reduce the amount and / or frequency
-  Restrict, occasionally / in small quantities

Milk and derivatives



FOOD	Indications	FOOD	Indications
Soy Yoghurt	Ca B ⁹ Se FAT	Brie cheese	B ⁹ B ¹² Ca Se A B ⁶
Almond milk	B ⁹ D E Ca	Camembert cheese, 20-30% fidm	B ⁹ B ¹² Ca Se A B ⁶
Greek yoghurt, plain	B ¹² B ⁹ Ca Se FAT	Gouda cheese	B ⁹ B ¹² Ca Se A B ⁹ B ¹²
Coconut milk	D B ¹² Ca FAT	Yoghurt, skimmed, plain flavour	B ⁹ B ¹² D Ca
Milk, skimmed, pasteurized	B ⁹ B ¹² D Ca	Fresh cheese	A B ⁹ B ¹² D Ca Se
Kefir	A B ⁹ D Ca	Cheese Feta	A B ⁶ B ⁹ B ¹² Ca Se
Milk, semi-skimmed, pasteurized	B ⁹ B ¹² D Ca	Blue cheese	A B ⁹ B ¹² Ca Se
Cottage cheese	B ⁹ B ¹² Ca Se	Cheddar cheese	A B ⁹ B ¹² Ca Se
Milk	B ¹² D Ca	Mozzarella cheese	A B ⁹ B ¹² Ca Se
Goat's milk	B ⁹ D Ca	Parmesan cheese	A B ⁹ B ¹² Ca Se
Sheep's milk	B ⁹ Ca	Drinking yoghurt, plain, sweetened	B ⁹ B ¹² D Ca

■ Allowed, adjusting the amounts and / or frequency
■ Allowed without raising the recommended quantities and / or frequency

■ Reduce the amount and / or frequency
■ Restrict, occasionally / in small quantities

Milk and derivatives



FOOD	Indications	FOOD	Indications
Strawberry ice cream	B⁹ Ca	Yogurt, NS as to type of milk, fruit (contain jams)	B⁹ B¹² D Ca
Goat cheese, cured	A B⁹ Ca	Cream cheese spread, light	A B⁹ B¹² Ca
Emmental cheese	A Ca	Milk, semi-skimmed, dried	A B⁶ B⁹ B¹² D Ca Mg Se
Goat cheese, uncured	A B⁹ Ca	Dessert, custard pudding, vanilla, strained	B⁹ Ca
Roquefort cheese	A B⁹ Ca Se	Milk shake, chocolate	B⁹ Ca
Drinking Yoghurt, skimmed, plain	B⁹ Ca	Milk shake, flavors other than chocolate	Ca
Cheese, edam type	A B⁹ B¹² Ca Se	Milk, canned, condensed, sweetened	B⁹ B¹² Ca Se
Cream, half and half	B⁹ Ca	Chocolate mousse	A B⁹ B¹² Ca
Processed cheese, portions	A B⁹ B¹² D Ca Se	Cream ice cream	B⁹ B¹² Ca
Drinking Yoghurt, milk, with fruits	B⁹ D Ca	Chocolate ice cream	B⁹ Ca
Yoghurt, skimmed, with fruits	B⁹ B¹² D Ca		

Allowed, adjusting the amounts and / or frequency
 Allowed without raising the recommended quantities and / or frequency

Reduce the amount and / or frequency
 Restrict, occasionally / in small quantities

Oils and fats



FOOD	Indications	FOOD	Indications
Coconut oil		Soya, oil	E
Wheat germ oil	E	Pork lard	D
Sunflower oil	E	Walnut oil	
Extra virgin olive oil	E	Sesame oil	
Palm oil	E	Margarine, light	A B⁹ D E
Peanut oil	E	Mayonnaise light	B⁹ E
Rape oil	E	Butter with salt	A B⁹
Cod liver oil	A D	Butter, light	A B⁹
Flaxseed oil			

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Tubers and derivatives



FOOD	Indications	FOOD	Indications
Sweet potato	A B ⁹ Ca	Potato, boiled	B ⁹ B ⁶ C Ca
Potato, prefried, frozen	C B ⁹ Ca Se	Beetroot, canned	Ca B ⁹
Potato, cooked, fat added	B ⁶ B ⁹ C Ca Se	Potato, fried in unspecified oil, without salt	B ⁶ B ⁹ Ca FAT
Potato, roast	B ⁹ B ⁶ C Ca		

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Sauces and condiments



FOOD	Indications	FOOD	Indications
Mint, fresh	A B⁹ C 	Fennel	B⁹
Chili or hot pepper	B⁶ B⁹ C E	Garlic, powder	B⁶ B⁹
Parsley, fresh	A B⁹ C	Oregano, dried	B⁶ B⁹ E
Apple vinegar		Dill, dried	A B⁶ C
Wine vinegar		Sea salt	
White pepper	B⁹ C	Iodized salt	
Basil	A B⁹ C	Chili pepper, red	B⁶ B⁹ C
Sauce, peppers, hot, chili, mature red, canned	B⁹ C	Chili pepper, green	B⁶ B⁹ C
Ginger	B⁹	Bay, leaf	A B⁶ B⁹ C
Cinnamon, powder	B⁹ E	Black pepper	B⁶ B⁹
Rosemary	A B⁶ B⁹ C 	Soya, sauce	B⁹

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Sauces and condiments



FOOD	Indications	FOOD	Indications
Saffron	B⁶ B⁹ C Fe Ca Mg  	Vanilla	Ca  
Thyme, dried	 A B⁶ B⁹ C E Fe Ca Mg 	Balsamic vinegar	Ca  
Curry	 B⁹ E Fe Ca Mg Se 	Tomato chili sauce	B⁹ C E Ca  
Mustard	B⁹ Ca Se   	Peppers, hot chile, sun-dried	 A B⁶ B⁹ C E Fe Ca Mg   
Tahini	  B⁹ Fe Ca Mg Se  	Sweet and sour sauce	Ca B⁹  
Tabasco, sauce	B⁹  Ca 	Ketchup	B⁹ Ca   
Nutmeg	 B⁹ Fe Ca Mg 	Barbecue sauce	B⁹ Ca   
Pesto sauce	B⁹ E Ca Mg   	Paprika, powder	 A B⁶ B⁹ E Fe Ca Mg   
Curry sauce	 B⁹ E Ca   	Cheese sauce	     B⁹ Ca
Cumin	 B⁶ B⁹ E Fe Ca Mg   		

■ Allowed, adjusting the amounts and / or frequency
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■ Reduce the amount and / or frequency
■ Restrict, occasionally / in small quantities

Sugars and derivatives



FOOD	Indications	FOOD	Indications
Sugar, white		Chocolate, bitter, with almonds	B⁹ E Fe Ca Mg
Sugar, brown	Ca B⁹	Chocolate bitter, with sugar	B⁹ Fe Ca Mg
Honey	Ca B⁹	Chocolate with milk and almonds	 B⁹ B¹² E Ca Mg
Chewing gum		Chocolate paste with hazelnuts	B⁹ Fe Ca Mg
Jelly	Ca B⁹	Chocolate bar, type kit kat	B⁹ B¹² Ca
Marmalade, strawberry	Ca B⁹	White chocolate	B⁹ B¹² Ca
Marmalade, orange	Ca B⁹	Milk chocolate	B⁹ Fe Ca Mg
Liquorice	Ca	Chocolate, milk, with nuts, not almond or peanuts	B⁹ B¹² Fe Ca Mg
Soluble cocoa, with sugar, powder	B⁶ B⁹ C Ca	Chocolate	B⁹ Fe Ca Mg
Custard	B⁹ B¹² D Ca		

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Snacks



FOOD	Indications
Pop corn	 B⁶ B⁹ E Ca Mg  
Corn chips	 B⁹ E Ca Mg  

FOOD	Indications
Butter cookie	     A B⁹ Fe Ca Se

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Non-alcoholic beverages



FOOD	Indications	FOOD	Indications
Lemon juice, fresh	B⁹ C Ca	Coffee, substitute, instant	B⁶ B⁹ Fe Ca Mg Se
Tap water	Ca	Soluble coffee, powder	B⁹
Mineral water	Ca	Coffee, brewed	B⁹
Sparkling water, bottled	Ca	Orange juice	B⁶ B⁹ C
Coffee, seed or powder, decaffeinated		Blackcurrant juice	C Ca
Coffee, brewed, decaffeinated		Pineapple juice	B⁹ C Ca
Infusion, tea, herbal	B⁹	Soy milk	B¹² B⁹ D Ca FAT
Soft drink, carbonated, orange flavoured	Ca	Non-alcoholic beer	B⁹ Ca
Tomato, fresh juice	C B⁹ Ca FAT	Soft drink, tonic water type	
Carrot, fresh juice	A B⁶ B⁹ Ca	Carbonated drink, lemon	
Coffee, powder	Fe Ca Mg Se	Apple juice	Ca

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Non-alcoholic beverages



FOOD	Indications
Grapefruit juice	B ⁹ C Ca
Energy drink	B ¹² B ⁶ Ca
Cranberry juice	Ca C

FOOD	Indications
Fruit juice	Ca C
Lemonade	B ⁹

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities

Alcoholic beverages



FOOD	Indications	FOOD	Indications
Cognac		Vodka	
Gin		Whisky	
Rum		Sparkling wine, cava type	B⁹ Ca
Tequila		Beer, low alcohol	B⁹ Ca
White wine	B⁹ Ca	Sangria	B⁹ Ca
Wine, rose	B⁹ Ca	Fruit liqueur	
Red wine	B⁹ Ca		

- Allowed, adjusting the amounts and / or frequency
- Allowed without raising the recommended quantities and / or frequency

- Reduce the amount and / or frequency
- Restrict, occasionally / in small quantities



How to customize your diet

- Choose food to replace
- Look at the food table of the selected food group
- See the recommended amount of the new food in the Food equivalences
- Replace the food selected by an equivalent that has a higher score
- Continue enjoying your Fagron Nutrigen™ plan and be constant

You can do it.





1. Morphological genetics in overweight predisposition

Genetic risk of overweight/obesity - MEDIUM-HIGH RISK -



ABOUT

Key genetic predisposition genes to obesity and weight gain are analysed. Obesity is influenced by the interplay between external factors (such as diet and/or physical activity) and is highly linked to individual genetics. Genetics highly determine how the body processes or metabolizes fats and/or nutrients. Therefore, understanding our own genetics is important to control obesity and as a key weight reduction tool.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
MC4R-1	rs2229616	CC	HIGH	Higher risk of obesity. High predisposition to increased glycosylated hemoglobin (increased risk of type 2 diabetes) and decreased HDL-cholesterol levels.
SH2B1-2	rs7498665	AA	LOW	Normal risk of obesity.
FTO-1	rs9939609	AT	MEDIUM	Predisposition to obesity, related to insulin resistance, hyperphagia, and increased risk of type 2 diabetes.
FTO-2	rs1121980	AG	MEDIUM	Increased risk of obesity related with insulin resistance, hyperphagia, and increased risk of type 2 diabetes.
MC4R-2	rs17700633	AG	MEDIUM	Increased risk of obesity and type 2 diabetes.

INDICATIONS



LOW RISK

Reduced risk of obesity due to inherited genetic factors.



MEDIUM-LOW RISK

Medium-low risk of obesity due to inherited genetic factors.



MEDIUM-HIGH RISK

Medium-high risk of obesity due to inherited genetic factors. Other factors such as intake due to anxiety or low satiety may explain excess weight.



HIGH RISK

High risk of obesity due to inherited genetic factors. Other factors such as intake due to anxiety or low satiety may explain excess weight.



1. Morphological genetics in overweight predisposition

Risk of rebound weight gain - HIGH REBOUND EFFECT -



ABOUT

Individuals with certain genetic variants of the ADIPOQ gene were found to be more susceptible to regain weight after weight loss interventions (rebound effect).

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
ADIPOQ	rs17300539	GG	HIGH	Predisposition to regain weight after dieting.

INDICATIONS



LOW REBOUND EFFECT

Low risk of rebound weight after diet interventions. Normal weight loss capacity.



MEDIUM-LOW REBOUND EFFECT

Medium-low risk of rebound weight after diet interventions. Normal weight loss capacity.



MEDIUM-HIGH REBOUND EFFECT

Medium-high risk of rebound weight after diet interventions. Lower weight loss capability than normal during interventions.



HIGH REBOUND EFFECT

High risk of rebound weight after diet interventions. Lower weight loss capability than normal during interventions. It will require an extra effort to loose weight and keep it off afterwards.



1. Morphological genetics in overweight predisposition

Risk of increased BMI - MEDIUM-LOW RISK -



ABOUT

The predisposition to increase waist circumference and body mass index (BMI) is analyzed. BMI is used to determine whether an individual is in a healthy weight range for the correspondent height. It is useful to consider BMI alongside waist circumference, as waist measurement helps to assess risk by measuring the amount of fat carried around the middle.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
MC4R-3	rs12970134	AG	MEDIUM	Increased risk of increased BMI, increased waist circumference, and insulin resistance.
MC4R-4	rs17782313	TC	MEDIUM	Increased risk of increased BMI, increased waist circumference, and insulin resistance.
SH2B1-1	rs4788102	GG	LOW	Normal risk of increased BMI.

INDICATIONS



LOW RISK

Reduced risk of increased BMI, waist circumference and insulin resistance due to genetics.



MEDIUM-LOW RISK

Medium-low risk of increased BMI, waist circumference and insulin resistance due to genetics.



MEDIUM-HIGH RISK

Medium-high risk of increased BMI, waist circumference and insulin resistance due to genetics.



HIGH RISK

High risk of increased BMI, waist circumference and insulin resistance due to genetics.



1. Morphological genetics in overweight predisposition

Basal metabolic rate (burn calories at rest)

- HIGH BURNER -



ABOUT

The predisposition to an increase/decrease in energy expenditure while resting is analysed. Some people have a higher tendency than others to expend less energy when not performing any physical activity, which supports weight gain.

MARKER	LOCUS	VARIANT	METABOLISM	DESCRIPTION
FABP2	rs1799883	CC	HIGH	Predisposition to normal resting metabolic rate.
LEPR-4	rs2025804	AA	HIGH	Predisposition to normal resting metabolic rate.

INDICATIONS



HIGH BURNER

HIGH ENERGY/CALORIE BURNING CAPACITY AT REST



MEDIUM-HIGH BURNER

MEDIUM-HIGH CAPACITY TO BURN ENERGY/CALORIES AT REST



MEDIUM-LOW BURNER

MEDIUM-LOW CAPACITY OF ENERGY/CALORIE BURNING AT REST



LOW BURNER

LOW ENERGY/CALORIE BURNING CAPACITY AT REST



1. Morphological genetics in overweight predisposition

Weight loss capability during diet interventions - NORMAL WEIGHT LOSS -



ABOUT

The predisposition to an increase/decrease in weight loss during diet interventions is analysed. Some people have a higher tendency than others to lose weight when they follow a diet intervention. Lower capabilities will imply a longer time to accomplish the goals and would require a stricter intervention.

MARKER	LOCUS	VARIANT	CAPABILITY	DESCRIPTION
ACSL5	rs2419621	TC	MEDIUM	Predisposition to slower diet-induced weight loss.

INDICATIONS



RAPID WEIGHT LOSS

Diet interventions should be successful due to a higher capability to reduce weight while on diet.



NORMAL WEIGHT LOSS

Diet interventions should be successful due to a normal capability to reduce weight while on diet. However it may take a minimum of 3-6 months to be effective.



SLIGHTLY SLOW WEIGHT LOSS

Standard diet interventions could not be successful due to a low capability to reduce weight while on diet. Specialized treatments would be recommended.



SLOW WEIGHT LOSS

Diet interventions should contain a complete approach for the patient, both nutritional and psychological, due to the lower capability to reduce weight while on diet. Specialised treatments will be recommended.



2. Behavioural genetics in food intake

Appetite and anxiety risk

- NORMAL -



ABOUT

Genetic variations affecting appetite and anxiety related to eating are analysed. Appetite is a phenomenon created by our nervous system which results in a desire to eat, either by necessity or by pleasure, and in which external factors (such as odors, flavours, appearance and presentation of food) are involved. It has been seen in numerous studies that the appetite or desire to eat can also have genetic causes that can determine inhibition of intake or reduced feeling of being full. Anxiety related to food intake can be caused by periods of stress, but it has also been seen that there is an important genetic component that makes us more prone to anxiety and translates into compulsive eating more easily. The main parameters related to genetic predisposition to deregulated levels of appetite and anxiety in food intake, increased risk of obesity, increased food intake and reduced fullness are analysed below. Knowing how these genetic processes affect your diet allows proper handling of meals.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
COMT	rs4680	GA	MEDIUM	Increased risk of overeating.
NMB	rs1051168	GG	LOW	Normal risk of eating disinhibition.
DRD2-1	rs1800497	GG	LOW	No predisposition to emotional eating.
MC4R-1	rs2229616	CC	HIGH	Predisposition to binge eating.
DRD2-2	rs6277	AG	LOW	No predisposition to binge eating.

INDICATIONS



NORMAL

Normal or well-balanced regulation of appetite and eating-related anxiety.



SLIGHTLY INCREASED

Medium-low dysregulation of the appetite, leading to some levels of anxiety affecting food intake.



INCREASED

Medium-high dysregulation of the appetite, leading to elevated levels of anxiety affecting food intake. Appetite suppressants may be helpful.



HIGHLY INCREASED

High dysregulation of the appetite, leading to high levels of anxiety affecting food intake. Appetite suppressants may be required and possibly anxiolytic prescription upon medical decision.



2. Behavioural genetics in food intake

Satiety: Feeling Full - SLIGHTLY LOWER SATIETY -



ABOUT

The perception of feeling full and satisfied after food intake is different within individuals. This is particularly important as the longer it takes to reach this feeling, the more food intake will occur, contributing to weight gain.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
FTO-1	rs9939609	AT	MEDIUM	Slight predisposition to diminished satiety. Increased risk of obesity.

INDICATIONS



NORMAL SATIETY

Normal perception of satiety after eating, activated after 15-20 minutes of the start of the meal.



SLIGHTLY LOWER SATIETY

Slightly reduced perception of satiety after eating a meal. Try to eat slower to allow the satiety center to be activated.



LOWER SATIETY

Reduced perception of satiety after eating a meal. Eat slower to allow the satiety center to be activated.



VERY LOW SATIETY

Very low perception of satiety after eating a meal. Eat very slow to allow the satiety center to be activated. Incorporate satiating food in your daily diet.



3. Efficacy of exercise

Benefits from endurance exercise for improving HDL levels - VERY LOW EXPECTED BENEFITS FROM EXERCISE -



ABOUT

The predisposition to improving the HDL cholesterol levels via exercising is analysed. The expected efficacy of exercise on cholesterol regulation differs between individuals and is highly dependant on your genetics.

MARKER	LOCUS	VARIANT	BENEFIT	DESCRIPTION
PPARD	rs2016520	TT	LOW	No predisposition to increase HDL cholesterol levels in response to endurance exercise.

INDICATIONS



HIGH EXPECTED BENEFITS FROM EXERCISE

Exercise will be strongly beneficial for cholesterol regulation (HDL increase).



MEDIUM-HIGH EXPECTED BENEFITS FROM EXERCISE

Exercise will be beneficial for cholesterol regulation (HDL increase).



MEDIUM-LOW EXPECTED BENEFITS FROM EXERCISE

Exercise alone will not be enough for cholesterol regulation.



VERY LOW EXPECTED BENEFITS FROM EXERCISE

Exercise alone will not be enough for cholesterol regulation.



3. Efficacy of exercise

Exercise to reduce body fat - MEDIUM-HIGH EXPECTED BENEFIT FROM EXERCISE -



ABOUT

The efficacy of physical activity to reduce body fat is different among all of us and the cause is mainly genetic. This is the reason why some people, even exercising daily tend to lose less weight than others exercising a couple of times a week. In this category, the genes related to the efficacy of exercise to reduce body fat are analysed.

MARKER	LOCUS	VARIANT	BENEFIT	DESCRIPTION
FTO-1	rs9939609	AT	MEDIUM	Slight predisposition to lose fat during physical exercise.
FTO-2	rs1121980	AG	MEDIUM	Predisposition to lose fat slowly during physical exercise.
LIPC	rs1800588	CC	LOW	No predisposition to benefit from physical exercise to increase HDL cholesterol levels.
LEP	rs7799039	GG	HIGH	Predisposition to low response to exercise-induced fat loss.

INDICATIONS



HIGH EXPECTED BENEFIT FROM EXERCISE

An exercise strategy will be a very good option for weight loss. Exercise 3-4 times per week at medium-high intensity will be beneficial for slimming. Introduce also some diet restrictions.



MEDIUM-HIGH EXPECTED BENEFIT FROM EXERCISE

An exercise strategy may be a good option for weight loss. Exercise 2-3 times per week at medium-high intensity will be beneficial for slimming. Also introduce some diet restrictions.



MEDIUM-LOW EXPECTED BENEFIT FROM EXERCISE

An exercise strategy may not be the best option for weight loss. Rather introduce diet restrictions and institute healthy sport-related habits (walking, swimming at low intensity).



VERY LOW EXPECTED BENEFIT FROM EXERCISE

An exercise strategy may not be the best option for weight loss. Rather introduce diet restrictions and institute healthy sport-related habits (walking, swimming at low intensity).



4. Fat metabolism

Response to monounsaturated fats (MUFAs) - VERY LOW MUFA METABOLISM -



ABOUT

The predisposition to a higher/lower capacity to metabolize monounsaturated fatty acids (MUFAs) is analysed. MUFAs are a class of fatty acids found in foods such as olive oil, nuts and avocados. The beneficial effects of MUFAs on cardiovascular disease risk and blood lipid profiles have been extensively studied: dietary MUFAs decrease oxidized LDL, LDL cholesterol, total cholesterol, and triglyceride concentrations, without the concomitant decrease in HDL typically seen with low-fat diets.

MARKER	LOCUS	VARIANT	METABOLISM	DESCRIPTION
ADIPOQ	rs17300539	GG	LOW	No predisposition to reduce BMI and decrease obesity risk in response to monounsaturated fatty acids (MUFA) intake.

INDICATIONS



FAST MUFA METABOLISM

Normal capability of burning monounsaturated fat (MUFA). Increased capability to intake and metabolize MUFA with low weight gain.



MEDIUM MUFA METABOLISM

Medium capability of burning monounsaturated fat (MUFA). MUFA intake may lead to low weight gain unless a high-fat diet is followed.



LOW MUFA METABOLISM

Low capability of burning monounsaturated fat (MUFA). Direct correlation of high-MUFA intake and weight gain due to fat accumulation.



VERY LOW MUFA METABOLISM

Very low capability of burning monounsaturated fat (MUFA). Direct correlation on high-MUFA intake and weight gain due to fat accumulation.



4. Fat metabolism

Response to polyunsaturated fats (PUFAs) - FAST PUFA METABOLISM -



ABOUT

The predisposition to a higher/lower capacity to metabolize polyunsaturated fatty acids (PUFA) and to improve the lipidic profile (decreased LDL-levels) with PUFA intake is analysed. Polyunsaturated fatty acids are necessary to build cell membranes and nerve coverings as well as for proper blood clotting, muscle movement and inflammation. There are two main types of polyunsaturated fats: omega-3 fatty acids and omega-6 fatty acids. Both types provide health benefits.

MARKER	LOCUS	VARIANT	METABOLISM	DESCRIPTION
PPAR-Y	rs1801282	CC	HIGH	Predisposition to improve lipid profile (LDL and total cholesterols) and reduce BMI in response to a PUFA-rich diet.
FADS1	rs174547	CT	MEDIUM	Age-related predisposition to slightly reduced PUFA biosynthetic capacity and lower plasma omega 3 concentration.

INDICATIONS



FAST PUFA METABOLISM

Normal capability of burning polyunsaturated fat (PUFA). Increased capability to intake and metabolize PUFA with low weight gain. Improved lipidic profiles with PUFA intake.



MEDIUM PUFA METABOLISM

Medium capability of burning polyunsaturated fat (PUFA). PUFA intake may lead to low weight gain unless a high-fat diet is followed. Improved lipidic profiles with PUFA intake.



LOW PUFA METABOLISM

Low capability of burning polyunsaturated fat (PUFA). Direct correlation of high-PUFA intake and weight gain due to fat accumulation.



VERY LOW PUFA METABOLISM

Very low capability of burning polyunsaturated fat (PUFA). Direct correlation of high-PUFA intake and weight gain due to fat accumulation.



4. Fat metabolism

Response to fat intake to improve the HDL levels - VERY LOW EXPECTED BENEFITS -



ABOUT

The predisposition to have increased or reduced levels of HDL is analyzed according to the genetic situation of liver lipases. With this category, we understand if a low fat diet is a good strategy to regulate cholesterol levels.

MARKER	LOCUS	VARIANT	METABOLISM	DESCRIPTION
LIPC	rs1800588	CC	LOW	No predisposition to improve HDL cholesterol levels in response to low fat diet.

INDICATIONS



HIGH EXPECTED BENEFITS

A low fat diet will be of great help in increasing HDL levels.



MEDIUM-HIGH EXPECTED BENEFITS

A low fat diet will be a good support to increase HDL levels.



MEDIUM-LOW EXPECTED BENEFITS

Low fat diet will not be enough to increase HDL levels.



VERY LOW EXPECTED BENEFITS

Low fat diet will not be enough to increase HDL levels.



5. Carbohydrate metabolism

Capability to digest starchy food - REDUCED STARCH DIGESTION -



ABOUT

The capability to break down starch from food is analysed. Amylase is an enzyme that catalyzes the hydrolysis of starch into sugars. Amylase is present in the saliva of humans and some other mammals, where it begins the chemical process of digestion. When starch is not properly processed, its consumption must be reduced in a diet plan.

MARKER	LOCUS	VARIANT	CAPABILITY	DESCRIPTION
AMY1-AMY2	rs11577390	CC	LOW	No predisposition to increased expression of the amylase gene.
AMY1	rs4244372	TT	HIGH	Predisposition to increased expression of the amylase gene which is likely to enable more efficient starch digestion.

INDICATIONS



INCREASED STARCH DIGESTION

Increased capability to digest starch from food due to an increase in the expression and the activity of amylase enzyme. It is known that reducing calories will be beneficial.



MEDIUM STARCH DIGESTION

Moderate capability to digest starch from food due to an increase in the expression and the activity of amylase enzyme. It is known that reducing calories will be beneficial.



REDUCED STARCH DIGESTION

Reduced capability to digest starch in food due to a decrease in amylase enzyme activity. It would be beneficial to decrease starch intake.



HIGHLY REDUCED STARCH DIGESTION

Highly reduced capability to digest starch in food due to a decrease in amylase enzyme activity. It would be beneficial to decrease starch intake.



5. Carbohydrate metabolism

Refined carbohydrate sensitivity - VERY HIGH CARBOHYDRATE SENSITIVITY -



ABOUT

Carbohydrate consumption initially produces a slight euphoria, followed by a sugar low, this is then replaced by tiredness. This adverse feeling causes a desire to snack more, perpetuating this unhealthy cycle, without ever feeling satisfied. In carbohydrates sensitive people the carbohydrate-insulin-serotonin connection has malfunctioned, or become desensitised and the amount of calories extracted by the consumption of refined carbohydrates is higher than average, also due to a continuous increase of its consumption.

MARKER	LOCUS	VARIANT	SENSITIVITY	DESCRIPTION
FABP2	rs1799883	CC	HIGH	Predisposition to increased sensitivity to refined carbohydrates.

INDICATIONS



NORMAL CARBOHYDRATE SENSITIVITY

Normal calorie extraction from carbohydrate consumption.



MEDIUM CARBOHYDRATE SENSITIVITY

Moderate calorie extraction from carbohydrate consumption. Medium risk of weight gain.



HIGH CARBOHYDRATE SENSITIVITY

Increased calorie extraction from carbohydrate consumption. Higher risk of weight gain.



VERY HIGH CARBOHYDRATE SENSITIVITY

Highly increased calorie extraction from carbohydrate consumption. Very high risk of weight gain.



5. Carbohydrate metabolism

Carbohydrates and HDL levels predisposition - HIGH RISK OF DYSREGULATION -



ABOUT

Carbohydrate intake has an implication on the regulation of cholesterol levels. We analyse the predisposition to increase or decrease the HDL cholesterol levels depending on carbohydrate intake.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
KCTD10	rs10850219	GG	HIGH	Predisposition to reduce HDL cholesterol levels in response to a carbohydrate-rich diet.

INDICATIONS



LOW RISK OF DYSREGULATION

High carbohydrate consumption will not lead to a cholesterol dysregulation.



MEDIUM-LOW RISK OF DYSREGULATION

High carbohydrate consumption may lead to slightly increased LDL and decreased HDL levels.



MEDIUM-HIGH RISK OF DYSREGULATION

High carbohydrate consumption will lead to increased LDL and decreased HDL levels.



HIGH RISK OF DYSREGULATION

High carbohydrate consumption will lead to highly increased LDL and decreased HDL levels.



5. Carbohydrate metabolism

Carbohydrates and LDL levels - LOW RISK OF DYSREGULATION -



ABOUT

Effect of carbohydrate intake in the regulation of cholesterol levels.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
MMAB	rs2241201	CC	LOW	No predisposition to increase LDL cholesterol levels in response to high intake of carbohydrates.

INDICATIONS



LOW RISK OF DYSREGULATION

High carbohydrate consumption will not lead to cholesterol dysregulation.



MEDIUM-LOW RISK OF DYSREGULATION

High carbohydrate consumption will lead to very slight increased LDL and decreased HDL levels.



MEDIUM-HIGH RISK OF DYSREGULATION

High carbohydrate consumption will lead to increased LDL and decreased HDL levels.



HIGH RISK OF DYSREGULATION

High carbohydrate consumption will lead to highly increased LDL and decreased HDL levels.



6. Lipid metabolism

Predisposition to reduced HDL levels - REDUCED HDL LEVELS -



ABOUT

Although environmental factors play a role, variation in HDL levels are at least 50% genetically determined. In this category the main genes involved in the predisposition to higher or lower HDL levels are analysed.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
APOA5	rs662799	AA	LOW	Predisposition to normal levels of HDL cholesterol.
CETP	rs5883	CC	HIGH	Predisposition to decreased HDL cholesterol levels.

INDICATIONS



NORMAL HDL LEVELS

Normal regulation of HDL levels. No increased risk of cardiovascular risk.



SLIGHTLY DECREASED HDL LEVELS

Slightly lower HDL levels leading to increased cardiovascular risk.



REDUCED HDL LEVELS

Lower HDL levels leading to increased cardiovascular risk.



HIGLY REDUCED HDL LEVELS

Very low HDL levels leading to increased cardiovascular risk.



6. Lipid metabolism

Predisposition to increased levels of triglycerides - HIGHLY INCREASED TRIGLYCERIDES -



ABOUT

Triglycerides are a type of fat (lipid) found in your blood. When you eat, your body converts any calories it doesn't need to use right away into triglycerides. The triglycerides are stored in your fat cells. Later, hormones release triglycerides for energy between meals. If you regularly eat more calories than you burn, particularly from high-carbohydrate foods, you may have high triglycerides (hypertriglyceridemia). In this category we analyse the genes related to the predisposition of having increased levels of triglycerides.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
PPAR-Y	rs1801282	CC	HIGH	Predisposition to increased levels of triglycerides.

INDICATIONS



TRIGLYCERIDES NOT INCREASED

No predisposition to increased triglyceride levels.



SLIGHTLY INCREASED TRIGLYCERIDES

Slight predisposition to increased triglyceride levels.



INCREASED TRIGLYCERIDES

Medium-high predisposition to increased triglyceride levels.



HIGHLY INCREASED TRIGLYCERIDES

High predisposition to increased triglyceride levels



6. Lipid metabolism

Predisposition to increased oxidation of LDL

- SLIGHTLY INCREASED LDL OXIDATION -



ABOUT

Oxidized low-density lipoprotein (LDL) is a harmful type of cholesterol that is produced in your body when normal LDL cholesterol is damaged by chemical interactions with free radicals. These, and a related series of inflammatory responses can result in atherosclerosis, which is the hardening of the arteries. The resulting decrease in blood flow in your arteries increases your chances of having a heart attack or a stroke. You can produce high levels of oxidized LDL if you have excessive free radical formation or simply high LDL cholesterol levels. In this category, the genes related to an increased predisposition to oxidize LDL are analysed.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
APOB-2	rs676210	AG	MEDIUM	Predisposition to increased LDL oxidation.

INDICATIONS



NOT INCREASED LDL OXIDATION
Normal LDL oxidation.



SLIGHTLY INCREASED LDL OXIDATION
Moderate increase in the LDL oxidation. Increased risk of atherosclerosis.



INCREASED LDL OXIDATION
Increased LDL oxidation. Increased risk of atherosclerosis. Strategies for reducing LDL levels would be recommended.



HIGHLY INCREASED LDL OXIDATION
Highly increased LDL oxidation and risk of atherosclerosis. Intense strategies for reducing LDL levels should be initiated.



6. Lipid metabolism

Risk of increased cholesterol LDL levels

- SLIGHTLY INCREASED LDL LEVELS -



ABOUT

Low-density lipoprotein (LDL) is one of the five major groups of lipoprotein which transport all fat molecules around the body in extracellular water. LDL delivers fat molecules to cells. LDL can contribute to atherosclerosis if it is oxidized within the walls of arteries. In this category, the genes related to the risk of having increased cholesterol LDL levels in your body are analysed.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
CELSR2	rs12740374	GT	MEDIUM	Increased predisposition to lower LDL cholesterol levels.
HNF1A	rs2650000	AC	MEDIUM	Predisposition to slightly increased LDL cholesterol levels.
LDLR	rs6511720	GG	HIGH	High risk of increased LDL cholesterol levels.
ABCG8	rs6544713	CC	LOW	High risk of increased LDL cholesterol levels.

INDICATIONS



NOT INCREASED LDL LEVELS

Lower risk of high LDL levels



SLIGHTLY INCREASED LDL LEVELS

Moderate risk of high LDL levels



INCREASED LDL LEVELS

High risk of high LDL levels.



HIGHLY INCREASED LDL LEVELS

Very high risk of high LDL levels.



6. Lipid metabolism

Risk of unbalanced Triglycerides/HDL ratio

- SLIGHTLY INCREASED TG/HDL RATIO -



ABOUT

The predisposition to an unbalanced Triglyceride/HDL cholesterol (TG/HDL-C) ratio is analysed. High TG/HDL ratio has been identified as a risk factor for cardiovascular (CV) diseases.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
HMGR	rs3846663	CT	MEDIUM	Predisposition to slightly higher triglyceride (TG) levels, and increased TG/HDL cholesterol ratio.

INDICATIONS



NORMAL TG/HDL RATIO

Not associated with increased TG/HDL ratio.



SLIGHTLY INCREASED TG/HDL RATIO

Slightly associated with increased TG/HDL ratio.



INCREASED TG/HDL RATIO

Increased TG/HDL ratio leads to a highly increased risk of cardiovascular pathologies. Risk of insulin insensitivity.



HIGHLY INCREASED TG/HDL RATIO

A very high TG/HDL ratio leads to a highly increased risk of cardiovascular pathologies. Risk of insulin insensitivity.



7. Glucose metabolism

Risk of increased glucose levels in plasma after fasting

- MEDIUM-HIGH RISK OF HIGH GLUCOSE LEVELS

-



ABOUT

Fasting blood sugar levels give vital clues about how a person's body is managing blood sugar. Blood sugar tends to peak about an hour after eating and declines after that. High fasting blood sugar levels point to insulin resistance or diabetes. In this category, the genes related to the predisposition to an increased level of glucose after fasting are analysed, helping to understand how the body manages sugar.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
PLIN1	rs2289487	TT	LOW	Predisposition to normal plasma glucose levels after fasting.
GHSR	rs490683	GG	HIGH	High risk of increased plasma glucose levels after fasting.

INDICATIONS



LOW RISK OF HIGH GLUCOSE LEVELS
Normal fasting plasma glucose levels. No increased risk of Type-II diabetes.



MEDIUM-LOW RISK OF HIGH GLUCOSE LEVELS
Normal or slightly increased fasting plasma glucose levels. No increased risk of Type-II diabetes.



MEDIUM-HIGH RISK OF HIGH GLUCOSE LEVELS
Increased fasting plasma glucose levels. Increased risk of Type-II diabetes.



HIGH RISK OF HIGH GLUCOSE LEVELS
High risk of Increased fasting plasma glucose levels. Increased risk of Type-II diabetes.



7. Glucose metabolism

Risk of insulin resistance - HIGH INSULIN RESISTANCE -



ABOUT

Insulin resistance (also called metabolic syndrome) is when cells in your muscles, fat, and liver don't respond well to insulin and can't use glucose from your blood for energy. To make up for it, your pancreas makes more insulin. Over time, your blood sugar levels go up. Insulin resistance syndrome includes a group of problems like obesity, high blood pressure, high cholesterol, and Type-II diabetes. In this category the genetic predisposition towards a higher risk of insulin resistance is analysed.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
PPAR-Y	rs1801282	CC	HIGH	High predisposition to insulin resistance.
ADIPOQ	rs17300539	GG	HIGH	High predisposition to insulin resistance.
TCF7L2-2	rs7903146	TT	HIGH	High predisposition to insulin resistance.
FTO-1	rs9939609	AT	MEDIUM	Increased predisposition to insulin resistance.
FTO-2	rs1121980	AG	MEDIUM	Increased predisposition to insulin resistance.

INDICATIONS



LOW INSULIN RESISTANCE

Low inherited risk of insulin resistance



MEDIUM-LOW INSULIN RESISTANCE

Medium-low inherited risk of insulin resistance



MEDIUM-HIGH INSULIN RESISTANCE

Medium-high inherited risk of insulin resistance



HIGH INSULIN RESISTANCE

High inherited risk of insulin resistance



7. Glucose metabolism

Risk of Type-II diabetes

- MEDIUM-HIGH DIABETES TYPE-II RISK -



ABOUT

Type-II diabetes mellitus (T2DM) is caused by complex interplay between multiple genetic and environmental factors. In this category, a complete analysis of the main genetic variants related to an increase in the risk of developing Type-II diabetes is analysed.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
PPAR-Y	rs1801282	CC	HIGH	Increased risk of diabetes type 2.
PLIN1	rs2289487	TT	LOW	Normal risk of type 2 diabetes.
TCF7L2-2	rs7903146	TT	HIGH	High risk of diabetes type 2.
FTO-1	rs9939609	AT	MEDIUM	Increased risk of diabetes type 2.
MC4R-2	rs17700633	AG	MEDIUM	Slight predisposition to obesity increasing the risk of type 2 diabetes.
CDKN2A/B	rs10811661	CC	LOW	Normal risk of type 2 diabetes.
KCNQ1	rs2237892	CC	HIGH	Increased risk of type 2 diabetes.
CDKN2A, CDKN2B	rs2383208	GG	LOW	Normal risk of type 2 diabetes.
CDKAL1	rs7756992	AA	LOW	Normal risk of type 2 diabetes.
TCF7L2-1	rs7901695	CC	HIGH	Increased risk of type 2 diabetes.

INDICATIONS



LOW DIABETES TYPE-II RISK
Normal diabetes type-II risk.



MEDIUM-LOW DIABETES TYPE-II RISK
Medium-low risk of developing type-II diabetes.



MEDIUM-HIGH DIABETES TYPE-II RISK
Medium-high risk of developing type-II diabetes.



HIGH DIABETES TYPE-II RISK
High risk of developing type-II diabetes.



8. Flavour sensitivities

Bitter taste sensitivity

- NORMAL -



ABOUT

Sensitivity to bitter flavours is deeply linked to genetics. A high sensitivity to bitter flavours is usually linked to increased salt consumption. Therefore there is a higher predisposition to cardiovascular risks when extra salt is consumed intending to mask the bitter flavours.

MARKER	LOCUS	VARIANT	SENSITIVITY	DESCRIPTION
TAS2R38-1	rs1726866	AG	NORMAL	Predispositon to normal sensitivity to bitter taste.
TAS2R38-2	rs713598	GC	NORMAL	Predispositon to normal sensitivity to bitter taste.

INDICATIONS



NORMAL

Normal or decreased sensitivity to bitter flavours. No extra salt should be consumed for this reason.



SLIGHTLY INCREASED

Slightly increased sensitivity to bitter flavours. No extra salt should be consumed for this reason.



INCREASED

Increased sensitivity to bitter flavours. Try to minimize bitter-tasting food, since it may lead to an increased consumption of salt.



HIGHLY INCREASED

High sensitivity to bitter flavours. Try to avoid bitter-tasting food, since it may lead to an increased consumption of salt.



8. Flavour sensitivities

Salt sensitivity

- MEDIUM-LOW SALT SENSITIVITY -



ABOUT

Salt sensitivity is defined as a physiological trait by which blood pressure shows changes parallel to changes in salt intake. In many individuals, when salt intake increases, the excess amount is excreted by the way of kidney or sweat. However, there are some individuals where this mechanism is faulty and increased salt is retained and manifests as high blood pressure.

MARKER	LOCUS	VARIANT	SENSITIVITY	DESCRIPTION
ACE	rs4343	AG	MEDIUM2	Predisposition to increased salt sensitivity associated with increased risk of salt sensitive hypertension.

INDICATIONS



LOW SALT SENSITIVITY

Normal salt sensitivity: no increased blood pressure risk due to salt consumption.



MEDIUM-LOW SALT SENSITIVITY

Slightly increased salt sensitivity: moderately increased blood pressure risk due to salt consumption.



MEDIUM-HIGH SALT SENSITIVITY

Increased salt sensitivity: increased blood pressure risk due to salt consumption. Reduce current salt consumption, if daily intake is high.



HIGH SALT SENSITIVITY

High salt sensitivity: high blood pressure risk due to salt consumption. Reduce current salt consumption, if daily intake is high.



8. Flavour sensitivities

Sweet flavour preference

- NORMAL -



ABOUT

Increased desire to eat sweet food due to an incapacity of tasting sweet flavours.

MARKER	LOCUS	VARIANT	SENSITIVITY	DESCRIPTION
SLC2A2	rs5400	GG	HIGH	No predisposition for preferring sugar-containing foods.

INDICATIONS



NORMAL

Normal taste of sweet flavour. No excess sugar intake should be required.



SLIGHTLY INCREASED

Slight incapacity to taste sweet flavours. This will lead to an increase in sugar consumption and obesity risk.



INCREASED

Incapacity to taste sweet flavours. This will lead to an increase in the sugar consumption and obesity risk. Consider using artificial sweeteners in your diet.



HIGHLY INCREASED

Major incapacity to taste sweet flavours. This will lead to an increase in the sugar consumption and obesity risk. Consider using artificial sweeteners in your diet.



9. Detoxification imbalances

Antioxidant capability

- NORMAL ANTIOXIDANT CAPABILITY -



ABOUT

The balance between production and clearance of reactive oxygen species (ROS) is essential for cell survival. Antioxidant cellular systems evolved to maintain a redox homeostasis under different physiological and pathological conditions. Therefore, understanding the status of the antioxidant mechanisms is a key factor for health improvement. The main genes involved in the human antioxidant capability are analysed in this category, allowing us to understand whether we need extra help via specific supplementation or if our internal antioxidant mechanisms work properly.

MARKER	LOCUS	VARIANT	CAPABILITY	DESCRIPTION
GPX1	rs1050450	GG	HIGH	Predisposition to normal hydrogen peroxide detoxification.
NQO1	rs1800566	GG	HIGH	Predisposition to normal NQO1 activity.
COMT	rs4680	GA	MEDIUM	Predisposition to slightly reduced COMT enzyme activity resulting in a less efficient inactivation of neurotransmitters and catecholestrogens.
SOD2	rs4880	GA	HIGH	Predisposition to normal hydrogen peroxide detoxification.
CYP1B1	rs1056836	GG	LOW	Predisposition to high CYP1B1 activity which could result in accumulation of carcinogenic products.
CYP1A1-2	rs1048943	TT	HIGH	Predisposition to normal CYP1A1 enzyme activity.
GSTP1	rs1695	AA	HIGH	Predisposition to normal GSTP1 activity.

INDICATIONS



NORMAL ANTIOXIDANT CAPABILITY

Normal capacity of metabolizing free radicals and cellular toxins.



SLIGHTLY REDUCED ANTIOXIDANT CAPABILITY

Slightly reduced capability of metabolizing free radicals and cellular toxins.



REDUCED ANTIOXIDANT CAPABILITY

Reduced capability of metabolizing free radicals and cellular toxins. Increased risk of cellular damage. Prescribe supplementation as suggested at gene level.



LOW ANTIOXIDANT CAPABILITY

Low capability of metabolizing free radicals and cellular toxins. High risk of cellular damage. Prescribe supplementation as suggested at gene level.



Calcium malabsorption risk - LOW RISK OF CALCIUM MALABSORPTION -



ABOUT

Calcium dissolves in the stomach and is absorbed through the lining of the small intestine into the blood stream. Once in the blood stream, calcium builds bone, regulates the expansion and contraction of the blood vessels, and performs other important functions. Common factors for calcium malabsorption are a diet high in phytic acid (present in wholegrains), high levels of sodium intake, smoking and also genetic factors related to Vitamin D. In this category, the genetic factors related to a predisposition to calcium malabsorption due to lower levels of 25(OH) D (Vitamin D) are analysed. Therefore, a high risk of malabsorption would require an increase in vitamin D consumption or even controlled supplementation.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
CYP2R1-1	rs10766197	AG	MEDIUM	Predisposition to slightly reduced vitamin D levels and calcium absorption.
GC	rs2282679	TT	LOW	Predisposition to normal vitamin D levels and calcium absorption.

INDICATIONS



LOW RISK OF CALCIUM MALABSORPTION

Low inherited risk of calcium malabsorption.



MEDIUM-LOW RISK OF CALCIUM MALABSORPTION

Medium-low inherited risk of calcium malabsorption.



MEDIUM-HIGH RISK OF CALCIUM MALABSORPTION

Medium-high inherited risk of calcium malabsorption.



HIGH RISK OF CALCIUM MALABSORPTION

High inherited risk of calcium malabsorption.



Predisposition to dysregulated calcium levels - NO ADDITIONAL RISK OF DYSREGULATED PLASMA CALCIUM LEVELS -



ABOUT

The predisposition to low or high levels of plasma calcium are analyzed in this category. A predisposition to high levels of calcium and increased absorption would be a warning against calcium supplementation due to the potential increased risk of vascular calcification.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
DGKD	rs1550532	GG	LOW	Predisposition to normal serum levels of calcium.
CYP24A1	rs1570669	AA	HIGH	Predisposition to reduced serum calcium levels and bone mineral density.
CASR-1	rs17251221	AA	LOW	Predisposition to normal serum calcium levels.
CASR-2	rs1801725	GG	LOW	Predisposition to normal serum calcium levels.
CARS	rs7481584	AG	MEDIUM	Predisposition to slightly reduced serum calcium levels.
GCKR	rs780094	TT	LOW	Predisposition to normal serum calcium levels

INDICATIONS



NO ADDITIONAL RISK OF DYSREGULATED PLASMA CALCIUM LEVELS

No additional risk of dysregulated plasma calcium levels.



SLIGHTLY INCREASED RISK OF DYSREGULATED PLASMA CALCIUM LEVELS

Slightly increased risk of dysregulated plasma calcium levels.



INCREASED RISK OF DYSREGULATED PLASMA CALCIUM LEVELS

Increased risk of dysregulated plasma calcium levels.



HIGHER RISK OF DYSREGULATED PLASMA CALCIUM LEVELS

High risk of dysregulated plasma calcium levels.



Risk of iron overload - LOW RISK OF HEMOCHROMATOSIS -



ABOUT

Iron overload is defined as excess stores of iron in the body. Excess iron is deposited in organs throughout the body. The most notable organs with iron deposition are the liver, heart, and endocrine glands. Resulting symptoms and diseases are related to specific organ damage. In this category, the genetic risk of iron overload on high intake is analysed.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
HFE	rs1800562	GG	LOW	Predisposition to normal absorption of dietary iron.

INDICATIONS



LOW RISK OF HEMOCHROMATOSIS
No additional risk of iron overload.



MEDIUM-LOW RISK OF HEMATOCHROMATOSIS
Some risk of having increased iron absorption on high iron intake. Avoid iron excess.



MEDIUM-HIGH RISK OF HEMATOCHROMATOSIS
Medium risk of having increased iron absorption on high iron intake. Avoid iron excess and/or supplements.



HIGH RISK OF HEMATOCHROMATOSIS
High risk of having increased iron absorption on high iron intake. Avoid iron excess and/or supplements.



Risk of low iron plasma levels - LOW RISK OF DECREASED IRON LEVELS -



ABOUT

Low iron levels may lead to anemia. In this category, the genetic risk of low transference of iron into the body is analysed. When your body has a predisposition to low iron levels, it will be necessary to ensure a diet with proper levels of iron.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
TF-1	rs3811647	GG	LOW	Predisposition to normal serum ferritin and iron levels.
TMPRSS6	rs4820268	AA	LOW	Predisposition to normal serum iron levels.
TF-2	rs8177253	CC	LOW	Predisposition to normal iron binding capacity.

INDICATIONS



LOW RISK OF DECREASED IRON LEVELS

No additional inherited risk of low iron levels.



MEDIUM-LOW RISK OF DECREASED IRON LEVELS

Some risk of having lower iron transference, only when iron intake is low. Ensure dietary daily recommended intake.



MEDIUM-HIGH RISK OF DECREASED IRON LEVELS

Moderate risk of having lower iron transference, only when iron intake is low. In that case, supplementation would be recommended.



HIGH RISK OF DECREASED IRON LEVELS

High risk of having lower iron transference, only when iron intake is low. In that case, supplementation would be recommended.



Predisposition to dysregulated magnesium levels

- MEDIUM-HIGH RISK OF DYSREGULATED MAGNESIUM LEVELS -



ABOUT

Inherited risk of low magnesium plasma levels.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
CASR-1	rs17251221	AA	LOW	Predisposition to normal serum magnesium levels.
TRPM6	rs11144134	TT	HIGH	Predisposition to lower serum magnesium levels.
SHROOM3	rs13146355	AG	MEDIUM	Predisposition to slightly lower serum magnesium levels.
DCDC5	rs3925584	TT	LOW	Predisposition to normal serum magnesium levels.
MUC1	rs4072037	TC	HIGH	Increased risk of decreased serum magnesium levels associated with lower kidney function measure (eGFR).

INDICATIONS



NO ADDITIONAL RISK OF DYSREGULATED MAGNESIUM LEVELS

No additional risk of dysregulated plasma magnesium levels.



MEDIUM-LOW RISK OF DYSREGULATED MAGNESIUM LEVELS

Some risk of dysregulated plasma magnesium levels.



MEDIUM-HIGH RISK OF DYSREGULATED MAGNESIUM LEVELS

Medium risk of dysregulated plasma magnesium levels.



HIGH RISK OF DYSREGULATED MAGNESIUM LEVELS

High risk of dysregulated plasma magnesium levels.



Predisposition to dysregulated selenium levels - NO ADDITIONAL RISK OF DYSREGULATED SELENIUM LEVELS -



ABOUT

Selenium is an essential mineral and micronutrient. It is fundamental to human health and found in many foods. It is found in meat, grain cereals, egg yolk, milk, brazil nuts, mushrooms, garlic and seafood (hence, selenium levels are high in populations with high intake of seafood). Understanding the predisposition to low or high selenium levels will help for ensuring the proper selenium daily intake.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
AGA	rs1395479	CC	LOW	Predisposition to normal selenium levels.
SLC39A11	rs891684	GG	LOW	Predisposition to normal serum selenium levels.

INDICATIONS



NO ADDITIONAL RISK OF DYSREGULATED SELENIUM LEVELS

No additional risk of dysregulated plasma selenium levels.



MEDIUM-LOW RISK OF DYSREGULATED SELENIUM LEVELS

Some risk of dysregulated plasma selenium levels.



MEDIUM-HIGH RISK OF DYSREGULATED SELENIUM LEVELS

Medium risk of dysregulated plasma selenium levels.



HIGH RISK OF DYSREGULATED SELENIUM LEVELS

High risk of dysregulated plasma selenium levels.



Sodium sensitivity - MEDIUM-LOW SODIUM SENSITIVITY -



ABOUT

Inherited risk of dietary salt-induced blood pressure.

MARKER	LOCUS	VARIANT	SENSITIVITY	DESCRIPTION
ACE	rs4343	AG	MEDIUM2	Predisposition to increased sodium sensitivity associated with increased risk of sodium sensitive hypertension.

INDICATIONS



LOW SODIUM SENSITIVITY

Normal sodium sensitivity: no increased blood pressure risk due to salt consumption.



MEDIUM-LOW SODIUM SENSITIVITY

Slightly increased sodium sensitivity: moderately increased blood pressure risk due to salt consumption.



MEDIUM-HIGH SODIUM SENSITIVITY

Moderate sodium sensitivity: increased blood pressure risk due to salt consumption. Reduce current salt consumption, if daily intake is high.



HIGH SODIUM SENSITIVITY

High sodium sensitivity: high blood pressure risk due to salt consumption. Reduce current salt consumption, if daily intake is high.



11. Intolerance

Lactose intolerance risk - LACTOSE INTOLERANCE -



ABOUT

Lactose intolerance means that there are insufficient lactase enzymes to break down all the consumed lactose in the intestine. Partially digested or undigested lactose passes into the large intestine and that causes symptoms such as pain, abdominal bloating and diarrhea.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
MCM6-1	rs182549	CC	HIGH	Increased risk of lactose intolerance.
MCM6-2	rs4988235	GG	HIGH	Increased risk of lactose intolerance.

INDICATIONS



LOWER RISK OF LACTOSE INTOLERANCE

Lower risk of lactose intolerance.



SLIGHTLY INCREASED RISK LACTOSE INTOLERANCE

Slightly increased risk of lactose intolerance. Lower capability to digest lactose. Rather reduce the lactose intake.



MEDIUM-HIGH RISK LACTOSE INTOLERANCE

Medium-high risk of lactose intolerance. Lower capability to digest lactose. Rather reduce or avoid lactose-rich food.



LACTOSE INTOLERANCE

Lactose intolerance. Move to a lactose-free diet.

A top-down view of various dairy products arranged on a light-colored surface. In the top right, there is a blue wooden crate containing several white eggs. Below the eggs, a glass bowl is filled with crumbled white cheese, garnished with a single green basil leaf. To the left of the bowl is a white ceramic pitcher filled with a light-colored, frothy beverage. In the center, two glass bottles of milk with white caps and twine around the necks are visible. To the right, a glass of milk is partially shown. Below the milk bottles, a white bowl contains small, round pieces of cheese, also garnished with a basil leaf. In the bottom center, a large wheel of cheese is cut into several slices, with a knife resting on it. To the left of the wheel, a small glass jar contains a thick, white spread, possibly butter or cream cheese, with a white spoon inside. Another similar jar is visible in the bottom left corner. The overall composition is clean and bright, emphasizing the natural and fresh nature of the dairy products.

SYMPTOMS OF LACTOSE INTOLERANCE

If you suffer from these symptoms and / or have a medium or high risk of developing intolerance, it is advisable to eliminate these types of products from your diet if possible.

Major symptoms

- ▶ Nausea
- ▶ Abdominal pain
- ▶ Spasms
- ▶ Swelling and abdominal bloating
- ▶ Abdominal gases and flatulence
- ▶ Acidic diarrhea
- ▶ Vomiting

Other nonspecific symptoms due to an alteration of the intestinal mucosa

- ▶ Low mood
- ▶ Tiredness
- ▶ Pain in extremities
- ▶ Skin problems
- ▶ Reduced mental concentration
- ▶ Nervousness
- ▶ Sleep Disorders



11. Intolerance

Alcohol metabolism - NORMAL ALCOHOL METABOLISM -



ABOUT

People of certain genetic type may experience symptoms like redness or flushing of the face and neck after consuming alcohol. These reactions can result from variants in the ALDH2 gene which is involved in breaking down alcohol.

MARKER	LOCUS	VARIANT	METABOLISM	DESCRIPTION
ALDH2	rs671	GG	HIGH	Predisposition to normal alcohol metabolism.

INDICATIONS



NORMAL ALCOHOL METABOLISM

Normal risk of alcohol toxicity due to a normal metabolism.



NORMAL-INTERMEDIATE ALCOHOL METABOLISM

Moderate risk of alcohol toxicity due to a slightly slower metabolism.



INTERMEDIATE-SLOW ALCOHOL METABOLISM

Medium-high risk of alcohol toxicity due to slow metabolism.



SLOW ALCOHOL METABOLISM

High risk of alcohol toxicity due to slow metabolism.



SYMPTOMS OF ALCOHOL INTOLERANCE

If you suffer from these symptoms and / or have a medium or high risk of developing intolerance, it is advisable to eliminate these types of products from your diet if possible.

Major symptoms

- ▶ Facial redness (flushing)
- ▶ Red, itchy skin bumps (hives)
- ▶ Worsening of pre-existing asthma
- ▶ Runny or stuffy nose
- ▶ Low blood pressure
- ▶ Skin problems
- ▶ Diarrhea



11. Intolerance

Risk of celiac disease

- LOW RISK OF CELIAC DISEASE -



ABOUT

Celiac disease is an autoimmune disorder that occurs in genetically predisposed people where the ingestion of gluten leads to damage in the small intestine and causes digestive problems such as malabsorption of nutrients, abdominal pain or diarrhea. There are different risk haplotypes for celiac disease, the most prevalent is the haplotype HLA-DQ2.5 that covers 90% of celiac disease patients. However, there are other haplotypes (HLA-DQ2.2, HLA-DQ8) which account for 10% of cases and increase the risk of suffering celiac disease. This test determines whether or not an at-risk individual carries this additional risk.

HAPLOTYPE	HAPLOTYPE RESULT	HAPLOTYPE SNP DESCRIPTION	HAPLOTYPE RISK
DQ2.5/DQ2.5	Absent	DQ2.5/DQ2.5 = rs2187668 (T/T)	HIGH
DQ2.5/DQ2.2	Absent	DQ2.5 = rs2187668 (T) & DQ2.2=rs2395182 (T) + rs7775228 (C) + rs4713586 (A)	HIGH
DQ2.2/DQ2.2	Absent	DQ2.2/DQ2.2=rs2395182 (TT) + rs7775228 (CC) + rs4713586 (AA)	MEDIUM
DQ2.5	Absent	DQ2.5 = rs2187668 (T)	MEDIUM
DQ2.5/DQ8	Absent	DQ2.5= rs2187668 (T) & DQ8= rs7454108 (T)	MEDIUM
DQ2.5/DQ7	Absent	DQ2.5= rs2187668 (T) & DQ7=rs4639334 (A)	MEDIUM
DQ2.2	Absent	DQ2.2/DQ2.2=rs2395182 (T) + rs7775228 (C) + rs4713586 (A)	MEDIUM
DQ2.2/DQ8	Absent	DQ2.2 =rs2395182 (T) + rs7775228 (C) + rs4713586 (A) & DQ8= rs7454108 (T)	MEDIUM
DQ2.2/DQ7	Absent	DQ2.2 = rs2395182 (T) + rs7775228 (C) + rs4713586 (A) & DQ7=rs4639334 (A)	MEDIUM
DQ8/DQ8	Absent	DQ8/DQ8= rs7454108 (CC)	MEDIUM
DQ8/DQ7	Absent	DQ8= rs7454108 (C) & DQ7=rs4639334 (A)	MEDIUM
DQ8	Absent	DQ8= rs7454108 (C)	MEDIUM
DQ7/DQ7	Absent	DQ7/DQ7=rs4639334 (AA)	LOW
DQ7	Present	DQ7=rs4639334 (A)	LOW

INDICATIONS



NO ADDITIONAL RISK OF CELIAC DISEASE

No additional risk of celiac disease



LOW RISK OF CELIAC DISEASE

Carrier of celiac disease risk variant.
Try to reduce the gluten intake (consult your specialist before making any dietary changes).



MEDIUM-HIGH RISK OF CELIAC DISEASE

Carrier of celiac disease risk variants.
Try to reduce or avoid gluten-containing food (consult your specialist before making any dietary changes).



HIGHER RISK OF CELIAC DISEASE

The genetic test indicates a high risk of developing celiac disease. Before initiating any dietary changes, consult your specialist for further analysis.



SYMPTOMS OF GLUTEN INTOLERANCE

If you suffer from these symptoms and / or have a medium or high risk of developing intolerance, it is advisable to eliminate these types of products from your diet if possible.

Major symptoms

- ▶ Bloating
- ▶ Diarrhea, Constipation and Smelly Feces
- ▶ Abdominal pain
- ▶ Headaches
- ▶ Feeling Tired
- ▶ Skin problems
- ▶ Unexplained Weight Loss



11. Intolerance

Caffeine metabolism - FAST CAFFEINE METABOLIZER -



ABOUT

Metabolism of caffeine. Slower metabolism implies that caffeine will take longer to be degraded and therefore its effects will be more noticeable. However there is a risk of feeling anxious due to excessive consumption. On the other hand, faster metabolism implies that the patient will tend to increase consumption to get the same stimulating effects, since caffeine will be rapidly degraded.

MARKER	LOCUS	VARIANT	METABOLISM	DESCRIPTION
CYP1A1-1	rs2470893	CT	MEDIUM	Increased predisposition to slower caffeine metabolism.
CYP1A2	rs762551	AA	HIGH	Predisposition to fast caffeine metabolism.

INDICATIONS



FAST CAFFEINE METABOLIZER

Fast speed of caffeine metabolism and increased desire to drink coffee in order to feel the benefits.



INTERMEDIATE-FAST CAFFEINE METABOLIZER

Intermediate speed of caffeine metabolism.



SLOW-INTERMEDIATE CAFFEINE METABOLIZER

Slow caffeine metabolism speed: caffeine will last longer in the body. Be careful with excess caffeine.



SLOW CAFFEINE METABOLIZER

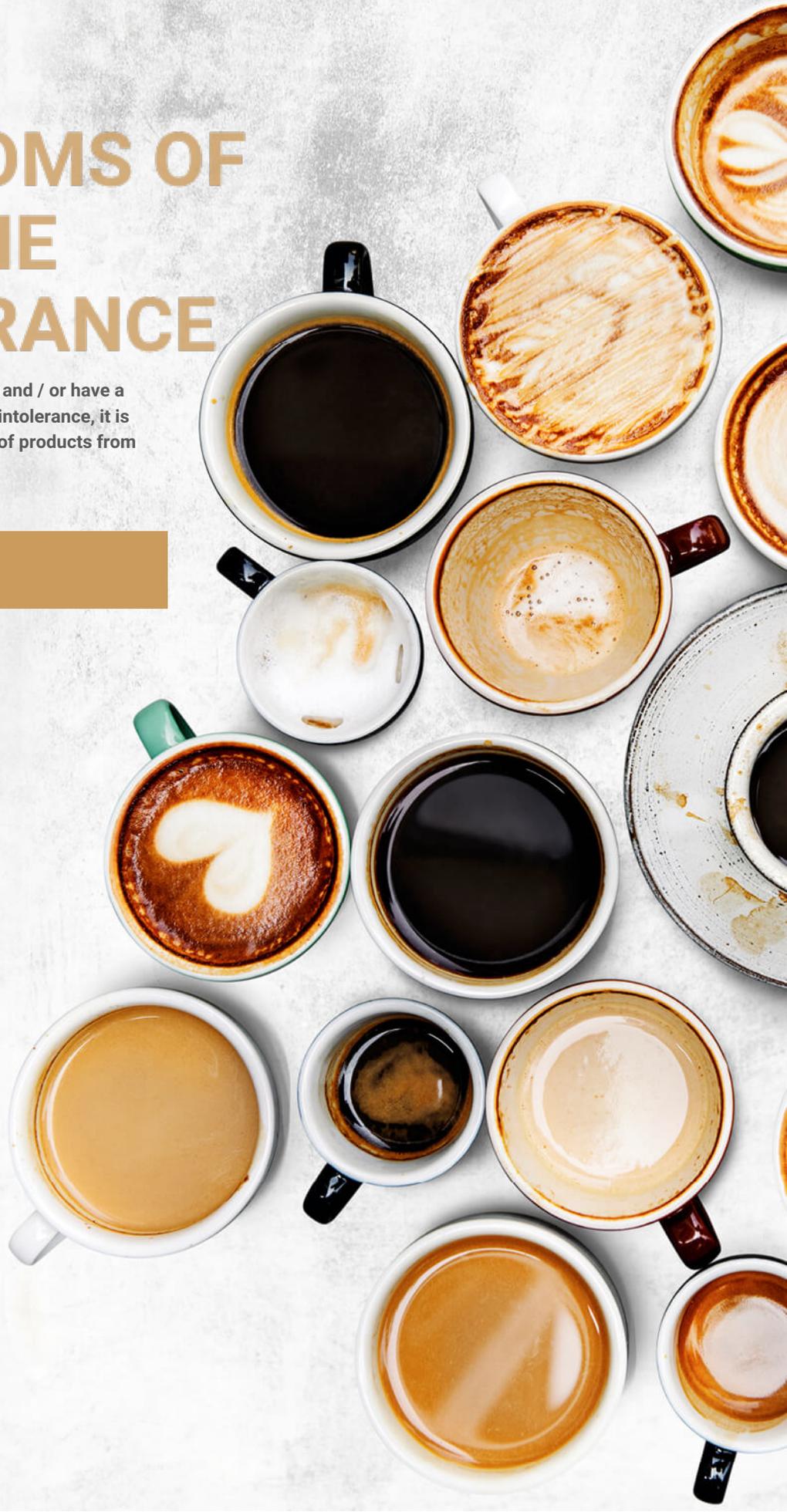
Very slow caffeine metabolism speed: caffeine will last longer in the body. Be careful with excess caffeine.

SYMPTOMS OF CAFFEINE INTOLERANCE

If you suffer from these symptoms and / or have a medium or high risk of developing intolerance, it is advisable to eliminate these types of products from your diet if possible.

Major symptoms

- ▶ Racing heartbeat
- ▶ Headaches
- ▶ Jitters
- ▶ Nervousness or anxiousness
- ▶ Restlessness
- ▶ Insomnia





11. Intolerance

Fructose intolerance risk

- LOWER RISK OF FRUCTOSE INTOLERANCE -



ABOUT

Fructose malabsorption, or dietary fructose intolerance, occurs when cells on the surface of the intestines aren't able to break down fructose efficiently. Fructose is a simple sugar, known as a monosaccharide, that comes mostly from fruit and some vegetables. It's also found in honey, agave nectar, and many processed foods that contain added sugars. Symptoms of fructose malabsorption/intolerance include nausea, abdominal pain, diarrhea, vomiting, chronic fatigue, among others.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
ALDOB-1	rs1800546	CC	LOW	No predisposition to develop hereditary fructose intolerance.
ALDOB-2	rs76917243	GG	LOW	No predisposition to develop hereditary fructose intolerance.

INDICATIONS



LOWER RISK OF FRUCTOSE INTOLERANCE

Lower risk of fructose intolerance.



SLIGHTLY INCREASED RISK FRUCTOSE INTOLERANCE

Slightly increased risk of fructose intolerance. Lower capability to digest fructose. Rather reduce the fructose intake.



MEDIUM-HIGH RISK FRUCTOSE INTOLERANCE

Medium-high risk of fructose intolerance. Lower capability to digest fructose. Rather reduce or avoid fructose-rich food.



HIGH RISK FRUCTOSE INTOLERANCE

Fructose intolerance. Move to a fructose-free diet.

SYMPTOMS OF FRUCTOSE INTOLERANCE

If you suffer from these symptoms and / or have a medium or high risk of developing intolerance, it is advisable to eliminate these types of products from your diet if possible.

Major symptoms

- ▶ Nausea
- ▶ Bloating
- ▶ Abdominal pain
- ▶ Diarrhea
- ▶ Vomiting
- ▶ Chronic fatigue
- ▶ Malabsorption of certain nutrients, such as iron





12. Matching Diet Type

Efficacy of low calorie diets

- MEDIUM-LOW EXPECTED BENEFIT FROM LOW-CALORIE DIET -



ABOUT

A complete set of genes related to the expected efficacy of a low-calorie diet is analysed in this category.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
PPAR-Y	rs1801282	CC	HIGH	No predisposition to weight loss induced by a low calorie diet.
ADIPOQ	rs17300539	GG	HIGH	No predisposition to weight loss induced by a low calorie diet.
LEPR-1	rs1805134	CT	MEDIUM	Increased predisposition to weight loss induced by a low calorie diet.
ACSL5	rs2419621	CT	MEDIUM	Increased predisposition to weight loss induced by a low calorie diet.
ADRB2	rs1042714	GG	LOW	Predisposition to weight loss induced by a low calorie diet.

INDICATIONS



VERY LOW EXPECTED BENEFIT FROM LOW-CALORIE DIET

A pure low-calorie diet may not be the best option for weight loss.



MEDIUM-LOW EXPECTED BENEFIT FROM LOW-CALORIE DIET

A pure low-calorie diet may not be the best option for weight loss. However, a reduction in calorie intake may be beneficial.



MEDIUM-HIGH EXPECTED BENEFIT FROM LOW-CALORIE DIET

A low-calorie diet may be one of the best options for weight loss. Try to dramatically reduce calorie intake.



HIGH EXPECTED BENEFIT FROM LOW-CALORIE DIET

High expected efficacy of a low-calorie diet. It is strongly recommended to follow it.



12. Matching Diet Type

Efficacy of low carbohydrate diets - HIGH EXPECTED BENEFIT FROM LOW-CARBOHYDRATE DIET -



ABOUT

A complete set of genes related to the expected efficacy of a low-carbohydrate diet is analysed in this category.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
KCTD10	rs10850219	GG	LOW	Predisposition to weight loss induced by a low carbohydrate diet.
MMAB	rs2241201	CC	LOW	Predisposition to weight loss induced by a low carbohydrate diet.

INDICATIONS



VERY LOW EXPECTED BENEFIT FROM LOW-CARBOHYDRATE DIET

A pure low-carbohydrate diet may not be the best option for weight loss.



MEDIUM-LOW EXPECTED BENEFIT FROM LOW-CARBOHYDRATES DIET

A pure low-carbohydrate diet may not be the best option for weight loss. However, a reduction in carbohydrate intake may be beneficial.



MEDIUM-HIGH EXPECTED BENEFIT FROM LOW-CARBOHYDRATE DIET

A low-carbohydrate diet may be one of the best option for weight loss. Try to dramatically reduce carbohydrate intake.



HIGH EXPECTED BENEFIT FROM LOW-CARBOHYDRATE DIET

High expected efficacy of a low-carbohydrate diet. It is strongly recommended to follow it.



12. Matching Diet Type

Efficacy of low fat diets

- MEDIUM-LOW EXPECTED BENEFIT FROM LOW-FAT DIET -



ABOUT

A complete set of genes related to the expected efficacy of a low-fat diet is analysed in this category.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
PPAR-Y	rs1801282	CC	HIGH	No predisposition to weight loss induced by a low fat diet.
GHSR	rs490683	GG	HIGH	No predisposition to weight loss induced by a low fat diet. Also applicable after gastric bypass.
APOA2	rs5082	AG	LOW	Predisposition to weight loss induced by a low fat diet.
SH2B1-2	rs7498665	AA	HIGH	No predisposition to weight loss induced by a low fat diet.
TCF7L2-2	rs7903146	TT	LOW	Predisposition to weight loss induced by a low fat diet.
FTO-1	rs9939609	AT	MEDIUM	Increased predisposition to weight loss induced by a low fat diet.

INDICATIONS



VERY LOW EXPECTED BENEFIT FROM LOW-FAT DIET

A pure low-fat diet may not be the best option for weight loss.



MEDIUM-LOW EXPECTED BENEFIT FROM LOW-FAT DIET

A pure low-fat diet may not be the best option for weight loss. However, a reduction of fat intake may be beneficial.



MEDIUM-HIGH EXPECTED BENEFIT FROM LOW-FAT DIET

A low-fat diet may be one of the best options for weight loss. Try to dramatically reduce fat intake.



HIGH EXPECTED BENEFIT FROM LOW-FAT DIET

The expected efficacy of a low-fat diet is high. It is strongly recommended to follow it.



13. Hormones

Leptin

ABOUT

Leptin is a hormone which main function is sending a signal to the brain for food intake regulation. Leptin is commonly called the "satiety hormone". Low levels of leptin may imply problems of overeating and/or burning the stored fat. LEP-R is the gene coding for the cellular receptor of the leptin hormone. Its capability to bind leptin and start the cellular signalling is key for the satiety regulation function. Lower leptin binding capability may lead to high possibilities of leptin resistance, overeating and lower fat burning.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
LEP	rs7799039	GG	HIGH	Predisposition to lower levels of leptin.



13. Hormones

Visfatin

ABOUT

Visfatin is an adipokine with an inflammatory and catabolic profile that has been associated with several metabolic risk factors, such as obesity, insulin resistance, and Type-II diabetes.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
NAMPT-1	rs9770242	AA	HIGH	High predisposition to increased levels of circulating visfatin.



13. Hormones

Ghrelin

ABOUT

Ghrelin is a hormone produced in the gut, often termed "the hunger hormone", since it causes an increase in appetite through its effect in the brain. Imbalances in ghrelin are associated with appetite increase, increased calorie consumption and fat storage.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
GHSR	rs490683	GG	HIGH	Predisposition to normal ghrelin receptor (GHSR) expression.



13. Hormones

Adiponectin

ABOUT

Adiponectin is a hormone that regulates glucose levels and fatty acid breakdown. Low levels of adiponectin are associated with inflammation, lipid abnormalities and insulin resistance.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
ADIPOQ-2	rs1501299	GG	HIGH	High predisposition to lower adiponectin plasma levels.
ADIPOQ-3	rs2241766	TT	HIGH	High predisposition to lower adiponectin plasma levels.



14. Inflammation

TNF- α

ABOUT

TNF- α is a pro-inflammatory cytokine, strongly linked to many inflammatory conditions, expressed in, and secreted by adipose tissues. Increased levels are associated with obesity-induced inflammation, adiposity and insulin resistance.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
TNF- α -1	rs1800629	GG	LOW	Predisposition to average levels of TNF-alpha.



14. Inflammation

IL-6

ABOUT

IL-6 is an interleukin with mainly pro-inflammatory functions and is commonly used as inflammatory marker. High levels of IL-6 are associated with obesity, insulin resistance and metabolic syndrome.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
IL-6-1	rs1800795	CG	MEDIUM	Predisposition to intermediate levels of IL-6. Pro-inflammation.



14. Inflammation

IL-10

ABOUT

IL-10 is a cytokine with potent anti-inflammatory properties.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
IL-10-1	rs1800896	TC	MEDIUM	Predisposition to intermediate levels of the anti-inflammatory cytokine IL-10.



15. Vitamin deficiency risk

Vitamin E

- MEDIUM-LOW RISK OF VITAMIN E DEFICIENCY -



ABOUT

Inherited risk of vitamin E metabolism deficiency or low plasma levels.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
INTERGENIC	rs12272004	CA	MEDIUM	Increased risk of lower plasma levels of alpha-tocopherol (Vitamin E).
ZNF259, LOC100128347, APOA5, SIK3, BUD13	rs964184	CG	MEDIUM	Increased risk of lower plasma levels of alpha-tocopherol (Vitamin E).

INDICATIONS



LOW RISK OF VITAMIN E DEFICIENCY

Normal vitamin E metabolism and levels. Ensure daily recommended intake.



MEDIUM-LOW RISK OF VITAMIN E DEFICIENCY

Low risk of Vitamin E deficiency. Ensure daily recommended intake.



MEDIUM-HIGH RISK OF VITAMIN E DEFICIENCY

Medium risk of Vitamin E deficiency. Ensure daily recommended intake. Supplementation strategies might be of interest.



HIGH RISK OF VITAMIN E DEFICIENCY

High risk of Vitamin E deficiency. Ensure daily recommended intake. Supplementation strategies would be recommended.



15. Vitamin deficiency risk

Vitamin D

- MEDIUM-LOW RISK OF VITAMIN D DEFICIENCY -



ABOUT

Inherited risk of vitamin D metabolism deficiency or low plasma levels.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
GC	rs2282679	TT	LOW	Normal risk of vitamin D deficiency.
CYP2R1-2	rs10741657	GA	HIGH	High risk of low serum levels of vitamin D.
NADSYN1, DHCR7-1	rs12785878	GT	MEDIUM	Increased risk of lower serum levels of vitamin D.
CYP2R1-3	rs2060793	GA	MEDIUM	Increased risk of lower serum levels of vitamin D.
NADSYN1, DHCR7-2	rs3829251	GG	LOW	Normal risk of vitamin D deficiency.

INDICATIONS



LOW RISK OF VITAMIN D DEFICIENCY

Normal vitamin D metabolism and levels. Ensure daily recommended intake.



MEDIUM-LOW RISK OF VITAMIN D DEFICIENCY

Low risk of Vitamin D deficiency. Ensure daily recommended intake.



MEDIUM-HIGH RISK OF VITAMIN D DEFICIENCY

Medium risk of Vitamin D deficiency. Ensure daily recommended intake. Supplementation strategies might be of interest.



HIGH RISK OF VITAMIN D DEFICIENCY

High risk of Vitamin D deficiency. Ensure daily recommended intake. Supplementation strategies would be recommended.



15. Vitamin deficiency risk

Vitamin C

- MEDIUM-HIGH RISK OF VITAMIN C DEFICIENCY

-



ABOUT

Inherited risk of vitamin C metabolism deficiency or low plasma levels.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
SLC23A2	rs1279683	GG	HIGH	High risk of reduced circulating concentrations of vitamin C.
SLC23A1	rs33972313	CC	LOW	Normal risk of vitamin C deficiency.

INDICATIONS



LOW RISK OF VITAMIN C DEFICIENCY

Normal vitamin C metabolism and levels. Ensure daily recommended intake.



MEDIUM-LOW RISK OF VITAMIN C DEFICIENCY

Low risk of Vitamin C deficiency. Ensure daily recommended intake.



MEDIUM-HIGH RISK OF VITAMIN C DEFICIENCY

Medium risk of Vitamin C deficiency. Ensure daily recommended intake. Supplementation strategies might be of interest.



HIGH RISK OF VITAMIN C DEFICIENCY

High risk of Vitamin C deficiency. Ensure daily recommended intake. Supplementation strategies would be recommended.



15. Vitamin deficiency risk

Vitamin B12

- MEDIUM-LOW RISK OF VITAMIN B12 DEFICIENCY -



ABOUT

Inherited risk of vitamin B12 metabolism deficiency or low plasma levels.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
FUT2	rs602662	GA	MEDIUM	Increased risk of vitamin B12 deficiency.

INDICATIONS



LOW RISK OF VITAMIN B12 DEFICIENCY

Normal vitamin B12 metabolism. Ensure daily recommended intake.



MEDIUM-LOW RISK OF VITAMIN B12 DEFICIENCY

Low risk of vitamin B12 deficiency. Ensure daily recommended intake.



MEDIUM-HIGH RISK OF VITAMIN B12 DEFICIENCY

Medium risk of vitamin B12 deficiency. Ensure daily recommended intake and increase it. Supplementation should be evaluated.



HIGH RISK OF VITAMIN B12 DEFICIENCY

High risk of vitamin B12 deficiency. Increase daily vitamin B12 intake. Supplementation should be evaluated.



15. Vitamin deficiency risk

Vitamin B9 (folate) - LOW RISK OF VITAMIN B9 (Folate) DEFICIENCY -



ABOUT

Inherited risk of vitamin B9 (folate) metabolism deficiency or low plasma levels.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
MTHFR	rs1801133	GG	LOW	Normal risk of folate deficiency.

INDICATIONS



LOW RISK OF VITAMIN B9 (Folate) DEFICIENCY

Normal folate metabolism. Ensure daily recommended intake.



MEDIUM-LOW RISK OF VITAMIN B9 (Folate) DEFICIENCY

Low risk of folate deficiency. Ensure daily recommended intake.



MEDIUM-HIGH RISK OF VITAMIN B9 (Folate) DEFICIENCY

Medium risk of folate deficiency. Ensure daily recommended intake. It is recommended to supplement with L-methylfolate due to a lower capability to activate folate. It also impacts lower B12 levels when low levels of folate are active.



HIGH RISK OF VITAMIN B9 (Folate) DEFICIENCY

High risk of folate deficiency. Ensure daily recommended intake. Highly recommended to supplement with L-methylfolate due to a almost null capability to activate folate. It also impacts lower B12 levels when low levels of folate are active.



15. Vitamin deficiency risk

Vitamin B6

- MODERATE RISK OF VITAMIN B6 DEFICIENCY -



ABOUT

Inherited risk of vitamin B6 metabolism deficiency or low plasma levels.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
NBPF3	rs4654748	CT	MEDIUM	Increased risk of lower plasma vitamin B6 concentrations.

INDICATIONS



LOW RISK OF VITAMIN B6 DEFICIENCY

Normal vitamin B6 metabolism.
Ensure daily recommended intake.



MODERATE RISK OF VITAMIN B6 DEFICIENCY

Little predisposition to a vitamin B6 deficiency. Make sure that the recommended daily intake is met.



MEDIUM-HIGH RISK OF VITAMIN B6 DEFICIENCY

Medium risk of vitamin B6 deficiency. Ensure daily recommended intake and increase it. Supplementation should be evaluated.



HIGH RISK OF VITAMIN B6 DEFICIENCY

High risk of vitamin B6 deficiency. Increase daily vitamin B6 intake. Supplementation should be evaluated.



15. Vitamin deficiency risk

Vitamin A

- LOW RISK OF VITAMIN A DEFICIENCY -



ABOUT

Inherited risk of vitamin A metabolism deficiency or low plasma levels.

MARKER	LOCUS	VARIANT	RISK	DESCRIPTION
BCM01-1	rs12934922	AA	LOW	Normal risk of vitamin A deficiency.
BCM01-2	rs7501331	CC	LOW	Normal risk of vitamin A deficiency.

INDICATIONS



LOW RISK OF VITAMIN A DEFICIENCY
Normal vitamin A metabolism. Ensure daily recommended intake.



MEDIUM-LOW RISK OF VITAMIN A DEFICIENCY
Low risk of vitamin A deficiency. Ensure daily recommended intake or slightly increase it.



MEDIUM-HIGH RISK OF VITAMIN A DEFICIENCY
Medium risk of vitamin A deficiency. Ensure daily recommended intake and increase it. Supplementation should be evaluated.



HIGH RISK OF VITAMIN A DEFICIENCY
High risk of vitamin A deficiency. Increase daily vitamin A intake. Supplementation should be evaluated.

Together
we create the future of
personalized medicine.

