numed s.a.r.l.

myINNERGO

Dear Mrs. Jane Doe,

Referred by your healthcare provider Dr. John Doe, your sample for the analysis arrived on 16/05/2017 in MyInnergo-Europe and was analyzed in the laboratory of IB Genetics and the accredited Cancer Research Lab in the USA according to the highest laboratory quality standards (ISO 15189), using genotyping with Sequenom's MassArray method.

After obtaining the genotyping results, your personalized report was compiled. Your recommendations are based on the most current evidence-based scientific research that has been published in peer-reviewed journals and reviewed by our team of world-renowned experts in the field of nutrigenomix, nutrition and sport physiology in the UK and Europe.

We would like to thank you for your trust and we hope that you are satisfied with our service.

Personal analysis results for:
Mrs. Jane Doe

Date of birth:
01/01/1987

Date of analysis start:
17/05/2017

Date of analysis end:
25/05/2017

Reference number:
NUGN1

Kind regards,

Aire Allikas, MSc.
Chief Executive Officer
myInnerGo

Dr. Andres Valkna, PhD.
Chief Scientific Officer
myInnerGo

Ziad HARB, MD
Sports Medicine
CEO-NUMED s.a.r.l.

numed s.a.r.l.

AA123

14.6.2017

NUGENE

Weight

myINNERGO

GENES UNLOCKED

No two humans are genetically identical. Genetic variants are present throughout the human genome and are key to our understanding of the potential influence that genes may have on athletic performance. Along with environmental factors (training and diet), it is possible that elite athletes possess a blueprint of genetic variants that permit them to succeed at the highest level of competition.

ABOUT YOUR RESULTS

The aim of the myInnerGo Fitness Professional is to provide you with a simple, scientifically robust information about your genetic potential.

MyInnerGo genetic testing service for fitness professionals identifies genetic markers that are associated with certain traits, including response to nutrition and performance abilities. Also identifies health related markers in your DNA that are associated with differences in lifestyle, in order to provide you information about your responsiveness to nutrients or diet.

The personal genetic information contained in this report should be used as an additional factor or data point in your entire decision-making process.

COLLECTING SCIENTIFIC INFORMATION

The information on specific genetic variants is obtained from ***PubMed Central*** *This is the U.S National Institutes of Health (NIH) free digital archives of biomedical and life science journal literature.Additional information included about genetic variants is obtained from* ***OMIM****. OMIM is the Online Mendelian Inheritance in Man database catalog of human genes and genetic disorders.*

GENETIC TENDENCY CALCULATION

A model to calculate the overall genetic tendency in lifestyle traits involves combination of predisposition from multiple variants in the different genetic loci into a single relative value: HIGH-AVERAGE-LOW or HIGH-AVERAGE or AVERAGE-LOW. myInnerGo will provide genetic tendency compared to the general population. The combined genetic tendency from multiple genetic markers relative to the population is calculated as a product of the corresponding score and frequency for individual marker.

YOUR REPORT CONTAINS THE FOLLOWING INFORMATION

1. WEIGHT MANAGEMENT

SUMMARY OF GENETIC PROFILE

OBESITY RISK	**LOW**	AVERAGE	HIGH
EXERCISES EFFECT ON WEIGHT		**AVERAGE BENEFIT**	HIGH BENEFIT
WAIST CIRCUMFERENCE		**AVERAGE**	HIGH
WEIGHT REGAIN		AVERAGE RISK	**INCREASED RISK**
RESPONSE TO CALORIE RESTRICTION	LOW RESPONSE	**AVERAGE RESPONSE**	

1.1 Obesity Risk

Scientific research has demonstrated that 40-60% of our bodyweight is genetically predisposed. Genes affect appetite and metabolism, which under certain dietary conditions, lead to an increased risk of becoming overweight or obese. This means that our genes and our environment together (nature and nurture) impact how our body develops and this can be further influenced by our lifestyle and dietary choices. Multiple genes predispose us to common obesity.

Genes of interest: MC4R, FTO, TNF-alfa, APOA2, ADIPQ

YOUR RESULT: ***LOW***

Your genetic profile suggests you have a low risk for becoming overweight; most people have a higher risk of weight gain than you. This indicates your genetic predisposition, however environmental factors such as the right diet and lifestyle also play a role in your weight management, and it is therefore recommended you make healthy choices.

1.2 Exercises Effect on Weight

Exercise in conjunction with an active lifestyle is important for general good health status. However, studies have demonstrated that the benefits of exercise in relation to weight management differ depending on individual genetic variations.

Genes of interest: INSIG2, FTO, LPL, ADRB2

YOUR RESULT: ***AVERAGE BENEFIT***

The genetic variations have shown that you have an average affinity when it comes to weight and exercise. This means that a powerful combination of both nutritional planning and exercise is more likely to be needed to gain the most benefit from a weight management program, and that physical activity may have to be greater to gain the same benefit as those who have the gifted variants.

1.3 Waist Circumference

Your genetic make-up determines not only your overall risk for obesity but also your body-shape, i.e. the development of muscle mass and where your body tends to accumulate fat. The measurement of your waist circumference and the amount of fat stored around the abdomen is a key determinant for measuring your risk of obesity, and obesity related conditions such as diabetes and cardiovascular diseases. The overall heritability of waist circumference has been shown to be approximately 40%.

Genes of interest: ADRB2, UCP2, UCP2

YOUR RESULT: ***AVERAGE***

Your genetic profile suggests that you are at average risk for developing abdominal obesity, this means, if gaining weight you will probably store less fat around your abdomen than in other parts of your body, which is beneficial to your overall health.

1.4 Weight Regain

In the case of overweight and obesity risk, successful weight management consists of two main components: 1) initial weight loss, and 2) weight maintenance. Some individuals find weight loss easy, but it's the maintenance phase that is commonly the long-term challenge. Some genetic profiles are associated with a greater propensity for regaining weight.

Genes of interest: PPARG, ADIPQ, IL-6

YOUR RESULT: ***INCREASED RISK***

Your genetic profile is associated with increased risks for regaining weight. You may need on-going professional support to minimise your risk and maintain your weight.

1.5 Response to Calorie Restriction

The traditional method of weight loss is to restrict calorie intake. A popular method used by health professionals is to restrict the total number of calories consumed by 500 – 1000 kcal/day to achieve a loss of 0.5-1kg/week. However, the rate of weight loss will differ between individuals based on their genetic profile. Genetic variations determine the weight change response to calorie restriction.

Genes of interest: ADRB3, PPARG, ADIPOQ

YOUR RESULT: ***AVERAGE RESPONSE***

The genetic data has shown that calorie restriction will probably have an average effect on weight loss for you. Additionally making correct choices of where calories come from will give you extra benefits for successful weight management.

2. METABOLISM AND MACRONUTRIENTS

SUMMARY OF GENETIC PROFILE

RESPONSE TO CARBOHYDRATES		AVERAGE RISK	**INCREASED RISK**
RESPONSE TO TOTAL FATS	LOW RISK	**AVERAGE RISK**	INCREASED RISK
RESPONSE TO UNSATURATED FATS	HIGH BENEFIT	AVERAGE BENEFIT	**NO BENEFIT**
RESPONSE TO PROTEINS	HIGH BENEFIT	**AVERAGE BENEFIT**	
BASAL ENERGY EXPENDITURE		**AVERAGE**	LOW

2.1 Response to Carbohydrates

Carbohydrates provide the main source of energy for the body - they are commonly utilised first, ahead of other nutrients such as protein and fat, providing fuel for life and activity, they are also the preferred fuel source for the brain, nervous system and heart. As energy providers, carbohydrates contain 4kcal/g. Carbohydrates are important for maintaining good health, but nutrigenetic studies have shown that for some people with a particular genetic profile, over-consumption of these macronutrients can increase the risk of gaining weight.

Genes of interest: PLIN1, PPARG, ADRB2

YOUR RESULT: ***INCREASED RISK***

Your genetic profile is associated with a higher risk of weight gain from over-consumption of carbohydrates. Carbohydrates should make up not much more than half of your daily energy intake for effective weight management.

2.2 Response to Total Fats

Fats can be found in almost all foods, and are the most energy rich macronutrient, containing 9kcals/g (twice as much as protein and carbohydrates). Animals use fats as the most economical way to store their energy. However, due to its high calorific value, too much fat can have a poor effect on health. Studies have shown that excess consumption of different fats can increase your risk of weight gain, depending on your genotype.

Genes of interest: TFAP2B, TCF7L2, APOA5, FTO, PPARG

YOUR RESULT: ***AVERAGE RISK***

Your genetic profile is associated with an average risk of weight gain from over-consumption of fats. This profile is similar to over 50% of the population. Be mindful of your fat consumption; choose unsaturated fats in favour of saturated fats. This will help you manage your weight more easily!

2.3 Response to Unsaturated Fats

There are different types of fat; saturated fat is derived from animal, dairy, palm and coconut, and can be recognised because it will remain solid at room temperature; whereas unsaturated fats, derived from plants, nuts and seeds, will remain liquid at room temperature. Unsaturated fats should make up the greater part of your total intake of fats as they have a more beneficial effect on your health. However, beware of the calorie content per gram, as it is generally the same for both saturated and unsaturated fats. With certain genetic profiles, it has been found that an increased intake of unsaturated fats can have a beneficial effect on body weight.

Genes of interest: APOA5, ADIPQ, PPARG, FTO

YOUR RESULT: ***NO BENEFIT***

Your genetic profile is associated with a higher risk of weight gain from over-consumption of unsaturated fats meaning that a diet high in unsaturated fat has no benefit for your weight management. But do not avoid unsaturated fats totally – they may still have some beneficial effects on your health.

2.4 Response to Proteins

Proteins are the essential nutrients for the human body, as a fuel, proteins contain 4kcal/g, just like carbohydrates. However, unlike carbohydrates and fat, the body does not store protein; so it is important to eat a variety of dietary protein every day. Studies suggest that a high-protein diet may be more beneficial for weight loss and improvement of body composition and fat distribution in individuals with a certain genotype.

Genes of interest: TFAP2B, FTO, BDNF

YOUR RESULT: ***AVERAGE BENEFIT***

Your genetic profile suggests that a dietary intake higher in proteins will not have a beneficial effect on your body weight.

2.5 Basal Energy Expenditure

The basal energy expenditure (also called basal metabolic rate - BMR) is the rate of energy used by the body at rest. The release and use of energy in this state is sufficient to maintain vital organ function, respiration and repair. Basal metabolism is typically the largest component of our total energy expenditure (approximately 60%). BMR is individual and is affected by height, weight, age, gender and activity levels but it can also be affected by our genes.

Genes of interest: IL-6, UCP1

YOUR RESULT: ***AVERAGE***

The genetic variants have shown that you have an average energy expenditure. This means that your body uses the same amount of energy as the majority of the population with similar body weight, height, age and gender.

3. CAFFEINE

SUMMARY OF GENETIC PROFILE

CAFFEINE CONSUMPTION	LOW	AVERAGE	HIGH
EFFECT ON SLEEP		AVERAGE	HIGH
COFFEE TASTE	NON-TASTER	TASTER	
METABOLISM OF CAFFEINE		FAST	SLOW
SENSITIVITY TO CAFFEINE		AVERAGE	HIGH

3.1 Caffeine consumption

High proportion of adults consume some form of caffeine daily, but the amount can differ greatly. Daily consumption of caffeine tends to be positively correlated with age, smoking, alcohol consumption and of course depends on personal taste preferences. However twin studies provide powerful evidence for the heritability of coffee intake and modern genetic research has determined multiple genetic variations associated with habitual caffeine consumption. Heritability estimates for coffee and caffeine use range between 36 and 77%.

Genes of interest: CPLX3, CYP1A1/CYP1A2, CYP1A2, GCKR, ADORA2A

YOUR RESULT: ***AVERAGE***

Your genetic profile demonstrates that you have tendency to consume caffeine in average amount.

3.2 Effect on sleep

The potency to promote alertness and performance is the prime reason why people consume caffeine. People often drink coffee in order not to fall in sleep, but besides keeping us awake caffeine may spoil sleep quality - decrease the deep stages of sleep, reduce sleep efficiency and even alter the waking. The effect of caffeine on sleep is highly individual and associated with genetic variations.

Genes of interest: ADORA2A

YOUR RESULT: ***AVERAGE***

Your genetic profile shows that habitual caffeine consumption most likely does not reduce your general sleep quality. Sleep deprivation affects sustained attention less with your genotype compared to other variants, but at the same time the stimulant action of caffeine is not so high for you.

3.3 Coffee taste

People differ markedly in their coffee and other food taste preferences and it has been shown that genes have big influence on that. Research has demonstrated that those who are not habituated to coffee or tea have a higher sensitivity to bitter compounds. These bitter-sensitive people called "tasters" and besides the coffee and tea they might avoid hot and spicy food. Even some vegetables like cauliflower, cabbage, broccoli, and Brussels sprouts may seem unpleasantly bitter to them due to the similarity in their chemical compounds.

Genes of interest: MGAM, TAS2R38, TAS2R38

YOUR RESULT: ***TASTER***

Your genetic profile demonstrates that you are taster type, meaning that you probably experience a more intense bitterness than people with other genotype. People like you are less frequently coffee and tea lovers and due to your genetics you may also dislike some other foods like citrus fruit, red wine, soy products and cruciferous vegetables.

3.4 Metabolism of caffeine

Caffeine, a naturally-occurring central nervous system stimulant, is the most widely used psychoactive drug in the world. Caffeine is found in various seeds, leaves, nuts, and berries such as the seeds of the coffee plant, the leaves of the tea bush, kola nuts, yerba mate, guarana berries, guayusa and yaupon holly. Coffee contains the highest concentrations of caffeine. The metabolism of caffeine is affected by a number of factors including gender, exercise, diet and genetics.

Genes of interest: CYP1A2

YOUR RESULT: ***FAST***

Your genetic profile shows fast metabolism of caffeine. Your body can metabolize and excrete caffeine quickly, so it has less time in your body to produce stimulating effects. This also means you probably need and can tolerate larger amounts of caffeine.

3.5 Sensitivity to caffeine

Caffeine is widely valued as a psychostimulant, but it has also anxiogenic and blood pressure rising effect. Those effects are variable for different people and they are associated with certain genetic variations. This sensitivity to caffeine does not necessarily correlate with whether or not someone is a slow or a fast metabolizer of the chemical. Fast metabolizers can still be sensitive to and get the jitters from drinking coffee. Genetic variations associated with the caffeine sensitivity affect caffeine receptors in the brain.

Genes of interest: ADORA2A

YOUR RESULT: ***AVERAGE***

Genetic analysis showed that you have lower sensitivity to caffeine. It means that most probably you do not feel increased anxiety after consumption of caffeine containing beverages in average amount (1-1.5 cup of coffee for instance). Also your genotype protects you against blood pressure increase which may otherwise happen after consumption of higher amount of caffeine (>3 cups of coffee).

4. LACTOSE INTOLERANCE

SUMMARY OF GENETIC PROFILE

LACTOSE INTOLERANCE	*INTOLERANT*	***TOLERANT***

4.1 Lactose intolerance

Lactose intolerance a.k.a. hypolactasia is a metabolism disorder caused by the body's inability to produce lactase. Lactase is an enzyme which breaks down lactose (sugar found in milk) in intestines. Lactose is a disaccharide which needs to be reduced into glucose and galactose in order to be absorbed in the blood from the small intestine. It is not possible to break down lactose due to lactase deficiency. Unabsorbed lactose moves on to the large intestine, where bacteria reduce it to gas and acids. The created compounds irritate the intestine and cause discomfort, bloating, diarrhoea, stomach grumbling and pain. These symptoms can be avoided by limiting the consumption of dairy products. Lactose intolerance occurs in two forms – primary lactose intolerance and secondary lactose intolerance. Primary lactose intolerance is genetically inherited and breaks out usually somewhere between the ages 5 and 20. In most cases, 50-70% of lactase activity is preserved. Secondary lactose intolerance is caused by temporary damages in the small intestine like celiac disease, small intestine infection or gastroenteritis. These symptoms are reversible and usually disappear in 2-4 weeks. About 20-30% of people in Europe have lactose intolerance.

Genes of interest: LCT (MCM6)

YOUR RESULT: ***TOLERANT***

You are genetically lactose tolerant meaning that the sugar called lactose contained in milk products should be degraded properly. If you still feel un-comfortable after consuming milk or dairy products it means you may have secondary lactose intolerance which may occur as consequence of other bowel diseases. In this case you should consult your doctor.

5. RECOMMENDATIONS

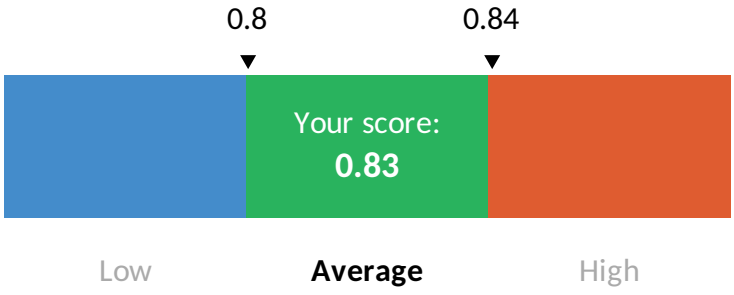
Comprehensive lifestyle recommendations are given to you using the data arising from your genetic profile and questionnaire. The aim of the recommendations are to give you an action plan and tips to reach your goal and stay healthy. Personal well-being means making the right choices and NUMED & myInnerGo make it easier!

How are Your Current Body Measurements in Relation to Your Genetic Risks?

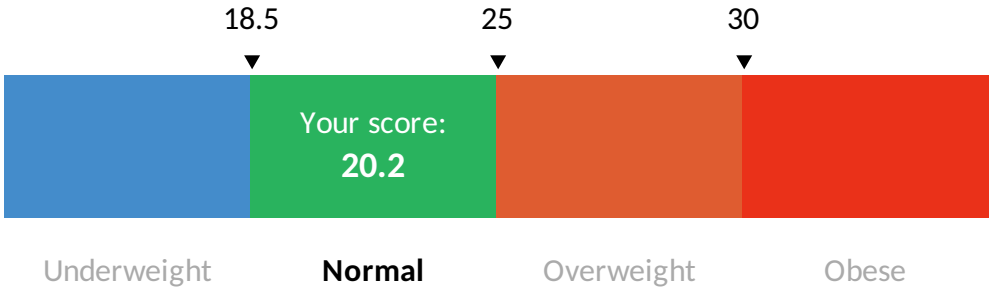
Body composition is used to describe the percentages of fat, bone, water and muscle in human bodies. Because muscular tissue takes up less space in our body than fat tissue, our body composition, as well as our weight, determines leanness. Body composition plays a critical role in the health and wellbeing and it can be measured in several ways. The most well-known approximate measure of whether someone is over- or underweight is the body mass index (BMI). BMI generally overestimates adiposity on those with more lean body mass (e.g., athletes) and underestimates excess adiposity on those with less lean body mass (e.g. elderly). Waist circumference and waist-hip ratio are the additional possibilities to screen for health risks associated with being overweight and obese. Research shows that people with "apple-shaped" bodies (with more weight around the waist) face more health risks than those with "pear-shaped" bodies who carry more weight around the hips.

From the questionnaire and the genetic analysis we can reference your genetic risks of being overweight and how effectively you have overcome your risks by using your advantages.

Your waist-hip ratio



Your body mass index



Your Obesity Risk and Body Mass Index

Summary

You have low genetic risk for obesity	
You are at a healthy weight	

Your actual BMI value is in the normal range and due to your genetic profile, weight management should not be difficult for you. To maintain your healthy weight and prevent unnecessary weight gain you should follow a genetically suitable diet and training programme.

Your Waist Circumference and Waist-Hip Ratio

Summary

You have average genetic risk for abdominal obesity	
Your actual waist circumference is in the healthy range	
Your waist-hip ratio indicates healthy body composition	
You are at a healthy weight	

You do not have an increased genetic predisposition for abdominal fat accumulation and your actual waist circumference meets the international health standard, which is positive! But your waist-hip ratio indicates a higher fat level. Keep going and follow a personalised genetic diet and training programme to keep problems at bay.

What is More Important for You - to Eat Less or Move More?

The usual recommendation for losing weight is to eat less and move more. The problem is that it does not work for everyone or it only works in the short term. Some people are genetically less responsive to calorie restriction or physical activity than others. In these cases it is of increased importance to know the individual reaction of the body to physical activity and calorie restriction. This is a key to a successful weight management programme!

Your key to weight loss is calorie restriction - do not forget to follow and make notes of the food you eat! It is genetically determined that calorie restriction might have a more effective result on your weight loss than physical activity. Please follow our diet recommendations!

How Much Should You Eat?

To calculate the calories you require, we have taken into account your height, weight, age, gender, current physical activity level and genetic predisposition for basal energy expenditure. Based on this data we have calculated an optimal daily energy need for you taking into account your aim.

Optimal daily energy intake for you is

1756 kcal

Daily Calorie Explanation

As your aim is to maintain weight, the recommended kcal-s are calculated to cover your daily energy intake need. The sample menu in this current report is given to you to demonstrate a diet with correct amounts of kcal-s and proportions of macronutrients most suitable for you.

How Much Exercise Should You Be Doing?

You have reported to have a low physical activity which is not really enough for your health nor weight management. We recommend that you increase your physical activity in order to maintain health and manage your weight.

The following recommendations about your physical activity are meant to be taken in addition to the routine activities of daily living of light intensity (e.g., self care, cooking, casual walking or shopping) or lasting less than 10 min in duration (e.g., walking around home or office, walking from the parking lot).

Your aim should be to meet the recommended amount of physical activity which can be described in the following way:

Moderate intensity aerobic physical activity for a minimum of 30 min five days each week OR
Vigorous-intensity aerobic activity for a minimum of 20 min three days each week.

For example, you can meet the recommendation by walking briskly for 30 min twice during the week and then jogging for 20 min on two other days.

Moderate intensity aerobic activity, which is generally equivalent to a brisk walk and noticeably accelerates the heart rate, can be accumulated toward the 30-min minimum from bouts lasting 10 or more minutes. Vigorous-intensity activity is exemplified by jogging, and causes rapid breathing and a substantial increase in heart rate.

Examples of moderate intensity activities:

Walking at very brisk pace (3-4 mph)
Mowing the lawn — walk power mower
Cycling — on flat: light effort (10–12 mph)
Golf — walking pulling clubs
Swimming leisurely
Tennis doubles
Non-competitive volleyball, basketball, badminton etc.

Examples of vigorous intensity activities:

Jogging
Active swimming
Competitive tennis, football, basketball, volleyball
Cycling with effort

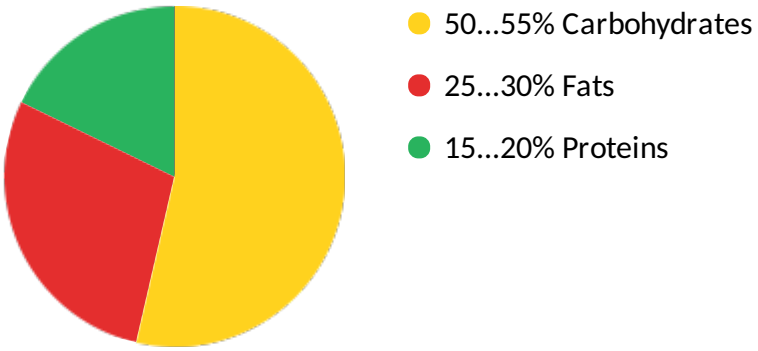
In addition to the described aerobic exercises you will benefit also from performing activities that maintain or increase muscular strength and endurance for a minimum of two days each week. ***It is recommended that 8–10 exercises be performed on two or more non-consecutive days each week using the major muscle groups.***

Be aware that muscle mass causes a higher basal energy expenditure than fat therefore by increasing muscle mass you can also improve your chances to manage your body weight.

What Kind of Diet Fits You Most?

The most suitable diet for you is composed by taking into account the genetic weight gaining risks arising from consumption of different macronutrients in larger amounts in combination with generally well known health based recommendations. Genetics show your individual predisposition to obesity, but also give you your individual key to keep it under control. Your genetically most suitable diet takes into account your very specific composition of macronutrients and your caloric needs, which helps you to manage your weight and well being the optimal effective way. Our diet recommendations with the right recipes for your genetical profile can help you modulate your habitual food choices and new lifestyle, which is a very important key factor for weight management. They are easy to follow and the right balance for the best results is ensured!

The most suitable diet for you is Balanced diet



You do not fall into a prevalent single risk category for any specific nutrient in relation to your health risk or weight. This means the results of your genetic profile suggest that following the principles of the balanced diet would be most beneficial for your long term health and weight management.

What does this mean?

We each have an individual response to the macronutrients (carbohydrate, protein, fats) in our diet; some individuals metabolise fats more efficiently than carbohydrates or proteins, or vice versa. This helps to explain why weight loss results are better for some individuals than others when following the same dietary intake. Your results indicate that you metabolise all of the macronutrients almost equally, and that to increase or reduce the ratios of specific nutrients of a generally known balanced diet would have no added benefit for your individual profile.

What is a Balanced Diet?

This diet encourages a 'balanced' intake of the three main nutrients in line with government guidelines whereby you should aim to eat approximately 50-55% of your daily intake from carbohydrates; 15%-20% protein and 25-30% fats.

When choosing carbohydrates we suggest you opt for those that have a low glycaemic load to keep you feeling fuller for longer. Avoid adding sugars pastries and biscuits.

Fats should also be divided equally: 1/3 saturated fats from meat, butter, cheese; 1/3 polyunsaturated fats from oily fish, rapeseed oil, watch your diet and eat a minimal amount of cakes, crisps, seeds; 1/3 monounsaturated fats from olive oil, avocado.

Ensure your plate contains

fist size of starchy carbohydrate like brown rice and pasta or potatoes,
half full with vegetables
small piece of lean protein like fish, chicken, beef, eggs or legumes and cheese.

Principles of a Balanced Diet

Ensure your plate contains at least 3 types of vegetables for variety, preferably in different colours
Choose wholegrain cereals, brown pasta and rice
Snack on vegetables, fruits, nuts and seeds
Trim or remove fat from meat
Reduce intake of red meat to 1-2 portions per week.
Choose fish as a healthy alternative to red meat
Aim for at least 1 portion of oily fish per week

Cook with small amounts of fat, try an oil mist
Try steaming, boiling or baking
Choose low fat dairy, especially cheese

How to make right choices?

Instead of this…	**Try this**
White bread (made out of refined wheat flour).	Whole grain wheat or rye bread.
Sugary sweets such as cakes, candies, cookies, biscuits, pastries.	Fresh fruits and berries or a few dried fruits with some nuts.
White refined rice and pasta out of refined wheat flour.	Brown rice and pasta. Healthy alternatives are also quinoa, millet and buckwheat.
Instant flakes, crunchy sugary mueslis, cornflakes.	Use natural whole grain flakes (oats) and make muesli yourself.
Margarine on the bread.	Avocado on bread or sandwich or use small amounts of butter.
Sunflower or canola oil in baked goods.	Olive or coconut oil for baking.
Whipped cream, sugary fatty yoghurts.	Natural yoghurt sweetened with fruits and berries.
Fatty cheeses.	Low-fat cheeses like mozzarella, cottage cheese, low-fat quark, half-fat Cheddar.
High-fat spreads, mayonnaise and rich sauces made with cream, cheese or eggs.	Spray a little olive oil and fresh lemon juice on the salad or pasta.
High-fat meats like pork, lamb, sausages and processed meats, skin of poultry.	Low-fat meat, poultry without skin, fish and seafood, beans and lentils.
Soft drinks, sugary fruit juices.	Pure water, herbal, green or red tea, occasionally natural juices mixed with water.
Deep-fried foods.	Slightly cooked or steamed foods.
Snack foods such as crisps.	Try fresh crunchy vegetables cut in small pieces with a dip sauce such as hummus.

What Should You Know about Weight Regain?

There is a general perception that few people succeed in long-term maintenance of weight loss. Research has shown that about 20% of overweight individuals are successful at long-term weight loss when defined as losing at least 10% of initial body weight and maintaining the loss for at least 1 year. Research also shows that successful individuals have used special strategies to maintain their weight loss. According to your genetical profile we have suggested special strategies for your successful weight loss maintenance.

Weight loss maintenance typically gets easier over time. After you have successfully maintained your weight loss for 2 years, the chance of longer-term success greatly increases.

Genetically you have a higher risk for weight regain. It is important to know, that keeping your desired weight requires not only a short-term restriction, but a long-term lifestyle change achieved step by step with the support from our genetically individualised diet. If there is a lot of new information for you to do, take it easy! It is normal that any change needs time. Set yourself some main goals at first and move on to the next goal step by step! This will help you to stick to the changes throughout life and not just for couple of months.

Practical Tips to Avoid Weight Regain

Summary

You have low to average genetic risk for obesity	
You have average basal energy expenditure	
You have low or average risk for obesity from overconsumption of total fats	
Unsaturated fats have no increased benefit for your weight management	
You have high risk for obesity from over-consumption of carbohydrates	
Exercise has average benefit for your weight management	

Your important tips to avoid weight regain

STAY MOTIVATED!

Never go more than 4-5 hours without food! Skipping meals encourage bingeing and crushes your willpower. By making sure you eat three meals per day, you can control your hunger and manage your appetite.
Avoid processed foods such as pies, sausage rolls, crisps, pizza, French fries, biscuits, and cakes which are often high in unhealthy fats and sugar. Replace these addictive foods with nourishing alternatives such as good quality protein, fats and complex carbohydrates.
Snack on something spicy. Capsacian, a molecule found in spicy chiles, has been shown to raise body temperature and speed up fat loss.
Buy new workout gear. Your grungy old workout clothes and shoes don't earn any point's when you're in a sour mood. Change your gear and you'll change your mood.

SLASH SUGAR INTAKE!

Give in a little. Eat a bit of what you're craving, maybe a small cookie or a fun-size candy bar. Try to stick to a 150-calorie threshold.
Grab some gum. If you want to avoid giving in to a sugar craving completely,

try chewing a stick of gum.
Reach for fruit. Keep fruit handy for when sugar cravings hit. You'll get fiber and nutrients along with some sweetness.
Avoid drinking any form of soda pop and other sweetened drinks. The amount of sweetener in any type of soft drink is very high. A 12-ounce can contain about 10 teaspoons of sugar.
Start using unrefined sweeteners at home, such as pure maple syrup, raw honey or coconut sugar. Stevia is an excellent choice for those wanting something sweet without calories or any rise in blood sugar.
Go for a walk when you crave sweetness. Studies find that athletes' preference for sweetened foods declines after exercise.
Combine foods. If the idea of stopping at a cookie or a baby candy bar seems impossible, you can still fill yourself up and satisfy a sugar craving. Combine the craving food with a healthful one. For example, dip a banana in chocolate sauce or mix some almonds with chocolate chips. As a beneficial bonus, you'll satisfy a craving and get healthy nutrients from those good-for-you foods.
Try to avoid adding sugar into tea and coffee. The more sugar you eat, the more you'll crave. So cutting down slowly is the best way to stop your sugar addiction.
Nix the sports bars and drinks. They're loaded with sugar! Same with many protein powders. Reach for water and fruit after a workout.
Choose the right breakfast cereal. Many are loaded with sugar. Even the healthy ones can make you fat, here's what to look for. You want one with less than 8 grams sugar per serving or, preferably, unsweetened altogether like steel-cut oatmeal.

CHOOSE HEALTHIER DIETARY FAT!

Get cooking with your oven! Grilling food reduces added fat, still gives a nice browned appearance and taste.
Go for lean cuts of meat, and stick to white meat, which has less saturated fat.
Eat omega-3 fats every day. Good sources include fish, walnuts, ground flax seeds, flaxseed oil, canola oil, and soybean oil.
Try to eliminate trans fats from your diet. Check food labels for trans fats. Avoiding commercially-baked goods goes a long way. Also limit fast food.
Beware of health halos. Local organic cream from the farmers' market is still cream, and it packs loads of calories. Foods like ice cream and bacon should be considered splurges. And a product labeled "No saturated fat" may be full of sodium, sugar, and refined flour.

BOOST YOUR METABOLISM!

Take a walk. Getting up and moving around not only can help you digest after a big meal, but it also may boost your fat burn.
Increase your daily activity. By making little changes to your daily routine, like choosing a parking spot farther from the door of your grocery store, means you will increase your daily energy expenditure.
Eat iron-rich foods. Iron helps our bodies make energy - low iron levels can slow down your metabolism. Foods rich in iron include oysters, mussels, beef, lamb, fish and poultry. Plant sources of iron include pumpkin seeds, lentils, tofu, chickpeas and other beans.
Eat enough calories to at least match your resting metabolic rate.
Turn to green tea. Green tea has an ingredient which can crank up metabolism.

EXERCISE CONTROLS WEIGHT!

Keep exercise levels of at least 1500 kcal/week.
Choose workouts that you enjoy most. While choosing exercises to involve yourself in, preference should be given to activities that you enjoy most; this will help boost your morale of exercising thereby creating a disciplined routine.
Mix cardio and weights. Working both your cardiovascular system and muscles in the same session will make you burn more calories during the 30-minute period after your workout.
Fire up your metabolism with intervals. One study found that doing 10 four-minute speed bursts with two minutes of slow walking or cycling after each (60 minutes total) three times a week upped the body's ability to use fat as fuel during exercise by 25 percent after six weeks.
Stretch it out: Researches have found that dynamic stretching exercises before running, may increase calories burnt. Before working out, perform five different dynamic stretching exercises, such as toe heel walks, hand walks, different angle lunges, and walking groaners (2 sets, 4 reps).
Challenge Yourself. Make sure you are always exercising to your full fitness capabilities.

BALANCED DIET

3 Day Meal Plan

According to your genes the most effective diet for your weight management is the balanced diet. The diet has a specific amount of energy, carbohydrates, fats and proteins, which are adjusted to your individual needs.

If you follow your diet, your daily energy intake will be between 1650 and 1900 kcal, which is exactly what you need to achieve your weight goal. Your optimal needed daily energy will come 50 to 55% from carbohydrates, 25 to 30% from fats and 15 to 20% from proteins. The exact sources of the carbohydrates, fats and proteins are also carefully chosen to fit with your genes and support your weight management most effectively.

The diet is divided into 5 to 6 meals per day - breakfast, lunch, dinner and snacks or sometimes a dessert in between the meals or with the main meals. You are free to switch the sequence of the meals within one day. However it is important to have the whole day equally covered and not to skip meals or eat everything at once as it will have a negative effect on your blood sugar levels and therefore also on your hunger and saturation.

It is also important to drink at least 1.5 L of water per day. Good choices to cover the need are water and herbal teas, but without the extra energy from sweeteners. Black tea and coffee are ok as well, but they alone do not cover your liquid needs and it is better to drink them without milk and/or sugar to avoid extra kcal. Make sure you drink your black tea and coffee separately from the meals, not to inhibit the absorption of important vitamins and minerals from the food.

Take time to prepare your meals and enjoy what you are doing and eating!

Day 1

Kcal:	Proteins:	Fats:	Carbohydrates:
1819	**88.9**	**54.4**	**261.2**

BREAKFAST

Pancakes Kcal: 399.6

Ingredients

1/2 cup wheat flour, whole grain

1 tsp sugar

1/2 tsp baking powder

dash off baking soda

1/2 cup buttermilk, lowfat

1 small egg

1/2 tbsp coconut oil

8 cherry tomatoes

2 sprigs basil leaves

Recipe

Whisk whole wheat flour, sugar, baking powder, baking soda, and salt in a bowl. Whisk buttermilk, egg, and coconut oil in a separate bowl; pour buttermilk mixture into dry ingredients. Stir just until combined (batter may seem a bit thick). Heat a cast iron skillet over medium-low heat for 5 minutes. Pour 1/3 cup of batter onto hot skillet and use a spoon to spread the pancake a bit. Cook until browned and bubbles appear on top, 1 1/2 to 2 minutes. Flip and cook until browned and set in the middle, about 2 more minutes. Repeat with remaining batter. Serve with tomatoes and basil leaves.

Nutrients

Proteins 17.7 g

Fats 13.2 g

Carbohydrates 54.1 g

SNACK

Apple and Almonds Kcal: 205.0

Ingredients

16 almonds

1 medium apple

Nutrients

Proteins 4.0 g

Fats 9.5 g

Carbohydrates 29.7 g

LUNCH

Barley and Lentil Soup **Kcal: 420.1**

Ingredients	Recipe	Nutrients
1/4 cup pink lentils 1/4 cup pearl barley 1 clove garlic 1/2 tsp finely chopped ginger 2 tbsp skim milk plain yoghurt 1/2 tbsp tomato puree, canned 1/2 tsp curry powder 1/4 cup coconut milk, canned 1 tbsp, chopped onion 1 tbsp, chopped chives 1/2 tbsp olive oil	Heat the oil in a large pot over medium heat. Add the chopped onion, crushed garlic, and ginger. Cook, stirring frequently, until soft, 3 to 4 minutes. Add the tomato paste and curry powder. Cook, stirring, until the tomato paste darkens, 1 to 2 minutes. Add the coconut milk, lentils, barley, 1 cup water, season with salt and bring to a boil. Reduce heat and simmer, stirring occasionally, until the lentils and barley are tender, 35 to 45 minutes (adding more water if needed to loosen). Serve topped with chives and yogurt.	Proteins 16.4 g Fats 20.1 g Carbohydrates 46.8 g

SNACK

Blueberry and Cottage Cheese Salad **Kcal: 338.2**

Ingredients	Recipe	Nutrients
1 tbsp lemon juice 8 tbsp cottage cheese 1 cup blueberries 1 tbsp honey 1 kiwi 1/2 medium apple	Put thinly sliced apple and kiwi on a plate. Sprinkle with lemon juice and top with cottage cheese, blueberries and finely chopped mint.	Proteins 15.8 g Carbohydrates 69.2 g Fats 2.0 g

DINNER

Chili-Garlic Shrimp Noodle Bowl **Kcal: 456.2**

Ingredients	Recipe	Nutrients
4 oz shrimp 1/2 tbsp tomato chilli sauce 1/2 lime 1 tsp tamari soy sauce 1/2 tbsp olive oil 1/2 cup shredded red cabbage 1/2 cup chopped sugar snap peas 2 cloves garlic 1 medium carrot 2 oz soba noodles	Cook the noodles according to the package directions. Toss with the lime juice, soy sauce, sesame oil. Heat the olive oil in a large skillet over medium-high heat. Add the shrimp and crushed garlic and cook, tossing frequently, until opaque throughout, 2 to 3 minutes. Stir in the chili sauce. Top the noodles and shrimp with the shredded cabbage, snap peas, and thinly sliced carrot, dividing evenly. Serve with lime wedges and additional chili sauce.	Proteins 35.0 g Fats 9.6 g Carbohydrates 61.3 g

Day 2

Kcal:	Proteins:	Carbohydrates:	Fats:
1792	**99.4**	**278.3**	**60.7**

BREAKFAST

Scots Porridge **Kcal: 720.4**

Ingredients	Recipe	Nutrients
1 cup oats 1 cup water 2 tsp ground flaxseeds 1/2 cup skimmed milk 1/2 one pear cinnamon	Put the water and milk in a saucepan and sprinkle in the oats and chopped pear. Bring to the boil and simmer for 3-5 min, stirring all the time. Season with cinnamon and serve with seeds.	Proteins 30.9 g Carbohydrates 119.6 g Fats 12.4 g

SNACK

Vegetables with Hummus **Kcal: 162.6**

Ingredients	Recipe	Nutrients
1 medium carrot 6 tbsp hummus, commercial 2 medium stalk, chopped celery	Cut the vegetables into slices or sticks and eat with hummus as a dip sauce.	Proteins 8.0 g Fats 8.6 g Carbohydrates 15.1 g

LUNCH

Chicken Tandoori with Rice **Kcal: 256.4**

Ingredients	Recipe	Nutrients
1/4 cup brown rice 3 tbsp skim milk plain yoghurt 1/2 tbsp lemon juice 1 clove garlic 1/4 tsp finely chopped ginger 2 oz chicken breast fillet 1 tbsp olive oil ground cumin seeds dried coriander seeds pepper ground turmeric cayenne pepper	Chop chicken into bite-sized chunks. Place the chicken pieces in a shallow casserole. Mix together the rest of the ingredients, season to taste with pepper,cayenne pepper, turmeric, coriander and cumin seeds and spread over the chicken. Then cover the dish and place it in the fridge to marinate for at least an hour. Bake the chicken in the marinade at 200 C/400 F/gas mark 6 for 35-40 min until meat is cooked thoroughly. Do not turn. Serve with cooked brown basmati rice.	Proteins 13.4 g Fats 14.6 g Carbohydrates 18.4 g

Coleslaw **Kcal: 51.4**

Ingredients	Recipe	Nutrients
1/2 cup shredded red cabbage 1 medium carrot 1 tbsp mayonnaise, low fat, low sodium 1/2 tbsp skim milk plain yoghurt 1 tbsp chopped onion	Mix finely shredded cabbage, grated carrots, finely chopped onion with mayonnaise and yogurt.	Proteins 0.9 g Fats 2.7 g Carbohydrates 6.2 g

SNACK

Orange and Walnuts **Kcal: 173.2**

Ingredients	Nutrients
8 half walnuts 1 orange	Proteins 3.8 g Fats 10.4 g Carbohydrates 20.4 g

DINNER

Roasted Cod with Quinoa **Kcal: 428.0**

Ingredients	Recipe	Nutrients
4 oz cod fish fillet 1/4 tbsp olive oil 1 clove garlic 1 tbsp chopped parsley 1/2 lemon 1/2 cup quinoa 1 cup vegetable broth 1 cup of flowerets broccoli	Mix together the oil, parsley and crushed garlic, season with salt and pepper to taste and rub over fish, setting aside to marinate for 10 min. Place the fish on a baking try and arrange the lemon slices on top. Cook in a preheated oven at 180 c/350 F/gas mark 4 for 15-20 min or until just cooked (and the flesh flakes easily). Rinse the quinoa very well under cold, running water. Put it in a saucepan with the broth, bring to the boil, cover and simmer for 13 min or until water has boiled away and the grains are light and fluffy. Serve with steamed broccoli!	Proteins 42.4 g Fats 11.9 g Carbohydrates 98.5 g

Day 3

Kcal:	Proteins:	Fats:	Carbohydrates:
1894	**87.9**	**65.7**	**256.0**

BREAKFAST

Scrambled Egg with Tomatoes Kcal: 350.7

Ingredients

2 oz skimmed milk

1 tbsp chopped parsley

1 tbsp chopped onion

1 clove garlic

2 medium eggs

5 cherry tomatoes

2 regular slices rye toast bread

1/2 tbsp butter

Recipe

Rinse and thinly chop tomatoes. Sauté the onion and crushed garlic until tender. Add tomatoes, stir-fry for two minutes. In a bowl beat together the eggs and milk with salt and black pepper. Pour the eggs on the sauté tomatoes, cook for 7 minutes by mixing and crushing till the eggs are scrambled to the size of the tomatoes. P.S. If baking is desired place the saute tomatoes on lightly greased baking pan, pour the egg mixture. preheat the oven to 350°F/180°C and bake it for 10-12 minutes. Serve it hot with chopped parsley on top. Complement the dish with butter and bread.

Nutrients

Proteins 18.3 g

Fats 16.4 g

Carbohydrates 32.8 g

SNACK

Fruit Smoothie **Kcal: 349.8**

Ingredients	Recipe	Nutrients
1 cup strawberries 1 cup skim milk plain yoghurt 1 large banana 3 oz orange juice	Blend all the ingredients to form a refreshing puree and serve chilled.	Proteins 18.5 g Fats 0.5 g Carbohydrates 72.1 g

LUNCH

Beef Steak **Kcal: 256.4**

Ingredients	Recipe	Nutrients
1 clove garlic 3 oz beef, sirloin 2 tbsp lemon juice 1 tbsp tamari soy sauce 8 thin slices onion 1/2 tbsp olive oil 1 cup of flowerets broccoli	Marinate beef in soy sauce, lemon and pepper for at least one hour. Heat the cooking oil in a pan then stir. Fry the onion rings until the texture become soft. Set aside. In the same pan where the onion where fried, fry the marinated beef (without the marinate sauce) until colors turn brown. Set aside. Put in the garlic then saute for a few minutes. Pour the marinate sauce and bring to a boil. Put the fried beef and simmer for 15 to 20 minutes or until meat is tender. Add water as needed. Add the stir fried onions and some salt and pepper to taste. Serve hot. Share and enjoy! Serve with steamed broccoli.	Proteins 22.6 g Fats 12.0 g Carbohydrates 16.0 g

Green Salad Kcal: 140.6

Ingredients	Recipe	Nutrients
1/4 cup, sliced fennel 1 small cucumber 1 medium stalk, chopped celery 1 tbsp lemon juice 1/2 tbsp honey 1/2 tbsp olive oil 2 outer leaves romaine lettuce	Lettuce in bite-sixed pieces, finely sliced fennel, celery and cucumber mixed with dressing.	Proteins 2.8 g Fats 7.0 g Carbohydrates 17.5 g

Sweet Potato Mash Kcal: 239.2

Ingredients	Recipe	Nutrients
2 medium sweet potatoes	Slice the sweet potato into thin circles, then steam for around 12 minutes until soft. Season with pepper and mash with a fork.	Proteins 5.2 g Fats 0.0 g Carbohydrates 54.6 g

DINNER

Sandwich with Avocado and Red Sweet Pepper **Kcal: 299.1**

Ingredients

2 slices whole grain bread (toasted)

4 slices cucumber

1 small red sweet pepper

1 cup sliced avocado

Nutrients

Proteins 5.4 g

Fats 23.0 g

Carbohydrates 22.5 g

Miso Soup **Kcal: 258.5**

Ingredients	Recipe	Nutrients
1 cup water 1 cup vegetable broth 3 tbsp miso paste 1 tsp seaweed, wakame 2 oz regular tofu 1 tbsp, chopped spring onions	Pour the water and vegetable broth (instand dashi would even be better) into a pot and bring to a boil. Turn the heat to medium-low and add the cubed tofu. Drain the seaweed and add the seaweed to the pot. Simmer for 2 minutes. In the meatime, spoon the miso paste into a bowl. Ladle about 1/2 cup of the hot broth into a bowl and whisk with chopsticks or a whisk to mix and melt the miso paste so that it becomes a smooth mixture. Turn the heat off, add the miso paste to the pot and stir well. Taste the soup - if it needs more flavor, whisk in another tablespoon or two of miso paste. Top with green onions and serve immediately.	Proteins 15.1 g Carbohydrates 40.3 g Fats 6.8 g

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1.0) The myInnerGo product portfolio is proposed forward for educational and informative use only and is not intended to be used for medical diagnosis or treatment. myInnerGo do not provide medical advice and cannot totally guarantee a precise outcome as a result of you taking any course of advised action or recommendation outlined by your Results which are based upon your genetic profile.

1.1) myInnerGo utilises a robust evidence-based approach, the information provided is based on a small subset of genetic markers and as a result is only one part of a much larger picture. There could be other genes, environmental influences, lifestyle varieties and unidentified genetic variants/expressions that are more important predictors.

1.2) Please pursue the advice of your GP, Doctor, or/and Physician with any questions you may have regarding your physical or/and psychological health and wellbeing. Prior to making any variations to your training, diet or lifestyle practices you must first consult a qualified health care provider, GP or relevant Doctor.

1.3) You as the receiver of the myInnerGo report are solely responsible for the way the information is interpreted, acted upon and be aware that any recommendations you follow you do so at your own risk. In no way will myInnerGo or any persons associated with myInnerGo be held accountable for any injuries, ailment or ill health that might occur because of the use of information provided by myInnerGo or the advice contained within your report or given out during a consultation. If you feel you may require emergency services, you must contact your doctor or the relevant ambulance, police or fire service.

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14.6.2017

NUGENE

Nutrition & Sport

myINNERGO

GENES UNLOCKED

No two humans are genetically identical. Genetic variants are present throughout the human genome and are key to our understanding of the potential influence that genes may have on athletic performance. Along with environmental factors (training and diet), it is possible that elite athletes possess a blueprint of genetic variants that permit them to succeed at the highest level of competition.

ABOUT YOUR RESULTS

The aim of the myInnerGo Fitness Professional is to provide you with a simple, scientifically robust information about your genetic potential.

MyInnerGo genetic testing service for fitness professionals identifies genetic markers that are associated with certain traits, including response to nutrition and performance abilities. Also identifies health related markers in your DNA that are associated with differences in lifestyle, in order to provide you information about your responsiveness to nutrients or diet.

The personal genetic information contained in this report should be used as an additional factor or data point in your entire decision-making process.

COLLECTING SCIENTIFIC INFORMATION

The information on specific genetic variants is obtained from ***PubMed Central*** *This is the U.S National Institutes of Health (NIH) free digital archives of biomedical and life science journal literature.Additional information included about genetic variants is obtained from* ***OMIM****. OMIM is the Online Mendelian Inheritance in Man database catalog of human genes and genetic disorders.*

GENETIC TENDENCY CALCULATION

A model to calculate the overall genetic tendency in lifestyle traits involves combination of predisposition from multiple variants in the different genetic loci into a single relative value: HIGH-AVERAGE-LOW or HIGH-AVERAGE or AVERAGE-LOW. myInnerGo will provide genetic tendency compared to the general population. The combined genetic tendency from multiple genetic markers relative to the population is calculated as a product of the corresponding score and frequency for individual marker.

YOUR REPORT CONTAINS THE FOLLOWING INFORMATION

1. SPORT PERFORMANCE

1. Endurance
2. VO2 max
3. Anaerobic Threshold
4. Power
5. Lean Body Mass
6. Hypertrophy Response
7. Injury Risk
8. Recovery
9. Warrior vs Worrier

2. MICRONUTRIENTS

1. Vitamin A
2. Vitamin D
3. Vitamin B6
4. Vitamin B9 - Folate
5. Vitamin B12
6. Bone Mineral Density and Ca Intake
7. Selenium
8. Magnesium
9. Iron
10. Omega-3

3. RECOMMENDATIONS

1. SPORT PERFORMANCE

The gene traits that are linked closely to the physical and psychological attributes of sport performance.

SUMMARY OF GENETIC PROFILE

ENDURANCE	***LOW***	AVERAGE/GOOD	HIGHLY GIFTED
VO2 MAX		***AVERAGE***	HIGH
ANAEROBIC THRESHOLD		***AVERAGE***	HIGH
POWER	LOW	AVERAGE/GOOD	***HIGHLY GIFTED***
LEAN BODY MASS		***AVERAGE***	HIGH
HYPERTROPHY RESPONSE		***NORMAL***	HIGH
INJURY RISK		***AVERAGE RISK***	INCREASED RISK
RECOVERY		***FAST***	SLOW
WARRIOR VS WORRIER	WORRIER	MIXED	***WARRIOR***

1.1 Endurance

Endurance is the ability to perform a physical task over prolonged periods of time with minimal fatigue. Endurance levels are commonly associated with the amount of energy expended during the exercise period. Those with higher endurance affinity will therefore be able to exert higher amounts of energy for prolonged periods.

Genes of interest: ADRB2, COL5A1, ACTN3, PPARA, ACE, ADRB3, PPARGC1A1, VEGF

YOUR RESULT: ***LOW***

The genetic data have shown a low affiliation with endurance activities. Endurance activities include many sports ranging from football to marathons. The genetic outcome does not mean that these sports should be avoided, but it is highly probable that this profile would have a tougher time reaching the same level as a person genetically gifted with endurance ability. There are endurance-related sports that it would be possible for this profile to excel at, but these are very mixed type sports.

1.2 VO2 max

VO2 max is an individual's maximum rate of oxygen consumption, as measured during incremental exercise. It is a fair reflection of the aerobic fitness of a person and is an important factor in aerobic activity needed for sub-maximal endurance-based sport, such as marathons.

Genes of interest: VEGF, ADRB1, NRF2 (GABPB1), ACE, UCP2

YOUR RESULT: ***AVERAGE***

The genetic data shows a small increase in VO2 max as a result of aerobic training. A high VO2 max may indicate an athlete's potential for excellent aerobic endurance, but many other factors can determine the winner of a particular race.

1.3 Anaerobic Threshold

The Anaerobic threshold (AT) is commonly known as the lactate threshold or LT, and is the level at which lactate begins to accumulate within the blood stream during exercise. With increased exercise intensity, lactate in the blood reaches the LT. The LT is a useful measurement for determining exercise intensity during training for a wide variety of sports such as running, rowing, cycling, swimming etc. The usage of interval training, which has been popularized in modern times, uses the principle that the LT can be exceeded for short periods of time, followed by a short recovery period.

Genes of interest: PPARGC1A1, ACTN3, AMPD1

YOUR RESULT: ***AVERAGE***

The gene profile is linked with an average anaerobic threshold - you are neither impaired nor gifted. Exercise intensity can still be high but lactate will cause a decline in performance faster than those with the gifted variants, but not as fast as those with low anaerobic threshold genes.

1.4 Power

Power is the ability to exert a maximal amount of energy over a very short period of time. However, a maximal power activity will depend on maximum energy expenditure. Those with a high affinity to power will be able to produce more energy (force) in a short period of time than those with little affinity.

Genes of interest: AMPD1, IL-6, ACTN3, NOS3, ACE, AGT, PPARA

YOUR RESULT: ***HIGHLY GIFTED***

You are gifted! The genetic data have shown that you have the potential to excel at power-based sports. This profile shares genetic variants with professional power and strength athletes. However, the scope of power sports is very wide and, therefore, other variables must be taken into consideration.

1.5 Lean Body Mass

Lean body mass (LBM) is your total body weight minus fat, and determines whether or not you are more likely to have lower body fat levels and higher muscle mass. Therefore those with higher affinity will have a more beneficial power to weight ratio.

Genes of interest: TRHR

YOUR RESULT: ***AVERAGE***

The genetic variants have shown that genetically your lean body mass is average, although many environmental factors affect this. Those with gifted genes may find it easier to have a more positive lean body mass.

1.6 Hypertrophy Response

Body composition in relation to resistance training is the ability for muscle hypertrophy to occur as a result of resistance exercise or physical activity. Muscle hypertrophy is the increase in muscle size, and, whilst there is a correlation between size and strength the genes that govern power are much more closely associated with strength. Those with better affinity to this aspect of body composition will be able to increase muscle size faster and to achieve more hypertrophy than those with lower affinity.

Genes of interest: LEPR

YOUR RESULT: ***NORMAL***

The genetic variations have found that, in terms of your body's response to resistance activity, you are average. Those with gifted genes may have a faster and more pronounced result than you when utilizing resistance training, but you still have the potential to increase muscle size. However, it may take more time, more complex training principles and targeted nutrition to reach elite-level bodybuilding goals.

1.7 Injury Risk

Injuries in sport are due to: damage from overuse; poor technique; or accident. Genetically, injury risk is associated with tendinitis, and therefore those with a genetically higher risk will be more predisposed to this inflammatory condition, commonly caused by overuse and/or lack of appropriate rest.

Genes of interest: GDF5, COL1A1, COL5A1

YOUR RESULT: ***AVERAGE RISK***

The genetic data show that there is an average injury risk. Injuries in sport commonly occur to the musculoskeletal system (MSK), and can be simple, involving the muscle, ligament, tendon or bone, or complex, involving more than one aspect of the MSK system and even other parts of the anatomy, such as the integumentary system and other organs.

1.8 Recovery

Recovery works on two levels: the first is the ability to heal from damage caused by physical activity and injury, and the second is the speed with which you recover energy after intense bouts of exercise. Those with higher affinity will be able to recover faster from injury and have more energy post-rest period than those with lower affinity.

Genes of interest: AMPD1, IGF2, IGF2AS

YOUR RESULT: ***FAST***

The genetic data shows a fast recovery rate. Recovery affects how quickly you can recuperate after intense bouts of exercise. It is a major factor in overuse injuries that occur in sport and daily life, and, therefore, is an important aspect not only to those in sport but everyone who suffers an injury. Recovery also has some bearing upon performance during sport, and sports that utilise short intervals of high intensity followed by periods of general moderate intensity are most affected by this.

1.9 Warrior vs Worrier

The variants in this topic are related to stress response and the ability to deal with stressors, ranging from executive decision-making to pain threshold. The variants are split between those who are "warriors", those who are "worriers" and those who fall in between.

Genes of interest: COMT

YOUR RESULT: ***WARRIOR***

You have a genetic variant that means your pain threshold is higher than others with an ability to deal with stress and stressors to a higher degree! However, under certain circumstances your cognitive behavior may be impaired.

2. MICRONUTRIENTS

The gene traits that look into potential deficiency risk factors of micronutrients in the diet.

SUMMARY OF GENETIC PROFILE

VITAMIN A	AVERAGE RISK	**INCREASED RISK**
VITAMIN D	AVERAGE RISK	**INCREASED RISK**
VITAMIN B6	AVERAGE RISK	**INCREASED RISK**
VITAMIN B9 - FOLATE	**AVERAGE RISK**	INCREASED RISK
VITAMIN B12	**AVERAGE RISK**	INCREASED RISK
BONE MINERAL DENSITY AND CA INTAKE	AVERAGE RISK	**INCREASED RISK**
SELENIUM	**AVERAGE RISK**	INCREASED RISK
MAGNESIUM	**AVERAGE RISK**	INCREASED RISK
IRON	**AVERAGE RISK**	INCREASED RISK
OMEGA-3	**AVERAGE RISK**	INCREASED RISK

2.1 Vitamin A

Vitamin A is a fat-soluble compound that is essential for the function of retinal pigments of vision, for growth and differentiation of cells and tissues like mucosa and immune cells. Vitamin A is known as the anti-infective vitamin, it is required for normal functioning of the immune system. Vitamin A is also needed for hormone metabolism and iron transportation and both vitamin A excess and deficiency are known to cause birth defects. Pre-formed vitamin A (retinoids) exists only in animal products such as organ meats, fish oil and dairy products. However, there are about 50 carotenoids that the body can convert into vitamin A. The most common is beta-carotene, what you can find in orange, yellow and green vegetables and fruits.

Genes of interest: BCMO1, BCMO1

YOUR RESULT: ***INCREASED RISK***

Your genetic profile shows reduced conversion of beta-carotene to vitamin A. This means you probably need more than 600-700 mcg of carotene and vitamin A to keep your levels sufficient to avoid deficiency. It is recommended that you pay special attention to your regular consumption of vitamin A and carotene containing foods. Good sources are animal products (as preformed vitamin A) and yellow and orange and dark green coloured fruits and vegetables (as provitamin A carotenoids). Half a teaspoon of cod liver oil or half a cup of carrots, sweet potato or squash can provide you with the average daily amount of vitamin A. Your increased needs can be covered by consuming more provitamin A as carotenoids.

2.2 Vitamin D

Vitamin D is needed for strong bones as it brings calcium into bones. It has other roles in the body, including modulation of cell growth, neuromuscular and immune function, and reduction of inflammation. Vitamin D deficiency is a widespread problem in developed countries. Environmental factors such as diet, intake of vitamin D supplements and exposure to sunlight are known to influence serum vitamin D concentrations.

Genes of interest: CYP2R1, DHCR7, GC

YOUR RESULT: ***INCREASED RISK***

Your genetic variants show an increased risk for vitamin D deficiency. Vitamin D is poorly absorbed from food, most of it is synthesised in our skin and liver with the help of sunshine. It is recommended that you spend more time in the sunlight and to check your vitamin D level (calcidiol) in the blood. For your overall good health it is important to reach the level of 30-40 ng/ml at least! For you it probably means you also need to supplement with vitamin D.

2.3 Vitamin B6

Vitamin B6 is a water-soluble essential nutrient and must be obtained from the diet because humans cannot synthesise it. Vitamin B6 has a number of functions. Vitamin B6 with other nutrients like folate and vitamin B12 are involved in keeping homocysteine levels low, which decreases cardiovascular risks. Vitamin B6 is an important vitamin for red blood cell production and carbohydrate metabolism providing good energy levels throughout the day, for neurotransmitter production leading to healthy nerves, brain and mood and to support liver functions. There is a wide variety of foods that act as good sources of vitamin B6 and it is probably easy to reach the recommended level of daily intake if you are eating a variety of healthy, fresh food every day.

Genes of interest: ALPL

YOUR RESULT: ***INCREASED RISK***

Your genetic variants show an increased risk for vitamin B6 deficiency. This means you probably need more than the average recommendation of 1,3 mg to keep the levels sufficient and avoid deficiency. You should pay special attention to eating a well-balanced diet with plenty of whole foods every day. A can of tuna or a cup of chickpeas can provide you with the average daily need, but due to your genetic predisposition you might need more.

2.4 Vitamin B9 - Folate

Folic acid, also called folate or folacin, is a B-complex vitamin which is most well known in the prevention of pregnancy defects. Folic acid is a crucial nutrient that supports important physiological functions such as DNA synthesis, cell division and substrate methylation. Adequate folate intake is also helpful in lowering the risk of some forms of cancer, especially in genetically susceptible individuals, and may lower the risk of cardiovascular diseases with keeping homocysteine levels low.

Genes of interest: SCLC19A1, MTHFR, MTRR, MTHFR

YOUR RESULT: ***AVERAGE RISK***

Your genetic profile shows no increased risk for folate deficiency. For your overall health make sure you reach the daily average recommended level of folate intake of 400 mcg. A cup of lentils or half a cup of spinach/broccoli can provide you with the needed amount.

2.5 Vitamin B12

Vitamin B12 is one of the most commonly deficient vitamins, affecting your whole body, from brain to bone. Deficiency in vitamin B12 is often related to poor intestinal B12 absorption, which can be due to lack of stomach acid, rather than direct dietary deficiency. Some people also need a lot more B vitamins than others. In adults, typical deficiency symptoms include loss of energy, tingling, numbness, reduced sensitivity to pain or pressure, blurred vision, abnormal gait, sore tongue, poor memory, confusion, hallucinations and personality changes. Often these symptoms develop gradually over several months to a year before being recognised as being due to B12 deficiency and they are usually reversible on administration of B12. Clinical deficiency of vitamin B12 can cause anemia, dementia, nervous system damage.

Genes of interest: FUT2, TCN2

YOUR RESULT: ***AVERAGE RISK***

Your genetic profile shows no increased risk of vitamin B12 deficiency. This means having a healthy and well balanced diet with vitamin B12 containing foods daily should cover your vitamin B12 needs of around 2,4 mcg daily and ensure you good health. One serving of meat or about 14 sheets of dried purple laver (nori) daily can provide the amount needed.

2.6 Bone Mineral Density and Ca Intake

Bone Mineral Density (BMD) is a measure of the amount of calcium and other minerals in bones. The minerals give the bones strength, making them less likely to break. BMD is clinically used as an indirect indicator of osteoporosis and fracture risk. Calcium is the best known mineral needed for strong bones. Calcium is a mineral found in the body and one of the most abundant, most of it is located in the bones and teeth. Other necessary nutrients for strong bones are vitamin D, magnesium along with many other minerals and vitamins. Low calcium intake has been associated with a multitude of disorders like risk of hypertension, preclampsia, premenstrual syndrome, obesity, polycystic ovary syndrome and hyperparathyroidism. Weight bearing physical activity is also necessary to build strong bones, optimise bone mass and reduce the risk of osteoporosis.

Genes of interest: VDR, VDR, LRP5

YOUR RESULT: ***INCREASED RISK***

Genetically you have an increased risk of low bone mineral density disorders. This means you might need more of these minerals and vitamins to avoid the deficiency and keep your bones healthy and strong. Calcium is one of the most important nutrients for the bones and you need it at least 1000 mg each day. A cup of yoghurt and a slice of cheese can give you around half of your RDA! Due to your genetic predisposition it is recommended to check your bone density with a doctor, in case there is need for more calcium.

2.7 Selenium

Selenium has many important functions in body. Selenium is one of the main antioxidants that protect us from disease and ageing. Selenium is also needed to regulate our hormonal balance. Lower levels of selenium in humans have been linked to a higher risk of cancer, heart disease, inflammation, asthma and other diseases. Selenium deficiency increases susceptibility to infection, and has been associated with nearly all type of disease. Dietary intake of selenium is dependent on its content in food and the bioavailability of its chemical forms. The selenium content of foods varies according to the concentration of selenium in the soil. Thus, the same foods may have significant differences in selenium levels depending where they have been grown.

Genes of interest: GPX4, GPX1

YOUR RESULT: ***AVERAGE RISK***

Your genetic profile shows no increased risk for selenium deficiency. This means that a healthy and balanced diet with selenium rich foods should cover your daily needs of 300 mcg, to protect your cells against diseases and ageing. 3-4 Brazil nuts should cover this daily need.

2.8 Magnesium

Magnesium is a required mineral and cofactor for over 300 metabolic reactions in the body. The body consists of about 25 g of magnesium, with about 50-60% in the bones and the remainder in soft tissue. Magnesium deficiency is widespread in the modern diet. Our fast-paced modern lifestyles and reliance on many refined foods (which tend to have a low magnesium content) mean that many of us are not getting enough magnesium in our diet. Magnesium deficiency may lead to cardiovascular disease, hypertension, metabolic syndrome, and type 2 diabetes. Magnesium is needed in energy production and vital tissue functions (blood, muscle etc.). Low magnesium consumption, particularly against a background of high calcium intakes, worsens the risk of cancer and cardiovascular disease. Optimal calcium-magnesium ratio should be 2:1. Many calcium-rich foods like milk or cheese have calcium-magnesium ratio 10:1 or 30:1, which does not favor calcium or magnesium uptake.

Genes of interest: MUC1, ATP2B1

YOUR RESULT: ***AVERAGE RISK***

Your genetic profile shows no increased risk of magnesium deficiency. This means that a healthy and balanced diet should cover your daily magnesium needs to ensure normal body functions, strong bones and protection against diabetes. An average magnesium intake should be at least 300-400 mg per day. One handful of pumpkin seeds can give you about 1/3 of this amount.

2.9 Iron

Iron is an essential nutrient required by every human cell. The main iron function is oxygen transport to our cells and tissues and energy production. Iron deficiency is the most common nutritional disorder in the world and the leading cause of anaemia. Iron deficiency without anaemia is associated with inefficient energy metabolism and reduced muscle strength and endurance.

Genes of interest: TMPRSS6, TMPRSS6, TF, TF

YOUR RESULT: ***AVERAGE RISK***

Genetically you don't have an increased risk for low iron. If your non-genetic risk factors don't indicate otherwise, a healthy and well balanced diet containing iron rich foods should cover your average daily iron needs of 8-18 mg to ensure your good health. One serving of red meat can provide you about 2 mg and a cup of lentils provide 7 mg of iron.

2.10 Omega-3

Omega-3 fatty acids are essential for our health. Omega-3 fatty acids include 3 different fatty acids shortened to ALA, EPA and DHA. Our body needs all 3 types and they are all essential, which means, we cannot produce them in our body, but we need to get them from the food we eat. Omega-3 fatty acids are primarily essential for a healthy heart and blood vessels, eyes and the brain. There is evidence that omega-3 fatty acids are useful in the prevention and treatment of heart disease, cognitive function, depression. For that especially EPA and DHA are needed. Deficiencies or imbalances in brain fats are now known to be associated with everything from dyslexia, hyperactivity and depression to schizophrenia and manic depression.

Genes of interest: FADS1, ELOVL2, FADS1

YOUR RESULT: ***AVERAGE RISK***

Your genetic variants show no increased risk for omega-3 fatty acids deficiency. This means that a healthy and balanced diet with sufficient omega-3 fatty acids should cover your daily basic needs. One serving of salmon daily will provide the recommended allowance of omega-3.

3. RECOMMENDATIONS

Comprehensive lifestyle recommendations are given to you using the data arising from your genetic profile and questionnaire. The aim of the recommendations are to give you an action plan and tips to reach your goal and stay healthy. Personal well-being means making the right choices and NUMED & myInnerGo make it easier!

What Sport Fits Your Genes?

From the genes we tested and the questionnaire we can predict a selection of sports that would fit your characteristics and preferred type, these sports only match your physical capabilities and therefore do not take skill acquisition into account. Some sports predominantly rely on physical dominance however there is always technique and skill to consider. On the other hand some sports are very reliant on skill and some of these we have excluded from our lists e.g. shooting.

Power and Endurance sports

Sport	Power	Endurance
Power Lifting	100%	0%
Weight Lifting	100%	0%
Sprinting 60-100	100%	0%
Olympic Throw Events	100%	0%
Sprint Cycling	100%	0%
Olympic Jump Events	100%	0%
Sprinting 200-400	80%	20%
Hurdles	80%	20%
Rowing Mid Distance	70%	30%
Running 800-1500	50%	50%

Sport	Power	Endurance
Running 2k-10k	30%	70%
Football (Soccer)	30%	70%
Rugby	40%	60%
American Football	40%	60%
Swimming Short Distance	80%	20%
Swimming Mid Distance	50%	50%
Swimming Long Distance	20%	80%
Running 10k - Marathon	10%	90%
Ultra Endurance	0%	100%
Triathlon	20%	80%

The genetic profile has shown a high affinity for power and low affinity for endurance. ***You will have an ability to accumulate a high number of fast twitch muscle fibres which means your body will adapt quick and well when power activities are carried out. Thanks to the gifts in your gene profile it is highly likely that when others can no longer progress you will continue to do so, although more complex training principles must be implemented to achieve this. You will have a potential to achieve very good results in pure power sports.***

From the questionnaire it seems as though you are influenced greatest by individual sports, and therefore your genetic profile and personality match sports such as, wrestling, shot-put, powerlifting, javelin etc.

Is There an Elite Athlete in You?

The question "is there an elite athlete in you?" is a tough question to answer, however we aim to do so by looking at your genetic profile and the motivation you appear to have from the questionnaire. Elite sport is a tough place to be and even for the most gifted athlete, training and nutrition schedules can be both physiologically and psychologically demanding. However most sports offer great rewards at the top, both personally and financially. It is your choice whichever road you choose, we will be on hand to help you no matter what.

You are gifted with high motivation!

The questionnaire shows that you have a high motivation to be a successful sports person, and you also share certain genetic gifts that give you the potential to excel in specific fields. This combination means that the future may well be bright and prosperous if elite sport is the path chosen to be followed or if this is the current path. To be an elite athlete however you will require expert coaching, nutrition and training and depending on the sport, financial backing, however you do have the correct state of mind and genetics to help you reach the goal. It is important to make sure that you are psychologically prepared for the journey you are about to embark on, sport in general is a place of competition with wins and losses, this test has shown that you have the physical ability but don't forget the skill and psychological factors affecting success.

How Can You Avoid Injury?

Sport Injuries are injuries that commonly occur during sports play or exercise, although they may also arise from general activities in life. Injuries can occur due to accidents, poor training, improper or lack of adequate equipment, lack of conditioning and insufficient warm-up/cool-down procedures. There are a variety of injuries and they all require adequate initial first-aid, rest and rehab. The time frame between injury and return to exercise depends on the injury and how fast you respond to rest and rehab.

Summary

Fast recovery	
Average injury risk	

Congratulation! You have average genetic injury risk and fast recovery!

Injuries may occur to any person and at any time, however the gene results show that you have the best possible profile to help stay injury free. The genetic data has shown that there is an average risk of injury with a fast recovery rate; this combination is very fortunate. It means that your risk factors attaining to injury are not increased above those from environmental factors and possible overuse. Having a fast recovery rate is beneficial not only to soft tissue injury recovery but also to energy reclamation during periods of high intensity activities. Sports which utilise this type of exercise include football (soccer), rugby, basketball, mid-distance racing, rowing etc.

Whilst this combination may be beneficial it does not state you are invincible, it is still important to listen to your body. If you feel a "twinge" or a "pull" or just slight pain there is usually a reason for it, it is better to take a few days off to recover from a minor strain then take months off to recover from a rupture.

Practical Tips to Prevent Injuries

Advanced

Learn your body's limitations, don't push through pain
Learn from other athletes and/or coaches
Getting expert advice can also keep you from doing the wrong workouts for your body type, help you moderate your routines so you don't overdo it
Always warm-up, this lubricates joints with synovial fluid
Hydrate. Even experienced athletes have been shown to drastically underestimate their fluid needs

Where possible do multiple varying sports, this helps prevent boredom, burn out, and overuse injuries. Exercise routines should not only concentrate on strength, but should include elements of cardiovascular training as well as balance and coordination conditioning.

How Can You Improve Your Training Intensity?

VO2 max is the complete maximum rate of oxygen that is consumed by a person measured during incremental exercise. The VO2 max is a fair reflection on the aerobic fitness of a person, it is an important factor in aerobic activity which is important to sub-maximal endurance based activity such as marathons. Genetics play a role in a person's ability to improve VO2 max, the majority of people have the capacity to increase their VO2 max to an extent. The extent by which VO2 max can change with training also depends on the starting point. The Anaerobic threshold (AT) is commonly known as the lactate threshold or LT, and is the level at which lactate begins to accumulate within the bloodstream from exercise intensity. With increased exercise intensity, lactate in the blood reaches the LT faster. The usage of interval training, which has been popularised in modern times, uses the principle that the LT can be exceeded for short period of time and then consequently recover.

Keep going! You have average VO2max potential and anaerobic threshold.

Your level: advanced

Your genetic profile shows that you have an average anaerobic threshold (AT) and your VO2max potential is low, this means that prolonged efforts may not be very applicable, interval based activity either over a short time or prolonged period is more relevant. In theory you can improve VO2max by 15-20% with many athletes going beyond this. Certain sports utilise VO2max more than others including hockey and football, specific sport based training may have some benefit. Because of your level you may have a good VO2max and AT already as training in general improves this.

To help unlock your VO2 max and AT follow this protocol 2-3 times per week:

INTERVAL TRAINING ***(can be done on bike, rower etc.)***

Walk – 2 minutes – 20% MHR
Jog – 1 minutes – 30% MHR
Run – 30 seconds – 75% MHR
Sprint – 10 seconds – 85% MHR
Jog – 3 minutes – 30% MHR
Sprint – 10 seconds – 85% MHR
Jog – 1 minute – 35% MHR* REPEAT 3 times

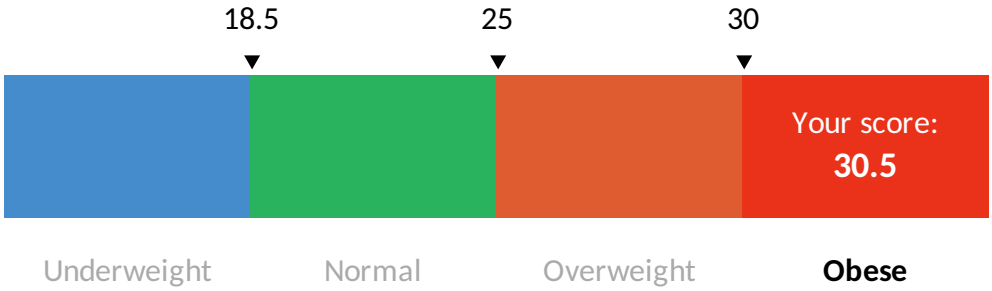
You should use a heart rate monitor and use the calculation 220-AGE to figure out your maximum heart rate (MHR).

As you improve your maximum heart rate will be lower and therefore continuous intensity alterations naturally occur to match the above programme.

How Can You Change Your Body?

Body composition is influenced by complex interactions between genetic and environmental factors such as exercises and energy intake. Athletes, and individuals, often wish to change their body composition in an attempt to gain a competitive advantage or just look better. Changing the body composition can be easy for some and a hard challenge for other. Certain individuals may be genetically predisposed to not benefit from exercise training and not to be efficient at burning energy for fuel. Genetic differences mean that the response of two similar individuals to the same guidelines are likely to be different, so personalised recommendations may help more efficiently to achieve the goal.

Your body mass index



Your Body Composition

Stay Focused!

The genetic profile shows that you have an average affinity towards a positive body composition. Body composition is important for all sports, as it helps with the ratio between contractile tissue and non-contractile tissues, which is vitally important where power to weight plays a big role. However with correct coaching, training and nutrition you have the ability to still reach elite goals. Body composition obviously plays a big role in aesthetic type sports such as bodybuilding, modelling and physique. It will take more complex training and stricter nutrition to reach elite level in these type of sports as compared with a person with more gifted genetic variants.

Exercise and Your Body

Be the Greatest!

The genetic profile in terms of how your body responds to physical exercise and the need for physical exercise shows that physical activity is beneficial. You will gain good results from the fat burning effects of exercise, and on top of this you will be burning energy through normal rest correctly. Therefore, you will more than likely find fat loss easier than others if your nutrition is well balanced.

Practical Tips to Change Your Body

Congratulations! From the genetic results we can see that you have a gifted profile and it should help your body composition as a whole. ***Your body mass index (BMI) belongs to the overweight category and your main aim from the questionnaire shows that you wish to decrease weight.***

To get good results you should follow these recommendations:

1. ***Get body fat % checked every 6 months through either skin callipers or body composition analyzer. Decreasing weight only covers overall weight,: it is important to lose body fat as the main target especially with a higher BMI. This will also highlight if the high BMI reading is correct, as muscle mass can cause abnormal readings.***

2. ***Choosing a sport that relies on weight is very applicable if you concentrate, as you have the ability to alter your body composition, these include sports such as boxing or weight lifting.***

3. ***Keeping to a generally good lifestyle year round, this will help keep a healthy fat to muscle ratio, especially important if BMI abnormality is caused by fat.***

4. ***Utilising resistance training into your training/exercise programme to help maintain and build upon strength and muscle mass, in general: More muscle = Less Fat. Please check also your recommendation "How Hard Should You Train and for How Long."***

   There are many differential forms of resistance training and these principles will need to be implemented for those wanting to take their resistance weight gain further:

   Drop sets
   5x5 strength training
   Rest pauses
   Plyometrics
   Super-sets
   Strength phases/Hypertrophy Phases
   Periodised training towards competition

   You should use resistance training as your main way to change body shape and gain weight due to your genes. Utilising slow paced CV activity can also help decrease fat and help your BMI and fat/muscle ratio.

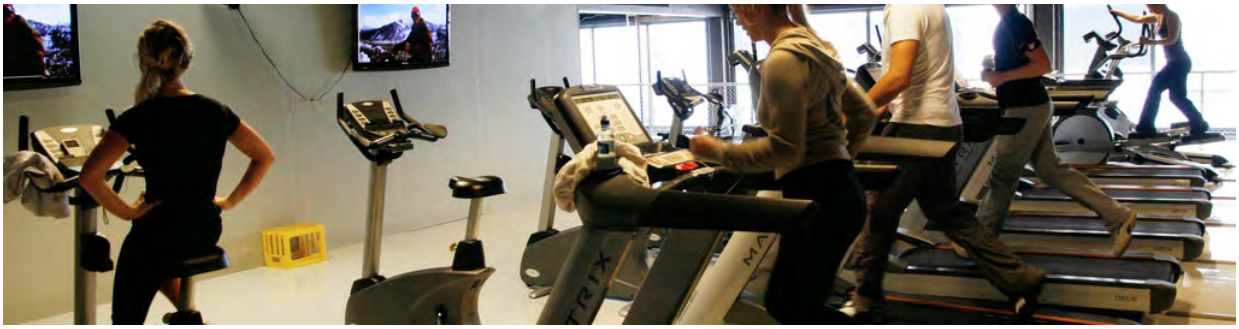
5. ***You should decrease calorie intake at least 250 kcal per day, this is usually best done by reducing sugars and saturated fats.***

6. ***You should increase energy expenditure by doing normal physical activity:***

Playing with the kids.
Mowing the lawn.
Cleaning.
Walking around for a few minutes every 20 minutes of sedentary time.
Doing small exercises in the adverts of a TV show.
Working on cars, bikes etc.

7. ***Having a partner who is decreasing weight to help you with your journey is great for motivation!***

8. ***Eat a variety of foods to keep interested in food and to help keep your nutritional intake well-rounded. High dense foods such as peanut butter and dark (70%+) chocolate will not be beneficial to your goals instead, salads, vegetables and lean meats such as fish are great to fill up on without packing in the calories.***



How Hard Should You Train and for How Long?

Training intensity is the amount of effort put into each and every bout, however long of the exercise lasts, therefore intensity can be explained by whether 50% of you max energy has been used after a bout of exercise or 100% and everything in-between. Frequency is similar to intensity as a higher frequency correlates with an increased intensity as more energy is expanded before recovery can fully restore you back to a 100% state, certain genetic traits allow us to recover from bouts of exercise faster, therefore allowing a return to exercise sooner thus increasing training frequency. By looking back into your recovery, anaerobic threshold and warrior/worrier/mixed profile we can help you accurately judge training frequency and intensity. Whilst different sports and goals require differing form of physical training and principles we can map out basic points and recommendations to follow for your genetic profile.

It never gets easier, you just got better!

The genetic profile has shown that you have a gifted profile that will benefit those who wish to train vigorously. With a good recovery rate you can expect energy recovery in between bouts of exercise to be faster than those with a lower recovery rate, you will also have the ability to establish a faster recovery from training sessions in general. You also have a very high anaerobic threshold, which whilst mainly associated with aerobic work it is also beneficial to High Intensity Interval Training (HIIT) and resistance work, this allows your training intensity to be higher than others as lactate will take longer to accumulate.

Here are three examples of how this can relate to training:

1. Resistance Training

You have the ability to perform 4-9 training sessions per week, splitting muscle groups down into 1-2 per day is most beneficial.

Rest periods in between resistance sets should be 45-60 seconds at 50-90% on the 1RM.
Exercises over 90% 1RM should have 90 seconds between sets.
You should be able to perform at a high level for 45-60 minutes per session.

2. Aerobic Training

You have the ability to perform 4-9 training sessions per week.
For prolonged periods over 20 minutes but less than 60 you should be able to maintain 60-70% of maximal effort.
For prolonged periods over 60 minutes you should be able to maintain 50% maximal effort.

3. High Intensity Interval Training

HIIT can be utilised with stronger maximal cycles and faster recovery periods, I.E a 30 second 80% effort can be followed by a 60s recovery period.

You have the warrior outcome in the COMT variants, this will help you combat the stressors of intense training, and to psychologically recover from tough training session which is further helped thanks to a higher than normal pain threshold.

How Can You Use the Warrior or Worrier in You?

This section concentrates on the ability for you to best maximise your genetic variants dictating your stress response. You may wonder why this is an important aspect? We look into the variants in the gene COMT as it helps us better understand the difference that people may have in the fact of stress. At a high level, sport is highly stressful and is in nature competitive thus building pressure upon an individual. By looking into this we can better see which type of person may be better suited to elite level sport, however the variants have their pros and cons. This is only one aspect of a much bigger picture, sport psychology covers all forms of different characteristics however this does give a base predisposition which can be worked upon and understood.

WARRIOR

The gene variants have shown that you possess the warrior profile, this gives you a higher pain threshold and an ability to govern stressors better, however it can leave you exposed in more cognitive executive situations.

Here are some recommendations to help you use your genes to your benefit:

1. Focus before exercise on getting the most out of your training, your ability to deal with stress affects your mental state but also your body.
2. Understand that because of your higher pain threshold you may try and fight through injuries, so make sure you listen carefully to other signs of injury such as inflammation.
3. Use your variants to help you train with a variety of principles and techniques.
4. You are more likely to enter competitions than others, use this as an advantage to better gauge your competition and where you are in your sporting role.
5. You may be more inclined to say and do things prematurely, try and consider thoughts and actions before they happen.

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