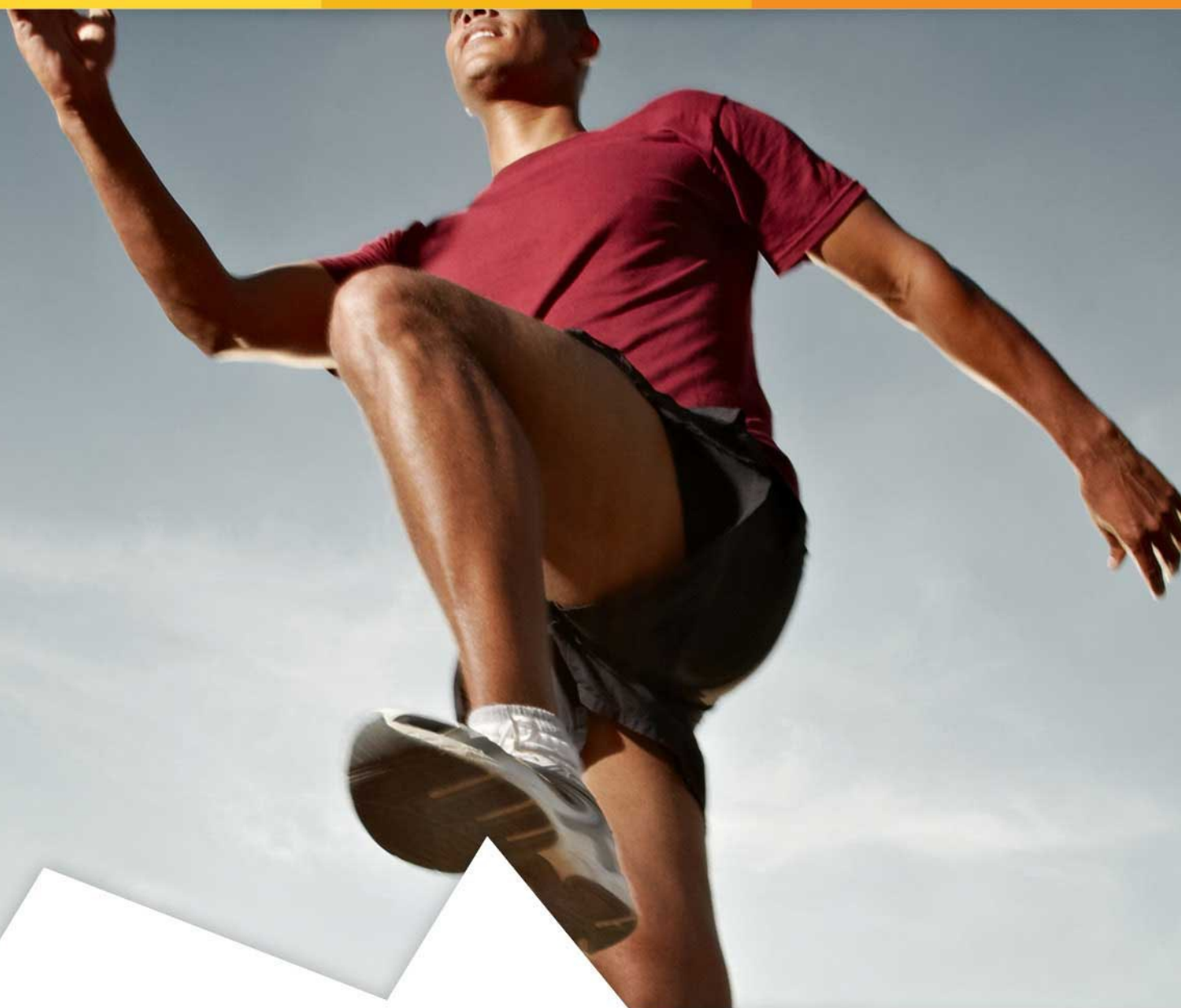




# YOUR GENOTYPE REPORT

Patient Name:	Ben Greenfield
Date of Birth:	1981-12-20
Sample Number:	aaaaaaaaaaaaaapbx
Date of Test:	2014-07-10



**DNAFit**<sup>®</sup>  
PREMIUM+ FITNESS



## WELCOME TO YOUR PERSONAL DNAFit PREMIUM+ REPORT!

It gives us great pleasure to enclose your unique DNA results. Our laboratory has tested your swabs for your response to a selection of key genes that are associated with health and fitness. Your individual results are presented for you in this report, along with a basic grounding in genetic science and the role genetics can play for our personal wellbeing, as well as our athletic potential. We have also included with this report our full DNAFit Genotype Support Guide to help you learn more about where your individual results lie in the larger genetic landscape.

The recent explosion in genetic science has revealed new connections between genes and exercise trainability. To fulfill your fitness or sporting objectives, it can therefore be extremely important to make the appropriate choices to best match your unique genetic make-up. By helping you understand how your genetic profile affects you, DNAFit provides unparalleled insight and knowledge to help you optimize your physical health and fitness.

## WHAT DOES MY DNAFit PREMIUM+ REPORT TELL ME?

From your DNA results, we reveal a unique scientific deep-dive in to the following key areas -



### Endurance / Power profile

Reveal your body's response to key genes associated power or endurance potential. Understand how best to train for your body, whatever your personal goal may be.



### Aerobic potential (VO<sub>2</sub> Max)

VO2 max is the most commonly used marker for endurance potential, we can help you understand your genetic VO2 max potential.



### Post-Exercise Recovery

Everybody has a different recovery ability - understand what your genes say about your natural recovery speed, and how to plan your exercise regime accordingly.



### Recovery Nutrition

Get to know your body's genetic need for certain vitamins and micronutrients. Learn how this can help you manage your recovery strategy after hard exercise.



### Injury risk

Some people are more genetically prone to injury than others, we help you identify where your genes put you on the injury risk scale.



## LEGAL DISCLAIMER

This report is based on your unique DNA results obtained by testing your swabs for your response to a selection of key genes that are associated with health and fitness. Any assertions or recommendations in the report as to an exercise regime or diet, whether specific or general, are based on the following assumptions:

1. that you are in a good state of health and do not have any medical problems that you are aware of;
2. that you have not had any recurring illness in the past 12 months;
3. that no medical practitioner has ever advised you not to exercise;
4. that you are not on any prescribed medication that may affect your ability to exercise safely or your diet;
5. that you do not have any food allergies; and
6. that there is no other reason why you should not follow the assertions or recommendations in the report.

If you have any concerns at any time about whether or not these assumptions are correct in your particular circumstances, before acting, or not acting, on any of the assertions or recommendations, you must consult a medical practitioner.

You are at all times responsible for any actions you take, or do not take, as consequence of the assertions or recommendation in the report, and you will hold DNA Fit Limited, its officers, employees and representatives, harmless against all losses, costs and expenses in this regard, subject to what is set out below.

To the fullest extent permitted by law, neither DNA Fit Limited nor its officers, employees or representatives will be liable for any claim, proceedings, loss or damage of any kind arising out of or in connection with acting, or not acting, on the assertions or recommendations in the report. This is a comprehensive exclusion of liability that applies to all damage and loss, including, compensatory, direct, indirect or consequential damages, loss of data, income or profit, loss of or damage to property and claims of third parties, howsoever arising, whether in tort (including negligence), contract or otherwise.

Nothing in this statement is intended to limit any statutory rights you may have as a consumer or other statutory rights which may not be excluded, nor to exclude or limit our liability to you for death or personal injury resulting from DNA Fit Limited's negligence or that of its officers, employees or other representatives. Nothing in this statement will operate to exclude or limit liability for fraud or fraudulent misrepresentation.





## UNDERSTANDING GENETICS

Before reading your full report, please take a moment to read this background information to help you better understand your results and to guide you on how best to make use of what you learn from your DNAFit results.

The DNAFit Premium report is designed for people of any fitness level. Whether you are an absolute beginner just wanting to train the best way for your body, a personal trainer keen to offer the very best service to your clients, or a professional athlete seeking that extra edge, our report can help you.

### WHAT ARE GENES?

A gene is a segment of the DNA (short for deoxyribonucleic acid) molecule that contains the instructions for how, when and where your body makes each of the many thousands of proteins required for life. Each gene is comprised of thousands of combinations of four letters that make up your genetic code: A, T, C, and G. Each gene's code combines these "letters" in various ways, spelling out the "words" that specify which amino acid is needed at every step in the process of making the proteins required for your body to develop and function. Increasingly, your genes can also tell you whether you are predisposed to specific health risks.

### WHAT ARE GENE VARIATIONS?

With the exception of identical twins, all people have small differences in the information that their DNA contains and it's these differences that make each of us unique. Gene variations are slight changes in the genetic code that are present in at least one percent of the population.

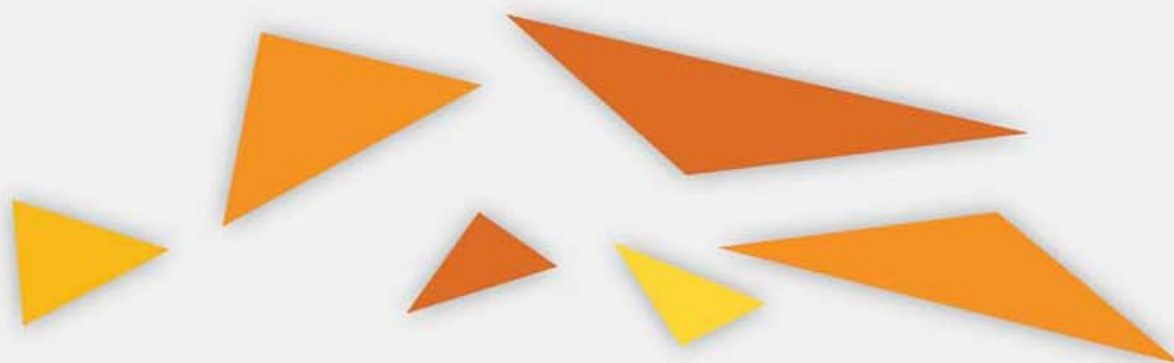
For example - one genetic "letter" (A, T, C, or G) may be replaced by another. These variations can lead to different processes in the body, just as altering one letter in a word can completely change its meaning. When the variation affects only one genetic letter, as in the goat/coat example above, it is called a "single nucleotide polymorphism" (or SNP, pronounced "snip").

### ARE GENE VARIATIONS "BAD"?

For a given population, one genetic code for a gene may be found more frequently than other genetic codes for that same gene. The genetic codes for those genes that appear less frequently are referred to as "variants". Variations should not be thought of as "good" or "bad," rather genetic variations are simply the differences in the forms of the genes present in our bodies. The key is to know which form of the gene you carry, so that you can make the right exercise, dietary and lifestyle choices to reduce your health risks.

### WHAT IS NUTRIGENETICS?

Nutrigenetics is concerned with the effects of our individual genetic variations in response to our diet, exercise and lifestyle, all of which can cause the genes to be "expressed" in a positive or negative way. Nutrigenetics testing enables us to identify where we are on our journey towards achieving our individual, optimal health potential.





## YOUR PERSONAL GENETIC REPORT

The following pages outline your genetic results. By identifying and analysing your unique pattern of genetic characteristics, it becomes possible to adjust your training, diet and lifestyle to match your individual needs for success in exercise and sport.

### **Remember:**

**Your genes cannot change, but your lifestyle can.**

This is why we consider the two together; by identifying genetic strengths and weaknesses, we can make appropriate exercise, dietary and lifestyle recommendations.

## YOUR DNA OVERVIEW



In your training mix power and endurance activities to benefit from your intermediate profile.



Include both performance and power activities in your training program to improve on your intermediate VO2 max tendency.



Your genetic variation may result in slower free radical clearance.  
DNAFit did not detect variations in genes related to inflammation & recovery.



Your genetic results indicate a raised requirement for dietary antioxidants  
and recommended daily levels of omega 3.



Your genetic results indicate that you have an overall higher than average risk of a sports related soft tissue injury.



## POWER / ENDURANCE PROFILE

Endurance training is defined as lower intensity activity, performed for a longer period time. Power training is identified as high intensity exercise performed quickly, but over shorter time periods. We have collated your body's response to key genes associated with either power or endurance training to create the below summary of where your genetics lie on the spectrum.

### Example Endurance Activities



Long-distance running



Mountain climbing



Road cycling

### Example Power Activities



Sprinting



Power lifting



Track cycling

## YOUR PERSONAL POWER / ENDURANCE RESPONSE


 40.5  **Power Potential**

 59.5  **Endurance Potential**

The above graph shows your percentage of genetic endurance and/or power results.

Power		
Gene	Result	Effect
ACE	II	-
AGT	CC	+
ACTN3	CT	+
TRHR	TT	-
PPARA	ND	ND
VEGF	CG	-
VDR	CT	-
IL6	GG	++

Endurance		
Gene	Result	Effect
ACE	II	++
ADRB2	GG	-
ACTN3	CT	+
BDKRB2	CT	+
COL5A1	CT	-
NRF	AA	-
PPARGC1A	GG	++
PPARA	ND	ND
CRP	GA	+
VEGF	CG	-





## POWER / ENDURANCE PROFILE

Your DNAFit assessment has determined that your genetic profile is almost equally balanced between power and endurance activities, based on variations in your genes.

In your training mix power and endurance activities to benefit from your intermediate profile.

### **What does my power / endurance profile mean for me?**

These results give you an indication of where your genetic results fall on the power / endurance spectrum.

N.B. It is important to note that this result should not change your sporting or fitness goal - rather it should help you understand how best for you to reach that goal, by taking advantage of your genetic pre-disposition. Training in purely one way, be it all endurance or all power without a balance between the two can often have a negative impact, so make sure you give yourself some variation no matter what your power/endurance profile.





## YOUR AEROBIC POTENTIAL (VO<sub>2</sub> MAX)



VERY LOW

LOW

MEDIUM

HIGH

VERY HIGH

Your body needs oxygen when exercising. VO2 max is a test used by scientists to measure the maximum or optimum rate at which an individual's body can effectively use oxygen during exercise. It is commonly used as a way of measuring a person's individual aerobic ability and it is an extremely popular measure of progress amongst endurance athletes.

There are certain gene results that can help you understand your natural VO2 max capacity, and we have tested your DNA to help reveal your individual markers.

VO2 Max Genes		
Gene	Result	Effect
ADRB2	GG	+
CRP	GA	+
PPARGC1A	GG	++
VEGF	CG	+

Your DNAFit assessment has determined that your genetic profile predicts a tendency towards an intermediate VO2 max based on variations in your genes. In order to make the most of your natural VO2 Max capacity, you will need to cross-train by consistently including both endurance and power activities in your training program.

Include both performance and power activities in your training program to improve on your intermediate VO2 max tendency.





## UNDERSTANDING YOUR VO2 MAX SCORE

The best way to calculate your own VO2 max score is to find a local health clinic or gym who should be able to perform a short VO2 max test, either on a treadmill or an exercise bike. Otherwise, the below guide will help you calculate your VO2 max score at any gym equipped with a step machine.

### Calculating your own VO2 Max

Use this simple 3-minute step test to monitor your VO<sub>2</sub> max:

Step in time up and down on a step at a rate of 22 steps per minute for females, and 24 steps per minute for males. After 3-minutes, remain standing and immediately measure your pulse rate for 10 seconds by lightly pressing your index and middle fingers on your neck or wrist and counting the total number of pulsing beats you feel. (Note: Do not press too firmly on your neck or wrist when feeling for a pulse.)

To get your heart rate, simply count the number of heart beats per minute for 10 seconds and then multiply the number of beats counted by 6, which will give you your standing heart rate.

Heart Rate = # of beats in 10 seconds x 6.

Now use the following equations to calculate your VO<sub>2</sub> max:

- **Males:** VO<sub>2</sub> max = 111.33 – (0.42 X Heart Rate)
- **Females:** VO<sub>2</sub> max = 65.81 – (0.1847 X Heart Rate)

Simply multiply your heart rate x 0.42 and then subtract that number from 111.33 for males, and multiply your heart rate x 0.1847 and then subtract that number from 65.81 for females = VO<sub>2</sub> max.

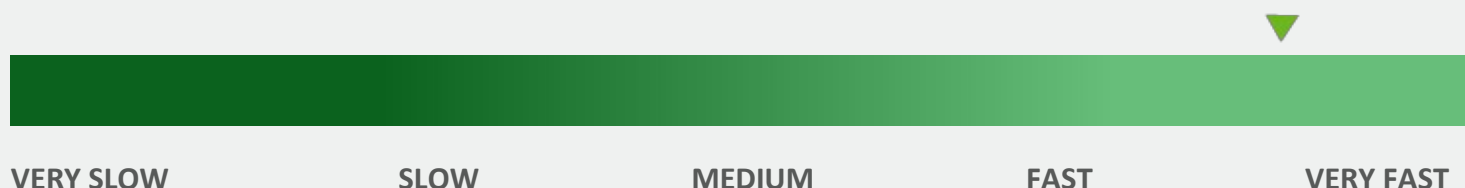




## RECOVERY

When exercising, some people are lucky enough to recover very quickly - ready to exert themselves again after very little rest, whereas others don't seem to bounce back quite as fast, needing a longer break between hard training bouts. Research has shown that certain genetic variations infer a delayed recovery from hard exercise training; those with these markers should take extra care with their training plan and nutrition strategy.

### YOUR POST-EXERCISE RECOVERY PROFILE



Recovery is one of the most important aspects of any training program. Without the proper rest between sessions we can push our bodies too hard and compromise our future workouts.

Gene Response		
Gene	Result	Effect
GSTM1	ND	ND
GSTT1	ND	ND
SOD2	TC	*
IL6	GG	-
IL6R	ND	ND
CRP	GA	-
TNF	GG	-

Your DNAFit assessment has determined that you have variations in gene(s) important in free radical removal [SOD2]. In order to support your genetic profile, DNAFit recommends that you consume adequate amounts of antioxidants in your daily diet.

Your DNAFit assessment did not detect variations in gene(s) related to immune support and recovery [IL6, TNFA, CRP]. DNAFit recommends that you maintain a regular exercise program to support your recovery times.





## RECOVERY

### Your Post-Exercise Nutrition Needs

Every time we push our bodies through exercise, we can cause inflammation and oxidative stress in our cells. It is important to refuel and repair your muscles so your body is ready for the next event or training session. If you neglect post-exercise nutritional support and recovery time, you risk running low on energy during your next exercise session and harming your overall training plan.

Recommended Micronutrient Doses	
Nutrient	Your Recommended Daily Intake
Vitamin A	2,700 IU / 810 µg
Beta carotene	7 mg
Vitamin C	105 mg
Vitamin E	15 IU / 13.5 mg
Omega-3	1.6 g
Cruciferous vegetables	1-2 servings per week
Alpha Lipoic Acid	100 mg







## INJURY RISK

Though of course injury is always a default risk when undertaking any form of exercise, some people do appear to be more predisposed to injury than others, and some of this is based on genetics. Scientific evidence has shown that certain genetic variations can affect injury risk; we have taken the results from your DNA test and collated them to provide you with an overall injury risk score. Those with a higher genetic injury risk may need to adjust their training plan to include more injury prevention sessions than the average person.

### Your Personal Injury Risk



VERY LOW

LOW

MEDIUM

HIGH

VERY HIGH

Gene Response		
Gene	Result	Effect
GDF5	TC	*
COL1A1	GG	*
COL5A1	CT	*
IL6	GG	-
IL6R	ND	ND
CRP	GA	-
TNF	GG	-

Your genetic results indicate that you have an overall higher than average risk of a sports related soft tissue injury. This should be taken into consideration when planning training schedules and the information should be communicated to your personal trainer.

Your Fitness assessment did not indicate variations in gene(s) related general inflammation – inflammation is a key feature in the injury recovery process having both positive and negative effects



## UNDERSTANDING YOUR FULL GENOTYPE BREAKDOWN


The table below provides a full breakdown of each of the genes we have tested your DNA for, and your individual allele response to that gene. We have also detailed the effect that your particular allele response is associated with.

Endurance / Power profile & VO2 max potential			
Gene	Variation	Allele Result	Effect
ACE	rs4646994	II	Endurance profile
ADRB2	rs1042713	GG	Lower VO2 max capacity
AGT	rs699	CC	Small association with Power
ACTN3	rs1815739	CT	Advantage for sprint and power profile, OK for endurance
BDKRB2	+9/-9 INDEL	CT	Associated with endurance
COL5A1	rs12722	CT	No measured impact on Power/Endurance
CRP	rs1205	GA	Exercise positive for VO2 max / Endurance profile
IL6	rs1800795	GG	Associated with power performance
NRF	rs7181866	AA	No measured impact on fitness
PPARA	rs4253778	ND	cannot be assessed
PPARGC1A	rs8192678	GG	Power/ Endurance mix
TRHR	rs16892496	TT	No measured impact on fitness
VEGF	rs2010963	CG	Intermediate VEGF production
VDR	rs731236	CT	No measured impact on fitness
Post Exercise Recovery & Injury Risk			
CRP	rs1205	GA	Regular exercise has positive impact on recovery
GSTM1	INDEL	ND	cannot be assessed
GSTT1	INDEL	ND	cannot be assessed
IL6	rs1800795	GG	No measured impact on fitness
IL6R	rs2228145	ND	cannot be assessed
SOD2	rs1800629	TC	Nutritional support for antioxidant function
TNF	Rs1800012	GG	Regular exercise has positive impact on recovery
COL1A1	rs12722	GG	May be more prone to ligament injury
COL5A1	rs143383	CT	Associated with increased tendinopathy risk
GDF	rs1800629	TC	Intermediate tendinopathy risk

### Want to know more about your genetic results?

Included with your DNAFit Premium Report is our full Genotype Support Guide. To understand some more about your individual results, why not grab a pen and mark cross-reference your results from the table above to see where you lie in relation to every possible gene response?

# GENOTYPE REPORT ANALYSIS SUPPORT GUIDE



This guide can be used to better understand your genetic results, by showing you how each of the genes we test for can affect a person's body. Please feel free to pass this document on to your personal trainer or coach so they can use your genetic information to help you reach your goals easier and quicker!



**DNAFit**<sup>®</sup>  
ACHIEVE YOUR GENETIC POTENTIAL





## POWER & ENDURANCE GENES

Analysis of gene results			
<b>ACTN3</b>	<b>RR</b>	<b>RX</b>	<b>XX</b>
<p>Long name: Alpha Actinin 3</p> <p>Associated with: Major structural component of the fast twitch fibres of skeletal muscles. Only present in fast twitch muscle fibres.</p> <p>Sports Connection: Power</p>	<p>Strength, speed and power gene combination (found in sprint athletes). Likely to benefit from explosive style training.</p>	<p>Expected to be good at strength, speed and power activities, but less so than RR.</p>	<p>Not associated with power or endurance.</p>
<b>ADRB2 (Arg16Gly)</b>	<b>AA</b>	<b>AG</b>	<b>GG</b>
<p>Long name: Beta 2 Adrenergic Receptor</p> <p>Associated with: Regulation of adrenalin release and the control within the central nervous system. Also involved in mobilisation of the carbohydrate, fat and protein in cells for fuel during exercise.</p> <p>Sports Connection: Endurance</p>	<p>Likely to respond well to endurance training, including good increases in VO2max. Good blood pressure responses to aerobic exercise. May have a slightly slower recovery from exercise.</p>	<p>A more moderate form of AA: an endurance-based combination with good increases in VO2max, but not as much as AA.</p>	<p>Likely to be less responsive to endurance training, although they may have a slightly quicker recovery from exercise.</p>
<b>ADRB2 (Gln27Glu)</b>	<b>CC</b>	<b>CG</b>	<b>GG</b>
<p>Long name: Beta 2 Adrenergic Receptor</p> <p>Associated with: Regulation of adrenalin release and the control within the central nervous system. Also involved in mobilisation of the carbohydrate, fat and protein in cells for fuel during exercise. Same gene as above (so same role) but the SNP is at a different position on the gene.</p> <p>Sports Connection: Endurance</p>	<p>Likely to respond well to endurance training, including good increases in VO2max. With regards to weight management, this genotype is also associated with better fat burning capabilities.</p>	<p>A more moderate form of CC: an endurance-based combination with moderate fat burning responses to exercise. May need to consume a low-carb diet for weight management.</p>	<p>Likely to be less responsive to endurance training. A low carbohydrate diet is generally recommended for weight management.</p>
<b>NRF-2</b>	<b>AA</b>	<b>AG</b>	<b>GG</b>
<p>Long name: Nuclear Respiratory Factor 2</p> <p>Associated with: Improving respiratory capacity and energy mobilisation in cells</p> <p>Sports Connection: Endurance</p>	<p>Likely to be less responsive to endurance training than carriers of the G allele.</p>	<p>Rare 'athletic' combination. Carriers are likely to excel at endurance sports. Much larger than normal increases in VO2max with an endurance training programme.</p>	<p>Extremely rare 'athletic' combination. Carriers are likely to excel at endurance sports. Much larger than normal increases in VO2max with an endurance training programme.</p>



## POWER & ENDURANCE GENES

Analysis of gene results			
AGT	CC	CT	TT
<p>Long name: Angiotensinogen</p> <p>Associated with: Vasoconstriction and blood pressure control</p> <p>Sports Connection: Power</p>	<p>Strongly favoured for power, strength and speed sports. Carriers should achieve a higher than average physical improvement in strength, speed and power with training programmes. Carriers have a greater susceptibility to high blood pressure and left ventricular hypertrophy, so monitor and adapt length of strenuous activity.</p>	<p>A more moderate form of CC: a power-based combination and susceptibility to high blood pressure and left ventricular hypertrophy, but not as much as CC.</p>	<p>Not associated with power or endurance. Fewer problems with blood pressure.</p>
ACE	II	ID	DD
<p>Long name: Angiotensin Converting Enzyme</p> <p>Associated with: Controlling blood pressure and the fluid (water)/sodium balance in blood. This is the most researched gene in relation to sporting performance.</p> <p>Sports Connection: Power and Endurance (depending on gene configuration).</p>	<p>Endurance sports and high repetition weight training programmes recommended. Carriers have an increased volume of slow twitch muscle fibres and have greater aerobic efficiency and VO2max. High fatigue resistance.</p>	<p>Mixture of power and endurance based training recommended.</p>	<p>Power based training recommended. Good muscle growth expected from weight training and strength sports. Good muscle recovery. Ensure blood pressure is monitored during high intensity exercise.</p>
VEGF	CC	GC	GG
<p>Long name: Vascular Endothelial Growth Factor</p> <p>Associated with: New blood vessel growth to support exercise activities. Regular exercise and progressive training programmes can create a 4-fold increase in levels of VEGF.</p> <p>Sports Connection: Endurance</p>	<p>Likely to respond well to endurance training. Carriers produce a greater amount of VEGF than other gene outcomes. Good muscle efficiency and VO2max, and can potentially adjust well to altitude training.</p>	<p>Moderate form of CC: an endurance-based combination with good muscular efficiency, but not as much as CC.</p>	<p>Likely to be less responsive to endurance training.</p>
BDKRB2	TT	TC	CC
<p>Long name: Bradykinin Receptor B2</p> <p>Associated with: Vasodilation and blood pressure control. Efficiency of muscular contraction and cell hydration.</p> <p>Sports Connection: Endurance</p>	<p>Likely to respond well to endurance training. Good muscular energy mobilisation and cell hydration.</p>	<p>A more moderate form of TT: an endurance-based combination with good muscular efficiency and cell hydration, but not as much as TT.</p>	<p>Likely to be less responsive to endurance training and should make sure they stay sufficiently hydrated during endurance activities.</p>





## POWER & ENDURANCE GENES

Analysis of gene results			
<b>PPARGC1A</b>  Long name: Peroxisome Proliferator-Activated Receptor Gamma Coactivator-1  Associated with: Regulation of energy homeostasis, including production of mitochondria, fat and carbohydrate burning and conversion of muscle fibres to slow twitch type.  Sports Connection: Endurance	<b>GG</b>	<b>AG</b>	<b>AA</b>
	Likely to respond well to endurance training. Carriers are good at burning fuel and can potentially maintain high energy levels for sustained periods.	A more moderate form of TT: a good response to endurance training and fuel utilisation, but not as good as TT.	Likely to be less responsive to endurance training.
	<b>GG</b>	<b>GC</b>	<b>CC</b>
	Strongly associated with endurance sports and activity of slow twitch muscle fibres. These carriers can increase fatty acid mobilisation with training.	Associated with both power and endurance attributes, so a mixture of power and endurance based training is generally recommended.	Associated with lower amounts of PPARGC1A expression, which is more related to positive attributes for power, speed and strength. Greater susceptibility to high blood pressure, which should be monitored.
	<b>GG</b>	<b>GT</b>	<b>TT</b>
<b>TRHR</b>  Long name: Thyrotrophin Releasing Hormone Receptor  Associated with: Regulating of the metabolic rate, mobilising fuels during exercise and also growth of lean body tissue.  Sports Connection: Power	<b>GG</b>	<b>GT</b>	<b>TT</b>
	Power based training recommended. Carriers are likely to achieve favourable improvements in lean body mass and muscle growth with strength training programmes.	A more moderate form of GG: a good response to strength training, but not as good as GG.	Likely to be less responsive to strength training in terms of increases in lean body mass.
	<b>CC</b>	<b>CT</b>	<b>TT</b>
	Carriers may achieve favourable muscle growth and bone density with strength training programmes, but should include a variety of exercises to control glucose and insulin balance.	A more moderate form of CC: a good response to strength training, but not as good as CC.	Likely to be less responsive to strength training in terms of increases in muscle mass and bone density.
	<b>GG</b>	<b>GC</b>	<b>CC</b>
<b>IL-6</b>  Long name: Interleukin-6  Associated with: Stimulates the immune response to training and is involved in the inflammatory repair process.  Sports Connection: Power	<b>GG</b>	<b>GC</b>	<b>CC</b>
	Associated with lower levels of inflammation after hard training sessions, leading to quicker recovery times. This genotype has been independently associated with success in power sports, perhaps due to improved muscle repair after exercise.	May experience moderate levels of inflammation after strenuous exercise. A longer rest period between training sessions may be required compared to GG. Use anti-inflammatory nutrition to aid recovery.	May experience higher levels of inflammation after strenuous exercise. A longer rest period between training sessions may be required compared to GG. Use anti-inflammatory nutrition to aid recovery.





## INJURY & RECOVERY GENES

	Analysis of gene results		
<b>GDF5</b> Long name: Growth Differentiation Factor 5 Associated with: Central Nervous System expression and the healing of skeletal, joint and soft tissues.	<b>CC</b> No significant injury risk.	<b>CT</b> Moderately raised risk of tendinopathy and osteoarthritis. Undertake prehabilitative exercises relevant to the sport and consider nutritional support for connective tissue.	<b>TT</b> Increased risk of tendinopathy and osteoarthritis. Undertake prehabilitative exercises relevant to the sport and consider nutritional support for connective tissue.
<b>COL1A1</b> Long name: Collagen 1 Alpha 1 Associated with: Type 1 Collagen, the main collagen found in connective tissues, including tendons, ligaments and cartilage.	<b>GG</b> Protective of tendon and ligament injuries in sport. However, it may be associated with increased risk of osteoporosis.	<b>GT</b> Moderately raised risk of tendon and ligament injuries in sport. Undertake prehabilitative exercises relevant to the sport and consider nutritional support for connective tissue.	<b>TT</b> Increased risk of tendon and ligament injuries in sport. Undertake prehabilitative exercises relevant to the sport and consider nutritional support for connective tissue.
<b>IL-6R</b> Long name: Interleukin-6 Receptor Associated with: It is the receptor for immune messenger Interleukin-6 (IL-6). IL-6 stimulates the immune response to training and is involved in the inflammatory repair process.	<b>AA</b> Associated with lower levels of inflammation after hard training sessions, leading to quicker recovery times.	<b>AC</b> May experience moderate levels of inflammation after strenuous exercise. A longer rest period between training sessions may be required compared to AA. Use anti-inflammatory nutrition to aid recovery.	<b>CC</b> May experience higher levels of inflammation after strenuous exercise. A longer rest period between training sessions may be required compared to AA. Use anti-inflammatory nutrition to aid recovery.
<b>CRP</b> Long name: C-Reactive Protein Associated with: An acute phase protein which rises in response to inflammation in the body. It is stimulated by IL-6 and is often used as a marker for inflammation in blood tests.	<b>AA</b> Associated with lower levels of inflammation after hard training sessions, leading to quicker recovery times.	<b>AG</b> May experience moderate levels of inflammation after strenuous exercise. A longer rest period between training sessions may be required compared to AA. Use anti-inflammatory nutrition to aid recovery.	<b>GG</b> May experience higher levels of inflammation after strenuous exercise. A longer rest period between training sessions may be required compared to AA. Use anti-inflammatory nutrition to aid recovery.
<b>IL-6</b> Long name: Interleukin-6 Associated with: Stimulates the immune response to training and is involved in the inflammatory repair process.	<b>GG</b> Associated with lower levels of inflammation after hard training sessions, leading to quicker recovery times.	<b>GC</b> May experience moderate levels of inflammation after strenuous exercise. A longer rest period between training sessions may be required compared to GG. Use anti-inflammatory nutrition to aid recovery.	<b>CC</b> May experience higher levels of inflammation after strenuous exercise. A longer rest period between training sessions may be required compared to GG. Use anti-inflammatory nutrition to aid recovery.



## GLOSSARY

**Aerobic:** Anything relating to, involving, or requiring oxygen. E.g. "Aerobic exercise"

**Allele:** An allele is an alternative form of a gene (one member of a pair) that is located at a specific position on a specific DNA chromosome. E.g. "You have the ID allele of the ACE gene."

**Anti-Oxidant:** A substance, such as vitamin E, vitamin C, or beta-carotene, thought to protect body cells from the damaging effects of oxidation.

**Cruciferous Vegetables:** Relating to or denoting plants of the cabbage family.

**Endurance:** A sport or activity that requires the ability to perform for long periods of time at low intensities, such as marathon running and cross-country skiing.

**Free Radical:** An atom or group of atoms that has at least one unpaired electron and is therefore unstable and highly reactive. In human tissue, free radicals can damage cells and cause health problems

**Folate:** A salt or ester of folic acid.

**Folic Acid:** Any of a group of vitamins of the B complex

**Genotype:** The genetic constitution of an individual organism.

**HCA (Heterocyclic Amines) and PAH (polycyclic aromatic hydrocarbons):** Possibly harmful chemicals formed when meat is cooked at high temperatures.

**Micronutrient:** A substance such as a vitamin or mineral, that is essential in small amounts for our body's health and growth.

**Monounsaturated Fatty Acids:** A type of fat that only has one bond per molecule, they are mostly liquid at room temperature but can turn solid when chilled. E.g. Olive Oil

**Nutrigenetics:** A branch of nutritional science, which aims to identify nutritional recommendations for individuals based on their DNA.

**Osteoporosis:** A medical condition in which the bones become brittle and fragile from loss of tissue, typically as a result of hormonal changes, or deficiency of calcium or vitamin D.

**Polyunsaturated Fatty Acids:** A type of fat that has more than one bond per molecule, they are typically liquid both at room temperature and when chilled.

**Power:** A sport or activity that requires the ability to perform at a high intensity for short periods of time, such as sprinting and power lifting.

**Tendinopathy:** A chronic injury to a tendon, often also referred to as tendonitis.





## WHAT'S NEXT?

We hope that you have found this report insightful and interesting. So, now that you have a full understanding of your body's genetics, what to do with this information?

With this report you're now equipped with the most advanced knowledge possible for your health and fitness, and we want to help you make the most of it to reach your goal.

We offer a selection of bespoke training programmes for whatever your goal may be, from training for the London Marathon to natural bodybuilding. Our team of Olympic athletes, professional sportspeople and world-renowned experts can deliver training programmes individually tailored exactly to your genetic results, taking in to account all of the areas we test for – power / endurance potential, VO2 max, recovery speed, nutrition needs, and injury risk.

Please visit [www.dnafit.com](http://www.dnafit.com), call +44 (0) 845 463 4653 or email [info@dnafit.com](mailto:info@dnafit.com) to find out about our bespoke DNA-based training programmes.

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