Push your limits in sports

DEMO REPORT

Health begins with us.

PRO COM CURE DIAGNOSTICS
QUALITY WITHOUT COMPROMISE

LIFE PROCOMCURE

Sample-ID	**spNGSXX**
Sample receipt	**DD.MM.YYYY**

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What impact does my genetics have on athletic performance?

Genetics plays a significant role in an individual's athletic achievements. In addition to training and nutrition, genetic predispositions influence athletic performance in various ways. Genetic factors determine muscle composition and energy metabolism in the body [1][2].

Genetic predispositions refer to the natural genetic traits inherited by an individual. Some people have a higher endurance capacity due to their genes, while others may have greater muscle mass or better responsiveness to strength training [2]. Genetic mutations are alterations in a person's genetic makeup that can lead to genetic variations. These mutations can have both positive and negative effects on athletic performance. For example, certain mutations can lead to increased production of red blood cells, improving oxygen supply to the muscles and enhancing endurance performance. On the other hand, specific mutations may contribute to muscle performance [3][4][5].

In humans, there are two types of muscle fibres: slow-twitch (red) and fast-twitch (white), which are developed through a combination of genetic factors and training. Red muscle fibres are crucial for endurance activities such as long-distance running, cycling, or swimming. They fatigue more slowly and enable sustained performance. Individuals with a higher number of red muscle fibres typically have a natural inclination towards endurance sports. In contrast, white muscle fibres are responsible for fast, explosive movements such as sprints and jumps. However, they fatigue faster than red muscle fibres. Individuals with a higher number of white muscle fibres often have a natural predisposition for quick and power-based sports like sprinting, weightlifting, or gymnastics [1].

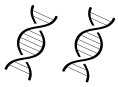
Genetic predispositions, therefore, play a significant role in athletic performance and provide insights into an athlete's individual strengths and weaknesses. By analysing specific genetic factors, athletes can optimise their training and competition strategies to unleash their full potential.

To provide you with insights into your athletic potential based on your genetics, we analyse 12 specific mutations (defined by a rs number) that can have a significant impact on your athletic performance. It's important to note that multiple mutations within a gene can influence athletic performance at different locations.

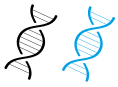
What information does the analysis provide?

Each gene in the human body is present in duplicate, which means that three possible genetic predispositions (variations) can occur through mutations. The mutation can occur in only one of the genes, both genes, or neither.

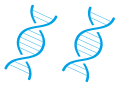
Graphical representation of possible gene variations:



No variations



One variation



Two variations

Short summary of your results

Muscle type

Gene Name	rs ID	Variation	Result
ACTN3	rs1815739		CT

Your Result:

Based on your genetic muscle type, both endurance and power- & strength-based sports are equally suitable for you.

Oxidative stress

Gene Name	rs ID	Variation	Result
SOD2	rs4880		CC
GPX1	rs1050450		TT

Your Result:

The mutation analysis suggests an increased breakdown of harmful free radicals.

Oxygen Uptake

Gene Name	rs ID	Variation	Result
NRF-2	rs12594956		AA
NRF-2	rs7181866		GG
VEGF	rs2010963		CG

Your Result:

Based on the genetic analysis, your oxygen intake is high, making endurance-based sports more favorable for you.

Short summary of your results

Risk of injury

Gene Name	rs ID	Variation	Result
Col5A1	rs12722		CT
Col1A1	rs1800012		GT

Your Result:

The analysis indicates that you do not have an increased protection against sports-related injuries.

Muscle fatigue

Gene Name	rs ID	Variation	Result
MCT1	rs1049434		TA

Your Result:

The mutation analysis indicates no increased susceptibility to rapid muscle fatigue.

Storage of iron

Gene Name	rs ID	Variation	Result
HFE C28Y	rs1800562		GG
HFE H63D	rs1799945		CC

Your Result:

Your iron storage is not increased, which means you do not exhibit higher performance due to increased iron & oxygen levels.

Notes

Miscellaneous

Report created by:

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Measurement Method:

NGS
PCR Test & DNA sequencing

Primary sample or submitted material:

Saliva sample

Disclaimer:

The analysis is based on the polymerase chain reaction (PCR) of the selected genes. Changes (mutations) in these genes can be detected using the PCR method and sequencing. The number of detected mutations is not exhaustive, and there may be other genes mutated that are not captured by PCR. The current interpretation of the selected genes may change in the future due to the publication of new scientific studies. If there is a small amount of DNA material in the sample, it can happen that not all gene variants can be analyzed. The interpretation of the results always pertains only to the analyzable gene markers. This report is provided to you solely for informational and educational purposes and does not replace a visit to a doctor or the advice or services of a doctor.

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