



GeneScope.ai

# ***NUTRI GENOMICS***

**Proactive Approach to Healthcare Management**

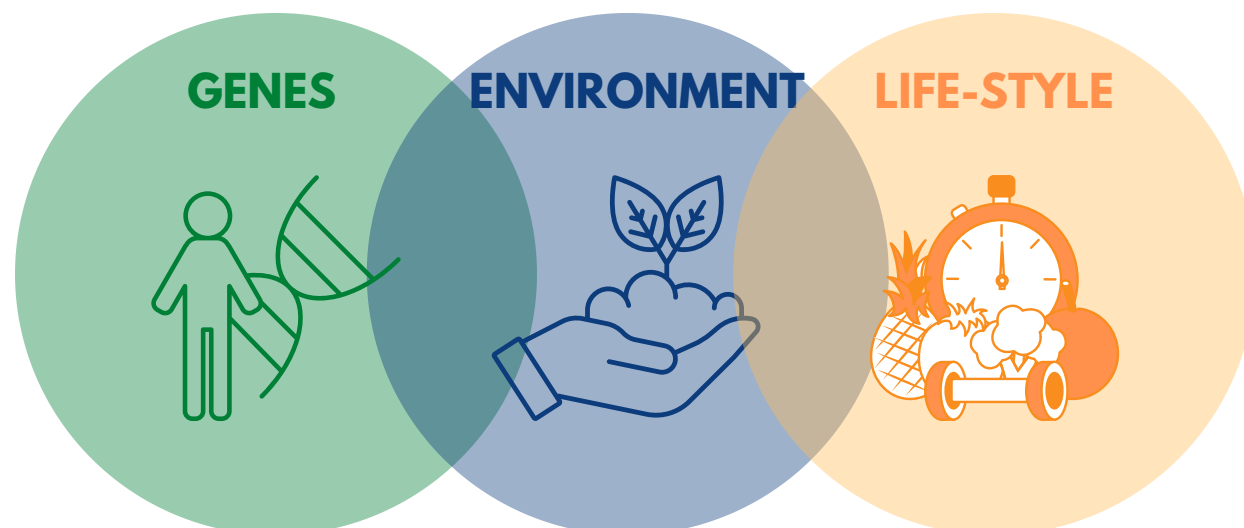


# What is NutriGenomics?

**Nutrigenomics** is the study of how genetic variations affect an individual's response to nutrients and other dietary compounds. It is an interdisciplinary field that combines genetics, nutrition, and molecular biology to understand how diet and lifestyle choices can impact an individual's health.

Both genetic, environmental and lifestyle factors play a key role in deciding an individual's health propensity for developing many life-style related diseases and disorders like obesity, type 2 diabetes, high blood pressure, high cholesterol, heart disease, stroke, certain types of cancer, sleep apnea, osteoarthritis, and fatty liver disease.

Since the human genome was sequenced, scientists and researchers have been able to identify genes associated with specific diseases, such as obesity, type 2 diabetes, and cardiovascular disease. By analyzing an individual's genetic makeup, nutrigenomics can identify genetic variations that increase their risk of developing these diseases, allowing for proactive intervention and preventative measures.



*"Health outcome is a complex interplay between your genes, environment and lifestyle."*

# Why GeneScope.ai?

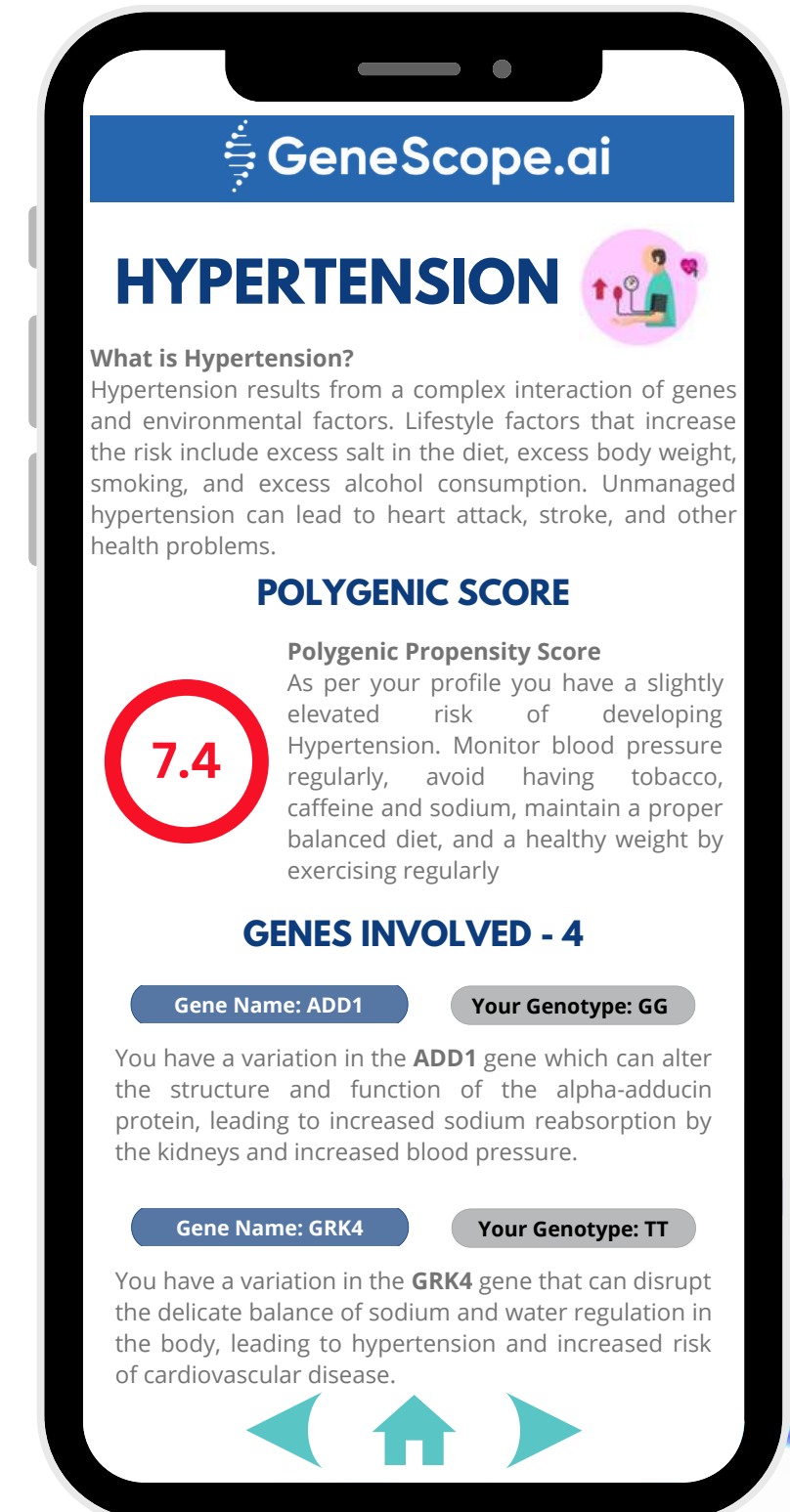
**GeneScope.ai** carries out genomic profiling to understand an individual's body constitution to provide innovative, personalized and precise interventions that aid in personalized and proactive healthcare management.

Every individual is unique and so are their lifestyles, environment they live in, their ability to metabolize nutrients and accordingly their propensity towards developing diseases and disorders.

This is the reason why **GeneScope.ai** firmly believes that the approach to proactive healthcare management also needs to be highly personalized and aligned to an individual's body constitution to get the maximum benefits and outcome.

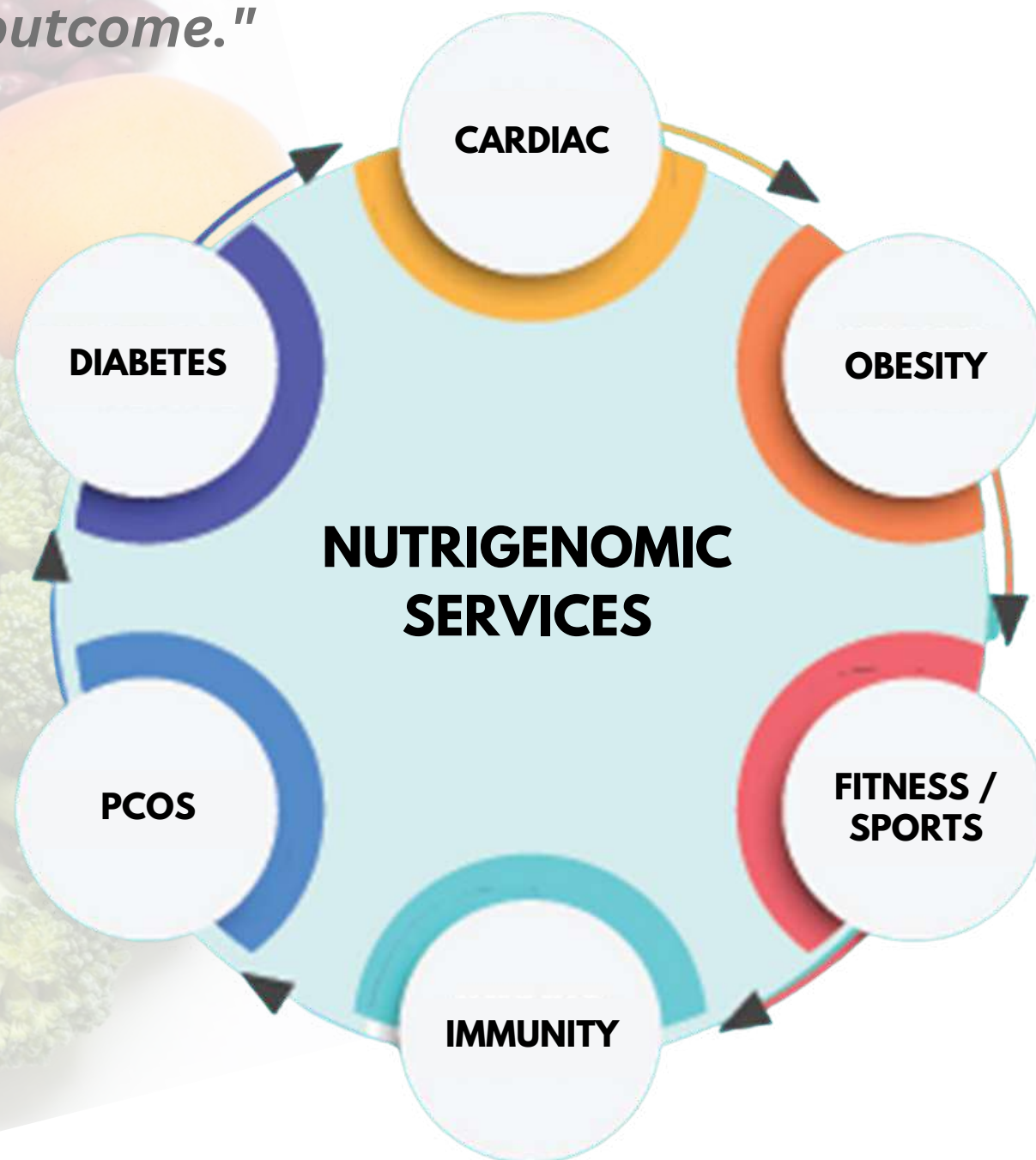
Get well defined measures from GeneScope.ai to make informed decisions. Your genes can show the way.

***Nutrigenomics represents a paradigm shift in nutrition science and has the potential to transform healthcare by providing personalized nutrition advice based on an individual's genetic makeup.***



# GeneScope.ai Nutrigenomic Services

*"Our Nutrigenomic services consists of panels that cover the important traits which play a significant role in positively influencing health outcomes of individual's. Designed by experts the panel considers only those genes that have a scientific evidence and role in deciding health outcome."*



**UNDERSTAND PERSON'S GENETIC PROFILE AND BODY CONSTITUTION**

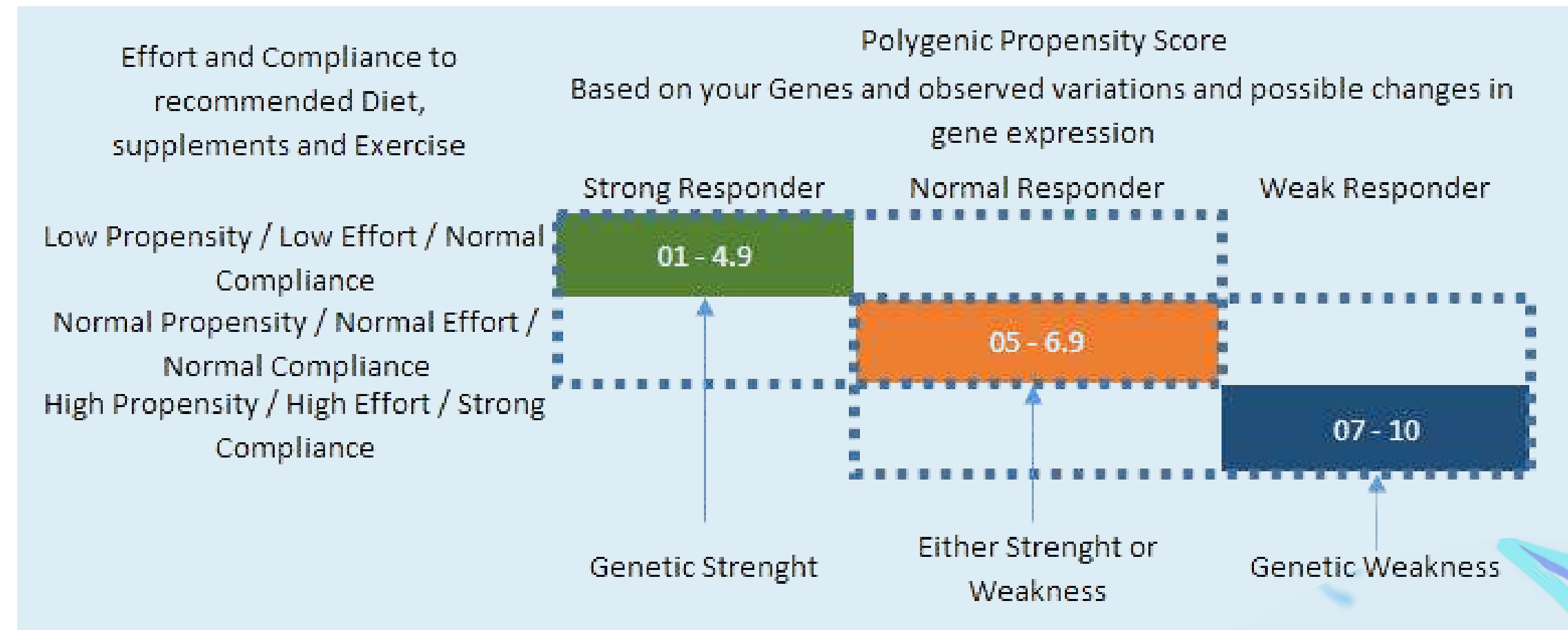
**ANALYZE TO IDENTIFY GENETIC STRENGTHS AND WEAKNESSES**

**DESIGN ACTIONABLE INTERVENTIONS ALIGNED TO GENETIC PROFILE**

**MEASURE AND TRACK PROGRESS TO ACHIEVE SUSTAINED BENEFITS**




# What information does your Genomic Profile convey?

Your health and sports performance outcome is a complex interplay between your genes, environment and the lifestyle you lead. Environment and an unfavorable lifestyle causes changes in **Gene Expression**. On top of that **Genetic variations** in certain genes, increases your propensity for developing lifestyle associated diseases or disorders and impacts fitness and sports performance.



Your genomic profile helps you to understand the following:

**POLYGENIC PROPENSITY SCORE**  
**YOUR GENOTYPE**  
**GENETIC VARIATION**  
**GENETIC STRENGTHS & WEAKNESS**

-  A score in green zone indicates you are a strong responder for a trait, with low propensity for developing disease or disorder.
-  A score in orange zone indicates you are a normal responder for a trait, with normal propensity for developing disease or disorder.
-  A score in blue zone indicates you are a weak responder for a trait, with high propensity for developing disease or disorder.

# What information does your Genomic Profile convey?

A genomic profile is like creating a user manual for your body. It helps you to understand your internal body composition, things that you can do, things you should not do, precaution's to be taken and many more other insights that are important for proactively managing your health. Nutrigenomics is today one of the most advanced tool and approach for taking care of your health.

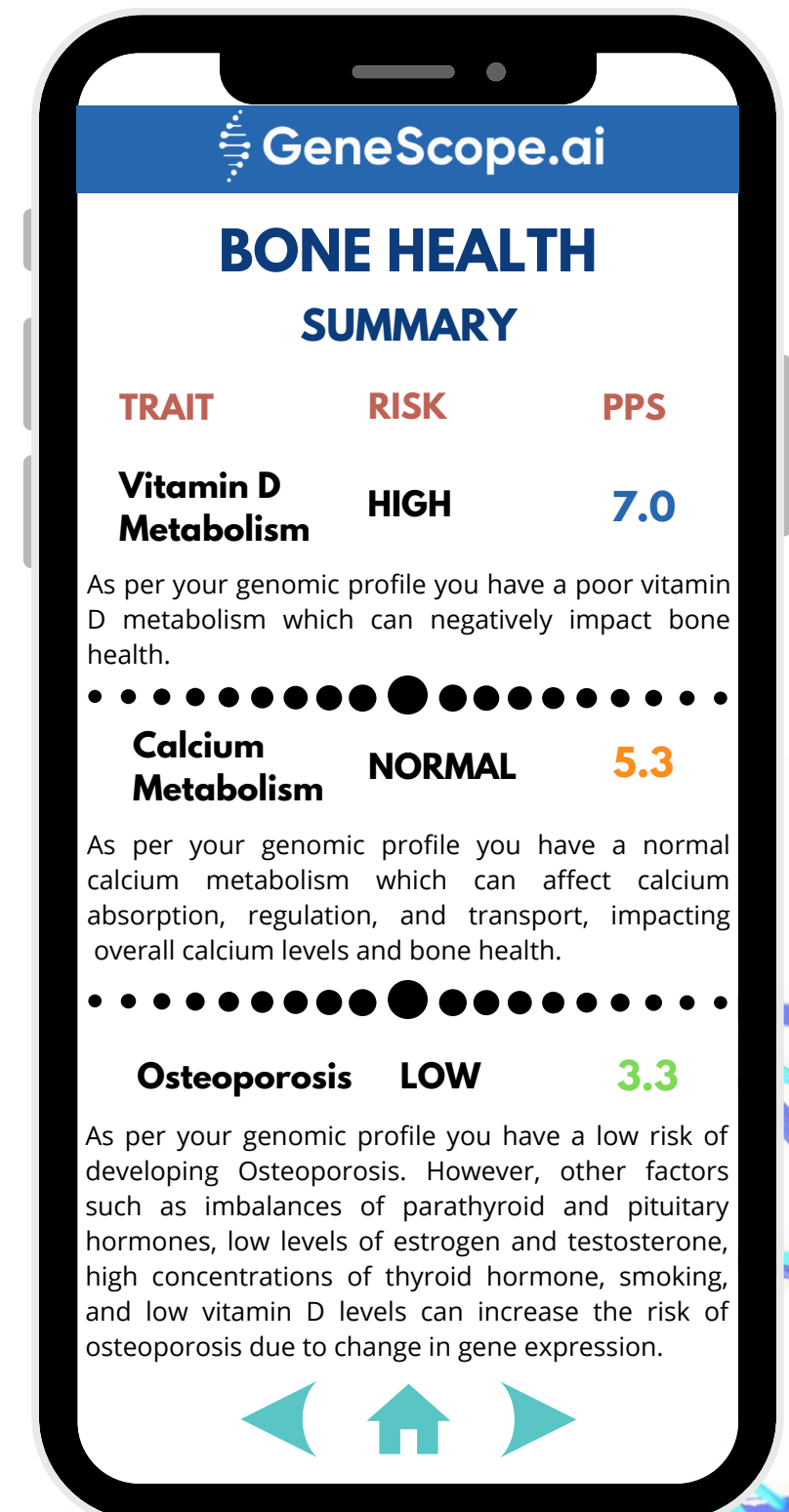
Moreover a genomic profile help you align your diet, nutrition and exercise as per what your body wants to achieve sustainable health benefits, remain motivated and put you on the path of improving your Quality of Life. Below you will get to know what information your genomic profile conveys -

## DIABETIC HEALTH

A nutrigenomic profile can identify variations in genes involved in insulin sensitivity, glucose transport, and lipid metabolism, all of which play important roles in diabetes management. Additionally, it can identify genetic variations that impact how your body responds to certain dietary factors, such as carbohydrates, fats, and proteins, which can have a significant impact on your blood sugar levels and overall diabetic health.

## BONE HEALTH

Maintaining good bone health is important in sports to prevent fractures and reduce the risk of developing conditions such as **osteoarthritis, osteoporosis and rheumatoid arthritis**. Genomic profiling provides important insights into the genetic basis of bone health and developing strategies for promoting optimal bone health.



# What information does your Genomic Profile convey?

## CARDIAC HEALTH

Genomics has a growing impact on cardiometabolic health for individuals, athletes and sports persons. **Sudden cardiac death (SCD)** is a significant concern today as we see so many examples around us of individuals who have succumbed to this phenomenon. Studies have identified genetic variants associated with hypertrophic cardiomyopathy, a leading cause of SCD. There are several other traits that can be managed using nutrigenomics, which include inflammation, oxidative stress, lipid metabolism, blood pressure regulation, homocysteine metabolism and weight management.

## WEIGHT MANAGEMENT

Maintaining a healthy weight is important for the body as it many times the root cause for a number of metabolic diseases and disorders. Excess body weight, particularly abdominal obesity, is associated with an increased risk of heart disease. Identifying genes and their interactions with nutrients that may influence energy metabolism, appetite regulation, and fat storage can help design sustainable weight management programs. For example, individuals with specific genetic variants associated with increased appetite may benefit from a diet rich in high-fiber foods to help regulate appetite and manage weight.

## IMPACT OF ENVIRONMENT

Genomics can provide valuable insights into the complex interplay between genetics and environmental factors in human health. By identifying genetic variations that influence an individual's susceptibility to environmental factors, personalized interventions can be developed to manage and mitigate the impact of environmental factors on health. For e.g. genetic variations in genes involved in inflammation and oxidative stress pathways can influence an individual's susceptibility to the harmful effects of environmental pollutants.



# What information does your Genomic Profile convey?

## **FITNESS LEVEL**

Your genomic profile and traits can have a significant impact on physical activity and fitness. Understanding how genetic variations influence fitness-related traits, for e.g. traits that decide your natural inclination to power or endurance, risk of common injuries, blood pressure response to exercise, body response to exercise, Aerobic capacity and many more can help individuals use this information to optimize their exercise and nutrition plans and improve their overall fitness and health.

## **FOOD INTOLARANCES AND INSENSITIVITIES**

Your genomic profile can provide insight into food intolerances and insensitivities by identifying genetic variations that affect how your body processes and responds to certain foods. Salt, Lactose, Gluten, Caffeine and Alcohol metabolism is affected in the body if there are variations seen in the associated genes. For e.g, genetic variations in the HLA-DQ gene can impact gluten sensitivity and celiac disease or genetic variations in the CYP1A2 gene can impact caffeine metabolism, making individuals more sensitive to the effects of caffeine.

## **EXERCISE RESPONSIVENESS**

Exercise responsiveness is all about how your body responds to exercises in order to achieve sustainable health benefits. Genetic variations govern your propensity for muscle damage and recovery, whether you benefit most from resistance training or muscle building, fat loss response to exercise, CLOCK gene and weight loss response to exercise HDL response to exercise and blood pressure response to exercise. Understanding how genetic variations impact physical fitness, individuals can tailor their exercise routines to their unique needs and develop a personalized plan for maximizing physical fitness.





# What information does your Genomic Profile convey?

## DIET, NUTRITION AND SUPPLEMENTS

Genetic differences make every individual respond differently to diet, nutrient and supplement requirement. Aligning your diet around what your body actually wants can help you decide on what to eat prior to training, during training and post training. There are a number of areas that are key to how your diet affects them in order to boost performance. Vitamin and mineral deficiencies are critical factors to overcome. By understanding how your body responds to vitamin and mineral metabolism and the associated risks can help to overcome them with right food and supplementation.

## SLEEP REGULATION

Sleep is essential to our general health - it helps control hormones and helps repair tissue after intense training sessions. Sleep is when we recover the most and we are able to turn off and regenerate. We help you understand how to improve sleep quality, duration and patterns as sleep affects a number of different areas such as performance, fatigue, wellness, mood, recovery etc...

## STRESS

Stress can have a significant impact on sport performance, both in terms of physical and mental performance. In some cases, stress can be beneficial, leading to increased arousal, focus, and motivation. However, in majority of the cases, stress can be detrimental, leading to decreased productivity, efficiency, and fatigue. Genes play an important role in an individual's response to stress and their ability to cope with it impacting health and sport performance



# Benefits of Genomic profiling in Sports Management



## EARLY DISEASE DETECTION:

Genomic profiling can help identify the risk of developing certain diseases at an early stage, which allows for preventative measures and treatments to be implemented before the disease progresses.



## PERSONALIZED DIETARY & NUTRITION GUIDANCE:

Identify genetic variations that impact how the body processes and responds to nutrients and other dietary factors. Develop targeted dietary programs that are tailored to an individual's specific needs, to reduce the risk of developing chronic diseases.



## REDUCE COST OF HEALTHCARE:

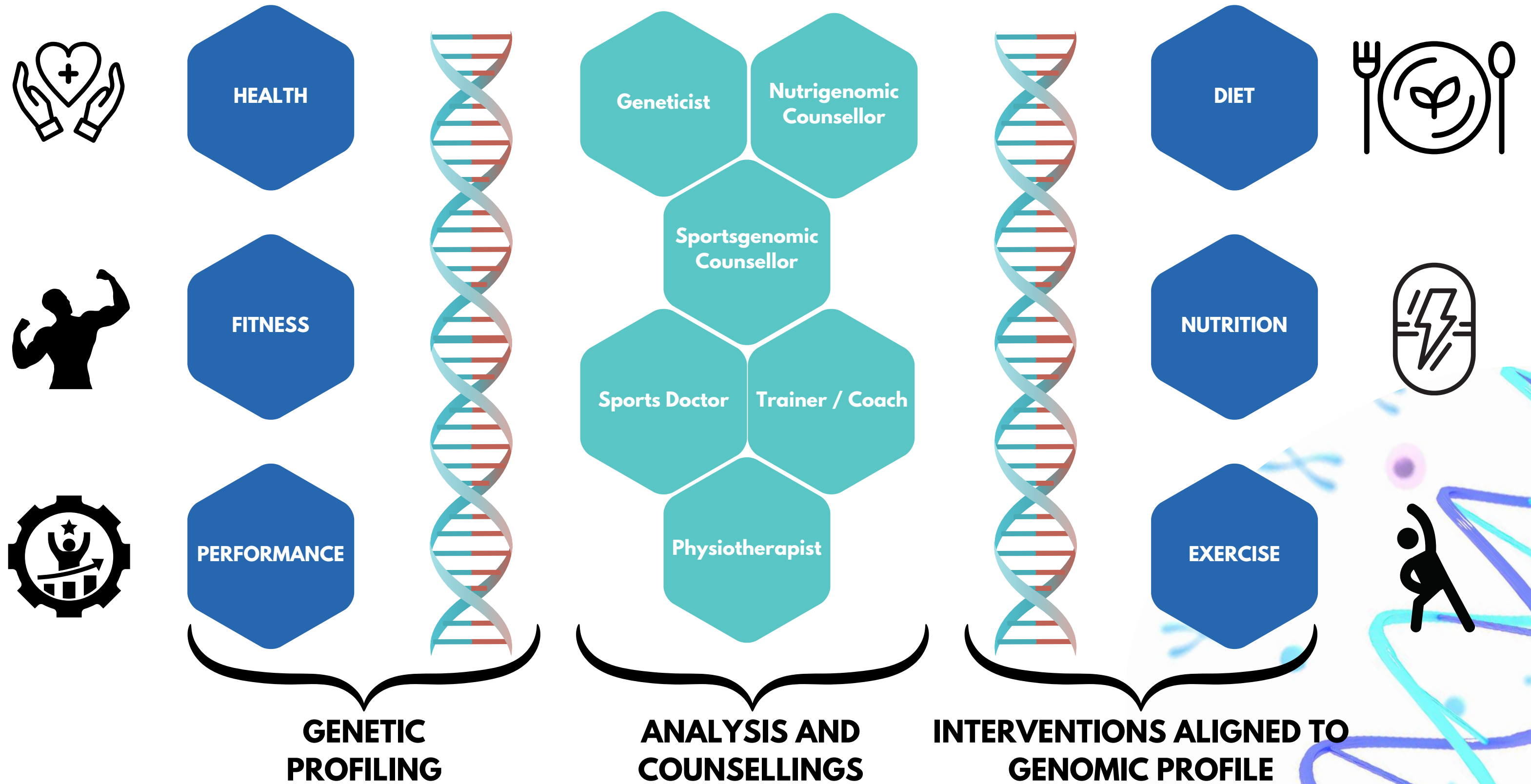
Genomic profiling is an scientific and evidence based approach to healthcare management. Early detection and prevention of diseases can reduce cost of expensive medical treatments and hospital visits with improved Quality of Life



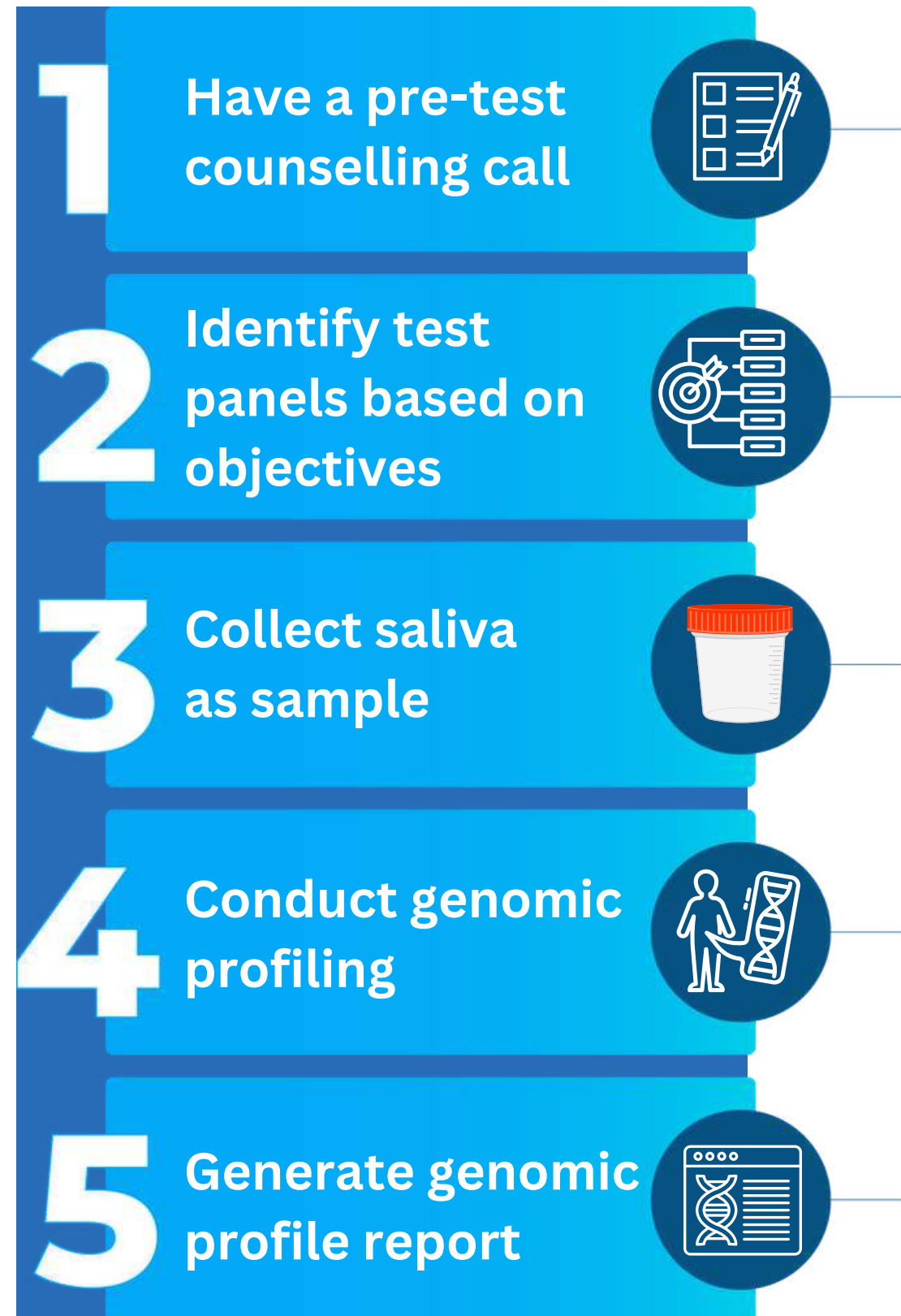
## LIFESTYLE MODIFICATIONS:

Get insights into how an individual's body responds to various lifestyle factors, such as exercise and stress and make informed choices about your lifestyle that may help to optimize health outcomes.

# GeneScope.ai building the partner ecosystem



## How does it work?



*"Whether **Healthy or Diseased** a simple saliva test can help you in proactively preventing or managing different metabolic health conditions and achieving optimal health"*

# Case Study 1 - Nutrigenomic Profiling for Personalized Diabetes Management

**Profile** – A 50-year-old male with a family history of type 2 diabetes. He was diagnosed with diabetes 10 years ago and has been on multiple medications, including metformin and insulin, to manage his blood glucose levels. Despite his efforts to maintain a healthy lifestyle and adhere to medical recommendations, his blood glucose levels have been fluctuating, and he is struggling to achieve optimal glycemic control.

He was recommended to us for getting his Nutrigenomic profiling test done to gain insights into his genetic predisposition to diabetes and how Nutrigenomic profiling might help.

**Nutrigenomic profiling** – Nutrigenomic profiling test revealed that he has a genetic variants that impacted glucose metabolism (ADRB2), reduced insulin sensitivity (FTO, TCF7L2) and increased inflammation (TNF-A).

**Interventions** – Based on these results, our Nutrigenomic counsellor recommended dietary modifications, including increasing intake of anti-inflammatory foods, such as omega-3 fatty acids and antioxidants, and reducing intake of high-glycemic index carbohydrates. The patient also received personalized nutrient recommendations, such as increasing intake of vitamin D and magnesium, which are important for glucose metabolism and insulin sensitivity.

**Outcome** – Dietary modifications were made where more omega-3 rich foods, such as fatty fish, nuts, and seeds, were introduced into his diet, and reducing his intake of high-glycemic index carbohydrates, such as refined grains and added sugars. He also started taking vitamin D and magnesium supplements as recommended. Over time, the patient noticed a significant improvement in his blood glucose levels and achieved better glycemic control. He was able to reduce his reliance on insulin and metformin, and his overall diabetes management improved.

## Case Study 2 - Nutrigenomic Profiling for Cardiac health management

**Profile** – A 45 - year-old female with a family history of cardiovascular disease. She has high blood pressure, high cholesterol, and a history of smoking. She was determined to take a proactive approach to manage her CVD risk and decided to undergo Nutrigenomic profiling to guide her personalized management plan.

She approached us for getting her Nutrigenomic profiling test done to gain better insights into how her genes may be influencing her cardiovascular health and get tailored nutrition recommendations.

**Nutrigenomic profiling** – Nutrigenomic profiling test revealed that she has genetic variants associated with a higher risk of elevated LDL cholesterol levels (APOE, CETP), increased inflammation (IL-6) and impaired antioxidant defense (eNOS, SOD2).

**Interventions** – Based on these results our Nutrigenomic counsellor advised her to follow a heart-healthy diet that included foods rich in omega-3 fatty acids, antioxidants, and fiber while limiting her intake of saturated and trans fats. She was also recommended specific nutrient supplements, such as coenzyme Q10 and vitamin E, to support her in managing oxidative stress better.

**Outcome** – She incorporated the personalized dietary recommendations into her lifestyle and started taking the recommended nutrient supplements. She also made other lifestyle changes, such as reducing smoking and exercising regularly. After six months, her follow-up blood tests showed improvements in her LDL cholesterol levels and markers of inflammation, indicating a positive response to the personalized CVD management plan based on Nutrigenomic profiling.

## Case Study 3 - Nutrigenomic Profiling to avoid yo-yo effect in weight management

**Profile** – A 45-year-old male who has a history of yo-yo dieting (rebound weight or regain weight tendency) and has been struggling with weight regain after each attempt at weight loss. He has a sedentary lifestyle and a family history of obesity and diabetes.

He got referred to us by his family physician for Nutrigenomic profiling to better understand his genetic predisposition to weight gain and develop a personalized approach to weight management.

**Nutrigenomic profiling** – Nutrigenomic profiling test revealed genetic variants associated with a reduced ability to metabolize fats (FABP2), appetite regulation (MC4R), fat storage and reduced ability to maintain lost weight (PLIN)

**Interventions** – Based on these results our Nutrigenomic counsellor advised personalized dietary recommendations to optimize his weight management. He was advised to follow a low-fat, high-fiber diet that included foods rich in lean protein, complex carbohydrates, and phytonutrients. He was also recommended specific nutrient supplements, such as carnitine and green tea extract, which have been shown to have beneficial effects on fat metabolism and appetite regulation.

**Outcome** – He incorporated the personalized dietary recommendations into his lifestyle and started taking the recommended nutrient supplements as advised. He also worked with our sports genomic counsellor to develop a regular exercise routine aligned to his genomic profile. Over the course of 6 months, he successfully lost 26 kgs. and reported improved physical fitness and reduced cravings for high-fat foods. His follow-up measurements showed significant improvements in his weight, body composition, and other markers of metabolic health.

## Case Study 4 - Nutrigenomic Profiling for proactive T2D prevention

**Profile** - A 40-year-old female who has a family history of type 2 diabetes (T2D). Her father and two siblings have been diagnosed with diabetes, and she is concerned about her own risk of developing the condition.

She came across our website and reached out to us as she wants to take a proactive approach to manage her health and reduce her risk of developing diabetes.

**Nutrigenomic profiling** - Nutrigenomic profiling test revealed genetic variants associated with increased risk for T2D, reduced insulin sensitivity (FTO, TCF7L2), glucose metabolism (APOA2), increased tendency for inflammation (IL6) and poor Vit D metabolism (VDR).

**Interventions** - Based on these results our Nutrigenomic counsellor advised personalized dietary recommendations to optimize her blood sugar levels and reduce her risk of developing diabetes. She was advised to follow a low glycemic index (GI) diet, which focuses on consuming foods that do not cause a rapid spike in blood sugar levels. She was also recommended specific nutrient supplements, such as chromium, magnesium, and vitamin D, which have been shown to have beneficial effects on blood sugar control.

**Outcome** - She started following the personalized dietary recommendations and the recommended nutrient supplements as advised. She also made lifestyle changes, such as increasing her physical activity, managing stress, and monitoring her blood sugar levels regularly. Now over 6 months, she has reported improved blood sugar control in her follow-up blood tests, with her fasting glucose levels and HbA1c levels well within the normal range, indicating a proactive approach to managing her health and reducing her risk of developing diabetes through Nutrigenomic profiling.





**GeneScope.ai**

**BRING BACK THE  
HAPPINESS IN  
YOUR LIFE**

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