GeneWell®
DNA test report

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Sample Code 0000

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Introduction

GeneWell® test is addressed to everyone who considers health and wellness to be essential and aspires to become more aware of their personal health risks.

Therefore, the GeneWell® test is an excellent choice, designed to include valuable information on your genes in terms of different medical conditions.

In the current report you can find thorough knowledge on your personal risks in order to make your everyday choices and to change health habits if needed.

Our aim at Genorama is to translate genetic data into clear answers and thereby helping people to make informed decisions based on their genetic prepositions and risks.

Our experts provide firm support in explaining test results and finding personal solutions to take part in modeling of healthy living. You are welcome to contact us with any questions.

On Behalf of Genorama Team

Before looking at your results

Our risk assessment system is based on the latest scientific and medical knowledge available in the most respected scientific and medical journals. You can learn about your health risks and medical conditions, and receive health recommendations in different sections of the report.

Right after this instruction you can see a Summary table showing the correlation of your disease risks to the European ancestry population's average risks.

Your Test Results chapter contains a more detailed description of the results along with disease risk circles and ways on how to reduce the disease risk.

The following chapter, Overview of the Diseases, gives a short description of tested diseases and conditions.

If you would like to learn about your individual detected genetic markers, this can be done in the Genetic Markers Information table. The final page of this report includes a Glossary.

Your Risk is the probability of your developing a condition at some point during your lifetime. The risk calculation takes into account the examined genetic markers and the average lifetime risk for your gender.

The Average Risk is calculated based on the data collected from individuals of European ancestry. You can compare yourself with the average population risk shown in the second circle. Please keep in mind that the risk calculation does not cover other than genetic factors.

Environmental factors such as smoking, diet, stress, and physical activity play an important role in the development of tested conditions. In case your risk is low it does not guarantee that you will not have the disease, or in case of high risk you may never develop the disease in your lifetime.

Summary

Disease name	Risk Level	Your risk %	Average risk %	Genetic risk
Alzheimer disease	higher	64	20	3.2
Atrial fibrillation	higher	33	23	1.5
Basal cell carcinoma	lower	21	23	0.9
Bladder cancer	average	1.4	1.2	1.1
Breast cancer	higher	25	13	2
Celiac disease	moderate	1.8	1	1.8
Colorectal cancer	average	4.8	4.9	0.98
Coronary artery disease	higher	42	24	1.7
Exfoliating glaucoma	higher	40	29	1.4
Folate metabolism	increased			
Gallstone disease	lower	23	27	0.85
Gastric cancer	average	0.6	0.57	1
Graves' disease	higher	1.3	1.2	1.2
Intracranial aneurysm	lower	6	7	0.85
Lactose intolerance	lower			
Lung cancer	average	6.2	6.7	0.93
Male breast cancer	NA			
Male pattern baldness	NA			

Disease name	Risk Level	Your risk %	Average risk %	Genetic risk
Melanoma	lower	1.3	1.9	0.69
Migraine with aura	average	48	43	1.1
Multiple sclerosis	lower	0.02	0.06	0.31
Obesity	lower	32	38	0.84
Osteoporosis	average	36	40	0.91
Peripheral arterial disease	average	15	15	1.1
Primary open angle glaucoma	average	2	2.1	0.97
Prostate cancer	NA			
Psoriasis	lower	0.26	2.5	0.11
Rheumatoid arthritis	higher	7.1	3.6	2
Sugar consumption	average			
Systemic lupus erythematosus	lower	0.74	0.91	0.82
Type 1 diabetes	average	0.67	0.59	1.1
Type 2 diabetes	higher	47	39	1.2
Venous thromboembolism	lower	4.3	5	0.86
Vitamin B12	higher			
Vitamin B6	average			
Vitamin D	increased			

Your test results

AUTOIMMUNE DISEASES

Psoriasis

The analysis of genetic markers showed that your personal risk of developing psoriasis is 8.3 times lower than the average risk in population. Even though your genetic risk is low, you are advised to:

- Avoid triggers that can lead to the disease, such as stress, smoking and obesity

Rheumatoid Arthritis (RA)

The analysis of genetic markers showed that your personal risk of developing RA is 2 times higher than the average risk in population. To reduce the risk you are strongly recommended to:

- Exercise regularly most days of the week
- Maintain a healthy weight level (BMI under 25)
- Avoid smoking
- Manage your stress
- Have regular physical check-ups

Systemic Lupus Erythematosus (SLE)

The analysis of genetic markers showed that your personal risk of developing SLE is 1.3 times lower than the average risk in population. Even though your genetic risk is low, it is advised to:

- Avoid triggers that can lead to the disease, such as chemical exposure, infections (parvovirus, hepatitis C), and smoking

EYE DISEASES

Primary Open Angle Glaucoma (POAG)

The analysis of genetic markers showed that your personal risk of developing POAG corresponds to the average risk in population. Even though you have the average genetic risk, you are advised to:

- Keep healthy diet with enough vitamins and nutrients
- Avoid large amounts of caffeine
- Drink a stable amount of liquid
- Have your intraocular pressure measured on a regular basis

Exfoliation Glaucoma

The analysis of genetic markers showed that your personal risk of developing exfoliation glaucoma is 1.37 times higher than the average risk in population. To reduce the risk you are strongly recommended to:

- Keep healthy diet with enough vitamins and nutrients
- Avoid large amounts of caffeine
- Drink a stable amount of liquid
- Have your vision examined by ophthalmologist every year or according to doctor's recommendation

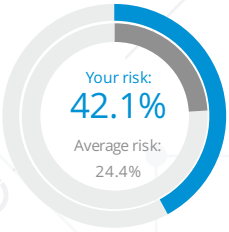
CARDIOVASCULAR DISEASES

Atrial Fibrillation (AF)

The analysis of genetic markers showed that your personal risk of developing AF is 1.5 times higher than the average risk in population. To reduce the risk you are strongly recommended to:

- Eat heart-healthy foods (low in salt, saturated fat, rich in vegetables, fruits and whole grains)
- Do some physical activity every day
- Avoid alcohol use and smoking
- Have regular physical check-ups

Coronary Artery Disease (CAD)



The analysis of genetic markers showed that your personal risk of developing CAD is 1.7 times higher than the average risk in population. To reduce the risk you are strongly recommended to:

- Keep your BMI below 25
- Avoid stress and smoking
- Have regular physical check-ups
- Have your blood tested for cholesterol (LDL, HDL, total cholesterol) and triglycerides level on a regular basis

Intracranial Aneurysm (IA)

The analysis of genetic markers showed that your personal risk of developing IA is 1.2 times lower than the average risk in population. Even though you have the average genetic risk, you are advised to:

- Avoid triggers that can lead to the disease, such as smoking, alcohol and drug abuse
- Eat properly and exercise regularly
- Have regular physical check-ups

Peripheral Arterial Disease (PAD)

The analysis of genetic markers showed that your personal risk of developing PAD corresponds to the average risk in population. Even though you have the average genetic risk, you are advised to:

- Avoid active and passive smoking
- Eat a healthy, balanced diet (keep your BMI < 25)
- Do regular daily exercise

Venous Thrombembolism (VTE)

The analysis of genetic markers showed that your personal risk of developing VTE is 1.2 times lower than the average risk in population. Even though your genetic risk is low, you are advised to:

- Keep your BMI below 25
- Drink enough water
- Avoid smoking
- Perform regular moderate exercise

ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES

Celiac Disease (CD)

The analysis of genetic markers showed that your personal risk of developing CD is moderate. To reduce the risk you are strongly recommended to:

- Avoid triggers that can lead to the disease, such as severe stress, physical injury or infection
- Consult a specialist about following a gluten-free diet

Folate Metabolism (FM)

The analysis of genetic markers showed that your personal risk of developing FM-associated diseases is higher than the average risk in population. Detected AG genotype provide ~60% of the expected MTHFR enzyme activity, compared to the most common genotype GG, which explain normal (100%) enzyme activity. To reduce the risk you are recommended to:

- Limit methionine-rich food (brazil nuts, meat, cheese)
- Eat food rich in vitamin B complex
- Consult your doctor about additional folic acid intake

Gallstone Disease (GSD)

The analysis of genetic markers showed that your personal risk of developing GSD is 1.2 times lower than the average risk in population. Even though your genetic risk is low, you are advised to:

- Drink enough water
- Avoid high saturated fat consumption and excessive dietary fiber intake
- If you plan to lose weight, do it slowly (no more than 2 pounds (0,5-1 kg) per week)

Overview of the Diseases

Alzheimer disease (AD) is the most common cause (70%) of dementia worldwide, characterized by a progressive decline in cognitive function, such as memory loss and changes in behavior. It is a chronic disease with progressive degeneration of brain cells and cell connections, causing a deterioration in mental function. The incidence rate for AD in European and American populations increases exponentially with age, especially at 70-80 years of age. Late onset AD (65 years) is accounting for >95% of all cases. Late onset heritability is 33% and affects men and women equally. Although current treatment of AD with medications can't stop the disease's progression, it helps lessen symptoms for a limited time. Creating a supportive environment for a person with AD is important.

AD risk factors: Older age / Family history / Gender (female) / Hemorrhagic and large ischemic cortical infarcts / White matter infarcts / Traumatic brain injury / Hypertension / T2D / Elevated cholesterol level and dyslipidemia / Metabolic syndrome / Smoking / Lack of exercise / Social inactiveness and low mental activity.

Atrial fibrillation (AF) is the most common cardiac arrhythmia, characterized by absence of coordinated atrial contractions. In the case of AF, the heart rate rises to 180 beats (normal rate 60-80) per minute, lasting from seconds to days. Symptoms include shortness of breath and weakness. AF affects nearly 1% of population, prevalence is 1.5 times higher among men. For treatment, electrical cardioversion or anti-arrhythmic medications are used. If the medications are not working, catheter or surgical procedures are applied.

AF Risk factors: Older age / High blood pressure / Coronary heart disease / Heart failure / Rheumatic heart disease / Myocardial infarction / Heart valve defects / Pericarditis / Congenital heart defects / Hyperthyroidism, sleep apnea, metabolic syndrome, chronic kidney and lung diseases / Alcohol use / Obesity / Family history.

Basal cell carcinoma (BCC), the most common type of skin cancer, is characterized by slow growth, localization and very rare metastatic rate, less than 0.1%.

Various epidemiological studies have found sun exposure as the main environmental trigger of BCC. Incidence rate of BCC is higher in places with increased sun exposure level, e.g. equator and northern territories of Australia. Sun exposure (UV light) is associated with cancer due the ability of UV radiation to induce direct mutations of DNA. According to the population-based analyses, estimated genetic factors account for 7.7%. Mortality of BCC is low, but the malignancy of disorder is associated with lifetime healthcare costs. Treatment depends of the size, type, depth and location of the cancer and may include freezing, surgery, cryotherapy, chemotherapy, radiation therapy, photodynamic therapy etc.

BCC risk factors: Excessive sun exposure / Tanning devices / Fair skin, light hair and eye color / Older age / Viral infections / Immunosuppression / Psoriasis treated with psoralen + UVA Radiotherapy.

Bladder cancer affects people mostly after the age of 40; the median age at diagnosis is 73 years. The disorder occurs 3-4 times more often in men than in women. Estimated heritability for bladder cancer is 31%. Bladder cancer can be characterized by non-muscle invasive lesions (60%) and aggressive muscle-invasive lesions (40%) that are mostly associated with high mortality rate. There are few symptoms to detect this disorder: increased frequency of urination, pain or burring during urination, blood in the urine, and being unable to urinate. The efficacy of treatment depends on the clinical stage and associated risk factors. Treatment options may include surgery, immunotherapy, chemotherapy and radiation therapy.

Bladder cancer risk factors: Smoking / Gender (male) / Race (Caucasian) / Environmental toxins (arsenic, aromatic amines) / Previous cancer treatment (cyclophosphamide) / Certain diabetes medications (pioglitazone, metformin) / Chronic bladder inflammation / Family history of Lynch syndrome.

Glossary

Average Risk is the percent of people who develop the condition during their life. This is compiled from authoritative epidemiological reports in the medical literature. The figures are based on the total lifetime risk for that condition for your gender.

Your Risk is the probability you will develop the given condition and is calculated for you based on the genetic markers tested and the average population risk.

Your Genetic Risk is calculated based on the genetic markers tested. Genetic risk 1 is the average risk. Genetic risk less than 1 indicates that your risk is lower and more than 1 that your risk is higher than the population average.

Gene name is official symbol of the gene this genetic marker is located in. If the gene name is “intergenic”, it means genetic marker is located outside of a gene. (Intergenic- a region of DNA sequences located between genes).

Single Nucleotide polymorphism (SNP) is a specific variation in an individual’s DNA sequence. SNP ID is a number given to each SNP for easy identification. You can use this number to search for more information from public databases (HapMap or SNPedia) or from scientific articles (Pubmed).

Bone mineral density (BMD) shows the amount of minerals such as calcium in the bones.

Body mass index (BMI) is a person's weight in kilograms divided by the square of their height in meters. The BMI is an attempt to estimate the amount of body fat in an individual, and then categorize that person as underweight (below 18.5), normal or healthy weight (18.5 – 24.9), overweight (25 – 29.9), or obese (over 30) based on that value. BMI may not apply to athletes, because athletes may have a high muscle to fat ratio and may have a BMI that is misleadingly high relative to their body fat percentage.

Caucasian is an old racial definition based on a skull from the Caucasus mountains. Commonly used to characteristic of a race of humankind native to Europe, North Africa, and southwest Asia and classified according to physical features —used especially in referring to persons of European descent having usually light skin pigmentation.

European descent means individuals native to or derived from Europe.

Heritability describes the proportion of the genetic variance to the total variance. In other words, heritability attempts to identify how much genetics play a role in part of the population, for example being taller.

Population means a group of individuals that may be defined according to some shared characteristic, which may be social, cultural or physical (ethnic/racial subgroup).